

AN EVALUATION OF PUBLIC ACT 116, MICHIGAN'S
FARMLAND AND OPEN SPACE PRESERVATION PROGRAM

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ABSTRACT

AN EVALUATION OF PUBLIC ACT 116, MICHIGAN'S FARMLAND AND
OPEN SPACE PRESERVATION PROGRAM

By

Mark James Cochran

In recent years the country has become faced with a problem which many claim will threaten its indispensable agricultural production in the future. These individuals contend that the land market is allocating too much farmland into nonagricultural uses and that this conversion process is irreversible. An institutional change, The Farmland and Open Space Preservation Act of 1974, P.A. 116, was introduced to change this performance of the land market.

A mail survey of farmers who had enrolled in the program and who were eligible for tax credits on their 1975 state income tax was undertaken for two reasons. First, it enabled the documentation of the farm, geographical and socioeconomic characteristics of the participants. Secondly, it provided some empirical support for the conclusions of the theoretical behavioral model that two types of farmers are likely to enroll. Those farmers whose farm income is greatly increased due to a substantial recovery of the property taxes paid could be one type which would be expected to enroll. The other type that would be expected to sign contracts would be those farmers who derive a great

deal of utility from the satisfaction of the intrinsic values which they receive from owning agricultural land.

The characteristics of a "typical" participant were:

- 1) fifty-five years of age,
- 2) operated 346 total acres,
- 3) owned 277 of those acres,
- 4) entered 256 acres into a farmland development rights agreement,
- 5) earned between \$5,000 and \$7,499 in net farm income,
- 6) earned between \$5,000 and \$7,499 in nonfarm income,
- 7) owned the land as a sole proprietorship, and
- 8) the farm was located thirty miles from a population center of greater than one hundred thousand inhabitants, twenty-four miles from a center of between twenty-five thousand and one hundred thousand people, and twenty-one miles from a city of ten thousand people or more.

The evaluation of the program and the characteristics of the participants produced the following recommendations:

- 1) It appears that the inclusion of nonfarm income in the calculation of the household income might be a deterrent to participation in the program. However, any exemption of the nonfarm income might make the program more attractive to those farmers who earn more nonfarm income than farm income. It seems that since the program is designed to preserve the state's farmlands and the businesses that operate them, a more appropriate measure of whether these firms need public assistance to survive the threat of conversion to nonagricultural land uses is farm income. While it is unlikely that many farmers would not supplement their farm incomes with their nonfarm salaries if the success of the operation depended upon it, the threat that urban pressure exerts

on a farm could be better approximated by the difference between the property taxes paid and some percentage of the farm income. This might increase the inducements to encourage enrollment of farms in the areas with the highest urban demand, since these areas have the greatest opportunities for nonfarm employment of farmers. To avoid any massive exploitation of such a calculation by nonlegitimate farmers, perhaps only the first two thousand dollars of nonfarm income should be exempted from the household income calculation.

2) Perhaps, there should be a reduction of the percentage used to discount the household income for comparison with the property taxes for farmers who organize and enter blocks of land of greater than 640 acres. This would increase the income tax credit for these farms as an incentive for enrolling in the program in large acreage tracts. An atmosphere for long range commitments to agriculture would more likely ensue from these large agreement parcels since anticipations for encroaching urban developments would be low and protection from nuisance suits, vandalism, trespassing and urban pressure in general would be increased. It would also be easier to coordinate the P. A. 116 program with local land use plans since the agreement acreage would be more consolidated and in less random locations. This option would not preclude the alternative to enroll as individuals as in the present system-- it would only add an incentive for farmers with their own initiative to organize in large tracts and in a manner more closely approaching the intent of the program's rationale.

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By

Mark James Cochran

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To my mother who through her special love and guidance has implanted within me a strong love for life and God, and to my father who through his patience, humanity and love for the outdoors has instilled me with a deep appreciation for the land and the people who inhabit it. For these and other gifts, I shall be forever indebted.

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TABLE OF CONTENTS

LIST OF TABLES	vii
LIST OF FIGURES	ix
Chapter	
I. INTRODUCTION	1
Problem Setting	1
Objectives	3
The Farmland and Open Space Preservation Act of 1974	5
II. THE RATIONALE FOR CONSERVATION	8
Review of Literature	8
Risk and Farmland Preservation	14
The Rationale For Public Action	19
Farmland And Nonmarketable Characteristics	21
Market Imperfections	27
The Quality of Societal Environment	28
Social Trap	32
III. A BEHAVIOR MODEL	35
Behavioral Analysis	35
Behavioral Model	37
IV. CHARACTERISTICS OF PARTICIPANTS	50
Farm Characteristics	51
Farm Acres	51
Farm Enterprise	52
Agreement Acres	53
Business Organization	54
Geographical Characteristics	55
County and Township	55
Land Capability Classes	60
Socioeconomic Characteristics	61
Age	61
Income	61
Land Tenure	63

Attitudes, Perceptions, and Anticipations	64
Rurality	64
Urban Pressure	64
Anticipations	64
Heirs	65
Preferences	65
Reasons	66
V. COMPARISON OF THE OBSERVED PATTERN AND BEHAVIORAL MODEL .	68
VI. PERFORMANCE OF ACT AS A LAND USE MEASURE	73
Farmer Initiative	73
Nuisance Suits	74
Federal Land Bank	74
Strip Development	75
VII. RECOMMENDATIONS AND SUMMARIES	77
Summary	77
Recommendations	78
Areas For Additional Study	80
Impact on Land Values	80
Coordination Among State Agencies	80
Federal Land Bank	81
Incidence of Penalty	81
Education and Delivery System	81
Long Term Variables	82
The Nature of Development Demand for Agricultural Land	82
Comparisons With Programs in Other States	83
APPENDICES	84
A. Legislative History of P.A. 116	84
B. Questionnaire	88
C. Methodology	93
D. Public Act 116, The Farmland and Open Space Preservation Act of 1974	95
BIBLIOGRAPHY	111

LIST OF TABLES

Table	Page
1. Pattern of P.A. 116 Participants With Regard to Farm Size .	51
2. Comparison of State and P.A. 116 Patterns With Regard to Type of Farm Enterprise	53
3. Comparison of State and P.A. 116 Patterns With Regard to Business Organization	54
4. The Ten Counties With The Most Agreement Acres	56
5. Comparison of State and P.A. 116 Patterns With Regard to Population Density	56
6. Comparison of State and P.A. 116 Patterns With Regard to Millage Rates	57
7. Comparison of State and P.A. 116 Patterns With Regard to Farmland Acreage Decreases	58
8. Pattern of P.A. 116 Participants With Regard to Distance from Cities of Population Greater Than One Hundred Thousand	59
9. Pattern of P.A. 116 Participants With Regard to Distance from Cities of Population Greater Than Twenty Five Thousand	59
10. Pattern of P.A. 116 Participants With Regard to Distance from Cities of Greater Than Ten Thousand	60
11. Prominent Soil Conservation Service Land Capability Classification	60
12. Comparison of State and P.A. 116 Patterns With Regard to Age	61
13. Patterns of P.A. 116 Participants With Regard to Farm and Nonfarm Income	62
14. Preferences for Use of Land After Participants Have Discontinued Farming	65

Table	Page
15. Reasons for Enrollment	66
16. Characteristics of "Typical" Participant	67

LIST OF FIGURES

Figure	Page
1. Conditions With State I_1 Where More Farmland Is Not Needed	18
2. Conditions With State I_0 Where More Farmland Is Needed . .	18
3. Utility Maximization	40
4. Relationship Between Utility From Intrinsic Value Satisfaction and Acres Farmed	42
5. Optimal Levels Under Utility Maximization	45
6. Utility Maximization With Concave Indifference Curves . . .	47

CHAPTER I

INTRODUCTION

Problem Setting

The agricultural industry in the United States has contributed significantly to the high standard of living enjoyed in America. American prominence as a leader in world food production is becoming more and more one of the nation's most envied assets. This covetable production can be credited to a variety of sources; a modern and well adopted technology, expert managerial prowess of the country's farmers, a strong system of credit institutions, a knowledgeable, innovative scientific community, a good natural resource base, an auspicious institutional foundation, a favorable climate, and perhaps others.

However, in recent years the country has become faced with a problem which many claim will threaten its indispensable agricultural production in the future. Each year in the United States, 2.7 million acres of rural lands are converted to nonagricultural uses.¹ It has been predicted that over the next twenty-five years, the equivalent of the total areas of New Hampshire, Vermont, Massachusetts and Rhode Island will be developed for urban purposes alone.² Additional

¹M.L. Cotner, M.D. Skold, and O. Krause, Farmland-Will There Be Enough? (Washington: U.S. Department of Agriculture, Economic Research Service, Natural Resource Economics Division, 1975), p. 8.

²Roger Blobaum, The Loss of Agricultural Land, Study Report to the Citizens' Advisory Committee on Environmental Quality (Washington: Citizens' Advisory Committee on Environmental Quality, 1974), p. 1.

agricultural lands will be converted for use in highways, strip mining and other developments. Lands with high natural capabilities for agricultural production are finite and their quantity is limited. Unfortunately, it is often these high quality farmlands that are diverted into urban uses. Lands with high locational value for urban uses frequently have qualities that enable them to be highly valued for agricultural purposes as well.

Although land resources are only one input into a sophisticated production process and substitution of other inputs is not only possible but has already been experienced, the importance of these resources cannot be neglected. Farmlands are undeniably key inputs into its agricultural production capacity. However, it is an atypical input because of its characteristics as a stock resource with asymmetric irreversibility traits.³ Another distinguishing characteristic of land as a productive input is the inherent amenity values for which there may not be close substitutes.

The value of these uncommon characteristics is not easily measured or exchanged through market transactions. The market therefore proceeds with its intertemporal allocation of agricultural land in neglect of these persistent but unquantifiable values.⁴

³While technically the conversion of agricultural land to urban purposes is not unequivocally irreversible (it is possible to plow up a parking lot), the probability that the price system would change drastically enough to make such reconversions economically feasible is small.

⁴The author is not convinced of either the validity or the accuracy of attempts to quantify these values through consumer surplus or other procedures.

It is often claimed that the rate of depletion of these land resources which is directed by the market is too rapid and nonoptimal⁵ because of this neglect. Therefore, the institutions of the land market require adjustments to insure that its performance more closely approaches that which might be preferred by society if more complete value information were part of the allocation process.⁶

This nonoptimal rate of irreversible conversion of agricultural land resources may necessitate public action to adjust the institutions of the land market and produce a more acceptable performance in its intertemporal allocation process.

Objectives

In the state of Michigan, one set of institutional adjustments introduced by public action to alter the rate of agricultural land conversions is Public Act 116, The Farmland and Open Space Preservation Act of 1974.⁷ It is a collective attempt to adjust the performance of the market in its intertemporal allocations of land resources. After an evaluation of the consequences of the behavior in the land market in Michigan, certain groups, through the political process, decided that this behavior should be modified to encourage a more "desirable" set of

⁵Optimality, in this sense, can be defined as an allocation that is consistent with marginal utility analysis when both market and non-market values are considered.

⁶Any set of allocational rules implies a distribution of effects, depending on the original apportionment of property rights. Some individuals will stand to gain by any changes in the allocation procedures while others will lose. Certainly, the merits of the redistribution of property rights after an institutional change warrant heavy consideration in the value of the adjustment.

⁷Michigan Public Act 1974, No. 116.

outcomes. The Farmland and Open Space Preservation Act was designed as the institutional revision that could adjust the behavior in the land market in such a way that its allocational performance generates a pattern of land use consistent with many market and nonmarket values of certain uses.⁸

The purpose of this study is to evaluate the rationale and the impact of this public action. More specifically the objectives of this research are:

- 1) Examine the rationale for public action in the preservation of agricultural lands;
- 2) Document the socioeconomic pattern of participants in the first year of P.A. 116;
- 3) Develop a behavioral model to explain and predict the conduct of farmland property owners who are faced with opportunities for capital gains from the sale of their lands;
- 4) Describe the adjustments in the conduct of these individuals by the introduction of the P.A. 116 institutions and their impact on the performance of the land market;
- 5) Identify the relative strengths and weaknesses of the institutions of the P.A. 116 legislation;

⁸The political process is a system where different groups of individuals bonded together by some common interest may exercise more power and access than others and control the direction of public choice. Public choice can be perceived as the articulation of the preferences of those groups which employ the most power and access. See A. A. Schmid, "Property, Power and Public Choice" (Unpublished Manuscript, Michigan State University) and Warren Samuels, "Welfare, Economics, Power, and Property," Perspectives of Property, eds. Gene Wunderlich and W. L. Gibson (Institute for Research on Land and Water Resources: The Pennsylvania State University, 1972).

6) Suggest appropriate institutional adjustments in the legislation or administration of P.A. 116 that might increase its effectiveness in achieving its objectives.

The Farmland and Open Space Preservation
Act of 1974

The act provides certain tax incentives for landowners who agree to leave their land in agricultural or open space use for a minimum of ten years. These agreements are in the form of either of two types of restrictive covenants. The first, the farmland development rights agreement, pertains to land which is primarily used for agricultural purposes. The other type is the open space development rights easement and it applies to lands that are substantially undeveloped and unfarmed. There are two classes of the open space development rights easements-- designated open space and local open space.

All land that is to be entered in farmland development rights agreements must meet certain eligibility requirements. These requirements are:

a) A farm of 40 or more acres in one ownership which has been devoted primarily to an agricultural use.

b) A farm of five acres or more in one ownership, but less than 40 acres, devoted primarily to an agricultural use, which has produced a gross annual income from agriculture of \$200.00 per year or more per acre of cleared and tillable land.

c) A farm designated by the department of agriculture as a specialty farm in one ownership which has produced a gross annual income from an agricultural use of \$2,000.00 or more.

d) Parcels of land in one ownership which are not contiguous but which constitute an integral part of the farming operation being conducted on land otherwise qualifying as farmland may be included in an application under this act.

The land entered into a designated open space development rights easement must be classified as historic open space, riverfront open space or shoreland open space. This classification must be in accordance with:

a) Historic open space are those lands as defined in section 2(8)(a)(i) of the act.

b) Riverfront open space shall be a contiguous area of undeveloped land which lies within 1/4 mile of a river designated under Act No. 231 of the Public Acts of 1970, being sections 281.761 to 281.776 of the Michigan Compiled Laws, and any part of which is within 400 feet of the river, or is within an area zoned by the applicable local unit of government pursuant to that act.

c) Shorelands open space shall be those undeveloped lands designated by the director of the department as an environmental area pursuant to Act No. 245 of the Public Acts of 1970, being sections 281.631 to 281.645 of the Michigan Compiled Laws.

The local open space development rights easement requires that land be

. . . approved by the local governing body, the preservation of which in its present condition would conserve natural or scenic resources, including the promotion of the conservation of soils, wetlands and beaches; the enhancement of recreation opportunities; the preservation of historic sites; and idle potential farmland of not less than 40 acres which is substantially undeveloped and which because of its soil, terrain and location is capable of

being devoted to agricultural uses as identified by the department of agriculture.⁹

With the farmland development rights agreement, two kinds of tax benefits are provided. The land owner pays his property taxes as before but he receives a credit on his state income tax for the amount by which his property tax exceeds seven percent of his household income. The household income includes farm income, nonfarm income, capital gains, social security, retirement benefits, pensions, annuities, interest, gifts in excess of three hundred dollars, and virtually all other income. In addition, the landowner is exempt from any nonfarm special assessments such as sewers, water, curbs and paving. At the end of the contract period, if the agreement is not renewed, the income tax credits from the last seven years become a lien against the property and any special assessments must be repaid before any of the associated services can be used.

The tax advantages of the open space easements are in the form of an use-value assessment. These lands are assessed at both market and use values with the use value assessment used in the determination of the appropriate property tax. Again, at the end of the contract period a lien against the property will be recorded of the amount of the ad valorem taxes not paid on the development rights during the last seven years.

⁹Michigan Public Act 1974, No. 116.

CHAPTER II

THE RATIONALE FOR CONSERVATION

Review of Literature

Conservation is a topic that transcends many disciplines and bears great importance for the intertemporal welfare of society. One discipline which has made its own prolific contributions to the special problems of intertemporal productive efficiency and general social welfare is economics.

Most of the literature concerned with the economics of conservation deal with the problems of allocating natural resources between various time periods so as to produce the maximum welfare that is possible. Approaches used by different authors are widely variant and the conclusions themselves often seem to stand in contradiction of one another. In fact, even the basic definitions are not always agreed upon a priori.

For the sake of brevity, only a few prominent works pertaining to an optimal rate of use of exhaustible resources (or those exhibiting asymmetrical irreversibility characteristics) will be reviewed.

A. C. Pigou in his The Economics of Welfare¹⁰ argued that the government laden with the responsibility to its present citizens and those of future generations holds the clear duty for the defense of the

¹⁰A.C. Pigou, Economics of Welfare (London: Macmillan, 1962), pp. 23-30.

exhaustible natural resources from "rash and reckless spoilation."¹¹

He contended that the government through artificial encouragement to investment (especially to those whose returns would appear only after a lapse of many years) alter the rate of the use of depletable resources. He suggested that a lower rate of discount be employed when the social time preference deviated from the private one. This, he claimed, would favor those decisions which would slow the rate of use of the exhaustible resources.

In his Economics of Agricultural Production and Resource Use,¹² Earl O. Heady develops one approach for the intertemporal allocation decisions concomitant to conservation. He handles exhaustible resources as a factor of production that should be invested in commensurate with the marginal analysis of production. Heady manages this in the context of community indifference curves and transformation functions between rates of use in two periods. He introduces two considerations into the comparison of future benefits with those of the present. First, he suggests that risk and uncertainty should influence the discount rate that should be applied. Secondly, the durability or storage characteristics of the output produced by the stock resources is important. It may be more efficient to store the resource than the output it is used to produce.

Heady bases much of his welfare evaluation on Pareto optimality but concludes since intergenerational utility comparisons are impossible

¹¹Pigou, op. cit., pp. 29-30.

¹²Earl O. Heady, The Economics of Agricultural Production and Resource Use (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1952), pp. 763-793.

and that compensation is unlikely, the optimal level of conservation is a political choice to be handled by each succeeding generation.

Pareto optimality is also used as a criteria for economic efficiency in The Theory of Environmental Policy¹³ by William J. Baumol and Wallace E. Oates. They classify exhaustible resources into two categories on the basis of the presence of rising production costs. Their major contention concerning those stock resources exhibiting constant production costs is that Pareto optimality requires a constant discounted price. This assumes that the interest rate employed in discounting would equal the annual rate of increase in the resource's current price. For those resources whose supply costs are rising, Baumol and Oates conclude the price must be composed of two parts; the marginal input cost and the cost that current utilization imposes on future consumers of the community. In this case, the Pareto optimal discounted price of the resource can follow the rising pattern normally expected, but it is not certain that it always will. Much depends upon the time path of the price of labor.

In addition to their attack on the normal premise that depletion of a stock resource should result in a rising discounted price, these authors point out that the market does not always misallocate such resources by improperly pricing them. A market allocation will depart from intertemporal Pareto optimality only with the presence of imperfect

¹³William J. Baumol and Wallace E. Oates, The Theory of Environmental Policy (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1975), pp. 56-69.

markets, a "defective telescopic faculty or interest rates that differ from the appropriate social discount rate."¹⁴

Anthony Scott's Natural Resources-The Economics of Conservation¹⁵ proposes that no new, unique theory needs to be developed for the conservation movement. Rather, basic economic theory of production and the behavior of the firm needs to be applied in a new situation with unique technical, legal, and sociological conditions.

Interestingly, Scott concludes that the reproducible character of a resource should not dictate its use. Anticipated future demand and production costs will affect the price of the resource and, thusly, the rate at which it is to be used. Demand is the key determinant of the use (although replaceability, substitutability, or other qualities of the resource may affect the demand.)

He goes on to contradict the conclusions of Pigou with his proposition that a reduced rate of time preference would not assure a slower rate of depletion. The reduction in the interest rate would stimulate the expansion of all investment activity (especially those most influenced by the value of time.) This expansion of investments, if it occurs at the expense of consumption, might result in an increase in the derived demand for natural resources. This in turn could overshadow the original intentions of a discount rate reduction and result not in a lower rate of use, but in fact, a much higher one. Scott,

¹⁴Baumol and Oates, op. cit., p. 69.

¹⁵Anthony Scott, Natural Resources-The Economics of Conservation (Toronto: McClelland and Stewart Limited, 1973), pp. 3-39, 107-127.

therefore, rejects the social rate of time preference as any rationalization for a lower rate of discount.

John V. Krutilla in his article, "Conservation Reconsidered,"¹⁶ contends that conservation problems are unique because of the irreproducibility and irreversibility of the natural environment. These traits, when accompanied by utility considerations (option demand and the learn-by-doing phenomenon) that are ignored in intertemporal market allocations result in grave inefficiencies. The assymetric implications of technology (advances with time in production techniques that increase the supply of manufactured goods that can be produced from a given stock of resources while the supply of natural amenities from the same resource base remains constant) reduce the real cost of refraining from converting our remaining rare natural environments. Finally, Krutilla observes that if the consumption-savings behavior is motivated by a desire to leave an estate, part of that estate would logically be in assets that generate collective consumption goods of appreciating future value.

From these observations, Krutilla expounds on the unique problems of determining an optimal rate of depletion. The rate that directs the intertemporal market allocation is inappropriate for two crucial reasons. First, technology at any point in time is at a level which is less advanced than some point in the future. This leads to a conversion of natural resources into manufactured goods at a rate faster than what it would have proceeded had the more advanced technology been employed.

¹⁶John V. Krutilla, "Conservation Reconsidered," American Economic Review, LVII (September, 1967), pp. 777-786.

Secondly, with more direct contact with natural environments, the learn-by-doing phenomenon and the evolutionary nature of tastes and preferences will lead to a greater appreciation of natural amenities. With this appreciation through time, the conversion of the resource stock will have advanced further than it would have were the future composition of tastes to have prevailed.

On account of the traits of irreversibility and irreproducibility, this inappropriate rate of conversion will result in an inability to achieve a level of welfare in the future that would have been possible had the conversion rate been retarded.

The criticism of Pigou's premise that a lower social time preference should result in a reduction in the discount rate continues in an article, "Resource Conservation, Environmental Preservation, and the Rate of Discount,"¹⁷ by Anthony Fisher and John Krutilla. These authors point out that Pigou was vague in his recommendation because it is unclear whether he meant for the lower rate to apply to some projects in the public sector, to all such projects or to all investment opportunities in both the private and public sectors. If Pigou intended either of the first two, it leads to inefficiency and can only be justified on the grounds of second-best. If he intended the latter, the reduced discount rate will likely produce an impact on the depletion rate just the opposite to that anticipated.

¹⁷Anthony C. Fisher and John V. Krutilla, "Resource Conservation, Environmental Preservation, and the Rate of Discount," Quarterly Journal of Economics, LXXXIX (August 1975), pp. 359-370.

Risk and Farmland Preservation

If the inherent problems of specifying community indifference curves and a social welfare function can be temporarily ignored, some of the observations in the literature can be incorporated into a model. The model can depict the insurance nature of the P.A. 116 program as it is employed by the community as protection from the risk of an unwanted situation arising.

Many states have responded to the rapid rates of conversion of agricultural land to urban uses by some form of a farmland preservation program. These are attempts by publics to deal with the risks of the future. They are uncertain as to the role that agricultural products and the availability of the necessary inputs will play on their welfare in the future. It is difficult to accurately predict foreign and domestic demands for food, the technological improvements that will be developed for economically feasible use, the availability of the essential factors of production, and the value of farmland in an underdeveloped state. Once emotional arguments are dismissed, the adoption of such a program by a community remains a difficult problem.

The analysis of this problem can be more easily perceived by the division of the future into two possible states. The first state (I_0) will measure the community's welfare if such developments occur that more farmland will be needed than what the market currently allocates (or can in the future). A substantial population growth (both foreign and domestic), a rise in the personal incomes allowing the preference for meat over cereal diets to be expressed in the market (both foreign and domestic), the nonavailability of substitute inputs to offset the shortage of farmland, and the market neglect of amenity

values of farmland and open space could produce this situation. The probability of state I_0 occurring will be denoted by α .

The second state will be the situation where the market accurately allocates the land resources of the community and no need arises for more farmland than what it directs (or is capable of directing). Although other issues are also important, the basis of this situation will likely lie with the development of yet undiscovered technological efficiencies and the availability of alternative factors of production at prices economical enough to allow the necessary substitution to replace land resources. This state will be denoted as I_1 and its probability of occurrence as $1 - \alpha$.

The introduction of a preservation program into the land market affects the allocation of resources. The community through its adoption of the program has attempted to protect itself from the risk of which state will occur. The adoption of the program can be designated by a "w"; so if state I_0 occurs the community can be in the situation without the program (I_0) or in the situation with the program (I_0^w). The same nomenclature will apply to state I_1 .

The net benefits of adopting a preservation program are $I_0^w - I_0 = B$. The price or costs of the program can be considered as $I_1 - I_1^w = P$. The exchange rate between the two states for the community is: $\frac{dI_1}{dI_0} = \Pi$

The problem for the community lies in maximizing its utility subject to its restrictions on exchanging income in state I_0 for that of state I_1 .

$$\text{Max. } U = (1 - \alpha) \cdot u(I_1) + \alpha \cdot u(I_0)$$

$$\text{s.t. } I_1 - I_1^W = \Pi(I_0^W - I_0)$$

However, most programs affect the rate at which the community trades present consumption for future consumption. Advocates for the adoption of preservation programs often claim that the market interest rate does not reflect the true value of agricultural use of land. They contend that the market does not properly consider the costs of irreversibility of present use decisions and the external benefits produced by agricultural use of land. The conversion of farmland to other uses provides too much present consumption and too little future consumption. The programs usually provide tax incentives to produce a different interest rate so land owners will retain their land in agriculture and forego the income from developing it for other purposes. The utility (U^*) that the community obtains from exchanging consumption between the two time periods will be changed.

$$\text{Max. } U_1^* = C_0 C_1 \quad Y_0, Y_1 \text{ incomes}$$

$$\text{s.t. } (1 + r_1) C_0 + C_1 = (1 + r_1) Y_0 + Y_1$$

With the introduction of the preservation program, the interest will increase and so will the optimum level of utility.

$$\text{Max } U_2^* = C_0 C_1 \quad r_2 > r_1 \text{ with program}$$

$$\text{s.t. } (1 + r_2) C_0 + C_1 = (1 + r_r) Y_0 + Y_1$$

The benefits and costs of the program will depend upon whether the market or the program's adjusted interest rate more closely

approaches the rate in society's best interest. The probability that the rate adjusted by the program is better for society is α and that of the market rate being more beneficial is $1 - \alpha$.

In this case, due to the similarity of causal factors, it will be assumed that $\alpha = \alpha$. So, the benefits of the program will be $I_0^w - I_0 = B = U_0^b - U_0^a$ while the price of the program will be $I_1 - I_1^w = P = U_1^a - U_1^b$.

The first order conditions are:

$$\frac{\partial L}{\partial I_1} = (1 - \alpha) U_1^1 - \lambda = 0$$

so:

$$\frac{\partial L}{\partial I_0} = \alpha U_0^1 - \lambda \Pi = 0$$

$$\frac{\alpha U_0^1}{(1-\alpha) U_1^1} = \Pi$$

and if the exchange is directed by probabilities then a "fair" exchange would be:

$$\frac{\frac{\alpha U_0^1}{(1-\alpha) U_1^1}}{\frac{\alpha}{(1-\alpha)}} = \frac{U_0^1}{U_1^1} = \Pi$$

So, the exchange options for protection from risks of future demand for farmland can be maximized by equating the ratio of marginal utilities of the two states to the price ratio determined by the costs and benefits of a preservation program. The interest rate manipulation

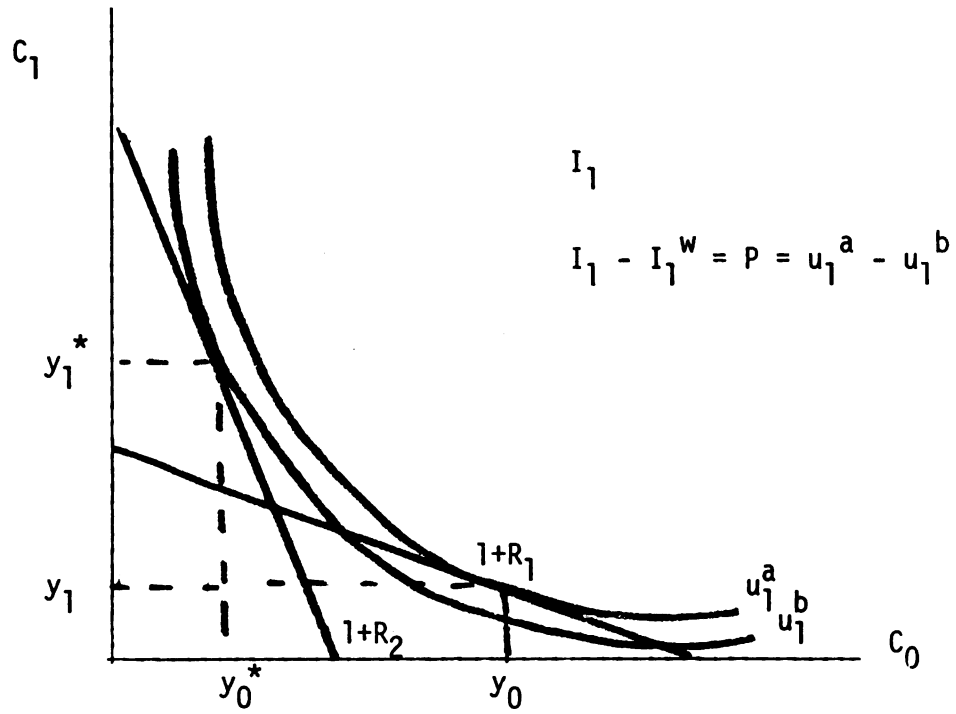


Figure 1. Conditions With State I_1 Where More Farmland Is Not Needed

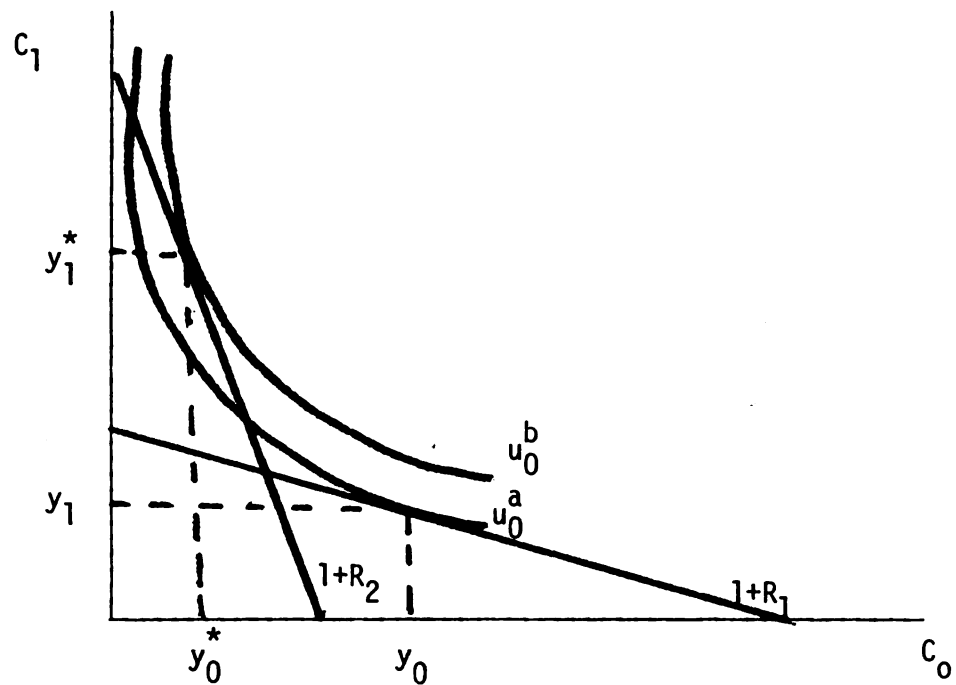


Figure 2. Conditions With State (I_0) Where More Farmland Is Needed

and the probabilities of each state occurring play important roles in this analysis also.¹⁸

The Rationale For Public Action

While the use of community indifference curves may provide some limited insights into the insurance nature of a preservation program, the notion of a social welfare function is somewhat naive. The fundamental political differences within a community and the problems of making interpersonal utility comparisons probably prevent any realization of such a function. Public interest cannot be solely articulated by economic efficiency. The pattern of income distribution, the rate of economic growth, the balance of payments equilibrium, economic stability, national security, and freedom are also important to the welfare of society.¹⁹ It is, therefore, more appropriate to view the problems of intertemporal allocations of land resources through the approach of public choice.

Inherent in Pareto optimal efficiency or any other allocation procedure is a distribution of effects in accordance with the original apportionment of property rights. This distribution of effects can be considered as the performance of the market.²⁰ When a group of individuals motivated by a common interest or goal, perceive that modification

¹⁸Format for analysis from I. Ehrlich and G.S. Becker, "Market Insurance, Self-Insurance and Self Protection," Journal of Political Economy, (July/August 1972), pp. 623-648.

¹⁹Peter O. Steiner, "The Public Sector and The Public Interest," Public Expenditures and Policy Analysis, eds. Robert H. Haveman and Julius Margolis (Chicago: Rand McNally and Co., 1970), p. 40.

²⁰James D. Shaffer and A. Allan Schmid, "Community Economics-- A Framework For Analysis of Community Economic Problems," (Unpublished manuscript, Michigan State University).

in the performance of the market would provide them benefits above their costs, they may try to introduce an institutional adjustment. The success for adoption of this adjustment will depend upon the group's power and access in the political process.²¹ Since each institutional adjustment is likely to produce a change in the performance of the market, these adjustments will result in gains for some groups and losses for others. The adoption of a proposed change will be dependent on which group, those who gain or those who lose, exercises the most power and access in the political process.

The introduction of a preservation program was initiated by a group of individuals who wished to see a different distribution of effects emanate from the land markets. The previous performance of the market was felt to be unsatisfactory because the allocation process ignored many of the values that these individuals held. The preservation of farmland was deemed to have the qualities of both a public good and a social trap.

Part of the justification for the institutional change lies in the public good qualities that farmland produces when it is retained in agriculture. Peter O. Steiner has described public goods as collective goods which are provided by the public sector.²² He defines collective goods as follows:

²¹A. Allan Schmid, "Property, Power and Public Choice" (Unpublished Manuscript, Michigan State University), and Warren Samuels, "Welfare, Economics, Power, and Property," Perspectives of Property, eds. Gene Wunderlich and W.L. Gibson (Institute for Research on Land and Water Resources: The Pennsylvania State University, 1972).

²²Steiner, op. cit., p. 25.

A collective good in my definition is not necessarily a collective consumption good. Collective goods arise whenever some segment of the public collectively wants and is prepared to pay for a different bundle of goods and services than that which the unhampered market will produce. A collective good thus requires (1) an appreciable difference in either quantity or quality between it and the alternative the private market would provide, and (2) a viable demand for the difference.²³

Steiner distinguishes three types of public goods;

- 1) those arising from inherent qualities of certain goods which result in externalities that cannot effectively be marketed,
- 2) those arising from market imperfections rather than any characteristics of any goods, and
- 3) those that arise not from market failures but from aspects concerning the quality of the social environment (i.e., patterns of consumption, income distribution, etc.).²⁴

Farmland And Nonmarketable Characteristics

The first of Steiner's three types of public goods can be considered as external, spillover, or third party effects. These external effects have two general characteristics: interdependency of production or utility functions²⁵ and the lack of compensation.²⁶ The interdependency of production or utility functions occurs when the activities of one economic entity, either producer, consumer, or unit

²³Steiner, op. cit., p. 25.

²⁴Steiner, op. cit., p. 26.

²⁵Orris C. Herfindahl and Allen V. Kneese, Economic Theory of Natural Resources (Columbus, Ohio: Charles E. Merrill Publishing Company, 1974), p. 305.

²⁶Paul W. Barkley and David W. Seckler, Economic Growth and Environmental Decay--The Solution Becomes the Problem (New York: Harcourt Brace Jovanovich, Inc., 1972), pp. 154-55.

of government, has a direct impact upon the productivity of another's production function or the satisfaction level of its utility function. The lack of compensation results when the producer of a benefit is not rewarded for its production or when the creator of a cost can escape its burdens which are then passed on to others. The two characteristics are interrelated because external effects materialize when the behavior of one economic entity produces a cost or benefit which is incurred by another and no compensation transpires.

The classical case of "pure" collective consumption goods can be considered as an extreme example of externalities. The entire output is unmarketable--all of the benefits are external.²⁷ These goods are distinguished by the characteristic that they can be simultaneously used by many without being consumed to exclusion by any. This inability to exclude consumers from enjoying the benefits created by some specific good leads to the lack of compensation for its production which in turn leads to the free rider problem. The free rider problem results from the knowledge that contributions on an individual basis to the production of some good may not be necessary for the enjoyment of its benefits--once the good is produced, exclusion from its use is prohibitive by its nature and it is impossible to charge for its benefits.²⁸ The effective demand for these classical collective goods is then understated in market terms due to the free rider properties.

The externalities of retaining land in agricultural use are numerous. They range from the amenity values that the farms provide to the nonfarm public to the external costs that scattered urban development

²⁷Steiner, op. cit., p. 23.

²⁸Barkley and Seckler, op. cit., pp. 128-44.

pattern produces for a community. While the actual magnitude and measurement of these externalities is beyond the scope of this study, the identification and description of a few of these basic external effects will be beneficial for conceptual purposes.

The use of land for agricultural purposes produces scenic and aesthetic qualities which many members of the surrounding community value, but the property owner is incapable of collecting any compensation for their production. Agricultural use of land resources provides an external benefit to those who would rather view the green pasture and open space of farmland rather than the concrete and brick of urban developments. The value of this benefit is not incorporated into a market allocation process and the advocates of the preservation program argue for institutional changes resulting in recognition of these values and their inclusion in the allocation process.

Another external benefit of undeveloped farmland for which there are no compensatory returns is the value rural residents place on the agricultural character of their community. In recent years, the historical urban migration trend has been reversed in the United States.²⁹ People seem to be displaying a strong preference for rural residences and agricultural communities as a place to live. The amenities (in the form of either aesthetics or an agricultural character of the community) that the surrounding farms provide to these rural residences is not calculated into the return to agriculture and is ignored in the market allocation process. The neglect of this value by the allocation process

²⁹Calvin L. Beale, The Revival of Population Growth in Non-Metropolitan America, ERS-605 (Washington: United States Department of Agriculture, Economic Research Service, 1975), pp. 3-15.

led to a market performance that produced too little of the collective good. The preservation program introduced changes in the allocation rules that were felt to be justified because it brought some consideration of this external benefit into the process.

The ecological concern that the more intensified use of remaining lands or the agricultural development of marginal lands to replace the production capacity that agriculture loses by the reduction of its acreage will produce environmental hazards is an example of external effects. The increased water pollution resulting from intensified uses of chemical fertilizers, pesticides and herbicides applied to increase yields will not be incorporated into the decision process for land use. The increased soil erosion stimulated by the elimination of rotation practices, the shift from pasture to row crops, and the abandonment of other low intensity, conservation practices will also be an external cost not considered by farmers or developers. The agricultural development of marginal lands could also provide numerous environmental hazards. The loss of the flood control capacity of farmland when converted to other uses is another external cost. Since the market fails to evaluate these benefits, support for the legitimacy of a public program for the retention of agricultural lands in farming was deemed to be in the public interest.

A viable agricultural industry can have a strong impact on the local economy of a region. Agriculture provides second round economic effects to a community in that numerous businesses either sell goods used in the production of farm products or sell, handle, or process the farm products themselves. It is felt by some that the secondary benefits that agriculture generates in income and employment for the

associated business enterprises in the economy should be appraised in the allocation process of land resources.³⁰ One of the external costs associated with the conversion of farmland to urban purposes is the effect that it has on the surrounding farms. It can influence not only the economic operation of these farms, but it can also effect the value satisfaction that a farmer receives from his occupation and lifestyle. The influx of nonagricultural land uses adjacent to farm operations introduces the possibilities that property taxes will rise to reflect higher land values and a greater demand for public services, nuisance suits to prevent offensive odors, and a reluctance by farmers to invest in capital and improvements.³¹ Trespassing, littering, unauthorized hunting, vandalism, and congestion of public facilities may also develop and threaten the lifestyle of the agricultural community.

The actual occurrence, or the anticipation that these possibilities may become realities, imposes a cost on the remaining farmers which could lead to behavior not desired by some segments of society. Public action to reduce the spread of these external costs is a value judgment that many people support as consistent with the public interest.

The conversion of farmland to urban purposes is often in a disordered and scattered pattern of development. A scattered development pattern imposes an external cost³² in that the owners of the developed

³⁰ A crucial comparison must be made between the impact on the economy that agricultural use of the land will have and the impact any alternative uses will produce.

³¹ William R. Bryant, *The Effects of Urban Expansion on Farming In Wayne County, New York* (Ithaca: Cornell University Agricultural Experiment Station, Agricultural Economics Research 75-28, 1975), pp. 3-38.

³² Or the foregone external benefits of a well planned community.

property are not charged for the detriments that they pass onto others in the community. These detriments can range from the loss of aesthetic values of a well planned community to the inefficiencies in the provision of public services like sewers, electricity, water, fire, police protection, etc.³³ It is sometimes suggested that if the conversion of farmland to nonagricultural uses was slowed, then urban development would be consolidated on other sites. This would lead indirectly to a more orderly growth pattern. Some support for a preservation program could then conceivably be generated in hopes that external costs of development could be concentrated to a smaller land area.

Occasionally, another peculiarity is characteristic of this type of Steiner's classification of public goods. It is the option demand. Option demands arise from the value that many hold for the existence of certain collective goods which face the threat of some irreversible development. The option demand results from the desire to preserve the existence of a good or to reserve the decision on the timing of its development for future generations. The asymmetric quality of irreversibility inherent in the allocation of these goods is the base for option demands. There is a social value to many for the preservation of options lost by irreversible changes of collective goods that is not evaluated in the market pricing process. There are no market procedures that can effectively consider the willingness of many to pay for the insurance that no decisions occur that preclude the existence of the collective good. This demand is not incorporated

³³Marion Clawson, Suburban Land Conversion in The United States (Baltimore: The John Hopkins Press, 1971), pp. 141-163.

into the market price because of the free rider property which restricts the total demand from being converted into an effective demand.³⁴

The option demand for farmland arises from the value some have for the existence of the farm lifestyle. Perhaps, nonfarm residents who grew up on a farm or have some other ties to rural communities have a willingness to pay to prevent any occurrences that may jeopardize that style of life. They may be willing to guarantee that the farm lifestyle continues but there is no way that the market can reflect the demand for this characteristic of agricultural land use.

More importantly, the option demand is introduced by the willingness to pay of individuals who, because of the asymmetry of irreversibility, would prefer that the decision to divert farmland to urban uses be postponed as long as possible. They have a demand for the preservation of farmland and open space, but the allocation process is unable to evaluate this quality of a collective good.

Market Imperfections

The public goods arising from market imperfections are extremely difficult to distinguish from those caused by the technical characteristics of specific goods. Steiner suggests that these market failures are the result of the lack of information, sufficient competition, timely adjustment and/or modest transaction costs. These imperfections create legitimate motives for the public provision or supplement of certain goods in quantities or qualities not furnished by the market.³⁵

³⁴Barkley and Seckler, op. cit., pp. 154-55.

³⁵Steiner, op. cit., pp. 29-30.

This second class of public good characteristics is prominent because of the lack of information about the quantity of farmland that will be needed in the future. Many feel that by the time the market signals that it has allocated too little land to agricultural production, too many irreversible conversions to urban uses will have occurred. The time lags involved for the market to make the appropriate signals will prevent the necessary allocational adjustments to proceed in time. The nonrenewable nature of the land resource and irreversible character of the use conversion compound the problems of the market with time lags and the lack of information. It is for this reason that many believe that an institutional adjustment to preserve farmland is legitimate.

The Quality of Societal Environment

The third class of public goods arise not from market failures but from the concern for the quality of the societal environment. Society may interfere with the allocation process of the market to establish a more favorable environment with respect to the distribution of income, the quality of goods produced, or the patterns of consumption.³⁶ This concern is not based upon efficiency of production but on the distribution of its products and associated costs.³⁷ This consideration is not founded upon the impact of technological externalities (physical productivity effects) but upon pecuniary

³⁶Steiner, op. cit., pp. 31-32.

³⁷Daniel W. Bromley, A. Allan Schmid and William B. Lord, Public Water Resource Project Planning and Evaluation: Impacts, Incidence and Institutions (Madison: University of Wisconsin, Center for Resource Policy Studies and Programs, School of Natural Resources, 1971), pp. A-14.

externalities (financial effects).³⁸ It is then more of a political choice based upon information of the trade-offs involved than of an economic decision founded on productivity.

Some people propose that the societal environment would be ameliorated by providing all its components with sufficient supplies of food for adequate nutrition. This question is based not on efficiency of production but upon the distribution of the associated costs and benefits. The rationale is, therefore, not founded on an economic basis, but is comprised of moral responsibility and political concerns.

Some support for the retention of farmland in agriculture has resulted from the concern that the reduced acreage will produce higher production costs. These higher production costs are presumed to be readily passed on consumers in the form of higher food costs. The argument for public action based on this concern ensues from the interest of the quality of the social environment. The essential nature of agricultural products creates the sentiment that these products should be available in abundant supplies at low prices. It is feared that the loss of agricultural lands will affect both the available supply and the price of farm products. Since the quality of the social environment could be enhanced by abundant supplies at low prices, many argue that public action for farmland preservation is justified.

The concern for price instability resulting from the reduction in the production capacity associated with losses of agricultural

³⁸ Leonard Merewitz and Stephen H. Sosnick, The Budget's New Clothes (Chicago: Markham Publishing Co., 1973), pp. 106-107.

lands is also based upon the quality of the social environment. Some preservation supporters attest that this reduction in the production capacity will generate variability in production (attributed to more intensive land uses and associated yield fluctuations due to pests, disease epidemics, and unfavorable weather) and lengthen the time necessary to build up adequate buffer stocks. This will, they stress, lead to price instability, a negative aspect of the social environment.

There is considerable support for the aspects of the institutional changes introduced by Michigan's Farmland and Open Space Preservation Act that might provide property tax relief for farmers. The percentage of income that is paid in property taxes is more than twice as high for rural real estate owners than urban ones.³⁹ Theoretically, the value of land resources is the capitalized value of the future income stream generated by the use of the land.⁴⁰ However, there is a low correlation between the rate of increase in the market value of farmland and the rate of increase in net farm income.⁴¹ This implies that farmers are paying property taxes on market values induced by nonfarm demand. Many feel that the public interest would be served if tax relief was provided for farmland owners.

³⁹Robert J. Gloudemans, Use-Value Farmland Assessments: Theory, Practice, and Impact, Studies in Property Taxation (Chicago: International Association of Assessing Officers, 1974), pp. 8-10.

⁴⁰Raleigh Barlowe, Land Resource Economics: The Economics of Real Property (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1972), pp. 156-184.

⁴¹Gloudemans, op. cit., p. 8.

The last issue of concern is based on the existence of two of Steiner's general public good types. This issue surrounds the role of American agriculture to contribute to the food needs, both present and future, of the countries whose effective demand is insignificant enough to provide the foodstuffs to avoid mass starvation and malnutrition in times of crisis. The first public good associated with this issue is that the provision of good health is an improvement to the quality of the societal environment. The humanitarian benefit enjoyed by society when good health and nutrition are furnished to all its populace suffers from the free rider problem in that without public action its total demand will not be embodied in the production decisions. The second type of public good innate in this issue is that good health and nutrition can be considered as inputs into the production process by their contributions to human capital. However, no compensation would result from private action so the public must collectively act for good health to be provided effectively as a production input.

Many of the concerns discussed have obvious interrelationships and it may be impossible to distinctly classify all the concerns in Steiner's system. Probably few preservation advocates would base their support only on a single concern.

Since the value or the extent of demand for these collective good characteristics is arduous to measure, the institutional adjustment that is introduced to compensate for their neglect is not of a marginal nature. It is justified not by quantifiable additions of the demand for each public good property but by the overall magnitude of the demand for the combination of properties.

The rationale for a farmland preservation program was that the induced changes in the performance of the land market would be in the public interest. Public interest was felt to be served by the components who instituted the change because the neglect by the market of the discussed values has been removed.

The market now considers these values, but not by any marginal analysis. It evaluates the values indirectly by the incentives the program offers the farmers to behave differently than they would have without the program. The extent to which the incentives are effective in producing the expected behavior and the desired market performance will determine the degree to which these values have been incorporated into the allocation process. There is no insurance that the program will induce the market to efficiently (in a marginal neoclassical context) allocate land resources in accordance with all values. It has simply altered the allocation in the direction that was satisfactory to those groups with power and access in the political process.

Social Trap

Many supporters of public action to preserve farmland contended that the behavior in the land market was leading the country into a social trap. John Platt describes a social trap as a situation where "men or organizations or societies get themselves started in some direction or some set of relationships that later become unpleasant or lethal and that they see no way to back out of or avoid."⁴² Thomas Schelling has outlined several examples of these social traps where

⁴²John Platt, "Social Traps," American Psychologist (August, 1973), p. 641.

individual actions or inactions controlled by immediate personal goals of self-interest produce long range societal effects which are to almost no one's self-interest.⁴³

The social trap in the allocation of land resources lies in the behavior of some farm real estate owners to act in their own interests and to ignore the long range welfare of society. The conclusion that the allocation of land resources previous to the introduction of the farmland preservation program was leading to a long range situation not in the public interest is a value judgment of the performance of the market. It is assumed that the value judgments inherent in the market performance induced by the adoption of the preservation program are consistent with those of society.⁴⁴

If the articulated preferences for land resource allocation displayed by the adoption of the preservation program are a true indication of society's preferences, it can be assumed the behavior motivated by self-interest was expected to produce a performance that would not be consistent with society's preferences. This could be interpreted as a special case of social traps.

Any adjustments of individual behavior that leads to the elimination of a social trap (ceteris paribus) could legitimately be considered as in the public interest. This is the argument by some for the justification of the state's farmland preservation program.

⁴³Thomas C. Schelling, "On the Ecology of Micromotives," The Public Interest, No. 25 (Fall 1971), pp. 61-98.

⁴⁴This assumption is based more on a personal confidence in the political process than any analysis.

Enough political support was generated to display an articulated preference for a market performance other than the one that the undirected behavior motivated by self-interest was producing.

CHAPTER III

A BEHAVIOR MODEL

Behavioral Analysis

In recent years, the owners of farm real estate have increasingly been confronted with opportunities to sell their land at a price that exceeds its agricultural value. This disparity between market price and agricultural value has been stimulated by the increase in demand for land to be used in residential, industrial and recreational development. Many farm property owners have reacted to these possible capital gains by selling their farmland. Many others have foregone these capital gains and continued farming for one reason or another.

Some elements of society have become concerned with the substantial diversions of agricultural lands to other purposes because some values for farmland are not recorded or regarded in the market allocation of land resources. This concern has led to changes in the rules which normally govern the operation of the land market. The denouements of both the increase of capital gains opportunities and the societal adjustments to a perceived problem can easily be handled with a paradigm developed in the field of industrial organization⁴⁵ and adapted to the public sector by James D. Shaffer and A. Allan

⁴⁵Edward S. Mason, "Price and Production Policies of Large-Scale Enterprise," American Economic Review, Supplement, March 1939, pp. 61-74.

Schmid. These authors describe community activity from the framework of structure, conduct, and performance.⁴⁶

Structure refers to the institutional characteristics of the society that constrain the choices of the members in that society. It forms the opportunity set from which individuals select and choose. In essence, it is the system of organization and control of natural, human and capital resources.

Conduct is the behavior of individuals in the society. It is the choices, decisions, strategies, and selections that members of a society assume when faced with the constraints of the structure.

Performance is the distribution of effects that are produced by the behavior of individuals. It is the flow of benefits and costs from a particular structure and the conduct which that structure helps induce.

This paradigm stresses the evolutionary nature of community activity. The institutions constrain the conduct which in turn generates the flow of consequences labeled the performance. Society can adjust its institutions, perhaps because of discontent of previous performances, and alter the entire community activity. The adjustments in the structure will induce conduct changes and a new distribution of effects.

If the behavior of agricultural land property owners can be predicted then the institutional adjustments in the structure of the political economy can be examined in the light of what performance they will likely produce.

⁴⁶Shaffer and Schmid, op. cit., pp. 6-23.

Behavioral Model

It can be assumed that most individuals are utility satisficers who periodically adjust their conduct techniques⁴⁷ to approach a maximizing situation.⁴⁸ For most individuals, the information and time investments necessary to keep behavior on the level of utility maximization are prohibitive. They, therefore, develop standard operating procedures or habits that enable them to attain utility levels that are satisfactory, but not necessarily maximum. Occasionally, when a decision requires a large commitment, an evaluation of their standard operating procedures will occur and they will invest more to procure more information and that will lead to behavioral adjustments that approach a utility maximizing solution. After a time, as the recently procured information becomes somewhat obsolete, these new conduct techniques will evolve into adjusted standard operating procedures that once again satisfy utility not maximize it.

In the case of the farmland property owners it can be assumed that the utility that they receive from their land can come from two sources--farming the land (and retaining ownership) and selling the land for capital gains. The continuation of farming is behavior that is directed by standard operating procedures designed to satisfy utility. Utility can be derived from farm income, property ownership, a farm lifestyle, self-employment, the farm occupation, etc. These conduct techniques insure that satisfying levels of utility are

⁴⁷For a more complete discussion of conduct techniques, see J. D. Shaffer, "Notes for A Theory of Personality For A Theory of Consumer Behavior" (unpublished manuscript, Michigan State University).

⁴⁸This adjustment process between utility satisfying and utility maximization is the premise of the author.

obtained from the use of land in agriculture. With periodic investments in information, the standard operating procedures directing this conduct are adjusted and for a short time the behavior appears to more closely approach a maximizing solution than a satisficing one. However, after a short time as the information becomes less useful the adjusted standard operating procedures begin to approach satisficing level of utility rather than an optimal level. When these standard operating procedures begin to produce utility below the satisficing level, it seems that a reaction threshold has been reached and an evaluation will result.

On the other hand, it would seem that since the sale of farmland is a major commitment, the actions of the property owners will be more of a calculating nature than an habitual one. For ease of analysis then it can be assumed that the utility derived from the sale of farmland for capital gains approaches an optimizing decision.

Most farm property owners do not actively and continually pursue opportunities for land sales. Rather they are periodically confronted with opportunities by speculators, developers and individual buyers.

For simplicity it can be assumed that behavior used to derive utility from farming is based on standard operating procedures which satisfy utility, with periodic adjustments that approximate optimization. Since decisions on the sale of land for capital gains require a larger commitment, a greater investment in knowledge occurs and the resulting behavior can be assumed to be utility maximizing. A larger commitment is required because this one decision is likely to produce abrupt changes in the life of the individual. It could change the

lifestyle, the occupation, the residence, etc.

However, since the marginal costs of evaluating standard operating procedures are probably lowered when investments in information associated with capital gains decisions occur, the periodic adjustments of standard operating procedures can be presumed to often coincide with evaluations of capital gains opportunities. This enables the entire behavior to approximate maximizing conduct for the short time until the adjustments begin to approach the satisficing levels rather than optimal ones.

If the behavior of farm property owners is analyzed at one of these short periods of time where behavior simulates utility maximization, a traditional neoclassical utility maximization approach will be appropriate.

An individual owner will then maximize his utility derived from his farmland by equating the slope of his indifference curve with the slope of his budget line. In this case his indifference curve will show the combinations of the acres he will farm and the acres he will sell that will leave him with a constant total utility. In other words, it will display all combinations between which he is indifferent. The budget line will be determined by the total number of acres that the individual owns. Its slope will display the rate at which acres farmed can be exchanged for acres sold. In this case, it will have a slope of (-1) .

The slope of the indifference curve will be determined by a plethora of factors. The theoretical definition of the slope is the ratio of the marginal utility of acres farmed to the marginal utility of acres sold. The complexity of the analysis arises from the

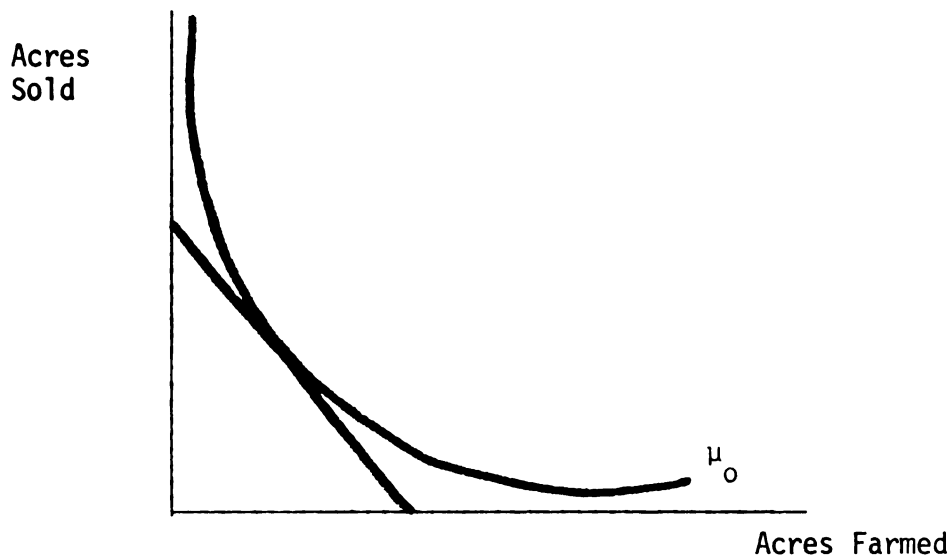


Figure 3. Utility Maximization

different sources from which utility is derived from both the acres farmed and the acres sold.

Utility emerges from the sale of land because of the capital gains that it generates.⁴⁹ The amount of utility generated by the sale would increase at a decreasing rate with the dollar value of the capital gains. However, other factors would also enter into this utility deviation. Any risk involved with the sale would (if the individual is a risk averter) decrease the utility of the capital gain produced by the sale. If only a parcel of the farm is sold, the development of nonagricultural land use adjacent to the farm might create some adverse effects on its operation. Any such spillover costs would also detract from the overall utility generated from a land sale.

⁴⁹Capital gains here are defined as the difference between the market price and the agricultural value of the land; utility here arises only from capital gains since agricultural value is the capitalized farm income and the choice to trade the future farm income for the present land value is just a temporal allocation decision.

As more acres are sold, the marginal utility derived from selling the last acre would be expected to be less than that marginal utility derived from the next to last acre. This occurs because of the diminishing marginal utility of money. As more money is acquired by individuals the value that they place on each dollar declines.

The farming of the land produces utility from a variety of sources. First, the farming activity should yield some farm income. It should also generate utility from the fact that many individuals enjoy being property owners. They get some satisfaction from knowing that they live and work on their own land. Many people also receive utility from being employed in agriculture. They would rather farm and be their own boss than work on an assembly line or sell insurance. Others enjoy the farm lifestyle and realize a great deal of satisfaction from living in a rural, farm community. Some people want their children to grow up on a farm and would prefer to see the farm passed onto the next generation. Others feel a strong sense of community and derive utility from knowing that they are helping to feed a hungry world. The total utility from farming can therefore be considered to be the sum of the utility from the farm income produced by the farm operators and the utility from the satisfaction of the myriad of intrinsic values individuals may hold for farming.

With a few basic assumptions, it can be shown that the marginal utility of the acres farmed is also decreasing. Thus with both the marginal utility from acres sold and the marginal utility from acres farmed decreasing, there will be a diminishing marginal rate of substitution and the indifference curve will be convex with respect to the origin.

If it can be assumed that the amount of farm income generated from each acre farmed is a constant, the marginal utility from any income produced by the last acre farmed will be less than the marginal utility of the income from any previous acres. This means that marginal utility of farm income decreases as the number of acres farmed increases. It results from the diminishing marginal utility of money.

The marginal utility of the intrinsic values of farming is a more complex situation. After a minimum number of acres is farmed, the feeling of being a farmer is achieved and it is unlikely that satisfaction of the intrinsic values is going to change with any increases or decreases in the acres farmed once that minimum acreage is surpassed. Graphically this can be displayed with a stair step function.

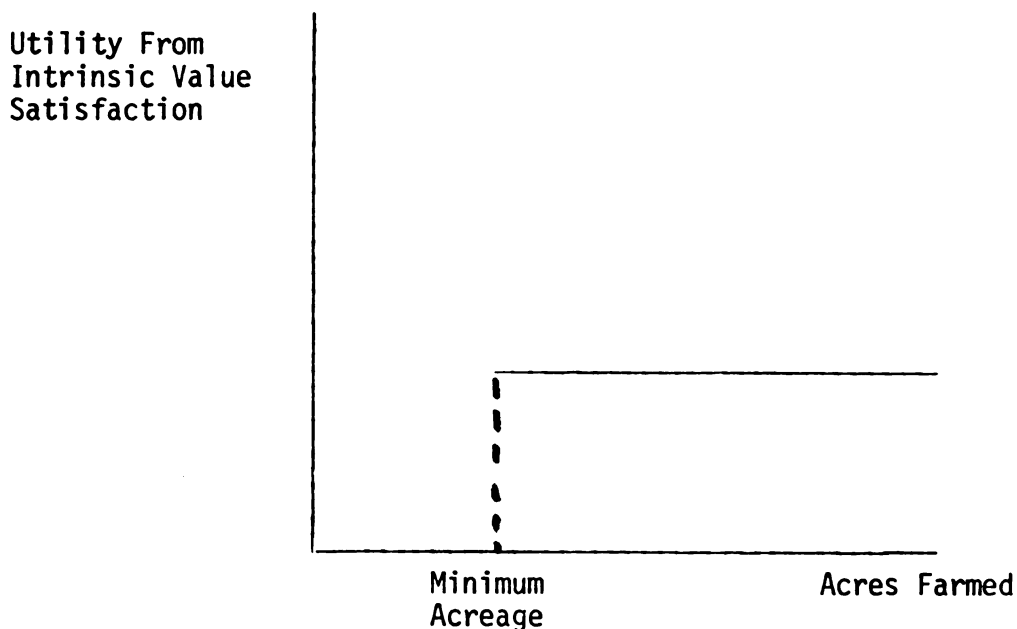


Figure 4. Relationship Between Utility From Intrinsic Value Satisfaction and Acres Farmed

Since the marginal utility is defined as the change in total utility divided by the change in quantity the satisfaction of intrinsic values displays a decreasing marginal utility. This occurs because the total utility changes very little as number of acres farmed increases so the ratio of the two will be a declining function. This will give an indifference curve that is convex to the origin and a marginal rate of substitution that is diminishing.

The entire model can easily be represented mathematically in a more succinct fashion.

$$\text{Max. } U = U(AS, AF)$$

$$\text{S.T.}$$

$$T.A. = AS + AF$$

where

$$U(AF) = U[FY(AF), PO(AF), FLS(AF), FO(AF), H(AF), c(AF)]$$

$$U(AS) = U[CG(AS), SC(AS), r(AS)]$$

where

T.A. = Total Acres

A.S. = Acres Sold

A.F. = Acres Farmed

FY = Farm Income

PO = Property Ownership

FLS = Farm Lifestyle

FO = Farm Occupation

H = Heirs

C = Sense of Community

CG = Capital Gains

SC = Spillover Costs

r = Risk

$$\frac{dU(AF)}{dAF} = \frac{\partial U}{\partial FY} \cdot \frac{dFY}{dAF} + \left[\frac{\partial U}{\partial PO} \frac{dPO}{dAF} + \frac{\partial U}{\partial FLS} \frac{dFLS}{dAF} + \frac{\partial U}{\partial FO} \frac{dFO}{dAF} + \frac{\partial U}{\partial H} \cdot \frac{dH}{dAF} + \frac{\partial U}{\partial C} \cdot \frac{dC}{dAF} \right]$$

where

$$\frac{dFY}{dAF} = k, \frac{\partial U}{\partial FY} < 0$$

$$\frac{\partial U}{\partial PO} \cdot \frac{dPO}{dAF}, \frac{\partial U}{\partial FO} \cdot \frac{dFO}{dAF}, \frac{\partial U}{\partial FLS} \cdot \frac{dFLS}{dAF}, \frac{\partial U}{\partial H} \cdot \frac{dH}{dAF}, \frac{\partial U}{\partial C} \cdot \frac{dC}{dAF} < 0$$

$$\frac{dU(AS)}{dAS} = \frac{\partial U}{\partial CG} \cdot \frac{dCG}{dAS} + \frac{\partial U}{\partial SC} \cdot \frac{dSC}{dAS} + \frac{\partial U}{\partial r} \cdot \frac{dr}{dAS}$$

where

$$\frac{\partial U}{\partial CG}, \frac{\partial U}{\partial SC}, \frac{\partial U}{\partial r} < 0$$

$$\frac{dCG}{dAS}, \frac{dSC}{dAS}, \frac{dr}{dAS} > 0$$

$$\text{Max } L = U(AS, AF) - \lambda (TA - AF - AS)$$

$$\frac{\partial L}{\partial AS} = U_1 - \lambda$$

$$\frac{\partial L}{\partial AF} = U_2 - \lambda$$

$$\frac{\partial}{\partial \lambda} = TA - AF - AS$$

$$\text{FOC } U_1 = U_2$$

So

$$\begin{aligned} & \frac{\partial U}{\partial FY} \cdot \frac{dFY}{dAF} + \frac{\partial U}{\partial PO} \cdot \frac{dPO}{dAF} + \frac{\partial U}{\partial FO} \cdot \frac{dFO}{dAF} + \frac{\partial U}{\partial FLS} \cdot \frac{dFLS}{dAF} + \\ & + \frac{\partial U}{\partial H} \cdot \frac{dH}{dAF} + \frac{\partial U}{\partial C} \cdot \frac{dC}{dAF} = \frac{\partial U}{\partial CG} \cdot \frac{dCG}{dAS} + \frac{\partial U}{\partial SC} \cdot \frac{dSC}{dAS} + \frac{\partial U}{\partial r} \cdot \frac{dr}{dAS} \end{aligned}$$

This displays that the individual will be in equilibrium when the marginal utility that he receives from the last acre sold is equal to the marginal utility he receives from the last acre farmed.

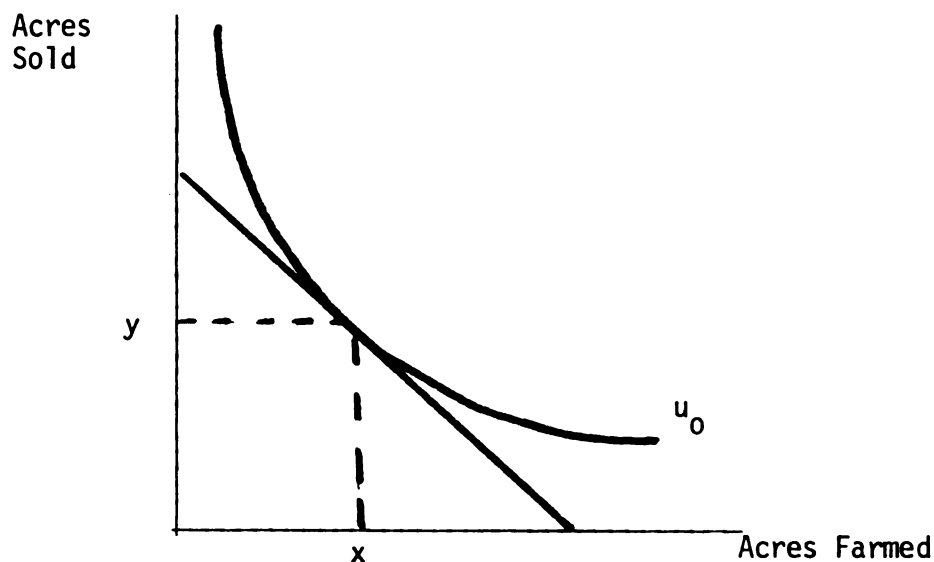


Figure 5. Optimal Levels Under Utility Maximization

Each individual's indifference curve will be shaped by the relative personal preferences for the variables that have been presented here. The relative weighting which an individual places on capital gains as opposed to farming will determine the slope of his curve and consequently his optimum allocation of his land. If a heavier weight is placed on the capital gains, the curve will be flatter (slope = MU_{AF}/MU_{AX}) and its tangency with the budget line

will allocate more land to capital gains sales. If the individual places relatively more weight on the farming utility, the curve will be steeper, the tangency will move closer to the horizontal axis and more land will be farmed.

It is possible for an individual to be a "specialist" in that he will either sell the entire farm or continue to farm all the land. For this to happen, instead of a diminishing marginal rate of substitution, an increasing one must be present. This might occur if in the relevant income range the individual would not experience a decreasing marginal utility of money and the intrinsic value satisfaction would have an increasing marginal utility. In other words, his last dollar earned is as valuable to him as first and he receives more enjoyment from farming, the more acres he farms.

Mathematically, that means that now

$$\frac{\partial U}{\partial FY}, \frac{\partial U}{\partial CG} \geq 0$$

$$\frac{\partial U}{\partial PO}, \frac{\partial U}{\partial FO}, \frac{\partial U}{\partial FLS}, \frac{\partial U}{\partial H}, \frac{\partial U}{\partial C} > 0$$

others

$$\text{i.e., } \frac{dCG}{dAS} < 0$$

so

$$MUM \geq 0$$

This provides an indifference curve which is concave with respect to the origin. Now, the combination of acres sold and acres farmed that will maximize utility will be one where all acres are farmed or all

acres are sold. The highest indifference curve that can possibly be reached is the one that intersects the budget line on one of the two axes. The slope of the budget line and the slope of the indifference curve will determine on which axis this intersection occurs.

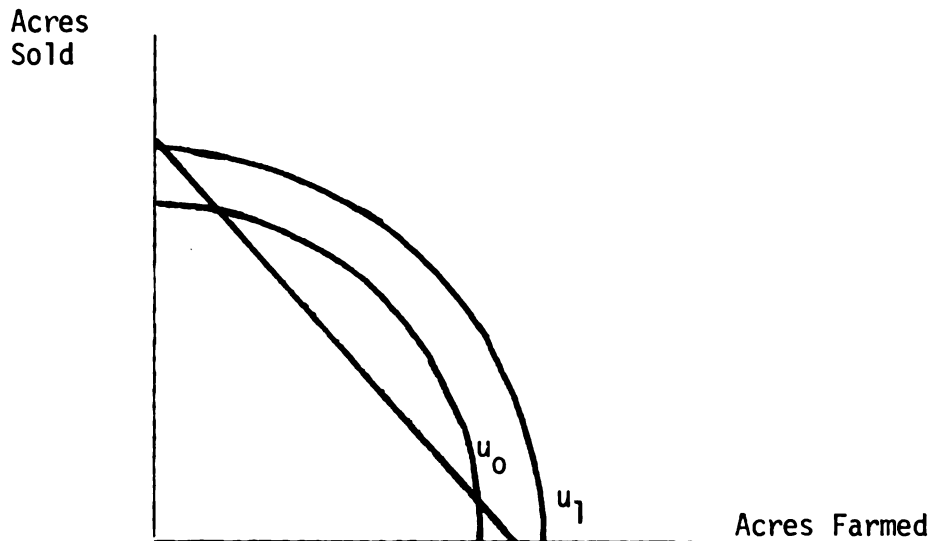


Figure 6. Utility Maximization With Concave Indifference Curves

A concave indifference curve could be produced from a more realistic set of assumptions. This situation could arise with a diminishing marginal utility of money if the capital gains per acre declined (dCG/dAS) as more acres were sold. Clawson described the phenomenon that the larger the parcel sold, the lower the return per acre.⁵⁰ This would also lead to a concave indifference curve if

⁵⁰Marion Clawson, op. cit., pp. 111-140.

the farmer received more of his total utility of farming from the intrinsic value satisfaction than from the farm income.

Mathematically, this would lead to

$$\frac{dCG}{dAS} < 0 \text{ (making } \frac{\partial U}{\partial CG} \cdot \frac{dCG}{dAS} > 0)$$

and

$$\frac{\partial U}{\partial FY} \cdot \frac{dFY}{dAF} < \left(\frac{\partial U}{\partial PO} \cdot \frac{dPO}{dAF} + \frac{\partial U}{\partial FO} \cdot \frac{dFO}{dAF} + \frac{\partial U}{\partial FLS} \cdot \frac{dFLS}{dAF} + \frac{\partial U}{\partial H} \cdot \frac{dH}{dAF} + \frac{\partial U}{\partial C} \cdot \frac{dC}{dAF} \right)$$

The influence of a change in the societal institutional structure to change the performance of the land market will depend upon which rules were changed and how. If the change was a reduction in the property tax (either direct or indirect through an income tax credit) in exchange for an agreement to continue farming the land for a ten-year period, the predicted behavior of the farm community would be that two types of farmers would likely be attracted to the program. First, those farmers whose farm income is greatly increased due to a substantial decrease in property taxes could be expected to participate. Secondly, those farmers who derive a great deal of utility from their intrinsic values would also be expected to sign contracts.

Since the contracts last a significant length of time, the farmer must compare the utility that he expects that he could receive from a capital gains sale sometime in the next ten years with the utility that he thinks will receive from farming for the next ten years. This simply changes the slope of the indifference curves in the previous analysis from the ratio of the marginal utilities to the ratio of the expected marginal utilities.

So a property tax incentive program should attract those farmers whose utility from the intrinsic value satisfaction is high relative to their utility from capital gains and those farmers whose property tax reduction will substantially increase their farm incomes. The second group could be considered the more marginal participants since their enrollment depends more the expected changes in income the program will provide than any clear cut preference articulation. Their decision for participation should be more of a marginal analysis (weighing the advantages of lower property taxes with the disadvantages of no opportunities for capital gains for a ten-year period).

CHAPTER IV

CHARACTERISTICS OF PARTICIPANTS

An important concern in the evaluation of a farmland preservation program is the documentation of the socioeconomic and farm characteristics of the farmers who apply for participation. This information can be used to identify strengths and weaknesses of the institutions introduced by the program and to isolate the distribution of effects that the induced performance of the land market will provide.

The socioeconomic characteristics of the farmers were obtained from the information on the official applications and from a mail survey sent to each property owner enrolled in the first year of the program. The mail survey was distributed to each land owner who had applied early enough to have the opportunity to sign a P.A. 116 agreement contract and still be eligible for a tax credit on the 1975 state income tax.

The sample for the survey was the entire population of participants during the program's first year. A total of 369 questionnaires was mailed out and the response rate was 57.9 percent.⁵¹

⁵¹Two questionnaires were returned which indicated a withdrawal of the applications for participation and eighteen more were returned that mentioned that the one survey was for one operation with more than one contract. This lowered the sample size to 349 with 202 responses.

Farm Characteristics

Farm Acres

The average number of acres owned by each farm entity which was enrolled during 1975 was 276.8 acres. This exceeded the state average in 1969 of 152.7⁵² by 124.3 acres or 81.4 percent. The farms can be grouped by the number of acres owned to more clearly show the dispersal of the pattern.

Table 1. Pattern of P.A. 116 Participants with Regard to Farm Size

Number of Acres Owned	Percent of Participants in Each Class
< 50	6.0
50 - 100	15.9
100 - 200	33.3
200 - 300	22.5
300 - 400	11.9
400 - 500	9.5
> 500	10.9

The first two groupings are important in analyzing the disparity between the state average and the P.A. 116 average. Of the state's farms in 1969, 20.9 percent were 50 acres or less. However, only six percent of the farms attracted to the P.A. 116 program were that small. The state had 25.4 percent of its farms with acreage between 50 and 100 acres while the preservation program recorded only 15.9 percent of its

⁵²Michigan Summary Data, 1969 Census of Agriculture, Vol. 1
(Washington: U.S. Government Printing Office, 1972) Section 1, p. 2.

farms in that range. Part of this disparity is removed when only farms with sales over \$2,500 (Economic Classes I through V) are considered in the state averages. Of these farms 8.3 percent were of 50 acres or less and 17.7 percent were between 50 and 100 acres.⁵³

Farm Enterprise

The four most common primary enterprises of the farms enrolled in the contract agreements are:

- 1) nonactive farmers (20.0 percent),
- 2) dairy (19.5 percent),
- 3) cash grain (19.0 percent), and
- 4) general (18.0 percent).

No one particular enterprise clearly dominated the pattern of the participants.

One cause for a unique pattern of enterprises in the preservation program may be the inclusion of nonactive farmers as a separate classification. If their farms are classified by the commodities that the renters produce, a new pattern is generated. This pattern is displayed as column number 2 in the chart. It is surprising that the program has attracted considerably more cash crop farms than the state average and that it attracted a smaller percentage of fruit, dairy, and livestock producers.

⁵³Michigan Summary Data, op. cit., p. 2.

Table 2. Comparison of State and P.A. 116 Patterns With Regard to Type of Farm Enterprise

Enterprise	<u>1</u> Percent of Participants ^a	<u>2</u> Percent of Participants ^b	<u>3</u> State ^c
Cash Grain	19.0	29.1	24.5
Other Field Crops	4.5	6.3	2.0
Cash Crops ^d	23.5	35.4	26.5
Vegetables	1.5	1.6	3.0
Fruit and Nuts	2.0	2.1	7.5
Poultry	1.5	1.6	2.1
Dairy	19.5	22.2	28.5
Livestock	10.5	12.6	22.5
General	18.0	20.6	6.6
Nonactive Farmers	20.0	--	--

^aPercentages calculated using Nonactive farmers as an enterprise.

^bPercentages calculated using enterprises assumed by renters of land owned by nonactive farmers.

^cU.S. Census of Agriculture, 1969.

^dDifferent Definitions used in Survey and Census.

Agreement Acres

The average farm enrolled in the P.A. 116 program placed 256.25 acres into a contract agreement. This is an average of 92.6 percent of the total land each farmer owned. Almost 23 percent of the farms had 100 acres or less entered into a contract while 35.19 percent put between 100 and 200 acres into the program. Over 13 percent of the

participants entered between 200 and 300 acres, 10.6 percent had contracts covering 300 to 400 acres and 17.8 percent had over 400 acres in an agreement.

Business Organization

There were six types of business organizations that enrolled in the preservation program. They were corporations, sole proprietorships, joint or common interest, trusts, partnerships, and business trusts. The most common was the sole proprietorships while joint or common interests followed next.

Table 3. Comparison of State and P.A. 116 Patterns With Regard to Business Organization

Business Organization	Percent of P.A. 116 Participants	Percent of State*
Sole Proprietorship	58.5	
Common or Joint Interest	24.1	
Individual or Family	82.6	87.2
Partnership	11.8	11.8
Corporations	3.1	0.7
Other	2.5	0.3

* U.S. Census of Agriculture, 1969.

The major difference between the state and the P.A. 116 pattern lies in the corporations and other organizations. They are small both in number and percentage in the state and the program so the difference can be considered as insignificant. The percentage of the program

acreage that was entered into contracts by each type of organization varies very little from the above pattern. The sole proprietors accounted for 58.5 percent of the agreement acres while 24.1 percent were from farms under a joint or common interest. Partnerships entered 11.8 percent of the land while corporations contributed only 3.1 percent.

Geographical Characteristics

County and Township

There is a good representation of the counties and townships in the program. Although the three counties account for almost one-third of the total acreage, forty-four counties have at least one farm which could have been eligible for a 1975 tax credit. There are 197 townships that have agreement acres located within their boundaries.

Of the forty-four counties represented, twenty-three have over one thousand agreement acres and fifteen of those have over two thousand acres. Nine counties have three thousand acres or more while four counties have exceeded the five thousand acre mark. The counties of Ingham, Clinton and Lenawee all have over eleven thousand acres. The sum of the acres in these three counties is about one-third of the total 96,163 acres enrolled in the program's first year.

Table 4. The Ten Counties With The Most Agreement Acres

County	Acreage in Agreement
Ingham	13,331
Clinton	11,493
Lenawee	11,026
Saginaw	5,226
Washtenaw	4,188
Jackson	4,129
Eaton	3,687
Iosco	3,318
Ottawa	3,135
Barry	2,791

The program has attracted a higher proportion of its participants from counties that have a higher population density than what the state distribution would suggest. It can clearly be demonstrated that a greater proportion of the program's agreement acres are located in urban and densely settled counties than the proportion of the state's total farmland located in those counties.

Table 5. Comparison of State and P.A. 116 Patterns With Regard to Population Density

Population Density (People/sq. mile)		Proportion of Total Acres	
		State*	P.A. 116
Urban Counties	> 200	.2634	.3647
Dense	50-200	.4520	.4858
Moderate	25-50	.2002	.0960
Sparse	< 25	.0844	.0384

* K.T. Wright, Michigan's Agriculture, Extension Bulletin 785, Michigan State University, 1974.

It can also be shown that the proportion of agreement acres located in the counties with a higher millage rate is greater than that indicated by the state pattern. It is interesting to note that 20.32 percent of the program's acreage is located in counties with greater than fifty-three mills while only 7.06 percent of the state's farmland lies in those same counties. It seems that the level of the millage rate was an important determinant for participation.]*

Table 6. Comparison of State and P.A. 116 Patterns With Regard to Millage Rates

Millage Rate*	Proportion of Total Acres	
	State	P.A. 116
< 33	.0755	.0728
33 - 35	.0093	.0021
35 - 37	.0540	.0146
37 - 39	.1533	.0817
39 - 41	.0682	.0122
41 - 43	.1284	.0578
43 - 45	.2286	.3250
45 - 47	.1079	.1481
47 - 49	.0545	.0262
49 - 51	.0193	.0021
51 - 53	.0303	.0280
> 53	.0706	.2032

*Data furnished by Michigan State Tax Commission.

However, the program does not seem to draw a disproportionately high (as compared with the state distribution) share of acres from counties that have exhibited large absolute farmland acreage decreases or from those with high percentage decreases. In fact, the program attracts a lower proportion of its acreage from counties with large absolute decreases than what the state's distribution might indicate.

Table 7. Comparison of State and P.A. 116 Patterns With Regard to Farmland Acreage Decreases

Absolute Acreage Decrease (1964-1969) (thousands of acres)	Proportion of Total Acres in Counties	
	State*	P.A. 116
1 - 15	.2923	.2885
15 - 30	.3946	.5195
> 30	.3131	.1814

* K.T. Wright, Michigan's Agriculture, Extension Bulletin 785, Michigan State University, 1974.

Vicinity to Population Centers

The distance of the participating farms from population centers of three different sizes was undertaken in an attempt to obtain an indicator of the pressure on these farms from urban demand.

The three sizes were:

- 1) cities of greater than one hundred thousand people,
- 2) cities of population greater than twenty-five thousand but less than one hundred thousand, and
- 3) villages of greater than ten thousand but less than twenty-five thousand people.

The average distance for the program farms from a city with a population exceeding one hundred thousand was 30.9 miles. However, one-half of the farms were located within 20.3 miles. Seventy percent of the farms were within 30 miles of cities of this size.

Table 8. Pattern of P.A. 116 Participants With Regard to Distance from Cities of Population Greater Than One Hundred Thousand

Miles	Percent of Participants
< 10	18.5
10 - 20	34.5
20 - 30	17.8
30 - 50	16.1
> 50	13.1

The distance from cities of twenty five thousand averaged out to be 24.1 miles. The median distance was slightly lower than that of the larger cities. It was 19.6 miles.

Table 9. Pattern of P.A. 116 Participants With Regard to Distance from Cities of Population Greater Than Twenty Five Thousand

Miles	Percent of Participants
< 10	24.6
10 - 20	36.9
20 - 30	16.4
30 - 50	13.9
> 50	8.2

The average distance from the smallest of the three population centers was 21.1 miles, but one-half the farms were within 10.1 miles. Eighty-four percent of the participants are located within twenty miles.

Table 10. Pattern of P.A. 116 Participants With Regard to Distance from Cities of Greater Than Ten Thousand

Miles	Percent of Participants
< 10	53.0
10 - 20	31.3
20 - 30	6.3
> 30	9.7

Land Capability Classes

The most common Soil Conservation Service Land Use Capability Class indicated by the respondents to the survey was II. Over fifty-three percent of the survey respondents claimed that the second class was predominant on their land. Twenty-nine percent of the participants who returned surveys designated Class I as predominant on their land while 12.6 percent indicated Class III.

Table 11. Prominent Soil Conservation Service Land Capability Classifications

Class	Percentage of P.A. 116 Participants
I	29.5
II	53.7
III	12.6
IV	2.1
VI	1.1
VIII	1.1
	100.0

Socioeconomic Characteristics

Age

The average age of the principle owner-operator of the land under contract agreements is 54.8 years which is almost five years older than the state overall average of 50.4 years. This disparity becomes even greater if only farms of economic Classes I through V are used to determine the state figure. This state average is 49.5 years.⁵⁴

Table 12. Comparison of State and P.A. 116 Patterns With Regard to Age

Age	Percent of State Farms (Class I-V)*	P.A. 116
< 35	13.2	7.7
35 - 45	20.9	14.2
45 - 55	29.0	27.6
55 - 65	25.6	31.1
> 65	11.2	19.4

*U.S. Census of Agriculture, 1969.

The preservation program has attracted a larger distribution of older farmers than what would be expected if it was considered that the age was not an important influence on participation.

Income

Both the average net farm income and the average nonfarm income of the farms enrolled in the program were in the range of \$5,000 to

⁵⁴Michigan Summary Data, op. cit., p. 12.

\$7,499 while the average household income fell between \$10,000 and \$14,999.

One-third of the farms had a net farm income of under \$2,500 and almost one-half of them were under \$5,000. However, there were two farms which earned between \$60,000 and \$79,999 of net farm income.

Table 13. Pattern of P.A. 116 Participants With Regard to Farm and Nonfarm Income

Income (\$)	Percent of Participants	
	Farm Income	Nonfarm Income
< 2,500	36.5	41.1
2,500 - 4,999	11.6	9.2
5,000 - 7,499	11.2	10.0
7,500 - 14,999	16.4	20.7
> 15,000	23.3	16.0

To compare these figures with the averages of the state, all incomes must be converted to 1967 constant dollars. The average net farm income⁵⁵ for the state in 1969 was \$3,553 for farms of economic Classes I-V.⁵⁶ For all farms it was \$2,400.⁵⁷ The farmers enrolled in P.A. 116 program earned an average net farm income in the range of \$3,125 to \$4,687. This exceeds that of all farms, but is comparable to that of the farms with sales above \$2,500.

⁵⁵Determined by subtracting average production expenses from average value of products sold.

⁵⁶Michigan Summary Data, op. cit., p. 13.

⁵⁷Michigan Summary Data, op. cit., pp. 3-4.

The average farm household enrolled in the preservation program earned somewhere between \$3,125 and \$4,687 in nonfarm income. This is below the average which was recorded for all farms in the state. The state average was \$5,972.⁵⁸

The household income averages are similar. The average for all farms in the state was \$8,371⁵⁹ which falls in the interval of \$6,250 to \$9,374 that was determined as the average for the P.A. 116 participants.

Land Tenure

There appear to be more rental and leasing arrangements among those farmers who have elected to apply for preservation agreements than normally occur within the state's farm community as a whole. The average farmer⁶⁰ in the state rented or leased 56.3 acres in 1969,⁶¹ but the average participant in the P.A. 116 program has rented almost twelve acres more. Those farmers who enrolled in the program rented, on the average, 68.5 acres from another land owner.

The 29.9 acres which were rented out by the average farmer with enrollment in P.A. 116 is about three and one-half times larger than the 8.6 acres⁶² which were rented out by the average farm in the state.

⁵⁸John Ferris and K.T. Wright, "Selected Tables Prepared for the Working Group on Agriculture, Michigan Economic Action Council," (Unpublished manuscript, Michigan State University, 1976), p. 18.

⁵⁹John Ferris and K.T. Wright, op. cit., p. 18.

⁶⁰Farms with sales of \$2,500 and over.

⁶¹Michigan Summary Data, op. cit., p. 27.

⁶²Michigan Summary Data, op. cit., p. 27.

Attitudes, Perceptions, and Anticipations

Rurality

A majority of those farmers who were eligible for a tax credit in 1975 felt that their farms were located in a rural area. In fact, 56.3 percent seemed to think this best described the surroundings of their farms. Only 16.6 percent considered their land to be on the urban fringe and 27.1 percent thought that their farms were in a semi-rural area (considerable nonfarm activity). ✓

Urban Pressure

The participants of the program were questioned about whether or not they perceived urban pressure upon their land and if so, how. A strong majority (72.4 percent) felt some sort of urban pressure while the rest did not seem to perceive any. Some of the common types of pressure mentioned were high property taxes, high land values, vandalism, traffic, trespassing, littering, opportunities to sell, harassment by land speculators, zoning regulations and adjacent developments of industrial parks, trailer parks, and housing subdivisions.

Anticipations

There seems to be an overwhelming anticipation that after the present owner of the farms under preservation contracts discontinued farming, the land would remain in agriculture with use by a relative or partner. The alternative that was selected as having the second highest likelihood to occur was for the land to continue in agriculture but to be used by someone other than a relative or partner. Finally, development by the owner, a relative or a partner was designated with

just slightly more chance of occurrence than development by someone other than the family or partners.

Heirs

Most farmers who enrolled for a preservation contract had heirs to whom they would pass their farm assets for use in agriculture after they discontinued farming. Approximately 79.8 percent of the farmers indicated that they did indeed have heirs. The remaining 20.2 percent had no heirs that would inherit the assets for use in agriculture.

Preferences

Of the farmers who responded to the question, 93 percent indicated agriculture as their highest preference for the use their land would assume after they completed farming. The next selection was one which indicated no preference but whatever use will bring the highest return. Development for residential, commercial, industrial, or recreational use was regarded with the least amount of preference.

Table 14. Preferences for Use of Land After Participants Have Discontinued Farming

Preference Rankings	Preference		
	Agriculture	Development	Highest Return
1	93.0	2.5	13.4
2	5.4	39.8	40.2
3	1.6	55.1	44.6
4	--	1.7	0.9
	<u>100%</u>	<u>100%</u>	<u>100%</u>

The percentages in the table are column totals and the preference rankings are an ordinal ranking scheme with the lowest number displaying the highest preference.

Reasons

The average ranking of the importance that five alternative reasons had in the decision to enroll in the preservation program produces some interesting results. The reason commonly listed as most important was a desire to obtain relief from rapidly rising property taxes. The next most important reason was a desire to see their own land remain in agriculture or to preserve the agricultural character of the community. A desire to see enough farmland preserved for future generations was rated as the third most important reason for applying. The alternative ranked fourth was a desire to be exempt from certain nonfarm special assessments.⁶³ Finally, the alternative ranked as least important was a desire to reduce competition from nonfarm uses to buy part or all of the farm.

Table 15. Reasons for Enrollment (Percentages)

Ranking of Importance	Property Tax	Assessment Exemption	Reduce Competition	Preserve Land for Future	Retain Own Land in Agriculture
1	73.1	6.9	5.5	19.9	21.9
2	7.7	20.8	5.5	29.2	38.2
3	12.6	8.3	16.6	32.2	27.0
4	4.9	30.6	31.7	16.4	7.9
5	1.6	32.6	39.3	2.3	5.1
6	--	.7	1.4	--	--

⁶³These results may be biased by the design error that the word "nonfarm" was omitted in the questionnaire. The magnitude of the misunderstanding generated by this error is indeterminate.

Again, the percentages are column totals and the lowest numbers in the rankings indicate the greatest importance.

Table 16. Characteristics of "Typical" Participant

Characteristic	Mean	Median	Standard Deviation
Age	54.77	55.64	13.10
Total Acres Operated	354.67	218.00	378.17
Acres Owned	276.83	187.00	297.47
Acres Rented Out	29.91	.18	73.92
Acres Rented In	68.48	.37	151.71
Agreement Acres	256.25	175.25	278.43
Distance From City of 100,000 Population	30.93	20.27	35.55
Distance From City of 25,000 Population	24.13	19.63	23.67
Distance From City of 10,000 Population	21.13	10.1	72.10

CHAPTER V

COMPARISON OF THE OBSERVED PATTERN AND BEHAVIORAL MODEL

The basic premise of the behavioral model was that farmers would be attracted to participate for two reasons. First, the property tax relief and exemption from special nonfarm assessments would be appealing to some farmers. The other attraction would be the fulfillment of intrinsic values from farming and a sense of community.

The indications from the observed pattern of participants seem to support this premise. The property tax relief does seem to have been a prime motivation for enrollment. Almost three fourths of the respondents to the survey indicated that this was of primary importance in their decision to apply. It also seems that the program attracted farmers with strong intrinsic values for farming. Over 93 percent of the farmers claimed that they would prefer that their land remain agriculture after they discontinued farming. This implies, since these farmers overwhelmingly preferred continued agricultural use of their land over an alternative that displayed a preference for economic returns not from any particular use, that these farmers have strong ties to agriculture, their land and/or to their perception of community welfare. The fact that both a desire for the preservation of farmland for future generations and the desire to retain their own land in agriculture were weighed more heavily in the decision to enroll in the

preservation program than the exemption from special nonfarm assessments further validates this contention.

It can be suggested that the discrepancy between the average age of the participants and the average age of all farmers in the state illustrates that enrollment was partially motivated by these intrinsic values. There is a strong relationship (significance at .0000)⁶⁴ between the age of the principle owner-operator and the number of acres that are leased or rented to another farmer. When the percentage of the land that is rented out is used as a control, the relationship between age of the owner and the importance that a desire to preserve farmland for future generations had in the decision to enroll in the program approaches significance at a .10 level. The observed level is .1057 for these farmers who rented out between two thirds to one hundred percent of their land. This implies that those farmers who leased more than two thirds of their land were inspired, at least in part, by a dedication to their perception of community welfare.

Another possible explanation for the disparity between the average ages of farm owners in the program and the state in general is that the older farmers who rented out more than two thirds of their land also had low farm incomes. The relationship is significant at a .1065 level. A smaller farm income can contribute to a smaller household income and this can lead to a higher property tax credit. So these older farmers who rent out a majority of their land could be attracted by a high potential to earn a large property tax credit (generated by their low farm incomes).

⁶⁴This significance level displays a probability of 1 in 10,000 chance of obtaining the relationship be random occurrence.

The program has attracted larger sized farms probably because the owners of these farms are faced with property taxes of a large magnitude. The property taxes can be expected to be high simply because of the substantial number of acres owned. Since a larger acreage does not guarantee a higher income, it can be assumed that some of these larger farms would be eligible for significant tax credits. The potential for these significant tax credits probably was the inducement which attracted farms larger than the state average.

The discrepancies between the pattern of farm enterprises in the state and the P.A. 116 program can be explained by the correlation of the selection of enterprise and the age of the owner and county location. The level of significance of the relationship between age and type of enterprise is .0558. This correlation probably explains why the program attracted a higher percentage of cash crop farmers than the proportion of such farmers in state pattern. Some of the older farmers rented out their land for use in the production of cash crops. The relationship between the county location and types of enterprise is at a significance level of .0010. Perhaps, the concentration of the agreement acres in the counties of Lenawee, Clinton and Ingham influenced the P.A. 116 pattern of farm enterprises. Since the relationship between enterprise type and distance from a population center of one hundred thousand people is significant at the .0610 significance level, the locational pattern could easily have influenced the type of enterprise attracted to the program.

Farms from densely populated counties with high millage rates were enrolled in the program because of the pressure from urban demand

and a desire to obtain relief from rapidly rising property taxes. The farms in these counties were most likely exposed to the highest property taxes due to the impact on land values from urban demand and high millage rates from the large demand for public services.

The farm and household incomes of the preservation program are comparable with those of the state in general if it can be assumed that most farms in the program are in the economic classes I-V. The nonfarm incomes for the program are below those for the state. This could result from the fact a larger nonfarm income reduces the possible tax credit and part of the inducement for enrollment. If it can be expected that off-farm employment opportunities are greatest near large centers of populations and that because of these increased employment opportunities, nonfarm income should be higher in the agricultural areas near these centers of population, the survey results imply that the inclusion of nonfarm income in the calculation of the household income may dampen the program's incentives for one of its main target groups. The survey displays a desire for property tax relief as a dominant factor for enrollment in the program. However, if the farmland owners near urban areas are exposed to both a larger threat of conversion to nonagricultural uses and to higher nonfarm incomes, the calculation of the tax credit based on both farm and nonfarm incomes may discourage some of the land owners in this area from enrolling. This is supported by the disproportionate number of farms from urban counties, a median distance of only twenty miles from cities of one hundred thousand people and an average nonfarm income lower than the state average. With these locational factors, a higher than state average nonfarm income might be expected, but

the tax incentive calculated from both farm and nonfarm incomes has been reduced for those with off-farm employment. Those farmers in close proximity to urban centers who have high nonfarm incomes are provided with less incentive to enroll because, ceteris paribus, their household incomes are higher and their tax credits smaller.

CHAPTER VI

PERFORMANCE OF ACT AS A LAND USE MEASURE

Farmer Initiative

The voluntary nature of the program that requires the land owner to provide the initiative for enrollment probably removes much of the suspicions of government intervention by the farm community. If this suspicion can be accepted as a legitimate deterrent to the adoption of a public policy to preserve farmland, the institutions of this particular program are probably more favorable than those of policies with a more regulatory nature.

However, leaving the initiative to each individual farmer does pose a few problems. It makes the coordination of the preservation program with local and state growth plans very difficult. It also does not insure that the blocks of agricultural land that are preserved will be large enough to promote an environment conducive to long term preservation. The anticipations that farmers have about the use that adjacent lands will assume can influence their capital and land investment decisions. These anticipations will be more likely to produce an atmosphere that will encourage vital capital and land investments if there is some insurance that surrounding lands will also be in agriculture.

If the inducements for enrollment in P.A. 116 program are not appealing enough to attract the quantity or quality of farmland that

is deemed desirable by the process of public choice, another policy or additional public action may be introduced. The success of the program depends upon the inducements being large enough to motivate farmers into assuming the initiative for action.

If it can be assumed that those farms nearest to urban centers are exposed to the greatest threat of conversion to nonagricultural uses, the program has probably been successful in attracting a disproportionately large share of these farms without imposing a regulatory policy. This is most likely a function of the higher potential for tax credit inducements in these areas. *

Nuisance Suits

The P.A. 116 program does not provide any protection for its contracted participants from nuisance suits. Historically, the courts have acted favorably towards farms faced with such lawsuits when the farms were established previous to any nonagricultural development. If the position of the courts should shift, the program may be faced with a crucial test.

Federal Land Bank

The Federal Land Bank of St. Paul, Minnesota has developed a position that no loans will be issued to farmers who enroll in the P.A. 116 program. They object to the restrictions that the state has first lien on the land and that the land essentially must remain in agriculture. The possibility of foreclosure makes both of these restrictions important to the financial institution. The Federal Land Bank is required to have the first lien on the land in case of foreclosure. It also wishes to have all contracts subordinated to the

Federal Land Bank upon foreclosure so that no use restrictions or penalties would remain with the land. The Division of Land Resource Programs, Michigan Department of Natural Resources who has responsibility for the administration of P.A. 116 plans to introduce an amendment to the legislation which would enable the lien of Federal Land Bank to take precedent over that of state in an event of foreclosure. However, they do not plan to adopt any changes which allow the subordination of the use restrictions. The Federal Land Banks will probably adjust its policy of allowing loans up to a specified percentage of the agricultural value of the land. They will lower the percentage and thereby restrict the size of loans that they will be willing to offer to the participants of P.A. 116.

This will constitute a disincentive to enroll in the program as the Federal Land Banks are an important source of long term debt at a rate usually lower than the rest of the market. The magnitude of this disincentive will be an important factor in the success of the program. If it is large the program may attract farms that are not planning on making the investments consistent with firm growth and agricultural viability. If the magnitude is small, the impact will be marginal and insignificant.

Strip Development

It is conceivable that due to the difficulty inherent in coordinating this voluntary, state program and local growth plans and due to the stipulation that not all land in the farm must be tied to an agreement contract that this program might lead to strip development. It seems doubtful that the latter will be much of a factor in

strip development if the trend of behavior of the participants in the first year continues in the future. In 1975, 92.6 percent of the total acres owned by the farmers enrolled in the program was under an agreement contract.

The first concern may be more legitimate, but depending upon the skill, cooperation and foresight of local planners, coordination of the state and local interests is possible.

CHAPTER VII

RECOMMENDATIONS AND SUMMARIES

Summary

Select groups of individuals perceived a performance of the land market which was dissatisfying to them because of the neglect of many values by the market allocation process. These values were based upon the assymetric irreversibility of farmland conversions, the external benefits produced by agricultural land use, the external costs of disorderly growth, the quality of the societal environment and the inability of the market to apply appropriate risk factor. Through their power and access in the political process, they introduced a new set of institutions to govern the behavior in the land market. This institutional adjustment was P.A. 116, The Farmland and Open Space Act of 1974.

The program provides two obvious incentives for the enrollment in the ten year contracts. First, it provides for a state income tax credit of an amount that is equivalent to the difference between the property tax paid and seven percent of the household income. An exemption from nonfarm special assessments is the second tax incentive offered.

Farmers are attracted to the program for two basic reasons. They have a desire to obtain relief from rapidly rising property taxes through the income tax credit offered by the program. They are also

interested in fulfilling any intrinsic values that they have for agriculture, farming their own land and from contributing to their perception of community welfare. They perceive participation in the program as a means of accomplishing these ends.

The program because of its providing the responsibility for initiative with each individual farmer has reduced suspicion of government policy and the concentrated redistribution of property rights inherent in regulatory actions. It has also produced a program which will be difficult to coordinate with state and local land use plans. It might also fail to attract acreage in large enough blocks to insure an atmosphere conducive to long term agriculture. The program also may fail to provide large enough inducements to attract many of the farms that it was designed to. For these reasons, it seems that P.A. 116 is a start on the preservation of farmland but has not completely resolved the issue.

Recommendations

It appears that the inclusion of nonfarm income in the calculation of the household income might be a deterrent to participation in the program. However, any exemption of the nonfarm income might make the program more attractive to those farmers who earn more nonfarm income than farm income. It seems that since the program is designed to preserve the state's farmlands and the businesses that operate them, a more appropriate measure of whether these firms need public assistance to survive the threat of conversion to nonagricultural land uses is farm income. While it is unlikely that many farmers would not supplement their farm incomes with their nonfarm salaries if the

success of the operation depended upon it, the threat that urban pressure exerts on a farm could be better approximated by the difference between the property taxes paid and some percentage of the farm income. This might increase the inducements to encourage enrollment of farms in the areas with the highest urban demand, since these areas have the greatest opportunities for nonfarm employment of farmers. To avoid any massive exploitation of such a calculation by nonlegitimate farmers, perhaps only the first two thousand dollars of nonfarm income should be exempted from the household income calculation.

Perhaps, there should be a reduction of the percentage used to discount the household income for comparison with the property taxes for farmers who organize and enter blocks of land of greater than 640 acres. This would increase the income tax credit for these farms as an incentive for enrolling in the program in large acreage tracts. An atmosphere for long range commitments to agriculture would more likely ensue from these large agreement parcels since anticipations for encroaching urban developments would be low and protection from nuisance suits, vandalism, trespassing and urban pressure in general would be increased. It would also be easier to coordinate the P.A. 116 program with local land use plans since the agreement acreage would be more consolidated and in less random locations. This option would not preclude the alternative to enroll as individuals as in the present system--it would only add an incentive for farmers with their own initiative to organize in large tracts and in manner more closely approaching the intent of the program's rationale.

Areas For Additional Study

Impact on Land Values

One area for additional investigation would be the impact of this preservation program on land values. It could encompass the effects on land in the program as well as land not entered. It would study the impact on urban growth--land values for development, prices of housing, transportation routes, etc. An interesting question to resolve would be that of does the program remove enough land from the development supply to have any impact on the value of rural and urban land. In its earlier stages, it seems unlikely that the agreement acres will be concentrated enough to have an appreciable effect on other than a few localized land markets.

Coordination Among State Agencies

Conflicts with other state agencies over whose policies will have authority over the land in this program would be another area of fruitful investigation. The wording of the legislation calls for cooperation with the state land use agency and for harmony of planning and projects consistent with the purposes of this act.

The highway corridor that is being planned in Clinton County may be the test case for this situation of conflict. Several farms with contracts lie within the proposed corridor of U.S. 27. It could be that the desire to be exempt from eminent domain was a major stimulus for participation in Clinton County. The courts may permit public condemnation of the land but require the Highway Department to honor the conditions of any agreement or easement contracts on the forms. The Highway Department has been cooperative and has a computerized

record of the location of all land under agreements or easements.

The actions of other state or local agencies that would be important to monitor should include those with responsibilities for the administration of recreational lands, the location of power plants and lines and the provision of public services such as sewers, water, electricity and police and fire protection.

Federal Land Bank

The situation with the Federal Land Bank demands more analysis. Its impact could be highly detrimental or insignificant depending upon the access of the state farmers to other sources of credit.

Incidence of Penalty

In the event that penalties are imposed for early termination of a contract or an easement the incidence of those penalties between buyers and sellers should be investigated. The extent to which the penalties are assumed by the individual who enrolled the land in the program will determine the disincentive that the penalties produce. A documentation of the incidence of such penalties will be important.

Education and Delivery System

An analysis of information distribution by the Cooperative Extension Service and the Department of Natural Resources to the farm community might provide some insights into the acceptance of the program. The various education and delivery systems used by the different personnel responsible for informing the agricultural land owners about the P.A. 116 program might have had an appreciable influence on the decisions regarding enrollment in the program. If a

relationship between presentation and distribution techniques and participation could be identified, future efforts by both the Extension Service and the Department of Natural Resources could be improved to help individuals more efficiently evaluate the advantages and disadvantages of enrolling in the P.A. 116 program.

Long Term Variables

Several variables should be monitored throughout the life of the program to facilitate a thorough evaluation. Two crucial concerns that should be watched in the long term are the impact of the program on the rate of conversion of agricultural lands and its influence on an orderly growth pattern. Other variables worthy of note are the recording of the number of farms which terminate their contracts early, the pattern of farms not in the program and why they have decided not to enroll, and the investment strategies of the farm operations in the program. The demand side of nonagricultural use of land and its interaction with the influences that the P.A. 116 program will have on the supply side should command some attention. Finally, some effort to analyze the extent to which the P.A. 116 program would fit into a comprehensive state land use plan or coordinate with other incremental programs would be beneficial to an evaluation of the Farmland and Open Space Act of 1974.

The Nature of Development Demand for Agricultural Land

The decisions that direct the conversion of agricultural lands to urban uses could be evaluated and the insights provided would enable a greater understanding of the process of land use change.

Of key importance to the analysis of the P.A. 116 and similar programs would be an explanation of all factors which determine which agricultural lands are diverted from farm use. Such issues as what percentages of the total agricultural land that is diverted can be considered as truly "prime" or highly productive farmland would be of interest. Others like why more development is not located on marginal agricultural land would also be helpful. Any effective recommendations that could stimulate development to occur on marginal lands rather than "prime" agricultural lands would probably alleviate much of the concern that promoted the adoption of P.A. 116.

Comparisons With Programs in Other States

A comparison of the implications of the enrollment in P.A. 116 and those of enrollments in similar programs in other states would produce a relative measure of the success of P.A. 116. Such an evaluation could provide some insights into the impact of some of the peculiarities in the Michigan Farmland and Open Space Act has had on enrollment.

APPENDICES

APPENDIX A

LEGISLATIVE HISTORY OF P.A. 116

APPENDIX A

LEGISLATIVE HISTORY OF P.A. 116

The roots of the present Public Act 116 Farmland Preservation Program can probably be traced back to a short, one paged bill introduced into the Michigan Legislature around 1965. This first approach to agricultural land preservation action was very similar to the systems operated in New Jersey and in Maryland. Farmers agreeing to participate in the proposed program would be provided with a tax incentive to not develop their land. Farms in the program would be assessed by the tax commission on both market and agricultural use values. The local treasurer would then apply the appropriate taxes on the use value rather than the market value. This difference in the value of assessments (market value vs. agricultural use value) would produce the property tax incentive for the program. The agreement would continue for an indefinite time period. When the land was developed, the difference in taxes on the agricultural use assessment and the market value assessment would have to be repaid for the three immediately preceding years.

During the subsequent legislative sessions, different amendments were added to this approach. One required that a certain percentage of the land owner's income had to be derived from agriculture for the land to qualify for an agreement. Another added an interest charge on the taxes that would be repaid when development occurred and, in addition, even attached a penalty for diverting the land from agricultural uses to more intensive purposes. The number of years of the

roll-back was increased from the original three year period to five years. Eventually, the bill passed the House of Representatives, but failed to pass the Senate.

The major opposition for this bill centered around its constitutionality. According to the Michigan Constitution, Article 9, Section 3, land must be appraised at a uniform market assessment. This bill did not provide for uniform assessment. Other objections came from local governmental units who feared a loss of tax revenues. Assessors and the State Tax Commission worried about the additional costs of handling two assessments for each qualifying farm. The possible abuse which speculators might be able to take advantage of frightened others. Some complained about the inequity of creating a tax relief for the farm community while not providing one for other groups.

The basis of the support for the bill evolved from the pressure which property taxes inflated by speculative land values exert upon the agriculture industry and from the social inefficiencies produced by the failures in the land market.

The Senate version of the bill (S.B. 130) introduced in 1971 had a five year duration period for the agreements and required a removal notice after three years if development was planned. It also proposed a decreasing penalty for each year that the land remained in the agreement. The penalty was 12.15 percent if the land was developed in the first year and systematically declined to 2.43 percent if it was developed in the fifth year or later.

In 1972 a new approach was presented in the Warner Bill (H.B. 4244). Since the Michigan Constitution authorizes the

Legislature to withdraw a class of land from the general property tax and impose a specific tax on the class, a new taxing scheme was developed to provide a constitutional farmland preservation program. A specific tax schedule was proposed that was based upon the land use capability classes of the Soil Conservation Service. Classes I and II were taxes \$9.00 per acre; class III at \$7.00 per acre; class IV at \$5.00 per acre; classes V, VI, and VII at \$3.00 per acre; and class VIII at \$1.00 per acre. By 1973 several amendments were attached to the bill, the most significant of which was the change to assessing the land at standard values based on the Soil Conservation Service use capability classes and then applying the local property tax millage rates. The standard assessments were \$200 per acre for classes I and II; \$160 per acre for class III; \$120 per acre for class IV; \$80 per acre for classes V, VI, and VII; and \$40 per acre for class VIII. A new penalty rate applied similarly as that proposed in S.B. 130 was included. It declined from 24.4 percent in the first year to 4.8 percent in the fifth year. An interest charge of 6 percent would also be computed on the roll-back taxes due when development occurred.

H.B. 4244 eventually passed the House of Representatives, but the Senate decided on a course of action of its own. In 1973, a special study committee was appointed by the Senate Tax Committee. Major revisions of the Warner Bill were made and the recommendations of the special committee produced the approach that is the foundation for Public Act 116.

Public Act 116 was signed into law by Governor Milliken on May 23, 1974. Its major revision was the creation of the state income tax credit provided when the property taxes on the land included in the

program exceeded 7 percent of the landowner's household income.

During the 1973-74 time span, another proposal for a farmland preservation program was pushed by the Michigan Department of Agriculture. This approach was based upon the purchase by the state of the development rights of selected farmland. The State would have negotiated with each farmer whose land was desired on the appropriate price for these rights of development. Once the rights of 80 percent of the land in a township was purchased, the state could exercise the power of eminent domain to acquire the rest. Funds required for these purchases would have been raised by State bond sales. It is argued by the Michigan Department of Agriculture that this approach would provide perpetuity for the preservation option, provide for a more orderly growth pattern and allow farmers the incentive to make investment decisions in conservation practices since the use restrictions would be of a long run nature. This program was considered too costly and there were real concerns about not only condemnation, but a State agency having the power to resell the development rights at any time it so chose without the consent of the landowner.

This latter program is not directly related to the evolution of P.A. 116, but it does display another approach by state policy makers to resolve the same issue of farmland preservation.

APPENDIX B

QUESTIONNAIRE

APPENDIX B

QUESTIONNAIRE

Farmland Open Space Preservation Act

- 0) What county is your farm located in ? _____ If it lies in more than one, please list all of them ; _____
- 1) In what year was the principle owner-operator born ? _____
- 2) What type of business organization is your farm ? _____ Corporation
_____ Sole Proprietorship _____ Trust _____ 2 or more having a joint or common interest in the land _____ Business Trust _____ Partnership
_____ Estate _____ Association.
- 3) What type of a farm enterprise is predominant on your operation ?
Examples : Cash grains, Feed grains, Field crops, Fruit, Vegetables,
Hay and silage, Dairy, Beef, Hogs, Poultry, Sheep, etc.

- 4) Please list the number of acres used in the production of these commodities:
- | | |
|--|-------|
| (a) Grains Sold (Wheat, Corn, Rye, Barley, Oats, etc.) | _____ |
| (b) Grains Fed to Own Livestock | _____ |
| (c) Other Field Crops (Soybeans, Potatoes, Sugar Beets, Field Beans) | _____ |
| (d) Hay and Silage | _____ |
| (e) Fruits | _____ |
| (f) Vegetables | _____ |
| (g) Woodland | _____ |
| (h) Other | _____ |
| (i) Residence | _____ |

- 5) If your operation includes some phase of livestock production, please indicate the number of animals you had in 1975 ;

Beef	
Cow/Calf	(a) _____
Beef feeding only	(b) _____
Dairy	(c) _____
Hogs	
Farrowing	(d) _____
Feeding only	(e) _____
Sheep	(f) _____
Poultry	
Broilers	(g) _____
Layers	(h) _____
Other	(i) _____

- 6) How many total acres are in your farm ? _____
- 7) How many of these acres do you own ? _____
- 8) How many acres do you rent to someone ? _____
- 9) How many acres do you rent from someone ? _____
- 10) If the sum of acres in part 4 does not equal the total acres listed in part 6, why not ? _____

- 11) How many acres of your farm are in a PA 116 Farmland Preservation Agreement ? _____
- 12) If not all your farm is in a PA 116 preservation agreement, please indicate the number of acres not included, the crops raised on those acres and whether or not you own them.

Acres

Crops

Own (yes or no)

(a)	_____	_____	_____
(b)	_____	_____	_____
(c)	_____	_____	_____
(d)	_____	_____	_____

- 13) What is the distance from the nearest city of population greater than 100,000 from your farm ? _____ miles; Name of the city _____
- 14) What is the distance from your farm and the nearest city of population greater than 25,000 but less than 100,000 ? _____ miles:
Name of the city _____
- 15) What is the distance between your farm and the nearest village of population greater than 10,000 but less than 25,000 ? _____ miles;
Name of village _____
- 16) What is the predominant Soil Conservation Service Land Use Capability Classification for your land? (a) ___I (b) ___II (c) ___III (d) ___IV
(e) ___V (f) ___VI (g) ___VII (h) ___VIII
- 17) What is the predominant Soil Management Group (as designed by the M.S.U. Agricultural Experiment Station) of your land? _____
- 18) Do you consider your farm in (a) _____ a rural area: (b) _____ a semi-rural, area (considerable non-farm activity) or (c) _____ an urban fringe area?
- 19) Do you feel urban pressure upon your land ? ___Yes ___No
If yes, in what way ? _____
- _____
- _____

20) Once you have discontinued farming, which of the following do you anticipate for your land? Please indicate the option that you feel will be most likely to occur with a 1; the option you feel that will be the next most likely to occur with a 2; the option with the third highest chance of occurrence with a 3; and the option you feel will be the least likely to occur with a 4.

- (a) _____ will continue in agriculture (use by relative or partner)
- (b) _____ will continue in agriculture (use by someone other than relative or partner)
- (c) _____ will be developed by yourself, a relative or a partner for residential, commercial, industrial or recreational purposes
- (d) _____ will be developed by someone other yourself, close relative or partner for residential, commercial, industrial or recreational purposes
- (e) _____ other -- please specify _____

21) Do you have a close relative and/or partners to whom your farm assets will be passed for use in agriculture after you finish farming?

_____ Yes _____ No

22) Do you hold a preference for the use that your land will assume after you complete farming? Please rank the alternatives with the lowest number displaying the highest preference: (1 - highest preference, 2 - next highest preference, 3 - least amount of preference).

- (a) _____ Agriculture
- (b) _____ Development for residential, commercial, industrial or recreational use
- (c) _____ No preference - whatever use will bring me the highest return
- (d) _____ Other (Please list)

23) Why did you apply for participation in the PA 116 Farmland Preservation Program? Please rank alternatives as to the amount of importance each consideration had in your decision. Lowest number displays the most importance. (1, 2, 3, 4, 5)

- (a) _____ Desire to obtain relief from rapidly rising property taxes
- (b) _____ Desire to be exempt from certain ^{non-farm} special assessments
- (c) _____ Desire to reduce competition from non-farm uses to buy part or all your farm
- (d) _____ Desire to see enough farmland preserved for future generations
- (e) _____ Desire to see your own land remain in agriculture and/or desire to preserve the agricultural character of your region
- (f) _____ Other (please list) _____

24) What was your household's 1975 net farm income ? (a) _____ 0 - 2,500
 (b) _____ 2,500 - 4,999 (c) _____ 5,000 - 7,499 (d) _____ 7,500 - 9,999
 (e) _____ 10,000 - 14,999 (f) _____ 15,000 - 19,999 (g) _____ 20,000 - 29,999
 (h) _____ 30,000 - 39,999 (i) _____ 40,000 - 59,999 (j) _____ 60,000 - 79,999
 (k) _____ 80,000 - 99,999 (l) _____ 100,000 and over

25) What was your household's 1975 net non-farm income? (a) _____ 0 - 2,500
 (b) _____ 2,500 - 4,999 (c) _____ 5,000 - 7,500 (d) _____ 7,500 - 9,999
 (e) _____ 10,000 - 14,999 (f) _____ 15,000 - 19,999 (g) _____ 20,000 - 29,999
 (h) _____ 30,000 - 39,999 (i) _____ 40,000 - 59,999 (j) _____ 60,000 - 79,999
 (k) _____ 80,000 - 99,999 (l) _____ 100,000 and over

THANK YOU FOR YOUR COOPERATION!

APPENDIX C

METHODOLOGY

APPENDIX C

METHODOLOGY

The methodological format employed in this study was based upon an institutional approach of public choice. An attempt was made to isolate the components of the rationale for public action and to describe the procedural adjustments through which this action was implemented. An evaluation of the degree to which the observed pattern of participants matched the expected behavior of farm real estate owners provided an indication of how closely the performance of the policy change achieved its objectives.

The data for the characteristic pattern of participants was obtained from the applications for enrollment and from a mail survey. The survey was distributed to each legal entity which would have been eligible for a 1975 state income tax credit if it had signed the necessary contract before April 15, 1976. Several entities who were included in the survey failed to sign contracts previous to the specified deadline, but they remained in the operational definition of a 1975 participant for purposes of the study. Special treatment was given to those surveys that indicated that the land owned by several legal entities was operated as one farm unit. It was assumed that each survey represented one farm operation. Those farm operations which included more than one legal entity of ownership were treated as one unit and the sample size was reduced by the number of redundant surveys mailed to each operation. A total of 369 surveys were mailed out and 202 responses were received. From the information

on the surveys, it was determined that at least eighteen questionnaires had been mailed to farms with more than one contract. This reduced the sample size to 351. Two surveys indicated that the property owners decided not to sign contracts at this late stage in the application process. This further reduced the sample size to 349.

The survey data were analyzed for statistical measures of dispersions. Means, modes, medians, and standard deviations were collected for each of the more than fifty variables evaluated. When a theoretical basis suggested a possible relationship between two or more of the variables, chi-square tests were employed to determine the statistical significance of such relationships. Chi-square tests were selected over regression techniques because of the low measurement level of much of the data (nominal) and the desire to know only the significance levels of the relationships, not the strength of these relationships. It was felt that the multicollinearity that probably exists between the various variables would prove multiple regression models of limited value.

The measures of dispersion for the survey respondents were compared with state averages. The state averages were calculated from data in the 1969 Census of Agriculture. No attempt was made to remove any bias that was introduced by the use of seven year old state-wide information. No more recent data were available since the 1974 Census of Agriculture has yet to be released. Income figures from both the survey information and the 1969 Census of Agriculture were converted to 1967 constant dollars for ease of comparison.

APPENDIX D

PUBLIC ACT 116, THE FARMLAND AND OPEN SPACE
PRESERVATION ACT OF 1974

APPENDIX D

Act No. 116
Public Acts of 1974
Approved by Governor
May 23, 1974

STATE OF MICHIGAN 77TH LEGISLATURE REGULAR SESSION OF 1974

Introduced by Reps. Warner, Traxler, Sackett, Mastin, Powell, Fitzgerald, Geerlings, Montgomery, Van Singel, Kirby Holmes, Strang, Mowat, Bryant, Damman, Armbruster, Kennedy, Smith, Cramton, Gast, Trezise, Defebaugh, Angel, Larsen, Richard D. Buth, Prescott, Elliott, Ferguson, Novak, Forbes, Brennan, Ziegler, Dively, Loren D. Anderson, Cawthorne, De Stigter, Sharpe, Spencer, Hoffman, Ostling, Engler, Martin D. Buth, Brown, Bullard, Stallworth, Ogonowski, Nelson, Gingrass, Thomas J. Anderson, O'Neill, Raymond W. Hood, Smit, Hunsinger and Vaughn
Reps. Farnsworth, Robert D. Young, Varnum, Guastello, Mahalak, Jacobetti, Hellman and Welborn
named as co-sponsors

ENROLLED HOUSE BILL No. 4244

AN ACT to provide for farmland development rights agreements and open space development rights easements; to prescribe the duties of the state land use agency; to prescribe the duties of local governing bodies; to prescribe the powers and duties of certain state departments; and to prescribe penalties.

The People of the State of Michigan enact:

Sec. 1. This act shall be known and may be cited as the "farmland and open space preservation act".

Sec. 2. (1) "Agricultural use" means substantially undeveloped land devoted to the production of plants and animals useful to man, including forages and sod crops; grains and feed crops; dairy and dairy products; livestock, including breeding and grazing; fruits; vegetables; and other similar uses and activities.

(2) "Development" means an activity which materially alters or affects the existing conditions or use of any land.

(3) "Development rights" means the right to construct a building or structure, to improve land, or the extraction of minerals incidental to a permitted use or as shall be set forth in an instrument recorded pursuant to this act.

(4) "Development rights agreement" means a restrictive covenant, evidenced by an instrument whereby the owner and the state, for a term of years, agree to jointly hold the right to develop the land as may be expressly reserved in the instrument, and which contains a covenant running with the land, for a term of years, not to develop, except as this right is expressly reserved in the instrument.

(5) "Development rights easement" means a grant, by an instrument, whereby the owner relinquishes to the public in perpetuity or for a term of years, the right to develop the land as may be expressly reserved in the instrument, and which contains a covenant running with the land, not to develop, except as this right is expressly reserved in the instrument.

(6) "Farmland" means:

(a) A farm of 40 or more acres, in one ownership which has been devoted primarily to an agricultural use.

(b) A farm of 5 acres or more in one ownership, but less than 40 acres, devoted primarily to an agricultural use, which has produced a gross annual income from agriculture of \$200.00 per year or more per acre of cleared and tillable land.

(c) A farm designated by the department of agriculture as a specialty farm in one ownership which has produced a gross annual income from an agricultural use of \$2,000.00 or more.

(d) Parcels of land in one ownership which are not contiguous but which constitute an integral part of farming operation being conducted on land otherwise qualifying as farmland may be included in an application under this act.

(7) "Local governing body" means:

(a) The legislative body of a city or village.

(b) The township board of a township having a zoning ordinance in effect as provided by law.

(c) The county board of commissioners in all other areas.

(8) "Open space land" means:

(a) Lands defined as:

(i) Any undeveloped site included in a national registry of historic places or designated as an historic site pursuant to state or federal law.

(ii) Riverfront ownership subject to designation under Act No. 231 of the Public Acts of 1970, being sections 281.761 to 281.776 of the Michigan Compiled Laws, to the extent that full legal descriptions may be declared open space under the meaning of this act, if the undeveloped parcel or government lot parcel or portions thereof as assessed and owned is affected by such act and lies within 1/4 mile of the river.

(iii) Undeveloped lands designated as environmental areas under Act No. 245 of the Public Acts of 1970, being sections 281.631 to 281.645 of the Michigan Compiled Laws, including unregulated portions thereof.

(b) Any other area approved by the local governing body, the preservation of which in its present condition would conserve natural or scenic resources, including: the promotion of the conservation of soils, wetlands, and beaches; the enhancement of recreation opportunities; the preservation of historic sites; and idle potential farmland of not less than 40 acres which is substantially undeveloped and which because of its soil, terrain, and location is capable of being devoted to agricultural uses as identified by the department of agriculture.

(9) "Owner" means a person having a freehold estate in land coupled with possession and enjoyment. However, where land is subject to a land contract, it means the vendor in agreement with the vendee.

(10) "Permitted use" means any use contained within a development rights agreement or a development rights easement essential to the farming operation or which does not alter the open space character of the land.

(11) "Person" includes an individual, corporation, business trust, estate, trust, partnership, or association, or 2 or more persons having a joint or common interest in the land.

(12) "Property taxes" means general ad valorem taxes levied after January 1, 1974, on lands and structures in this state, including collection fees, but not including special assessments, penalties, or interest.

(13) "Regional planning commission" means a regional planning commission created pursuant to Act No. 281 of the Public Acts of 1945, as amended, being sections 125.11 to 125.25 of the Michigan Compiled Laws.

(14) "Regional planning district" means the planning and development regions as established by executive directive 1968-1, as amended, whose organizational structure is approved by the regional council.

(15) "Soil conservation district" means a district created pursuant to Act No. 297 of the Public Acts of 1937, as amended, being sections 282.1 to 282.16 of the Michigan Compiled Laws.

(16) "State income tax act" means Act No. 281 of the Public Acts of 1967, as amended, being sections 206.1 to 206.532 of the Michigan Compiled Laws, and in effect during the particular year of the reference to the act.

(17) "State land use agency" means the land use agency within the department of natural resources.

(18) "Substantially undeveloped" means any parcel or area of land essentially unimproved except for a dwelling, building, structure, road, and other improvement that is incidental to agricultural and open space uses.

(19) "Unique or critical land area" means agricultural or open space lands identified by the land use agency as an area which should be preserved in its natural condition.

Sec. 3. (1) The state land use agency may execute a development rights agreement or easement on behalf of the state.

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(2) The provisions of a development rights agreement or easement shall be consistent with the purposes of this act and shall not permit an action which will materially impair the character of the land involved.

Sec. 4. (1) The execution and acceptance of a development rights agreement or easement by the state or local governing body and the owner shall constitute a dedication to the public of the development rights in the land for the term specified in the instrument. A development rights agreement or easement shall be for a term of not less than 10 years.

(2) The state or local governing body shall not sell, transfer, convey, relinquish, vacate, or otherwise dispose of a development rights agreement or easement except with the mutual agreement of the owner as provided in sections 12, 13, and 14.

(3) An agreement or easement shall not supersede any prior lien, lease, or interest which is properly recorded with the county register of deeds.

Sec. 5. (1) An owner of land desiring a farmland development rights agreement may apply by filing an application with the local governing body having jurisdiction under this act. The application shall be made on a form prescribed by the state land use agency. The application shall contain information reasonably necessary to properly classify the land as farmland. This information shall include a land survey or a legal description of the land, and a map showing the significant natural features and all structures and physical improvements located on the land. The application shall include the soil classification of the land if known.

(2) Upon receipt of the application, the local governing body shall notify the county planning commission or the regional planning commission and the soil conservation district agency. If the county has jurisdiction, it shall also notify the township board of the township in which the land is situated. If the land is within 3 miles of the boundary of a city or within 1 mile of the boundary of a village, the county or township governing body having jurisdiction shall notify the governing body of the city or village.

(3) An agency or local governing body receiving notice shall have 30 days to review, comment, and make recommendations to the local governing body with whom the application is filed.

(4) After considering the comments and recommendations of the reviewing agencies and local governing bodies, the local governing body holding the application shall approve or reject the application within 45 days after the application is received unless time is extended by mutual agreement of the parties involved. The local governing body's approval or rejection of the application shall be based upon, and consistent with, rules promulgated by the state land use agency pursuant to section 17.

(5) If an application for a farmland development rights agreement is approved by the local governing body having jurisdiction, a copy, along with the comments and recommendations of the reviewing bodies, shall be forwarded to the state land use agency. If no action is taken by the local governing body within the time prescribed or agreed upon, the applicant may proceed as provided in subsection (6) as if the application was rejected.

(6) If the application for a farmland development rights agreement is rejected by the local governing body, it shall return the application to the applicant with a written statement regarding the reasons for rejection. Within 30 days after receipt of the rejected application, the applicant may appeal the rejection to the state land use agency. The state land use agency shall have 60 days to approve or reject the application pursuant to subsection (7).

(7) The state land use agency, within 60 days after the farmland development rights agreement application has been received, shall approve or reject the application. A rejection of an application for a farmland development rights easement which has been approved by a local governing body by the state land use agency shall be for nonconformance with section 2 (6) only. If approved by the state land use agency, it shall prepare a farmland development rights agreement which shall include the following provisions:

(a) A structure shall not be built on the land except for use consistent with farm operations or with the approval of the local governing body and the state land use agency.

(b) Land improvements shall not be made except for use consistent with farm operations or with the approval of the local governing body and the state land use agency.

(c) Any interest in the land shall not be sold except a scenic, access, or utility easement which does not substantially hinder farm operations.

(d) Public access shall not be permitted on the land unless agreed to by the owner.

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(e) Any other condition and restriction on the land as agreed to by the parties that is deemed necessary to preserve the land or appropriate portions of it as farmland.

Upon receipt of the application, the state land use agency shall notify the state tax commission. Upon notification, the state tax commission shall within 60 days make an on-site appraisal of the land and structures in compliance with the agricultural section of the Michigan state tax commission assessors manual. The approved application shall contain a statement specifying the current fair market value of the land as determined by the state tax commission. A copy of the approved application and the farmland development rights agreement shall be forwarded to the applicant for execution.

(8) If the owner executes the farmland development rights agreement, he shall return it to the state land use agency for execution on behalf of the state. The state land use agency shall record the executed development rights agreement with the register of deeds of the county in which the land is situated and shall notify the applicant, the local governing body and its assessing office, all reviewing agencies, and the department of treasury.

(9) If an application for a farmland development rights agreement is rejected by the state land use agency, it shall notify the affected local governing body, all reviewing agencies concerned, and the applicant with a written statement containing the reasons for rejection. An applicant receiving a rejection from the state land use agency may appeal the rejection pursuant to Act No. 306 of the Public Acts of 1969, as amended, being sections 24.201 to 24.315 of the Michigan Compiled Laws.

(10) An applicant may reapply for a farmland development rights agreement following a 1-year waiting period.

(11) The value of the jointly owned development rights as expressed in a farmland development rights agreement shall not be exempt from ad valorem taxation and shall be assessed to the owner of the land as part of the value of that land.

Sec. 6. (1) If an owner of open space land desires an open space development rights easement, and the land is subject to the provisions of section 2 (8) (a), the procedures for filing an application provided by the state land use agency shall follow as provided in section 5, except subsections (7) and (11).

(2) The state land use agency, within 60 days after the open space development rights easement application has been received, shall approve or reject the application. If approved by the state land use agency, it shall prepare an open space development rights easement which shall include the following provisions:

(a) A structure shall not be built on the land without the approval of the state land use agency.

(b) Improvement to the land shall not be made without the approval of the state land use agency.

(c) Any interest in the land shall be sold only for a scenic, access, or utility easement which does not substantially hinder the character of the open space land.

(d) Access to the open space land may be provided if agreed upon by the owner and will not jeopardize the conditions of the land.

(e) Any other condition or restriction on the land as agreed to by the parties that is deemed necessary to preserve the land or appropriate portions of it as open space land. Upon receipt of the application, the state land use agency shall notify the state tax commission. Upon notification, the state tax commission shall within 60 days make an on-site appraisal of the land in compliance with the Michigan state tax commission assessors manual. The application shall contain a statement specifying the current fair market value of the land and the current fair market value of the development rights. The state land use agency shall submit each application for an open space development rights easement and an analysis of its cost to the state to the legislature. The application shall be approved in both houses by a resolution concurred in by a majority of the members elected and serving in each house. The amount of the cost shall be returned to the local governing body where lost revenues are indicated. A copy of the approved application and the open space development rights easement shall be forwarded by the state land use agency to the applicant for execution and to the local assessing office where the land is situated.

(3) The development rights held by the state as expressed in an open space development rights easement under this section shall be exempt from ad valorem taxation.

Sec. 7. (1) An owner of open space land desiring an open space development rights easement whose land is subject to the provisions of section 2 (8) (b), may apply by filing an application with the local governing body having jurisdiction under this act. The application shall be made on a form prescribed by the state land use agency. The application shall contain information reasonably necessary to properly identify the land as open space. This information shall include a land survey or a legal description of the

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land, and a map showing the significant natural features and all structures and physical improvements located on the land. The map shall include the soil classification of the land if known.

(2) Upon receipt of an application, the local governing body shall notify the county planning commission, the regional planning commission, and the soil conservation district agency. If the county has jurisdiction, it shall also notify the township board of the township in which the land is situated. If the land is within 3 miles of the boundary of a city or within 1 mile of the boundary of a village, the county shall notify the governing body of the city or village.

(3) An agency or local governing body receiving notice shall have 30 days to review, comment, and make recommendations to the local governing body with whom the application was filed.

(4) After considering the comments and recommendations of the reviewing agencies, the local governing body shall approve or reject the application within 45 days after the application has been received by it unless time is extended by mutual agreement of the parties involved. The local governing body's approval or rejection of the application shall be based upon, and consistent with, rules promulgated by the state land use agency pursuant to section 17. If the local governing body does not act within the time prescribed or agreed upon, the applicant may proceed as provided in subsection (8) as if the application was rejected.

(5) If the application is approved by the local governing body or the state land use agency on appeal, the local governing body shall prepare an appropriate easement which shall include the following provisions:

- (a) A structure shall not be built on the land without the approval of the local governing body.
- (b) An improvement to the land shall not be made without the approval of the local governing body.
- (c) Any interest in the land shall not be sold except for scenic, access, or utility easements which do not substantially hinder the character of the open space land.
- (d) Public access to the open space land may be provided if agreed upon by the owner and will not jeopardize the conditions of the land.
- (e) Any other condition or restriction on the land as agreed to by both parties that is deemed necessary to preserve the land or appropriate portions of it as open space land.

Upon receipt of the application, the local governing body shall direct either the local assessing officer or an independent certified assessor to make an on-site appraisal within 30 days of the land in compliance with the Michigan state tax commission assessors manual. The approved application shall contain a statement specifying the current fair market value of the land and the current fair market value of the development rights, if any. A copy of the approved application and the development rights easement shall be forwarded to the applicant for his execution.

(6) If the owner of the land executes the approved easement, it shall be returned to the local governing body for its execution. The local governing body shall record the open space development rights easement with the register of deeds of the county. A copy of the approved easement shall be forwarded to the local assessing office and to the state land use agency for their information. The state land use agency shall submit to the legislature and the department of management and budget a listing of all easements in effect by October 31 of each year.

(7) The decision of the local governing body having jurisdiction under this act may be appealed to the state land use agency, pursuant to subsection (8).

(8) If an application for an open space development rights easement is rejected by the local governing body, it shall notify the applicant and all reviewing agencies concerned with a written statement regarding the reasons for rejection. Within 30 days after receipt of the rejected application, the applicant may appeal the rejection to the state land use agency. The state land use agency shall have 60 days to approve or reject the application. The state land use agency shall submit each approved application for an open space development rights easement and an analysis of its cost to the legislature. The application shall be approved in both houses by a resolution concurred in by a majority of the members elected and serving in each house. The amount of the cost shall be returned to the local governing body where lost revenues are indicated. A copy of the approved application and an appropriate easement shall be forwarded by the state land use agency to the applicant for execution and to the local governing body where the land is situated.

(9) An applicant may reapply for an open space development rights easement following a 1-year waiting period.

(10) The development rights held by the local governing body as expressed in an open space development rights easement shall be exempt from ad valorem taxation.

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Sec. 8. All participants owning land contained under a development rights agreement or easement shall notify, on a form provided by the state land use agency for informational purposes only, the state or the local governing body holding the development rights 2 years prior to the natural termination date of the development rights agreement or easement of the owners' intentions regarding future plans with respect to the land.

Sec. 9. A city, village, township, county, or other governmental agency may not impose special assessments for sanitary sewers, water, lights, or nonfarm drainage on land for which a development rights agreement or easement has been recorded except as to a dwelling or a nonfarm structure located on the land unless the assessments were imposed prior to the recording of the development rights agreement or easement. Land covered by this exemption shall be denied use of an improvement created by the special assessment until it has paid an amount not more than the amount that would have been paid had the land not been excluded. The land exempted from the assessment shall be denied use of the improvement as long as the owner of the land has a recorded development rights agreement or easement.

Sec. 10. (1) (a) The owner of farmland and related buildings covered by a development rights agreement meeting the requirements of this act and who is required or eligible to file a return as an individual or a claimant under the income tax act of 1967, shall be eligible for a credit against the state income tax liability for the amount by which the property taxes on the land and structures used in the farming operation, including the homestead, restricted by such development rights agreement exceeds 7% of the household income as defined in chapter 9 of Act No. 281 of the Public Acts of 1967, as amended, being sections 206.501 to 206.532 of the Michigan Compiled Laws, excluding any deduction if taken under section 613 of the internal revenue code of 1954, as amended.

(b) Other owners of farmland and related buildings covered by a development rights agreement meeting the requirements of this act shall be eligible for a credit against the state income tax liability for the amount by which the property taxes on the land and structures used in farming operations restricted by such development rights agreement exceeds 7% of the taxable income of the owner as defined in chapter 1 of Act No. 281 of the Public Acts of 1967, as amended, being sections 206.1 to 206.36 of the Michigan Compiled Laws, excluding any deductions if taken under section 613 of the internal revenue code of 1954, as amended.

(c) The beneficiaries of an estate or trust, a partner in a partnership, or a participant in a corporation which has filed a proper election under subchapter S of the internal revenue code is entitled to the same percentage of the credit provided in this section as that person's percentage of all other distributions by the entity.

(2) A person applying for an income tax credit for property taxes paid under subsection (1) may apply for credit under chapter 9 of Act No. 281 of the Public Acts of 1967, being sections 206.501 to 206.532 of the Michigan Compiled Laws.

(3) If the allowable amount of the credit claimed exceeds the state income tax otherwise due for the tax year or if there is no state income tax due for the tax year, the amount of the claim not used as an offset against the state income tax shall, after examination and review, be approved for payment, without interest, to the claimant.

(4) For purposes of audit, review, determination, appeals, hearings, notices, assessments, and administration, the provisions of Act No. 281 of the Public Acts of 1967, as amended, shall apply.

(5) The department of treasury shall account separately for payments under this act and not combine them with other credit programs.

Sec. 11. (1) Land subject to a development rights agreement or easement may be sold without penalty under sections 12, 13, and 14, if the use of the land by the successor in title complies with the provisions contained in the development rights agreement or easement. The seller shall notify the governmental authority having jurisdiction over the development rights of the change in ownership.

(2) When the owner of land subject to a development rights agreement or easement dies or is totally and permanently disabled, the land may be released from the program under this act and shall be subject to a proration pursuant to sections 12(7), 13(7) and 14(7).

Sec. 12. (1) A development rights agreement shall be relinquished by the state at the expiration of the term of the agreement unless renewed with the consent of the owner of the land.

(2) A development rights agreement may be relinquished by the state prior to a termination date contained in the instrument as follows:

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(a) At any time the state determines that the development of the land is in the public interest and in agreement with the owner of the land.

(b) The owner of the land may submit an application to the local governing body having jurisdiction under this act requesting that the development rights agreement be relinquished. The application shall be made on a form prescribed by the state land use agency. The request for relinquishment shall be processed and shall be subject to the same provisions as provided for in section 5 for review and approval.

(3) If the request for relinquishment of the development rights agreement is approved, the state land use agency shall prepare an instrument, subject to subsections (4), (5), (6), and (7), and shall record it with the register of deeds of the county in which the land is situated.

(4) At the time a development rights agreement is to be relinquished pursuant to subsection (2) (b), the state land use agency shall cause to be prepared and recorded a lien against the property formerly subject to the development rights agreement for the total amount of the credit in the state income tax received by the owner under section 10. The lien shall provide that interest at the rate of 6% per annum compounded shall be added to the credit from the time the credit was received until it is paid.

(5) The lien may be paid and discharged at any time and shall become payable to the state by the owner of record at the time the land or any portion of it is sold by the owner of record, or if the land is converted to a use prohibited by the former development rights agreement. The lien shall be discharged upon renewal or reentry in a development rights agreement, except that a subsequent lien shall not be less than the lien discharged. The proceeds from the payment shall be used to purchase development rights on land which is deemed by the state land use agency to be a unique or critical land area that should be preserved in its natural character, but which does not necessitate direct purchase of the fee interest in the land.

(6) Upon termination of the development rights agreement pursuant to subsection (2) (a), the development rights shall revert back to the owner without penalty or interest.

(7) Upon the natural termination of the development rights agreement pursuant to subsection (1), the state land use agency shall cause to be prepared and recorded a lien against the property formerly subject to the development rights agreement for the total amount of the credit in the state income tax of the last 7 years received by the owner under section 10. The lien shall be without interest or penalty and shall be payable subject to subsection (5).

(8) Upon termination, the state land use agency shall notify the department of treasury for their records.

Sec. 13. (1) An open space development rights easement pursuant to section 6 shall be relinquished by the state at the expiration of the term of the easement unless renewed with the consent of the owner of the land.

(2) An open space development rights easement may be relinquished by the state prior to a termination date contained in the instrument as follows:

(a) At any time the state determines that the development of the land is in the public interest and in agreement with the owner of the land.

(b) The owner of the land may submit an application to the local governing body where the original application for an open space development rights easement requesting that the development rights easement be relinquished. The application shall be made on a form prescribed by the state land use agency. The request for relinquishment shall be processed and shall be subject to the provisions as provided in sections 5 and 6 for review and approval.

(3) If the request for relinquishment of the development rights easement is approved, the state land use agency shall prepare an instrument providing for the relinquishment of the open space development rights easement, subject to subsections (4), (5), (6), and (7), and shall record it with the register of deeds of the county in which the land is situated.

(4) At the time a development rights easement is to be relinquished pursuant to subsection (2) (b), the state land use agency shall cause to be prepared and recorded a lien against the property formerly subject to the development rights easement for the total amount of the ad valorem taxes not paid on the development rights during the period it was held by the state, if any. The lien shall provide that interest at the rate of 6% per annum compounded shall be added to the ad valorem taxes not paid from the time the exemption was received until it is paid.

(5) The lien shall become payable to the state by the owner of record at the time the land or any portion of it is sold by the owner of record, or if the land is converted to a use prohibited by the former open space development rights easement.

(6) Upon the termination of the open space development rights easement pursuant to subsection (2) (a), the development rights shall revert back to the owner without penalty or interest.

(7) Upon the natural termination of the open space development rights easement pursuant to subsection (1), the state land use agency shall cause to be prepared and recorded a lien against the property formerly subject to the open space development rights easement. The amount of the lien shall be the total amount of the last 7 years ad valorem taxes not paid on the development rights during the period it was held by the state, if any. The lien shall be without penalty or interest and shall be payable subject to subsection (5).

(8) A copy of the relinquishment of an open space development rights easement shall be sent to the local governing body's assessing office.

Sec. 14. (1) An open space development rights easement pursuant to section 7 shall be relinquished by the local governing body at the expiration of the term of the easement unless renewed with the consent of the owner of the land.

(2) An open space development rights easement may be relinquished by the local governing body prior to a termination date contained in the instrument as follows:

(a) At any time the local governing body determines that the development of the land is in the public interest and in agreement with the owner of the land.

(b) The owner of the land may submit an application to the local governing body having jurisdiction requesting that the development rights easement be relinquished. The application shall be made on a form prescribed by the state land use agency. The request for relinquishment shall be processed and shall be subject to the provisions as provided in section 7 for review and approval.

(3) If the request for relinquishment of the open space development rights easement is approved, the local governing body shall prepare an instrument providing for the relinquishment of the open space development rights easement, subject to subsections (4), (5), (6), and (7), and shall record it with the register of deeds of the county in which the land is situated.

(4) At the time an open space development rights easement is to be relinquished pursuant to subsection (2) (b), the local governing body shall cause to have prepared and recorded a lien against the property formerly subject to the open space development rights easement. The amount of the lien shall be the total amount of the ad valorem taxes not paid on the development rights during the period it was held by the local governing body, if any. The lien shall provide that interest at the rate of 6% per annum compounded shall be added to the ad valorem taxes exemption from the time granted until the lien is paid.

(5) The lien shall become payable to the local governing body by the owner of record at the time the land or any portion of it is sold by the owner of record, or if the land is converted to a use prohibited by the former open space development rights easement.

(6) Upon the termination of the open space development rights easement pursuant to subsection (2) (a), the development rights shall revert back to the owner without penalty or interest and the development rights easement upon the land shall expire.

(7) Upon the natural termination of the open space development rights easement pursuant to subsection (1), the local governing body shall cause to be prepared and recorded a lien against the property formerly subject to the open space development rights easement. The amount of the lien shall be the total amount of the last 7 years ad valorem taxes not paid on the development rights during the period it was held by the local governing body, if any. The lien shall be without penalty or interest and will be payable subject to subsection (5).

(8) A copy of the relinquishment of an open space development rights easement shall be sent to the local assessing office.

Sec. 15. If the owner or a successor in title of the land upon which a development rights agreement or easement has been recorded pursuant to this act shall change to a prohibited use the use of the land or knowingly sell the land for a use other than those permitted in the development rights agreement or easement without first pursuing the provisions in sections 11 (2), 12, 13, and 14, or receiving permission of the state land use agency, he may be enjoined by the state, acting through the attorney general, or by the local governing body, acting through its attorney, and is subject to a civil penalty for actual damages, but in no case to exceed double the value of the land as established at the time the application for the development rights agreement or easement was approved.

Sec. 16. All departments and agencies of state government shall cooperate with the state land use agency in the exchange of information concerning projects and activities which might jeopardize the preservation of land contemplated by this act. The state land use agency shall periodically advise the departments and agencies of state government of the location and description of land upon which there exists development rights agreements or easements and the departments and agencies shall harmonize their planning and projects consistent with the purposes of this act.

Sec. 17. The state land use agency may promulgate rules pursuant to Act No. 306 of the Public Acts of 1969, as amended, for the administration of this act.

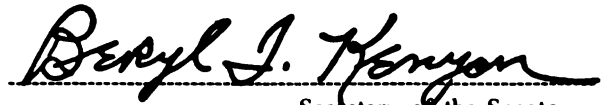
Sec. 18. The state land use agency shall prepare a report and make recommendations to the legislature not later than January 30, 1976, for a state plan for preserving open space lands, agricultural and horticultural lands, unique or critical land areas, recreational lands and historic lands.

Sec. 19. This act shall become effective July 1, 1974.

This act is ordered to take immediate effect.



Clerk of the House of Representatives.



Secretary of the Senate.

Approved _____

Governor.

Act No. 78
Public Acts of 1976
Approved by Governor
April 12, 1976

**STATE OF MICHIGAN
78TH LEGISLATURE
REGULAR SESSION OF 1976**

Introduced by Reps. Hoffman and Montgomery

Reps. Angel, Armbruster, Busch, Buth, Conlin, Cramton, Elliott, John M. Engler, Fessler, Gingrass, Holmes, Hunsinger, Markes, McCollough, O'Neill, Ostling, Powell, Rosenbaum, Roy Smith, Spencer, Stevens, Strang, Trim and Welborn named co-sponsors

ENROLLED HOUSE BILL No. 6003

AN ACT to amend section 5 of Act No. 116 of the Public Acts of 1974, entitled "An act to provide for farmland development rights agreements and open space development rights easements; to prescribe the duties of the state land use agency; to prescribe the duties of local governing bodies; to prescribe the powers and duties of certain state departments; and to prescribe penalties," being section 554.705 of the Compiled Laws of 1970.

The People of the State of Michigan enact:

Section 1. Section 5 of Act No. 116 of the Public Acts of 1974, being section 554.705 of the Compiled Laws of 1970, is amended to read as follows:

Sec. 5. (1) An owner of land desiring a farmland development rights agreement may apply by filing an application with the local governing body having jurisdiction under this act. The application shall be made on a form prescribed by the state land use agency. The application shall contain information reasonably necessary to properly classify the land as farmland. This information shall include a land survey or a legal description of the land, and a map showing the significant natural features and all structures and physical improvements located on the land. The application shall include the soil classification of the land if known.

(2) Upon receipt of the application, the local governing body shall notify the county planning commission or the regional planning commission and the soil conservation district agency. If the county has jurisdiction, it shall also notify the township board of the township in which the land is situated. If the land is within 3 miles of the boundary of a city or within 1 mile of the boundary of a village, the county or township governing body having jurisdiction shall notify the governing body of the city or village.

(3) An agency or local governing body receiving notice shall have 30 days to review, comment, and make recommendations to the local governing body with whom the application is filed.

(4) After considering the comments and recommendations of the reviewing agencies and local governing bodies, the local governing body holding the application shall approve or reject the application within 45 days after the application is received unless time is extended by mutual agreement of the parties involved. The local governing body's approval or rejection of the application shall be based upon, and consistent with, rules promulgated by the state land use agency pursuant to section 17.

(5) If an application for a farmland development rights agreement is approved by the local governing body having jurisdiction, a copy, along with the comments and recommendations of the reviewing bodies, shall be forwarded to the state land use agency. The application shall contain a statement from the assessing officer where the property is located specifying the current fair market value of the land and structures in compliance with the agricultural section of the Michigan state tax commission assessor manual (1972). If action is not taken by the local governing body within the time prescribed or agreed upon, the applicant may proceed as provided in subsection (6) as if the application was rejected.

(6) If the application for a farmland development rights agreement is rejected by the local governing body, it shall return the application to the applicant with a written statement regarding the reasons for rejection. Within 30 days after receipt of the rejected application, the applicant may appeal the rejection to the state land use agency. The state land use agency shall have 60 days to approve or reject the application pursuant to subsection (7).

(7) The state land use agency, within 60 days after the farmland development rights agreement application has been received, shall approve or reject the application. The state land use agency shall forward a copy of the information received from the local assessing officer and a copy of the application to the state tax commission for its review. The state tax commission shall make its review, including property description and value verification, and submit its comments to the state land use agency within 60 days after receipt of the application. A rejection of an application for a farmland development rights agreement which has been approved by a local governing body by the state land use agency shall be for nonconformance with section 2(6) only. If approved by the state land use agency, it shall prepare a farmland development rights agreement which shall include the following provisions:

(a) A structure shall not be built on the land except for use consistent with farm operations or with the approval of the local governing body and the state land use agency.

(b) Land improvements shall not be made except for use consistent with farm operations or with the approval of the local governing body and the state land use agency.

(c) Any interest in the land shall not be sold except a scenic, access, or utility easement which does not substantially hinder farm operations.

(d) Public access shall not be permitted on the land unless agreed to by the owner.

(e) Any other condition and restriction on the land as agreed to by the parties that is deemed necessary to preserve the land or appropriate portions of it as farmland.

A copy of the approved application and the farmland development rights agreement shall be forwarded to the applicant for execution.

(8) If the owner executes the farmland development rights agreement, he shall return it to the state land use agency for execution on behalf of the state. The state land use agency shall record the executed development rights agreement with the register of deeds of the county in which the land is situated and shall notify the applicant, the local governing body and its assessing office, all reviewing agencies, and the department of treasury.

(9) If an application for a farmland development rights agreement is rejected by the state land use agency, it shall notify the affected local governing body, all reviewing agencies concerned, and the applicant with a written statement containing the reasons for rejection. An applicant receiving a rejection from the state land use agency may appeal the rejection pursuant to Act No. 306 of the Public Acts of 1969, as amended, being sections 24.201 to 24.315 of the Michigan Compiled Laws.

(10) An applicant may reapply for a farmland development rights agreement following a 1-year waiting period.

(11) The value of the jointly owned development rights as expressed in a farmland development rights agreement shall not be exempt from ad valorem taxation and shall be assessed to the owner of the land as part of the value of that land.

This act is ordered to take immediate effect.

W. H. Thatcher

Clerk of the House of Representatives.

Willis S. Farnum

Secretary of the Senate.

Approved.....

.....
Governor.

Act No. 236
Public Acts of 1975
Approved by Governor
August 27, 1975

**STATE OF MICHIGAN
78TH LEGISLATURE
REGULAR SESSION OF 1975**

Introduced by Reps. Hoffman and Montgomery

ENROLLED HOUSE BILL No. 5504

AN ACT to amend section 10 of Act No. 116 of the Public Acts of 1974, entitled "An act to provide for farmland development rights agreements and open space development rights easements; to prescribe the duties of the state land use agency; to prescribe the duties of local governing bodies; to prescribe the powers and duties of certain state departments; and to prescribe penalties," being section 554.710 of the Compiled Laws of 1970.

The People of the State of Michigan enact:

Section 1. Section 10 of Act No. 116 of the Public Acts of 1974, being section 554.710 of the Compiled Laws of 1970, is amended to read as follows:

Sec. 10. (1) The owner of farmland and related buildings covered by a development rights agreement meeting the requirements of this act and who is required or eligible to file a return as an individual or a claimant under the income tax act of 1967, shall be eligible for a credit against the state income tax liability for the amount by which the property taxes on the land and structures used in the farming operation, including the homestead, restricted by such development rights agreement exceeds 7% of the household income as defined in chapter 9 of Act No. 281 of the Public Acts of 1967, as amended, being sections 206.501 to 206.532 of the Michigan Compiled Laws, excluding any deduction if taken under section 613 of the internal revenue code of 1954, as amended.

(2) Other owners of farmland and related buildings covered by a development rights agreement meeting the requirements of this act shall be eligible for a credit against the state single business tax act liability for the amount by which the property taxes on the land and structures used in farming operations restricted by such development rights agreement exceeds 7% of the adjusted tax base of the owner as defined in section 31(2) of the single business tax act without allowance for the small business exemption provided in section 35 of that act, excluding any deductions if taken under section 613 of the internal revenue code of 1954, as amended.

(3) The beneficiaries of an estate or trust, a partner in a partnership, or a participant in a corporation which has filed a proper election under subchapter S of the internal revenue code is entitled to the same percentage of the credit provided in this section as that person's percentage of all other distributions by the entity.

(4) A person applying for an income tax credit for property taxes paid under subsections (1) to (3) may apply for credit under chapter 9 of Act No. 281 of the Public Acts of 1967, as amended.

(5) If the allowable amount of the credit claimed exceeds the state income tax otherwise due for the tax year or if there is no state income tax due for the tax year, the amount of the claim not used as an offset against the state income tax shall, after examination and review, be approved for payment, without interest,

to the claimant. The total credit allowable under this act and chapter 9 of Act No. 281 of the Public Acts of 1967, as amended, shall not exceed the total property tax due and payable by the claimant in that year. The amount the credit exceeds the property tax due and payable shall be deducted from the credit claimed under this act.

(6) For purposes of audit, review, determination, appeals, hearings, notices, assessments, and administration, the provisions of Act No. 281 of the Public Acts of 1967, as amended, shall apply.

(7) The department of treasury shall account separately for payments under this act and not combine them with other credit programs.

Section 2. This amendatory act shall not take effect unless House Bill No. 4640 and House Bill No. 5085 of the 1975 Regular Session of the legislature are enacted into law.

This act is ordered to take immediate effect.



Clerk of the House of Representatives.



Secretary of the Senate.

Approved _____

Governor.

SENATE BILL No. 1683

September 28, 1976, Introduced by Senators CORBIN, PLawecki,
KAMMER, FAUST and O'BRIEN and referred to the Committee
on State Affairs

A bill to amend section 4 of Act No. 116 of the Public Acts of 1974, entitled
"Farmland and open space preservation act,"
being section 554.704 of the Compiled Laws of 1970.

THE PEOPLE OF THE STATE OF MICHIGAN ENACT:

1 Section 1. Section 4 of Act No. 116 of the Public Acts of 1974, being
2 section 554.704 of the Compiled Laws of 1970, is amended to read as follows:

3 Sec. 4. (1) The execution and acceptance of a development rights agree-
4 ment or easement by the state or local governing body and the owner shall con-
5 stitute a dedication to the public of the development rights in the land for
6 the term specified in the instrument. A development rights agreement or ease-
7 ment shall be for a term of not less than 10 years.

8 (2) The state or local governing body shall not sell, transfer, convey,
9 relinquish, vacate, or otherwise dispose of a development rights agreement or
10 easement except with the mutual agreement of the owner as provided in

1 sections 12, 13, and 14.

2 (3) An agreement or easement shall not supersede any prior lien, lease,
3 or interest which is properly recorded with the county register of deeds.

4 (4) A LIEN CREATED UNDER THIS ACT IN FAVOR OF THE STATE OR A LOCAL
5 GOVERNING BODY SHALL BE SUBORDINATE TO THE FIRST LIEN OF A MORTGAGE WHICH IS
6 RECORDED IN THE OFFICE OF THE REGISTER OF DEEDS BEFORE THE RECORDING OF THE
7 LIEN OF THE STATE OR LOCAL GOVERNING BODY.

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