POLICIES FOR THE PROTECTION OF PRIME AGRICULTURAL LANDS

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It is currently fashionable in land planning circles to include among planning goals "the protection of prime agricultural land." Threatening world food shortages in our future and the sudden exposure to an energy shortage in our recent past have combined to clothe this goal with some of the sanctity previously reserved for the home, motherhood, and the family. Given this elevation of the protection of prime agricultural land to the status of received truth, it becomes all the more appropriate to raise some key questions. Specifically, what is prime agricultural land, and why should we be concerned about it?

It is also appropriate to approach these questions with some humility. In spite of the richness of our data resources in land economics or soil science, there should be no pretense that we have clear-cut answers. At the outset, it will help to recognize that the key test of the value of any land is the "with or without" test. What are the technical possibilities of substitution? What are the institutional barriers to shifts in land use? What are the political costs of the altered trade patterns required to replace, not the land, but its products or services?

The immediate result of an attempt to answer these questions in a land planning framework is recognition of the fact that we cannot answer them within the planning framework that existing law forces us to use. There are local consequences that result from the loss of good agricultural land, and these can be quite important. But the impact

of this loss is not properly evaluated within a county, or even within a state. At the minimum scale, it is a national question, and increasingly an international one. Our traditional view is that land law is the exclusive prerogative of states, and land planning a local affair. This is an unrealistic basis on which to construct an argument for the preservation of prime agricultural land.

A system of national land accounts is needed that will permit a balance-sheet approach to the questions of what can be produced, where, and at what costs in energy, in transport, and in terms of foreclosed opportunities for alternative uses, e.g. for recreation. This approach has been proposed in several countries, including Sweden and the United Kingdom.¹ But as we will see below, the accounts needed and the valuation problems that result are quite different in food exporting countries from those used by food importing countries.

It will help obtain a clearer view of the issues involved if we distinguish between the productivity value of land, in a traditional agricultural sense, and its site value for agricultural purposes. As agriculture comes increasingly to resemble a manufacturing process in some of its branches, conventional productivity considerations give way to site and locational values. "Prime agricultural land" is often "prime" because of location, not inherent fertility.

Prime agricultural land is often also "prime" for other uses, e.g. residential sites, or airport and road transport uses. It is in this sense that the site-value dimensions of agricultural land must compete directly with non-agricultural uses. In this competition, it is often possible to let market price govern land use decisions. If this was the only competition involved we could confine our concern

to an insurance that market processes were being given an opportunity to function fairly and equitably. Perfection of the land market would be an adequate goal.

But this is not the only issue, nor even the most important one. The widespread concern over loss of prime agricultural land is due principally to fear of the loss of productive capacity inherent in good soil and its climatic endowment.

How should we value these soils? It is axiomatic that in an urbanizing environment the values of agricultural lands are bid up out of all proportion to their value in strictly agricultural uses. Market prices in this contest yield estimates of value that are of little or no help in judging the worth of land in agricultural uses. In recent years, for example, it has frequently been the case that land judged "poor" for agricultural uses in the vicinity of large urban places has sold for prices above those paid for land rated "average" or "good," for farming purposes. In the Metropolitan Area of Minneapolis-St. Paul in 1973, "poor" agricultural land sold for $832.00 per acre, while "good" averaged only $719.00 per acre.2/ If market prices were used as a guide, the poorest agricultural lands would have been given top rating.

Distortion of the relative values of different grades of agricultural lands for agricultural use is only one of the consequences of increasing urban sprawl. A more pervasive, and in the long run more serious, result is the inflated level of all rural land values in areas feeling the thrust of urban influences. In the past, this upthrust of farm land values was largely confined to the immediate environs of larger cities. Our approach to land appraisal and valuation problems is still dominated by an image of concentric circles of diminishing land values, spreading outward from an urban center. This "pebble dropped in a pond" model has been made obsolete by the automobile and the airplane.

A bursting rocket provides a better model of the effects of large

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urban centers on rural land values. Fast air and road travel translate urban demands for rural lands into a leapfrog pattern that can impinge on the most remote and isolated places. If we are realistically concerned about the protection of prime agricultural land, we must acknowledge that no part of rural America today is outside the zone of urban influence on land values.

It is frequently noted that a principal difference between Great Britain and the United States is that the U.S. has a written Constitution and Bill of Rights, while the U.K. Constitution is largely unwritten and made up of a number of conventional rules that are enforced by consensus.

This distinction is misleading. It diverts attention from the fact that major dimensions of the U.S. political structure are also governed by a body of largely unwritten rules and assumptions. Three of these are of particular significance for a study of U.S. land policy:

a.) The fifth amendment to the U.S. Constitution, protecting private property against a taking for public purposes without full compensation, has in effect been expanded to include compensation for anticipated capital gains. This is the significance of insistence by the courts upon use of market price as the only basis for determination of land values and hence compensation in case there is taking. The market price presumably pulls anticipated future capital gains forward into the present capital value of the property. If it can be shown that the market price undervalued these prospective capital gains, the property owner has often been able to claim successfully that he has been under-compensated. The right to a capital gain has quietly been incorporated into the Bill of Rights.

b.) By unwritten rule, every U.S. citizen has the right to possess and drive a private automobile, subject only to minimum safeguards with respect to eyesight, hearing, and physical handicaps. The expectation of car ownership is a part of the heritage of every U.S. teenager.
c.) We assume that space is plentiful, and labor scarce.

One measure of the frustration of modern urban life is that none of these assumptions can be fully realized in large cities. The core of our central cities is characterized by capital losses, not gains, in relative real property values. This trend is especially marked in residential property.

Almost all of the thrust of mass advertising assumes the availability of a car. Wants are created that can only be satisfied in the suburbs. And rapid urbanization has guaranteed that space to the individual has become a relatively scarce good, for the overwhelming majority of our population.

Although space in gross is not scarce in the United States, it has been made scarce by an urban life style. There should be no surprise at the fact that demand for space has thus acquired a high priority in the ranking of consumer demands, in an affluent and urbanized society.

The market incorporates these urban demands into the value structure of rural lands far in advance of any real need for the land for urban expansion. A few random sales of farm land at residential-lot prices bids up the price-expectations of all farm land owners in a wide area, even though their lands may be years and miles away from any realistic opportunity to sell at these prices. These higher levels of rural land prices are built into the farm capital, tax, and debt structure. The next generation then must take over an agricultural plant that is over-capitalized by any test based on net earnings. In this way we have generated an inflated structure of rural land values.

The inflation in farm land values induced by urban demands for rural lands can serve a useful purpose if it leads to intensification in agricultural land use. In an older era this was the case. The vegetable belts and dairy belts surrounding large cities were evidence of the validity of theories of location and land use associated with the name of J. H. von Thünen and the 1830's. Today, in many cases, the opposite trend can be noted. Large cities are surrounded by belts of idle lands, or lands in low intensities of agricultural use. When the expectation of capital gain outweighs profits from farming, farmers become owner-operating land speculators, and not farmers. Capital investment in agriculture declines, building maintenance is neglected
and the agricultural plant deteriorates.

This phenomenon was once confined to the environs of a few large cities. Today it characterizes a large area of productive farm land, encompassed roughly by a vast arc swinging from Duluth, Minnesota through Omaha, Kansas City, St. Louis, Cincinnati, and reaching the Atlantic Coast at Newport News. Not all land enveloped by this arc feels the full impact of urban demands, but much of it does, and the impacted area grows larger each year.

This impact of inflation on rural lands is only one aspect of the more generalized impact of inflation on our total business and financial structure. This impact in recent years has become so pronounced that it has generated recent and widespread demands for reforms in business accounting and governmental tax policies. A key complaint is that bond-holders and other holders of durable assets are disadvantaged by long-term commitments to fixed rates of return, or by tax policies in which rate structures remain unchanged while levels of nominal asset values and income rise.3/

Although these pleas for reform from the business community are directed explicitly to financial accounting practices, they are even more relevant to a national balance sheet approach to the construction of a system of "national land accounts."

For too long rural property owners have derived unjustified satisfaction from land value increases even when they had no relation to land productivity, or farming profits. These increases have contributed to a false sense of well-being, to an inflated net worth account, and to borrowing on a scale that could only be justified by liquidated values and not by earnings.

In an era in which enlightened credit policy calls for a shift away from emphasis on the junk value of collateral and toward more stress on management ability and earnings potentials, we have a land value structure that propels farmers powerfully in the opposite direction.

They are encouraged, and forced, to bring these inflated land values into their capital accounts, with results that can ultimately be disastrous, not only for farmers but for the nation.

The conclusion that market price alone cannot bear the burden of protection of prime agricultural land has led to the rapid proliferation of state laws permitting "use value assessment" in taxing farm land in urbanized areas.4/ These laws still leave us with the unresolved problem of what value-base to use in determining "use-value."

A digression is in order at this point. Because of the powerful role of the property tax in the United States, we have at hand a tool that invites misuse as a guide to land planning decisions. Although all dollars are equal, some dollars are more equal than others. The tax dollar has a high response potential among incentive packages affecting land use. For this reason, it has seemed to promise the greatest degree of "cost effectiveness" in the use of money incentives to preserve agricultural land. But tax policy is a complex tool, and it is applied at many different levels. One major problem is that property tax policies cannot be judged independently of income tax policies, and particularly those policies that affect the taxation of capital gains.

The great limitation on the use of differential tax policy to preserve agricultural land is that it invites nullification by the preferential way in which we also tax capital gains. As long as a lower property tax burden creates a potential for an increased capital gain upon sale of the property, we can expect ultimate failure of use-value assessments as a device to protect and preserve prime agricultural land. Tax policy can be an effective tool, but it is total tax policy that must be applied and not just a selected part.

We can return now to a more basic question. What are the criteria that should guide us in the selection of land to be preserved in agricultural use?

The determination of criteria for the preservation of prime agricultural land involves economic variables that are quite different in a food-

importing country from those applicable in a food exporting one. In an importing country, the import-substitution test can be used as one estimate of the value of agricultural land lost to food producing uses. This places the valuation problem in a world market setting, and yields an unambiguous figure for the cost of land lost.

In an exporting country, the cost of land lost to food production must be measured in terms of a reduced export potential. But to the extent that there may be excess resources of labor or capital in agriculture, this estimate cannot be derived simply by using world market prices to derive the value of the foregone export potential.

Moreover, the exporting country is likely to be forced to bear the costs of carrying and sharing any surplus stocks that are unsaleable in foreign markets. The costs of maintaining the "pipeline" of supply, and any reserves, fall on the exporter, in an oversupplied market.

The value of foregone agricultural production is thus more problematic in an exporting country than in an importing country, in cases in which both countries are losing prime agricultural land to urban expansion.

We have seen that the market price of land can yield perverse answers to the question: What is prime agricultural land? An alternative is to shift to an opportunity-cost concept of value. But here we find that our status as a surplus producer ties the value of land lost to production to unpredictable and sometimes violent movements in world market prices, foreign policy, and aid programs.

A third alternative is to turn away from prices and monetary valuations, grade the land by physical characteristics of soil and climate. Data of this type can be very helpful, particularly in determining the boundaries of major types of potential land use, e.g., farming, grazing, forestry.

Detailed soil survey data are certainly among the important criteria to be considered, in ranking agricultural land for protection from the distorting and destructive forces of uncontrolled urbanization. But these data must be used with care. One use that has been tempting to both urban planners and rural leaders has been to adopt the land use
capability classes established by the Soil Conservation Service. Much of the land in question has been classified by the SCS, and interests of speed and economy have made these classes an attractive hazard for land use planners.

These SCS classes were established in order to determine what soil conserving measures will be necessary if the land is to be retained in agricultural use. The top grades of land are those that need little or no application of soil conserving practices such as contour plowing, strip cropping, terracing, drainage, and the like. These are important characteristics, but not necessarily the ones that should guide us in ranking lands deserving of protection in urbanizing areas.

The use of soil survey data that provides the most unambiguous answers for urban land use planning concerns the suitability of soils for sewage disposal. It is increasingly clear that control of sewage disposal is virtually the only land use planning tool that has been effective in suburban fringe areas. Control of urban expansion has become heavily dependent upon prohibiting private septic tank disposal systems and scheduling sewer lines extensions. Soil survey data have been invaluable in making these decisions. But soil survey data can yield only approximate answers to the question of what land should be retained in agricultural use.

There is a variation on the classification scheme used by the Soil Conservation Service that is highly relevant to the ranking of land to be preserved from "urban flooding." This concerns energy conservation, rather than soil conservation, but the approach is the same. We need a classification system that will rank lands in terms of capacity to achieve any given level of output at minimum cost in terms of energy, and particularly energy from fossil fuels.

Some land is highly productive, but only with the heavy expenditure of fertilizer, petroleum fuels, and agricultural chemicals. We need a ranking system that will distinguish between these lands and those that can yield equal quantities of output but at lower costs in terms of fossil-fuel based energy.

To view this in a different light, we have concepts of productive land that rest on measures of physical output. But the level of output is not
the relevant variable. The cost of obtaining a given level of output is the critical variable. We have been in the habit of measuring that cost in conventional money terms. We now are beginning to realize that land productivity that depends heavily on energy inputs from fossil fuels is inferior to an equal level of output derived without making heavy demands on stocks of exhaustible resources.

We need, in short, a "conservation of energy" classification system by which to judge lands that should rank high in any scheme to protect rural lands and open space.

In practical terms, we need an approach to the determination of prime agricultural land that will incorporate all of the measures that have been outlined above. Soil survey data are basic, but alone they are not enough. The values placed on land in the marketplace are also significant criteria, but they too are inadequate. The national consequences of continued loss of productive farm land must be included in the calculations. This introduces questions of trade, aid, and foreign policy that require national guidelines for effective determination of local land use policies.

The policy tools that are immediately at hand involve some variation of differential taxation. Experience with this method of preserving agricultural land and open space is rapidly accumulating. The professional literature in taxation, land economics and land use planning contains numerous analyses of these experiments and any attempt to summarize them would exceed the bounds of this paper.

But it is appropriate to note that one guiding principle is clearly emerging from our attempts to preserve agricultural land through differential taxation: The decision to accept land for entry under preferential or deferred tax schemes should be made in the same political framework in which decisions to expand street, sewer and utility networks are made.

The principles that should link public tax-levying and expenditure policy should be applied in cases involving preferential policies to preserve designated types of land use. It is axiomatic in private business that the manager responsible for the profit and loss account must have
control of investment and expenditure policies on which profit or loss depend. This is no less true in the public sector. An encouraging beginning has belatedly been made in the Congress and some state legislatures to link expenditure policy with the act of taxation required to raise the needed funds.

A parallel need is acute in land use planning activities that involve the preservation of agricultural land or open space. The act of preservation is an expenditure that reduces the availability of land for commercial, industrial or residential and recreational uses. If we expect responsible decision-making to result, the decision to preserve must be made at the same level of political responsibility at which the costs of preservation must be "paid for" in a political sense.

This holds for both costs and benefits. Some existing systems of preferential taxation to preserve agricultural land or open space are fundamentally defective in this regard. The cost of lowered taxes for favored land owners must be borne in the form of higher taxes on other property owners in the same taxing jurisdiction. This is unfair. A major argument for preserving prime agricultural land rests on the need to preserve a food base, and this is national and even international in scope. If open space is the goal, the principal beneficiaries comprise a community that is typically metropolitan-wide in extent.

In summary, the costs and benefits of open space and agricultural land preservation cannot be properly appraised or financed at a township, county or school-district level. Yet the only functional programs we have in operation to achieve these goals are currently applied at a political level that rarely goes above the county.

The conclusion is unavoidable that some form of metropolitan or conurbation-wide political structure is essential, if prime agricultural land and open space is to be preserved in urbanizing areas.

Our discussion to this point has been focused on ways to preserve prime agricultural land from uncontrolled urban expansion. This is a defensive posture. If the discussion stopped here it would leave the impression that continued urban encroachment is akin to some elemental force of nature that cannot be stopped. Nothing could be more mistaken.
There is no inevitability in the kind of urban growth we have experienced in the past half-century. It has clearly defined causes. It is the result of our policies both intentional and unintentional, and these can be changed. While the maxim that a good offensive is the best defense is not universally valid, it has particular relevance to the development of strategies for the protection of prime agricultural land.

What are these policy measures that have generated the urban explosion? The limits set for this paper prevent a detailed analysis but the main outlines of the policies can be summarized.

At the outset, it should be clearly recognized that we have subsidized urban expansion in many and sometimes subtle ways. The most powerful subsidy, because it has been most pervasive, is created by the manner in which we raise the money for roads and highways, and determine where they will be built. The taxes that finance highways (principally on fuel and tires) are a fixed or linear function of distance traveled. If one vehicle travels twice as far in a year as another one, it generates on average twice as much motor vehicle tax revenue. In almost all states and up to the present moment this revenue has been preclusively earmarked for expenditure only on the construction of more miles of road.

The cost of these highways, in contrast, is a non-linear function of congestion. To upgrade a two-lane highway to four lanes more than doubles its cost. And to build an eight-lane roadway much more than doubles it again. Revenue is a function of distance traveled, expenditure is a function of traffic density.

The inevitable consequence is to concentrate the land-value increasing forces created by new road construction in the suburban areas surrounding large cities. A gigantic transfer of income and wealth results, and the beneficiaries are the suburbs and exurbs - the lands just beyond the existing urban fringe. We use traffic counts to determine the demand for more roads. This builds in a self-generating mechanism that insures that expenditures to satisfy the demand for highways can only generate more demand. In terms of increases in land values and
geographic area affected, this is surely the most important way in which public policy has directly subsidized the suburbs.

There are other more indirect but no less significant ways. The major features of our housing policies exercise a powerful stimulus to the demand for single-family detached houses, requiring substantial areas of land. The provisions of the "G-I Bill of Rights" after World War II gave a preferred status to borrowers who sought to build single-family homes. Savings and Loan Association policies have reflected this preference until quite recently. The transfer of risk from initial lenders to the federal government, made possible by the Federal National Mortgage Association (Fanny - May), has added a still more indirect but massive subsidy to those home-builders whose demand for shelter included a maximum demand for associated land.

Income tax policy also creates an unintended but very large subsidy for those who choose to build in the suburbs. By permitting the deductibility of interest on borrowed funds in computing income tax liability we give, in effect, added purchasing power to those in higher income brackets who can afford to buy space as well as housing. The higher the individual's income and the amount borrowed, the higher the rate of subsidy. To a lender, increasing lot sizes add disproportionately to the attractiveness of mortgage loan applications. The historically valid assumption is that the land will increase in value over time at a higher rate than will the structure on it.

Another aspect of income tax policy is less clearly understood. The major tool of federal revenue sharing with local units of government until quite recently has been the authority to issue tax-free municipal bonds. The federal government forgoes revenue, but the only municipalities that benefit from the subsidy are those that will borrow. The history of voter-approval of bond issues in the past thirty years shows clearly that the majority of approved bond issues are in newly developing areas. It has been extremely difficult to secure voter approval of new bond
issues in core cities. This subsidy, estimated at 2.5 billion dollars in 1971, has gone primarily to the suburbs.\footnote{The cost to the U.S. Treasury was estimated at $3.3 billion, from which state and local governments derived a benefit (from lower interest rates) of only $2.5 billion. This is a result of the progressive nature of the U.S. income tax structure and the fact that there are not enough high-income tax payers to buy all of the tax-exempt bonds. They must therefore be priced at higher rates to attract buyers from lower income brackets. The subsidy is not only concentrated in the suburbs, but it is "inefficient", in that benefits are less than costs in a total social accounting sense. See "An Alternative to Tax-Free Bonds?", The Morgan Guaranty Survey, Sept. 1973.}

In these and in other ways we have created an incentive package that insures the rapid expansion of urban areas onto prime agricultural lands. The resulting urban structure is the result of a long-standing policy of subsidies to the suburbs. If we really do want to preserve prime agricultural land, the place to begin is by reexamining this subsidy structure in a comprehensive framework. It was never consciously planned. It "just grewed." And its growth now threatens to become cancerous.