No. 172 March 1980

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*The authors wish to thank Carol Smith, research assistant in the Department of Agricultural Economics, for her help in editing an earlier version of this paper.

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The Farmland Preservation Law has sparked great interest in land use planning in rural Wisconsin. Over 40 of the state's 55 agricultural counties are already engaged in projects to identify and map productive agricultural land or to produce plans for how farmland should be protected in the future. The basic point of this paper is that planners must understand farm economics and the farming cycle in order to effectively develop farmland preservation plans. There are several important reasons for our emphasis on this point. First, while the emphasis on mapping and planning for farmland preservation is important and useful, it is critical to recognize that farming is an economic activity and must be profitable in order for farmland preservation programs to succeed. Preserving farmland is not the same as preserving farming. For example, protecting farmland from urban sprawl does not guarantee that farming will be profitable in the shadow of our larger cities, although it may be a useful or necessary precondition for a healthy agricultural economy.

Second, in our view, the key to successful planning is to involve "those being planned for" in the process of developing the plan. A "grass roots" approach to producing a plan is much more likely to result in a plan that is actually used than more technically sophisticated approaches which do not involve people as directly in the planning process. Thus, planners

need to be able to work closely with farmers, and therefore need to be able to view the world through the farmer's eyes, to see the economic incentives the farmer faces. Understanding the economics of the farm and the stages in the farm cycle will enable planners to better empathize with the farmer's position.

Third, understanding farm economics and the farming cycle is important because much of the conversion of farmland to nonfarm use occurs at particular stages in the cycle of the farm operation. Similarly, farmland preservation planning and zoning may be strongly supported by some farmers and strongly opposed by others based on the different types of economic incentives faced by farmers in different phases of the farming cycle. Thus, we believe there are several very practical reasons why planners should study farm economics and the farming cycle.

The term "farming cycle" is a shorthand means of denoting the life-cycle of the typical farm business, usually divided into entry, growth and exit phases. If we examine the size of a farm business over time, we might find that the beginning farmer may start off with a smaller operation, establish it as a solid business, grow, consolidate and then begin to exit or phase out of farming altogether.[1/] Ideally, an attempt is made to coordinate these stages so that a smooth transition of ownership and management occurs between one generation of farmers and the next, particularly between parents and children. It is often a great personal or family tragedy when forty years of work go down the drain in four hours of a farm auction because this transition of a good farm business could not be made.

We will relate the different phases of the farm life cycle to farmland preservation planning and incentives. In the entry phase, the length of the investment planning horizon, the cash flow problems and mobility are important in understanding how the beginning farmer may view

farmland preservation planning. In the growth phase we will emphasize uncertainty, investment and disinvestment strategies and income. In the exit phase, the process of transfer of the farm business between generations and the tax incentives faced by the farmer are critical in understanding how farmers and farmland may be effected by farmland preservation planning. Throughout the discussion, the focus will be the individual farm family and the economics of the individual farm operation.

The Entry Phase

In the entry phase, the beginning farmer tests if he/she wants to farm and then starts to become established. There are two levels of concern at the entry stage--the people and the business. Are the people involved well trained, competent production, business and financial managers? Is the business profitable, solvent and liquid? Or does the business have reasonable expectations of attaining these characteristics in the near future.

After that is decided and the new farm has started in the business, the question of interest and concern for farmland preservation programs arises. Typically, the young person entering farming has a long planning horizon. He or she is going to be thinking ahead for as many years as they are planning to farm. If the entering farmer is, for example, twenty-five years old, that may be 30 or 40 years; if he's an optimist, it may be 70 to 80 years. This long-term planning horizon tends to make entering farmers more interested in long-term kinds of programs like farmland preservation.

But these long-range levels of concern are overshadowed by the need to survive economically in the short run. Therefore, practices which may be desirable for both the farmer and society in the long run cannot put a cash flow squeeze on the beginning farmer in the short run. The ability

to survive until next year overrides any desire to be prepared for the long run no matter how good the cause. The young beginning farmer also has more mobility than a farmer 20 or 30 years older. Relatively speaking, it is easier for this person to move out of the area or to move out of agriculture into another kind of job. Both of these factors may be important for farmland preservation--as shall be seen later.

During the entry level stage of farming, taxable income is apt to be low. This is because, in most cases the farmer has just purchased the property and is in considerable debt. High interest payments and high initial expenses often lead to cash flow problems in the early years, as well as to low taxable income. This lower taxable income tends to make entering farmers eligible for larger amounts of tax credit in the farmland preservation program. Important beliefs held by many Americans is that agriculture is a good way to make a living, that the farm lifestyle is healthy, close to the earth, that farms are good places to raise children and a series of other beliefs, all of which add up to strong feelings about the value of agriculture as a way of life. For a person going into a farm business at 25 years of age, that may or may not be terribly important. Our feeling is that these lifestyle concerns <u>are</u> often a factor both in the initial decision to farm and in the decision to remain in farming. Older farmers may feel stronger about this than the typical young farmer. However this commitment of many farmers to agricultural or rural values and lifestyles is important in understanding the entry, growth and exit stages of farming and the reaction to a program such as farmland preservation.

All of these factors--the long term planning horizon, low taxable income and commitment to farming as a way of life--make young farmers in rural areas prime candidates and natural allies of the farmland

preservation program. Unfortunately, other factors intervene to hold back (restrict) entering farmers' participation in the program. Younger farmers often lack information about the farmland preservation program, and may not be very involved in local (town and county) government or politics. The simple reason for this is that they are too busy farming--trying to get the farm business off the ground and stay afloat--to learn about farmland preservation or to get involved in local politics.

In an urban farming area, such as the Twin Cities area or southeastern Wisconsin, the situation may be a little different. The young farmer may be the first to sell out and leave when urban pressure starts reaching out beyond city limits. This is reflective, again, of the long planning horizon of the younger farmer. He can afford to think about a move because, in a sense, he can amortize the cost of the move over a very long period of time. This contention is supported by a study of emmigration and land development trends near Phoenix, Arizona.[2/] One of the study's findings was that it tended to be the younger people who moved out first--many, many years in advance of any actual large-scale land development. They saw it coming and decided to get out. As far as we know, no comparable study has been conducted in Wisconsin.

The Growth Phase

The second stage in an average farm cycle is the growth phase. This is the stage--typically encompassing farmers in the 30-55 year old age bracket--within which farm expansion and consolidation occur.

Although one need not worship at the shrine of size in agriculture, one should keep in mind that there is a certain minimum size which is essential for a financially successful agriculture. Consider the dairy farming business, for example. Roughly 50% of Wisconsin farmers are dairy farmers. In this case, the minimum size is in the neighborhood of 35-40

cows per adult equivalent basis--or per family with some help from the spouse. This translates to a need to control roughly 130 to 150 crop acres and generate roughly $45,000-$55,000 gross income per farm. An operation of this size is apt to require a total investment of about $250,000. In other words, it is likely to cost approximately $6,000 to $6,500 per cow unit to set up a dairy business. We might note that some of these start-up costs can be greatly reduced by renting land rather than owning it outright--it's the control over the resource that is important, and this can come about through lease agreements as well as full ownership. In Wisconsin, farmers put great emphasis on land ownership, but in states such as Illinois, there is less importance attached to ownership and we find very profitable farms with third generation landlords and third generation tenants.

In any case, considering the typical Wisconsin dairy farm, the asset-turnover ratio (i.e., the annual volume of business relative to total investment) falls within the 25%-30% bracket. In other words, it takes $100,000 of investment to yield $25,000-$30,000 in annual gross value of production. The result, which applies generally to all types of farm operations, is that agriculture is an extremely high fixed cost industry.

There is no way to change fixed costs. The main components of fixed costs are depreciation, interest, certain repairs (such as to buildings) taxes and insurance. These fixed costs in a farm business keep rolling along, regardless of whether buildings are fully utilized, or not utilized at all. A farmer, as a businessman, looks at how he will amortize fixed costs over time. If he's at the end of the growth stage planning horizon, for example at age 50, his viewpoint on fixed costs is quite different from a younger farmer. Unless he has a child or relative who will farm for another generation, he may be reluctant to invest in items which have high fixed costs and are fixed in place. For example, he won't

get much out of a barn, normally, if he sells it to a developer. The farmer's notion of how the business will operate over time is different, depending on whether he knows there will be a termination of that business somewhere along the line and conversion to an alternative use, or whether he knows that business is going to be economically viable in farming for a long time. Variable costs are not as important for our purposes here, except those that relate to the farmer's fertility programs on transitional land. The main point is that for the operating farmer in the expansion and consolidation stage, his whole view of the business and his investment behavior depends on whether he thinks the farm business will continue for another generation or is going to be changing in some fashion, say conversion to development use. This is similar to the downtown urban business. In a part of the city that is in transition from one use to another, there is very little investment in the fixed-place improvements such as stores or factories. The same thing happens in the farming business, but we believe that this phenomena is even more pronounced in the farming business because of the very high fixed costs in agriculture.

A problem of uncertainty arises in investment planning when urban pressures begin to take root in farming areas. This uncertainty takes several forms. First, the individual is uncertain about if and when he or she will receive a good offer to sell the farm to speculator-developer interests. Secondly, the individual is unaware of what his or her neighbors will do in the face of development pressure. The classic example here is the case where a subdivision is built adjacent to a farm operation hindering certain kinds of farm practices such as night plowing and manure spreading.

The result is apt to be a policy of disinvestment in the farm operation, or at best, maintenance of the status quo. There is little incentive to invest in additional acreage or fixed capital improvements on farmland if that land is expected to convert to a nonagricultural use in the not-to-distant future.

A number of studies in different parts of the country support this conclusion. Jon Hutchison's study of agricultural land use patterns over time on the outskirts of Madison, for example, notes that there was typically less investment and less interest in conservation practices on that urban fringe.[3/] A 1974 study in Wayne County, New York, near Rochester, revealed significant differences in investment behavior between urban farms (within 30 miles of the city) and rural farms (more than 30 miles from the city).[4/] For example, the study indicated that 80% of the farmers polled in urban areas said they would invest $10,000 or less in farm improvements, whereas, in rural areas, 50% said they planned to invest more than $10,000 in farm improvements. Urban area farmers purchased an average of 83 acres over the prior 10 years while rural area farmers averaged 198 acres purchased. Asked whether or not they planned to expand in the future, 20% of the urban farmers responded positively where 40% of the rural farmers said they would expand.

Farm operations, therefore, tend to change in areas that are becoming urbanized. In the very early stages of urbanization, we find that more land is being rented. More of the land is bought up by investors and divided into smaller and smaller parcels. Eventually the type of farm operation is affected. Dairy farms make way for cash grain. Entering farmers may move out to more rural areas, which means that these farmers remaining in the near-urban farming situation are apt to have shorter planning horizons, both due to development uncertainty and approaching

retirement. As a result, they are less willing to invest in fixed farm maintenance and improvements, since their belief is that they may never recover the costs.

Farmers in the growth stage of the farming cycle are caught in an awkward position. They may want to move their farm operation but they don't have enough good farming years left to make that move worthwhile. They may be too old to change jobs but too young to retire. Retraining or the transfer of skills to another job may be difficult. If farm incomes remain satisfactory, these individuals are likely to remain in the area and continue farming for as long as possible, or until retirement is feasible. These are the holdouts who, twenty years later, may find themselves surrounded by urban development.

Again, the overall result of urban pressure on farming areas is disinvestment, shortened planning horizons, a change in the general type of farm operation, and most of all, uncertainty over what the future holds for that area and that farm. Once this process is well underway in an area, it may be very difficult to turn it around. In this situation, farmland preservation advocates and planners would be working against the current, and may have more success in areas where farming <u>is</u> viable economically in the long run, and especially where the farm population is relatively young. We do not mean to leave a pessimistic impression of what can be done in areas with intense urban pressure, because in Wisconsin there have been some very fruitful efforts in exactly these situations. For example, in Dane County, the towns of Dunn, Fitchburg and others close to Madison have developed very good farmland preservation programs in the face of intense urban pressures. Our point is that it is extremely important for planners to think about <u>farming</u> and <u>farmers</u> as well as about <u>farmland</u> and <u>land use</u>. It is important, and useful, to understand the incentives

faced by the indivdual who farms the land--to try to view the world from his perspective. If planners have this understanding and empathy, it will be much easier to conduct the community development/public involvement efforts that are critical to the success of a plan.

The Exit Stage

The final segment in the farm cycle is the exit stage. This is the stage in which retirement occurs and farmland transfer is contemplated and completed. In order to understand farmers' concerns and behavior during this period, it is necessary to be aware of the cost structure the retiring farmer faces.

There are two major types of costs associated with the exit stage--psychic costs and taxes. In this case, psychic costs are those mental and emotional costs--the sense of disappointment or loss--attributable to retirement, the phasing out of a lifestyle and to the possible transfer of farmland out of the family, perhaps out of farming altogether. The importance of these psychic costs should not be underestimated. Farmers who have struggled hard most of their lives to build up and maintain a family farm business, who have seen it grow and develop into a viable enterprize or who recognize farming as a time-honored family tradition are likely to have developed a pride in the land and in the farming operation along with a desire to see the operation continue, preferably within the family.

The tax situation which the retiring farmer faces is complicated, at best. First consider the income tax and its affect on a person's property at retirement. Over 97% of farmers file their income taxes on a cash basis. That is, they report income for tax purposes when it is received rather then when it is due or contracted for, and expenses are reported as expenses when they are paid, not when they are merely owed.

Thus, fertilizer is not considered a cost until the check is written and mailed, and an increase in inventory is not considered income until cash is received for it. This means that the dairy farmer who increased herd size over the years from 20 cows to 60 cows by developing his own herd now has an extra 40 cows with a zero cost basis attached to them according to income tax rules. When it comes time to sell the herd, this translates into a sizable tax liability for capital gains. In effect, the farmer has been rolling his tax liability ahead of him into the future--the tax has been postponed.

An understanding of the derivation and use of the tax basis is essential to an understanding of the computation of taxes on capital gains, which is the key to understanding the tax costs in the exit phase of the farm cycle. In order to compute a gain, one must know what the relevant basis was to begin with. For example, a tractor purchased for $10,000 has a $10,000 cost basis. A cost basis which has been adjusted for improvements, depreciation, and/or casualty losses is known as adjusted cost basis. A tractor which was originally purchased for $12,000 and for which $8,000 in depreciation has been claimed has an adjusted cost basis of $4,000. If this tractor is allowed $5,000 as a trade-in on a new tractor that lists for $15,000, what's the cost basis for the new tractor? In the cost basis calculations only the adjusted cost basis of any items traded and the actual dollars paid is relevant. So the cost basis for the new tractor is the actual dollar cost, $10,000 ($15,000 less $5,000), plus the adjusted cost basis of the old tractor of $4,000, for a total of $14,000.

There are two other ways to arrive at bases; by gift and by inheritance. The general rule in the case of gifts is that the basis in the hands of the donee (recipiant) is the same as the basis was in the hands

of the donor (giver). When a farming couple gives their farm to the children, the children retain the old basis in the farm. The general rule in the case of inheritance has been that the inheritor's basis is determined by the fair market value of the item in the estate.

Now consider the transfer of farmland property. One obvious method of transfer is by sale--for cash, through an installment plan, or through a land contract. Each has a particular impact on the net proceeds the farmer receives from the sale. A cash sale tends to result in a very high, one time gain, especially if the initial cost basis were low. As a result, family income is extremely high for one year, and the income tax will take a large bite out of the sale proceeds. Sale through a qualified installment sale plan, on the other hand, tends to reduce the tax burden because if the farmer takes 30% or less down and a corresponding small share of the payment in any year, then the capital gain can be prorated over the time period, household income in any year is greatly reduced and the income tax is greatly decreased. So the manner in which the farm is sold, the financing of the sale, will have a great impact on the net proceeds, after taxes, realized by the farmer.

Another traditional method of farmland transfer is by inheritance. Inherited property is subject to both a state inheritance tax and the federal estate tax. In some cases there may be advantages to transferring the farm by inheritance rather than sale. For example, consider a farm, the owner dies and the farm goes into the estate process. The gross estate is the market value of the farm, but is reduced by the amount of the funeral bill, the debts, casualty losses, administration costs for the estate and other costs to arrive at the adjusted gross estate, (AGE) is further reduced by the marital deduction, orphan exclusion and charity to arrive at the taxable estate. Thus, the tax liability may be smaller in

in some cases and thus may be advantageous to transfer through inheritance rather than sale. An additional advantage is that the basis for the inherited property is raised to its newly appraised value. Little, if any, capital gains tax is required should the inheritors decide to turn around and sell the property. As a result, property intended for eventual resale may first be transferred through an estate in order to obtain a higher basis and thereby reduce the capital gains taxes associated with sale.

Farmland can also be transferred by gift. Again, in this case the basis in the hands of the donee will be the same as the basis was in the hands of the donor.

A final method of farmland transfer is by trade. Suppose you own and farm 80 acres near a city and want to relocate to a farm in a more rural setting. It is not possible to sell a farm and buy another tax-free the way residential sales are treated. The farm house can be treated that way, but not the rest of the farm. So one way of relocating without high costs is to trade property. To play the trading game, you have the person who wants your 80 acres buy the farm you want in the more rural area. Then, you trade property with each other. The trading game is a very powerful and legitimate tool. Its only drawback is that you carry your old basis with you to the new property. Eventually, when you transfer the property, the capital gains and income tax will catch up with you. One important note of caution--the tax rules are extremely complex, and we have simplified them greatly in our discussion. It is very important that farmers seek advice from qualified professionals for details on estate planning and tax management.

The exit stage of the farming cycle is critical in understanding land use changes and the potential impact of farmland preservation programs. Significantly, most of the land that is shifted to nonagricultural use is

shifted during the exit stage of the farm cycle. A Baltimore County, Maryland study found that 3/4 of the total acres developed outside the boundaries of the designated metropolitan growth area had been transferred to development interests shortly after the death of the previous owner and settlement of the estate.[5/] Another 23% was sold and developed at retirement. Surprisingly, only 2% was developed because the owner had received an offer to buy the property at a good price.

The obvious implication of such data is that the stage in the life-cycle of the farmer and farm is critical in determining when and where farmland development occurs. A major factor may be whether the farmer has a child or close relative that wants to enter farming--the chances of sale to a nonfarm owner are greatly reduced in this case.

Conclusion

The phases in the farm life-cycle produce different economic incentives for the farm family, and the different economic incentives affect how that family will prefer to use its land and how it will react to farmland preservation programs. Thus, planners who are working on farmland preservation programs should spend some time researching the economics of the farm operations in the town or county. This could be done informally by simply visiting with farmers about some of the incentives or issues raised in this paper, or may be conducted more formally using data from ASCS, the State Agriculture Department and University Extension. In any case, an understanding of local farm economics is important for planners.

Farmland preservation planning and zoning have a high probability of success if the policies fit well with the incentives faced by farm families. Planning and zoning will be most favorably received in areas where there are many farm families in the entry and growth stages, where the farmland is productive and farm income is reasonably good, and where there is

evidence that urban pressure can disrupt farming but where the pressure is not yet so strong that each landowner believes his own land will be developed. In Wisconsin, these areas have been the first to adopt farmland preservation planning and zoning--Columbia, Jefferson and Walworth Counties, and the parts of Shawano County nearest Green Bay. However, other areas have also experienced success, such as more rural Barron and Iowa Counties and more heavily urbanized Dane County.

Finally, a large measure of patience is required in planning. Farm families may be very directly and substantially affected by the planning and zoning programs, and it takes time for them to gather enough information and make the decision to support these efforts. In Walworth County, over 8 years and 500 meetings were required before the planning and zoning policies were adopted. In more rural areas such as Iowa County, much less time may be required, but it is important to recognize that the world doesn't change overnight.

FOOTNOTES

1/ A more detailed discussion of the farm cycle and tax management issues is contained in The Farm Management Handbook, by Robert A. Luening, M.S. and William P. Mortenson, Ph.D., University of Wisconsin-Madison, College of Agricultural and Life Sciences, 1979.

2/ H. James Brown and Neal A. Roberts, "Landowners at the Urban Fringe," Discussion paper D78-10, Department of City and Regional Planning, Harvard University, Cambridge, 1978.

3/ Jon Hutchison, "Urban Fringe Agriculture, Nonpoint Water Pollution and Policy Considerations," unpublished Ph.D. thesis, Institute for Environmental Studies, University of Wisconsin-Madison, 1977.

4/ William Bryant, "The Effects of Urban Expansion on Farming in Wayne County, New York," Department of Agricultural Economics, A.E. Res. 75-28, Cornell University, Ithaca, 1975.

5/ George Peterson, "Federal Tax Policy and Land Conversion at the Urban Fringe," in Metropolitan Financing and Growth Management Policies: Principles and Practice, George F. Break (ed.). Proceedings of a symposium sponsored by the Committee on Taxation, Resources and Economic Development (TRED) at the University of Wisconsin-Madison, The University of Wisconsin Press, 1978.