

S105  
E55 REPLACEMENT  
no. 318

Copy 2

# Agricultural Land Use Decisions for Marion County, Oregon

For Use in the 1970

Marion County Comprehensive Plan



Special Report 318  
Cooperative Extension Service

December 1970  
Oregon State University

# Agricultural Land Use Decisions for Marion County, Oregon

for use in the 1970

Marion County Comprehensive Plan

prepared by

Preston S. Pattie  
Extension Community Development Agent

and

Russell C. Youmans  
Extension Resource Economics Specialist  
Oregon State University

---

Cooperative Extension work in Agriculture and Home Economics, Joseph R. Cox, acting director. Oregon State University and the United States Department of Agriculture cooperating. Printed and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914.

# Contents

	Page
CHAPTER I, RURAL LAND USE PLANNING IN MARION COUNTY	1
Involvement of People	
Preliminary Goals for Agriculture	
CHAPTER II, CONSIDERATIONS FOR AGRICULTURE	4
Deterministic Arguments	
Many Alternatives	
Aspects to Consider	
Marion County Farms	
Other Questions for Agriculture	
Considerations for Society	
Limitations of This Information	
CHAPTER III, ALTERNATIVES FOR MARION COUNTY AGRICULTURE	9
Range of Possibilities	
Explanation of Alternatives	
Four Alternatives for Agriculture in Marion County	
Using This Information	
APPENDIX TO CHAPTER III	14
CHAPTER IV, PRODUCTION, COMPETITION, FARM LAND	18
Competition	
Scope of Data	
Farm Land	
Farm Production	
Effects of Projected Yields	
APPENDIX TO CHAPTER IV	21
CHAPTER V, ECONOMIC ASPECTS OF MARION COUNTY AGRICULTURE	30
Relation to Land Use Planning	
Economic Influence of Agriculture	
Other Human Factors Influencing Rural Land Use Decisions	
Significance to the People of Marion County	
APPENDIX TO CHAPTER V	34
CHAPTER VI, SOIL PRODUCTIVITY AND LAND USE	45
Technology and Yields	
Other Factors Influencing Soil Productivity	
Soil Resource Groups	
Availability of Land in Soil Resource Groups	
Average Production per Acre	
APPENDIX TO CHAPTER VI	48

## Agricultural Land Use Decisions for Marion County, Oregon

Agriculture was deemed to have important considerations in making decisions affecting land use in Marion County. For this reason, the Mid-Willamette Valley Council of Governments asked Oregon State University Cooperative Extension Service to assemble information on agricultural needs for land in Marion County. In the discussions that followed between Extension Service and COG, an attempt was made to clarify the kind of information that would be useful for planning purposes.

The ensuing dialogue made it evident that there are several possible ways to consider the importance of agriculture for the people of Marion County. No attempt is made to determine which attitude toward the agricultural industry is most reasonable. But there are a few concepts relating to this industry's influence in a single county that need to be explored and understood more fully.

First, the discussion revealed that maintaining land in farming cannot be justified for an area as small as a single county on the basis of projected national or world needs for food. This is true even though Marion County is a very important agricultural producer. Exploring a second point revealed that Marion County essentially produces for national markets, with no particular link between food consumption in the Willamette Valley and Marion County agricultural production. This in no way implies that Marion County agricultural production is not important to the Valley, nation, or world, but that other areas could and would like to have the opportunity of supplying the products now coming from Marion County.

Another immediate consideration is that of the relationship between the environment and farming. Open space and beautiful scenery are only part of this complex issue. Because Marion County has a strong agricultural industry, this important economic use of open space may provide society the most rational method of supplying open space. Farms require relatively little in terms of social services, yet have the capacity to generate social revenue. This may be utilized to reduce social costs of maintaining open space.

A consideration, which should be held separate from those above, deals with resource conservation. Many hold the opinion that the most productive soils, being an irreplaceable resource, should be saved for future needs. Planning should maintain for future generations the needed flexibility to change the land use pattern easily, rather than allowing these productive soils to be built upon first for urban uses. Society must define its goals in light of attitudes and values to reach decisions on these issues.

There are probably many more considerations for agriculture that could be taken into account when planning future land use in Marion County. Also, many conflicting goals dealing with the considerations mentioned, will appear. In order to retain the ability to meet broad, social goals for land use, stronger arguments are necessary than food needs. Agricultural production trends, foreseeable production abilities and farm prices make this justification too weak to guarantee the kind of land use desired. Stronger reasons are less tied to numbers, rather they are tied to social values and costs. Examples

are flexibility to alter land use in the future at reasonable cost, reduce the cost of providing social services to now scattered population, reduce pollution of water supplies, allow rational shift of urban uses into rural areas, strength of the local economy and food processing, or scenic enhancement, etc.

The community has the responsibility of deciding what kind of community is desired and the role agriculture plays. The land use pattern should then reflect these desires by enhancing that type of agriculture.

To help persons involved in planning deal with these issues, four alternatives for the county's agriculture have been developed. No pretense is made to say that any one alternative is any better for the people of this area or that any one best represents the interests of Marion County citizens. Nor is any attempt made to insist that the full range of possibilities is accounted for. It is hoped that this range of possibilities, shown for the future of this industry, will help orient the reader to thinking in terms of considering what is desired of agriculture in Marion County. The biggest mistake would be to "plan" for the continuance of past trends because this is the easiest pattern to achieve. Surely the present concern over many current trends has encouraged emphasizing county-wide planning programs.

To develop this information on Marion County agriculture, four alternative levels of farm production were defined on the basis of past trends and national market expectations. These levels were then translated into acreages that would be needed to reach any given level of production. Other aspects of the farming and agri-business industries are presented for each alternative, such as value added to farm production from handling and processing, and the share of projected national production needs corresponding to each level of production. In all cases, each commodity was handled individually and added together into major groups. Space does not permit including any kind of breakdown by single commodities, but this information is being kept in the Marion County Extension Office for reference. Alternative one was developed by keeping farm production at the present level (average of 1967, 68 and 69). Alternative two shows what might occur if production rises with projected national production for food. Alternative three shows straight line projections of past share of national market up to year 2000. Alternative four was developed from estimates from Marion County Extension Agents to see if a reasonably broad range of possibilities is being considered.

The following discussion explores the results of these analyses:

°Alternative One shows the acreages needed to keep county production at its current level. It indicates that, because of increasing projected yields, cropland harvested could decrease about 89,000 acres or 53% by year 2000 and still meet this objective. Marion County's share of projected national market would decrease relative to other areas producing for the same markets. Share of national or Oregon production would fall off as county production remains constant and markets in general expand.

Value of farm sales (using 1967-69 average prices) would be held below 54 million dollars. The impact upon the county would probably be that of lessening agriculture's importance in many areas as compared to other enterprises.

°Alternative Two shows what might happen to agriculture if Marion County farmers keep pace in producing for expanding national markets, i.e. maintain current market share. Production in the county would have to rise by about 50% by year 2000 to do this. The minimum land in farms could continue decreasing, depending upon which lands are transformed to other uses and if anticipated yield increases are actually realized. Decreases of land in farms would have to be slower than decreases shown for the last 20 years in Marion County.

Value of sales plus value added due to processing and handling would increase from 75 million dollars currently to 114 million dollars and could result in a substantial increase in employment associated with processing and handling these products. It must be noted that because products here may be processed elsewhere, or products produced in other counties may be processed here this should not be taken strictly as the effect on the local economy per se.

°Alternative Three was developed by making straight line projections of past trends in share of national markets. Production increases faster in this alternative than in the others, and share of national market increases over time.

This means that past recent trends show this county producing steadily more of US market needs. Share of national markets produced by some other areas had to have decreased. To meet these objectives, value of production in 1980 would have to be nearly as high as Alt. #2 shows for year 2000. Land in farms in year 2000 would have to be nearly as much as current levels. A more specific discussion of the possibilities for land use under this alternative can be found in Chapter IV.

°Alternative Four sheds light on the feasibility of reaching the objectives of production and market share defined in the first three instances. This information represents the judgments of Extension agents in Marion County who work closely with growers, processors and others in agriculture. In general, productions were judged to be lower than for either alternatives two or three. Only a 9.6% increase in value of production results for 1980. However, increases in yields were judged to be slower causing acreage needed to reach this objective to follow closely to those of alternative number two.

# Chapter I

## RURAL LAND USE PLANNING IN MARION COUNTY

The Marion County Comprehensive Plan includes four major areas of concern: land use, agriculture, transportation, and public facilities. Land use is the backbone of the plan. Decisions made in this area or sub plan will serve as basis for developing the other three sub plans.

Why should agriculture be a part of a comprehensive plan?

Agriculture and forestry are of special concern to land use planners for the obvious reason that these industries occupy large amounts of land. But these industries use this natural resource in a manner unique from most other uses: the land is maintained in a nearly open condition - free from major developments. This has several advantageous effects from society's view point.

These uses of land provide open space for scenic benefits to residents and an attraction for tourists; psychological stability may be enhanced; environmental quality in general may be improved; uses such as recreation may provide supplemental income from the same resource; and not of least importance is the fact that open space uses of lands occupy a vital natural resource in such a manner that changing it to other uses in the future is not made costly by major developments. This means that flexibility in land uses is maintained as more open space is available. Future generations are given the opportunity to make changes in land use based on more experience and better information than we have today--why make mistakes today we can make tomorrow?

### Involvement of People

However, there is better evidence than these arguments that agriculture in Marion County is important to a great many persons in the area: those involved in land use planning say it is important!

The feelings of 120 persons throughout the county are expressed in an attitude survey which was distributed among the members of 14 Area Advisory Committees and other persons. Although this group is not a random sample, and the sampling is probably biased, just what the biases are in relation to agriculture is not entirely clear. This sampling could be broadened out at any time to establish a broader base of opinion and values from others in the county.

The attitude survey provided a framework which has been translated into guidelines by the Steering Committee for each of the four areas or sub plans. The guidelines are in the form of preliminary goals.

Many of these goals are general and far reaching. They represent the aspirations and expectations of many people as to the relation of agriculture to the rest of society and what might be expected or hoped for from this industry over the next several years. On the basis of the information developed for the comprehensive plan, some of the goals may very well be looked at again and structured more closely to the thinking of more people throughout the county.

## Preliminary Goals for Agriculture

After discussing each of the possible goals that had been developed at the April 29, 1970 Marion County Plan Work Session, the group decided on the following statements in light of the results of the Community Values Survey:

1. The agricultural industry in Marion County should remain strong. Emphasis should be put on capturing the maximum feasible share of agricultural markets.
2. Land on commercial farms should be taxed at agricultural value.
3. A balance between growth of the local economy and air and water quality should remain within reasonable limits.
4. Local governments should provide services, such as sewer, water, and convenient transportation systems to help maintain a healthy food processing industry. Rates for these services should be competitive with those in other areas. The community should cooperate in helping to accommodate an adequate labor force.
5. Fragmentation of commercial farm lands should be discouraged in order to enhance efficient competitive commercial farming practices.
6. Maximum governmental cooperation should be aimed at developing upstream water resources for multi-purpose uses (recreation, irrigation, etc.)
7. Prime agricultural land should be preserved for agricultural use to the maximum extent possible.
8. Prime timber producing areas, i.e., large timber management tracts both private and public, should be given the same priority for preservation as prime agricultural land.
9. Flood plains should be held for agriculture or other compatible uses, such as recreation.
10. Scatteration patterns of urbanization should be discouraged.
11. Dwellings at extremely low densities should be permitted in rural areas on unproductive soils.
12. Farm lands should provide open space for scenery to enhance environmental livability and the tourist industry. Strip-type commercial or residential development along roads in these areas should be discouraged.
13. Non-agricultural uses of land in prime agricultural areas should be limited to those uses which can easily be reverted back to agriculture, such as golf courses, parks, hunting facilities, trail systems, etc.



Two ideas seems to permeate the list of attitudes on rural land use:

a. that agriculture should continue to grow, remaining a strong leader in the county economy.

b. that all uses of land need to emphasize compatibility with overall environmental enhancement.

No attempt will be made here to explain why the citizens feel as they do. Whether it is for maintaining the rural atmosphere, high quality of environment, ample open space, or whether the reasons are based in resource conservation or economic considerations cannot be explored in this report. The important thing is that these persons have expressed a firm intention to consider agriculture when developing the Marion County Comprehensive Plan.

## Chapter II

### CONSIDERATIONS FOR AGRICULTURE

#### Deterministic arguments

From a review of recent publications, several deterministic arguments have been encountered showing amount of land and farm production required for agriculture. One of these would make a case that it is necessary to save some valley floor soils to insure the world of an adequate food supply. It seems evident that the Willamette Valley is not vital to feed the world at present, but it is asked at what future point in time the area might become vital to produce food for a growing population. Although these kinds of questions seem reasonable at first glance, any such argument must rest upon a number of engulfing assumptions about world population, agricultural productivity, pressures on land related resources, etc.

The variables are countless and good information is scarce. To show how one relatively small area, such as a single county, or even the Willamette Valley, fits into such a broad picture involves even more problems.

Furthermore, questions such as this that ask for a determination of the number of acres needed in agriculture are misleading from the planning standpoint. They tend to insist that there is one right way to plan and one correct number of acres to "set aside" for food production. Instead of dealing with these questions we need to be asking ourselves, "How much land do we want for agriculture?" We must develop our thinking toward planning for the things we would like this industry to achieve for our society.

#### Many alternatives

Marion County is not faced with one binding force guiding future uses of resources, as some people insist. If there was one binding force so strong that it removed the necessity of considering other possibilities, then there

would no longer be a need for deciding what people desire. Instead, the area is endowed with the opportunity to choose among many criteria to guide development. Therefore, for the next thirty years, at least, these methods of determining what is required in agriculture, rather than deciding what is wanted, do not appear to be realistic.

Following this positive attitude of considering alternatives open to the community now and in the future is the approach proposed here for this planning effort. It is, certainly, the light in which Extension Service would like this report to be viewed.

Using information such as this to make general planning decisions should not replace some general considerations. The need for flexibility of land uses, for instance, will probably be very important as different land use patterns are contemplated for the future. This flexibility should be provided now to make use of new knowledge and experience as it is acquired over time. It must be remembered that there is no attempt made there to compile data to indicate one correct way of planning the county. There is no "right way". All the information in the world cannot remove the necessity of making decisions.

TABLE II-1. Characteristics of Marion County Farms

	All farms*		Commercial farms*
	1959	1964	1964
Number of farms	3,788	3,388	2,102
Total land area in farms (acres)	351,397	333,624	285,200
Average size (acres)	92.8	98.5	135.7
Value of land and buildings (\$)	33,566	45,110	59,624
Value of land & buildings per acre (\$)	356.34	460.91	443.42
Cropland harvested (acres)	183,719	172,684	159,939
Average per farm (acres)	48.5	51.0	76.1
Value of production sold (\$)	32,403,946	43,679,575	41,772,377
Average per farm (\$)	8,489	12,892	19,873
Farm operator working off farm 100 days or more.	1,572	1,429	480

\*A commercial farm is one which has a gross income of at least \$2500 or with the operator under 65 years of age and working less than 100 days off the farm each year. Source: 1964 Census of Agriculture.

Aspects to consider

Consider, for instance, a farmer who has accepted a sub-standard income for the last several years in the expectation of selling his property for its value for urban uses. Decisions made in planning will have their effects on the values of farm land. This individual may be too old, or too poorly financed to continue farming.

His parcel of land may be too small to operate successfully without more intensive use. But, because markets are limited, costs of production are on a steady increase, and yearly fluctuations in production and prices are great, he has found himself unable to compete. His income has been falling off gradually as land prices have risen. His only good possibility may be to cash in on the one major asset he has - his property. This illustrates a severe problem of equity which is one of the toughest faced in land use planning. A sound planning program, generally accepted and respected, can avert some of these problems of difference in interest from reoccurring in the future.

Marion County farms

Table II-2, Breakdown of Marion County farms - 1964

Number of farms by type	
Field-crop farms, other than vegetable & fruit & nut . . . . .	156
Cash-Grain . . . . .	93
Other field crop . . . . .	63
Vegetable Farms. . . . .	262
Fruit and Nut. . . . .	592
Poultry. . . . .	78
Dairy farms. . . . .	159
Livestock farms other than poultry and dairy . . . . .	229
Livestock ranches. . . . .	16
General farms. . . . .	467
Miscellaneous and Unclassified farms . . . . .	1445
Number of farms by economic class	
Commercial farms . . . . .	2102
Part time. . . . .	927
Part retirement. . . . .	355

Source: 1964 Census of Agriculture, page 298.

The U.S. Census of Agriculture shows average age of farmers in Marion County to be 51.3 years in 1964. Other related information on Marion County farms is shown on table II-1. Increasing value of land and buildings per farm between 1959 and 1964 gives a rough idea of rising capital requirements facing farmers. Capital needed by commercial farmers is even more. With rising capital requirements confronting farmers in general for the future, another point is the differences between various types of farming enterprises.

Acreages of each different type of enterprise also vary from perhaps only five acres, as with ornamental horticulture to several thousand acres, as with grain and livestock. Taxing heavily the terrace lands and leaving the foothill lands to be taxed closer to their agricultural value will affect one kind of farm in a different way than another. Some further aspects of this are shown in chapter six. But a general overview is in order here. Table II-2 shows two different breakdowns of Marion County farms by type of enterprise and by economic class.

Each type of farm requires a different amount of land to be profitable and some farm enterprises are more profitable on some soils than on others. Some types of production are more strictly tied to the land resource, a prime example being onions on Lake Labish soils. Others may not find the quality of the soil to be such a determining factor in location, such as poultry production. Locational aspects will enter in for many types of production, such as the need to be close to labor supply or to markets to be able to compete with producers in other areas.

#### Other questions for agriculture

Many more aspects of this situation can be expounded upon. But the overall question to be considering is still that of deciding what the people expect from their agricultural industry and how these desires can be arranged on the resource base to best meet the various goals for this industry and the environment. Goals of various groups may be contradictory; planning now requires more thought and flexibility.

For instance, other aspects of these issues may seem contradictory.

Farmers, intending to farm, may fare better in the long run by keeping agricultural areas free from urban encroachments. Needed land investments for farming could be made more wisely if long-term use for agriculture is assured. Farm property may be taxed closer to its agricultural value in areas free from urban build-up because assessed values may be lower. Problems dealing with conflicts between residential uses of land and farming operations could be avoided. A few residences scattered through an agricultural area may be able to gain enough strength to put an end to noisy equipment operating in the early morning, or the use of suspiciously regarded chemicals in nearby fields. Other problems with odors from livestock and with field burning are well known.

#### Considerations for society

Another aspect of decision making is to ask questions such as, is it more beneficial for society to keep some of the best soil free from development even though it lies in small tracts than to keep larger tracts of poorer soils? What might be the effects on number of farms and farm incomes? Or on local taxes? The transportation system and patterns of urban growth will have an impact on the size of holdings.

Other questions may deal with farm workers. Removing soils where hand picked crops are currently grown will mean this production must move to another area or no longer be produced. If it is not produced in this area, opportunities for seasonal work will tend to become more limited, both on farms and in the processing plants.

It may be easy to make a case on paper that this is actually beneficial to laborers because seasonal work is inferior to permanent jobs. But it remains that many persons do seek out these temporary jobs because, evidently, this is the best opportunity available to them. Removing these opportunities will mean that these persons must seek out the next best activity available to them.

As these next best activities were not preferred in the past to seasonal agricultural work, it becomes difficult to argue that these persons are really better off. Viewed through their own framework of choice it may be that seasonal work is beneficial to them, and to the community as well. The next best activity open for many may be not working at all.

#### Limitations of this information

These are questions that should be explored in more depth for both public and private decision making purposes. Only a few suggestions to the answers are given here. The data presented is limited and should be used only for general planning purposes. However, the method used could be expanded and developed to the point where specific questions in current and long range planning can be treated.

When viewing this information remember that it is easier to show graphically the importance of agriculture to the economy, in terms of employment, income to farmers, to processors, etc., than to show Agriculture's impact on the environment. To some, the very mention of farming means resource conservation, cultural stability, pleasant surroundings, clean air, etc. To others, farming may take on an opposite connotation - use of strong chemicals, field burning, long hours, children working, etc.

There is no effort made here to connect large amounts of land in farming to a high quality environment, nor to a low quality one. The same is true regarding other possible goals of society. For example, if the feeling of people is that they want a rural oriented community, only they can decide such things as what percentage people employed in agriculture seems most reasonable to them or what amount of land in farming in certain areas is most appropriate. The possible implications of what seems reasonable or appropriate can be observed with the use of all available data, but this data can never determine for the people what is preferred by them.

## Chapter III

### ALTERNATIVES FOR MARION COUNTY AGRICULTURE

#### Range of possibilities.

To provide meaningful information for citizens involved in agriculture and land use planning, four alternatives for Marion County Agriculture have been developed. No pretense is made to say that any one alternative is any better for the people of this area or that any one best represents the interests of Marion County citizens. Nor is any attempt made to insist that the full range of possibilities is accounted for.

For each alternative several aspects of the farming and agri-business industries are shown -- cropland harvested, land in farms, farm production, share of national markets, value of farm production, and value added due to processing

and handling. These aspects are developed in Chapters IV and V. Further information relating to qualities of soils and the alternatives for agriculture is brought out in Chapter VI.

#### Explanation of alternatives.

A statement of the specific assumptions and conclusions for each alternative is given in the appendix to this chapter. But a brief description will be dealt with here. For each alternative, crops and livestock enterprises were handled separately. Then each commodity was added into crop groups, then the groups into grand totals. This complicated process was necessary to make use of different sources of information having crops in different groupings or singly. The methods employed for each commodity are too complicated to show in this report, but this information is available for review in the Extension office in the Marion County Courthouse.

Alternatives One, Two, and Three were developed to assure having a wide range of choices to consider, i.e., large amounts of land in farms or small, a large farm income or small, etc. Alternative Four was developed to find if an adequate range of choices was considered. This fourth alternative was developed from judgements provided by the Marion County Extension Agents who work closely with the county's agriculture.

#### Four alternatives for agriculture in Marion County.

°Alternative One shows the acreages needed to keep county production at its current level. It indicates that, because of increasing projected yields, cropland harvested could decrease about 89,000 acres or 53% by year 2000 and still meet this objective. Marion County's share of projected national market would decrease relative to other areas producing for the same markets. Share of national or Oregon production would fall off as county production remains constant and markets in general expand.

Value of farm sales (using 1967-69 average prices) would be held below 54 million dollars. The impact upon the county would probably be that of lessening agriculture's importance in many areas as compared to other enterprises.

°Alternative Two shows what might happen to agriculture if Marion County farmers keep pace in producing for expanding national markets, i.e. maintain current market share. Production in the county would have to rise by about 50% by year 2000 to do this. The minimum land in farms could continue decreasing, depending upon which lands are transformed to other uses and if anticipated yield increases are actually realized. Decreases of land in farms would have to be slower than decreases shown for the last 20 years in Marion County.

Value of sales plus value added due to processing and handling would increase from 75 million dollars currently to 114 million dollars and could result in a substantial increase in employment associated with processing and handling these products. It must be noted that because products here may be processed elsewhere, or products produced in other counties may be processed here this should not be taken strictly as the effect on the local economy per se.

°Alternative Three was developed by making straight line projections of past trends in share of national markets. Production increases faster in this alternative than in the others, and share of national market increases over time.

This means that past recent trends show this county producing steadily more of US market needs. Share of national markets produced by some other areas had to have decreased. To meet these objectives, value of production in 1980 would have to be nearly as high as Alternative Two shows for year 2000. Land in farms in year 2000 would have to be nearly as much as current levels. A more specific discussion of the possibilities for land use under this alternative can be found in Chapter IV.

°Alternative Four sheds light on the feasibility of reaching the objectives of production and market share defined in the first three instances. This information represents the judgments of Extension agents in Marion County who work closely with growers, processors and others in agriculture. In general, productions were judged to be lower than for either alternatives two or three. Only a 9.6% increase in value of production results for 1980. However, increases in yields were judged to be slower causing acreage needed to reach this objective to follow closely to those of alternative two.

#### Using this information

The overall question that may be dealt with now is to ask "How can this information be utilized in making decisions?" This is a much more complicated question than it seems to be at first. There is no straight forward way that it can be explained, showing what to think about this aspect, how to consider these factors, what to think about this information, etc. If this could be done, it would be possible to present all the decisions that must be faced and to show what to do about each one to be most satisfied. No one can decide these things except the people of this county.

A word of warning will appear in various places throughout this report about how this information should not be used.

As decisions get more complicated and the possible implications of each becomes more clear, there may be a tendency to want to rely more heavily on what is shown on paper, rather than taking chances with the unknown. The information in this report can prove useful in making rational choices between reasonable alternatives. But the limitations must be kept in mind when basing decisions upon it. A great many assumptions have had to be made to advance from one step to the next. Also interpretations of data and estimations of figures had to be made. Reliance upon projected yields and national productions are areas where opinions may differ.

It may seem a bit strange to some of you that the organizer of this information does not attempt to convince you to use it to the maximum extent possible. Let me explain by example why this is not advisable.

When a person with some land planned by the county for agricultural use comes into a planning office and asks for a variance of a zoning ordinance so he may sell some of his farm land for its urban use or build upon it himself, he puts the planner in the position of having to find some justification for leaving that land in agriculture. The planner and the land owner can see from the Marion County Comprehensive Plan that people in this county regard it in their best interest to keep that area in agricultural use. That decision was made after studying this report along with other pertinent information including other findings used in developing the comprehensive plan.

The goals stated in the comprehensive plan form the basis for justifying maintaining agricultural lands. The individual land owner must be made familiar with these goals in order to understand the context in which the plan regards agricultural lands.

In the past the need for food has been the basic argument used for preserving agricultural land. These kinds of statistical arguments falter for small areas or at the local level. Many persons and groups concerned with the future of agriculture have based decisions on this kind of argument without the benefit of goals for agriculture developed at the local level. This report is not intended to provide data to demonstrate this need for food production. Instead, it deals with questions that can be put into context of a smaller area, such as a single county.

Realizing all the limitations associated with this kind of information will make it more useful for rational planning, rather than less useful. The best way to make use of it is to become familiar with it and in doing so, begin to consider what you expect agriculture to do for your county, its economy, environment and people.

The alternatives are described to point out what some of the choices may be and what these possibilities indicate for the community - rural and urban oriented. Having four alternatives to choose from, rather than one projection to accept or reject should make it clear that decisions made in land use planning will affect agriculture and that this will have a further impact on the entire society. Some of this decision making affecting the people of Marion County will take place in the development of the comprehensive plan.

Decisions made in agriculture, from the alternatives presented, probably cannot be made rationally without also considering, at the same time, alternatives in the urban sector. One parcel of land may have several alternative uses for it in the future, some agricultural, some urban. Some of these possible uses may affect the economy and environment in one manner, whereas other uses will certainly have varying effects. This information should be helpful in understanding the effects that farm uses of land might have on the economy and society in general.

## Appendix to Chapter III

### Explanation of Alternatives

#### Alternative #1

**Situation:** This alternative demonstrates what agriculture might look like if share of national markets produced in this county decreases and farm production remains constant for all commodities.

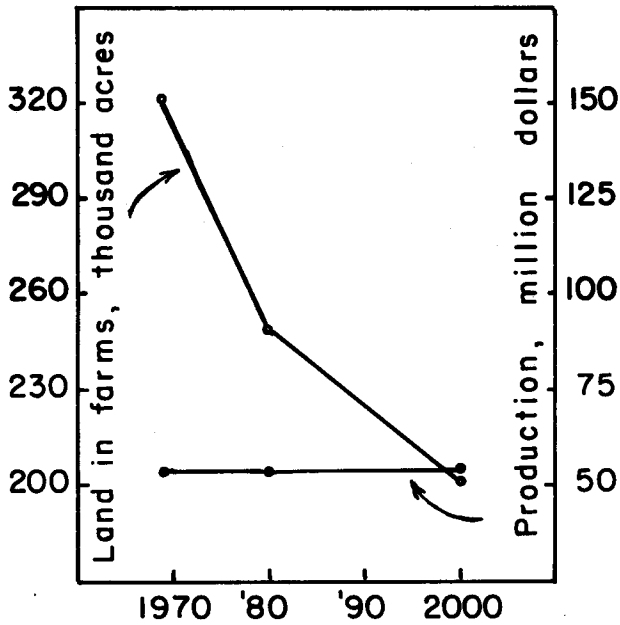
**Assume:** 1. County production remains the same as present production.  
2. Share of market falls as markets in general expand. 3. County yields rise in proportion to Oregon projected yields. (Projections from Economic Research Service/USDA).

**Results:** Acreage needs to hold county production constant are naturally low, as yields continue to rise for all crop areas. Acreage needs fall particularly rapidly up to 1980, resulting from a rapid rise in yields. This same effect of yields will continue to be important for alternatives #2 and #3.

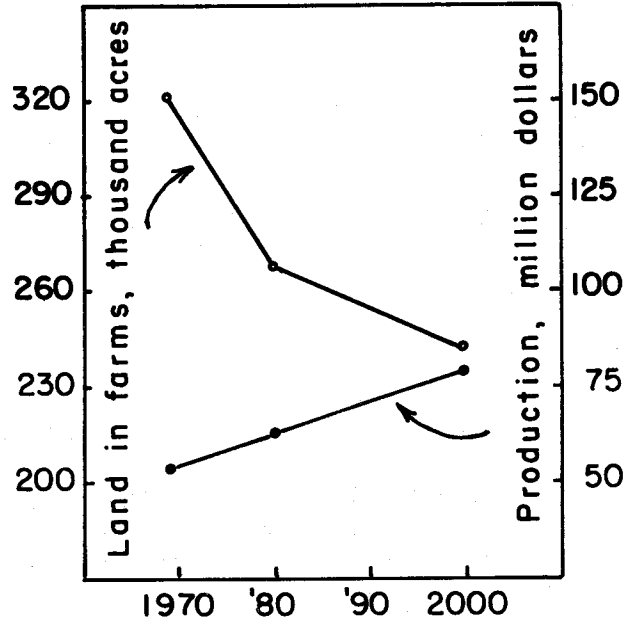


Figure III - 1. Four Possibilities for the Future of Marion County Agriculture

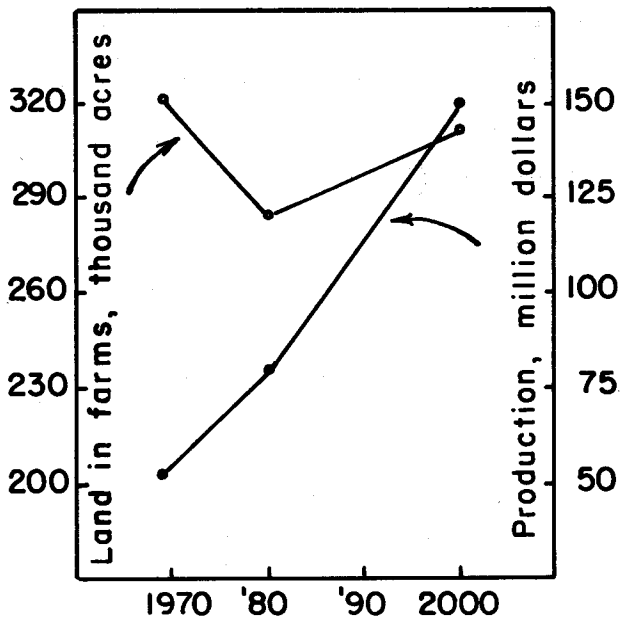
# 1. Maintain Present Production



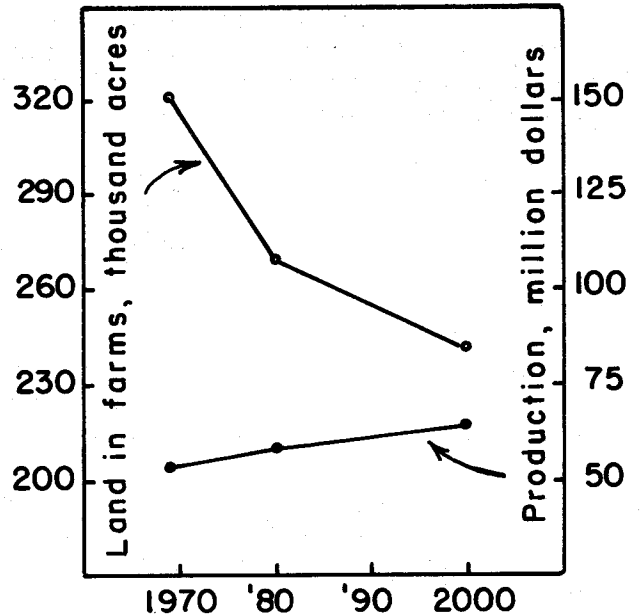
# 2. Produce for National Market



# 3. Extension of Past Trends



# 4. Judgement of County Agents



Conclusions: Because present acreage of cropland harvested is not falling off as rapidly as acreage needed to reach the objectives mentioned here, it seems unlikely that this alternative will prove useful up to 1980 at least.

### Alternative #2

Situation: This strategy would tend toward a middle-of-the road situation overall. However, for individual crops and some major groups, a reversal of present downward trends in production and market share would be necessary to achieve the objective defined here.

Assume: 1. County production increases proportionally with increasing U.S. or Willamette Basin production. 2. Share of market remains constant. 3. County yields rise in proportion to Oregon projected yields. (Projections from Economic Research Service/USDA).

Results: In small fruits and hay crops, this represents the highest of the first three alternatives in terms of county production. Acreage requirements to reach this objective follow accordingly. However, acreages tend to fall off for both 1980 and 2000 for all crops added together.

Conclusions: For some crop groups, maintaining increases in county production proportionate to national production may be as high an alternative as is realistic. Nevertheless, acreages needed are still not as high as present acreages of cropland harvested. From the standpoint of available land for farming, this alternative may not be difficult to achieve.

### Alternative #3

Situation: This alternative would continue past trends in the county's share of production or competitive position, and tends to go higher in production for many crop areas.

Assume: 1. County production rises at such a rate that share of the market follows past trends. 2. Share of the market continues along historical trend, which is rapidly increasing in most commodities. 3. County yields rise in proportion to Oregon projected yields. (Projections from Economic Research Service/USDA).

Results: As each crop was calculated individually and then all crops were added together, the projection lines for percent share of production do not always appear at first glance to be the past trend for the crop groups. In most cases, as well as overall, this alternative is the highest of the first three.

Conclusions: As production rises rapidly and larger acreages of cropland are shown, one question becomes apparent: if Marion County plans to keep large amounts of land in agriculture, what assurance is there that production will actually follow acreage available. Because there is no simple answer to this question, the assumptions of this strategy may be the most nebulous of the three. At least it demonstrates past changes in product mix, as from less intensive crops such as hay to more intensive such as vegetables.

#### Alternative #4

Situation: This information has been collected and compiled to insure an adequate range of possibilities to choose from. It is developed from estimates provided by Marion County Extension agents.

Assume: 1. County production increases according to judgments made by extension agents of Marion County. 2. Share of the market falls or rises according to production projections. 3. Yield increases are also based on county agent judgments.

Results: Share of national market drops in many cases due to low estimates of farm production. Acreages of cropland does not drop off so rapidly because of lower estimates of yields than those in the first three alternatives. Acreages of livestock were high due to much lower yields for this area. However, in total, acreage requirements for this alternative came very close to those for #2 -- the middle-of-the-road choice.

Conclusions: In comparing this alternative to the other three, there is no way to show that any alternative is completely unrealistic. It appears also that a reasonably wide range of choices is being developed.

## Chapter IV

### PRODUCTION, COMPETITION, FARM LAND

#### Competition

One very important aspect of the agricultural picture for this or any county, is its competitive position with other areas. In general, agriculture is limited by the markets capacity to absorb more products and not by the ability of American farmers to produce. As farmers in one area find their costs rising faster than those in another, they find themselves in a cost squeeze resulting in a reduction in what they produce for regional or national needs. Differences in quality of the product and distance to consuming centers also has an effect here. Generally, the Willamette Valley finds itself at a disadvantage in transportation costs to major population centers compared to areas such as Michigan. But quality of product, such as the Blue Lake bean, may compensate or even more than compensate for this disadvantage. Otherwise, lower costs of production must be relied upon to help Valley agriculture compete with other areas.

Prices of farm land and land taxes have a definite effect on farm costs of production. Transportation systems and sewer and water changes affect processing and handling costs. The more specific aspects of how these factors interrelate to cause agricultural production to change will not be analysed here. Instead, a more general picture will be presented on the importance of agriculture in Marion County.

Information on the four alternative land use patterns discussed in Chapter III is presented along with indications of how these patterns might affect the county's future agriculture production and its share of Oregon or U.S. Production. These percentages of larger markets are presented to indicate Marion County's

ability to compete with other areas. For most crops, the county is virtually producing for a national market. But for a few commodities -- milk, beef, chickens & broilers, cattle and calves, hay, and specialty horticultural crops -- the market area is logically smaller, but even these are closely related to the effects of national markets.

### Scope of data

Data were compiled for individual crops and then grouped under major headings. Figures reflect the effects of changing cropping patterns, prices to farmers, location of processing plants, transportation rates, shifts of consumer preferences, changes in yields and perhaps hundreds of other factors.

Crops which account for less than \$100,000 annual gross income and less than 1,000 acres were not included. Approximately 95% of the county's cropland harvested is accounted for. Cropland harvested amounted to 52% of land in farms in 1964. Land in farms equals 333,624 acres in 1964 whereas the total land in this county is about 750,720 acres. Thus, farms account for about 44% of total land area.

As background information, a brief historical view of the county's position in national and state markets is shown. This is then compared to acreages and production for each crop. Then, four alternative projections are made for county production, share of market, acreage, etc. An explanation of the assumptions behind each alternative can be found in Chapter III. Tables IV-1 and IV-2 show projected production and share of national production for each major commodity group.

### Farm land

A quick overview of recent historical changes in land use shows that the total land in farms has decreased rapidly in Marion County. However, closer inspection reveals that cropland has not changed more than a few thousand acres over the last twenty years. By studying figures IV-2 through IV-5, it can be seen that land taken out of farms has, in the aggregate, come out of farm woodlots, rather than cropland. It would be dangerous for the reader to assume that farmers are selling mostly woodland for urban uses and that cropland has not been greatly affected by urban pressures. A more plausible approach would be to assume that some cropland has been sold and that woodlots have been cleared to replace it. Some persons close to agriculture in Marion County feel that these trends of the past can no longer continue. These persons point out that there is probably little woodland left on farms that could be economically put to use for farming purposes. If this is true, future decreases in land in farms will probably come mostly out of the total cropland available in the county. This is, in fact, the assumption that has been used in developing these example land use patterns shown in the four graphs at the end of this chapter.

By defining goals or objectives for county production and share of national or state production, acreage requirements to meet these objectives can be demonstrated. Figures IV-1, IV-2, IV-3, IV-4, & IV-5 show these requirements for land. Each of these alternative land use patterns would indicate a different effect on the county's ability to produce for national and state markets. The projections of land in farms should not be taken as recommendations, nor as "land needed in agriculture". They should be viewed as possibilities, each with varying impacts on society.

Whether it is preferred to start with acreages and work toward production and share of market, or start with production and determine acreages needed will depend on which objective is of interest.

The primary purpose is not in building a case for designing the agricultural industry in Marion County, but to view agriculture from alternative situations and analyze its place in the total county land use pattern.

### Farm production

In this comparison of acreages and production, it should be restated that, even accepting the assumptions of yield, national markets, etc., there is no sure way of knowing what production will be in the county if a given amount of land is available for agriculture. On the other hand, the negative side seems to be more sure, i.e., if the county uses so much land available to agriculture for other purposes it has certainly hurt agriculture's ability to produce. Or, if so much production, with corresponding level of employment, etc. is sought from agriculture, then so much land would be necessary to achieve this goal. (So far no mention is being made of productivities of different soils.) One other broad assumption would be necessary to correlate available land and production. This would state that the competitive position of Marion County agriculture is determined by land available, disregarding the other factors of production - capital, labor and management. Obviously these other factors do have an effect.

As mentioned earlier, costs of production are extremely important in determining the actual production of an area. Land available to farmers, the costs of that land, property taxes, availability to markets, productivity of soils, etc., all play an important role here. But so do hundreds of other things which are far outside the control of the people of this area, -- consumer preferences, rate of growth of markets, technological achievements in other areas, not to mention major changes in the economy that could develop.

### Effects of projected yields

As may be quickly noted in each of the graphs showing acreages, a straight line does not result out to the year 2000. Production and yield projections were used for both 1980 and 2000 separately. The curves in the acreage graphs are mostly due to yield rising faster up to 1980 than after that year. This means that many specialists, when visualizing changes in agricultural productivity, see that yields are likely to respond favorably to technology already available or that should be in use soon. However, carrying this out to 2000 requires visualizing future changes in technology that might come about between 1980 and 2000. Evidently, the specialists giving these insights became slightly more conservative at this point when they showed yields increasing, but at a slower rate. However, ten years from now, they may see changes in technology that will continue yields rising at the same rate as before. If this is so, then the acreage needs for alternative #3, for instance, could well continue along the same downward path it follows to 1980.

If maximum agricultural production is sought by allocating acreages along a straight line between our current land in farms acreage and the amount needed in 2000 according to alternative #3, the farming community may be forced to pay for keeping land in a socially beneficial state. Farmers may have difficulty in getting marketing contracts to produce intensively enough on those soils to keep their incomes rising with the urban population.

Furthermore, vacant land may be the most valuable from the county's standpoint in that the services provided to land owners are not as costly as the tax revenues received from them under our present system of financing schools and other public services. If this is the case, it certainly has some significance in planning the county. Society could benefit at the expense of some individuals.

## Appendix to Chapter IV

### Notes on tables

The total U.S. production is only the total of the crops which are produced in this county rather than a total of all such crops produced in the nation. Thus, such crops as soybeans, rice and sorghum are omitted since they are not grown here.

Most of the county data used is from estimates by the Marion County Extension Office in Salem. U. S. figures are from the Statistical Reporting Service of the USDA. The Economic Research Service (ERS) of the USDA was relied upon heavily for projections both of U.S. production and of yields.

Projections of National production needs were based on series C of the U.S. Population Census. For crops with more limited market areas, such as hay and most livestock, projections were obtained from ERS for the Willamette Valley. For some crops, e.g., hops, mint oil, and forage & legume seeds, projections of Willamette Valley production were used from the Willamette Basin Comprehensive Study - Water and Related Land Resources, even though a comparison with U.S. market is shown. This is because projections of the specific crops are not shown in national market projections.

Yield projections are for Oregon but, in most cases, county yield increases have been kept in proportion to Oregon projections. For farm, forestry, and specialty horticultural crops, no projections of production or yields were found.

Data given by the Extension Agents of yields and county production for alternative #4 are the best judgements of these persons who work in the county closely with growers.

TABLE IV-1 ESTIMATED AND PROJECTED PRODUCTION BY MAJOR COMMODITY GROUPS

Commodity group	1959-61 Average	Approximate Current Normal	Year	Alternative		Alternative		Alternative	
				One 2000	Two 2000	Three 2000	Four Production 1000 lbs		
Vegetables (1000 lbs.)	182,628	491,854	1980 2000	491,854 491,854	606,988 789,646	966,746 2,020,400	621,626 657,028		
Small Fruits (1000 lbs.)	36,587	41,583	1980 2000	41,583 41,583	46,965 64,036	46,535 60,835	42,950 51,601		
Tree Fruits & Nuts (1000 lbs)	22,566	32,146	1980 2000	32,146 32,146	36,012 50,612	54,152 133,036	34,620 36,981		
Specialty Horticultural Crops (1000 dollars)	\$1,101	\$2,137	1980 2000	\$2,137 \$2,137	\$2,307 \$2,809	\$3,191 \$5,061	\$2,790 \$4,139		
Small Grains (1000 lbs.)	138,046	140,315	1980 2000	140,315 140,315	167,698 183,530	158,520 289,261	133,106 84,057		
All Hay (1000 lbs.)	126,066	119,940	1980 2000	87,171 73,386	110,596 141,804	123,416 184,996	105,832 93,490		
Grass and Legume Seeds (1000 lbs.)	17,240	18,839	1980 2000	18,839 18,839	18,160 21,590	17,354 23,214	14,321 11,528		
Specialty Field Crops (1000 lbs.)	10,732	22,969	1980 2000	22,969 22,969	28,902 38,391	43,248 93,549	28,259 99,397		
All Livestock (1000 lbs. live wt.) *98,121		90,592	1980 2000	90,592 90,592	116,758 152,155	125,705 185,469	99,616 104,165		
Poultry (1000 lbs. live wt.) *17,828		25,949	1980 2000	25,949 25,949	32,140 41,918	41,641 88,294	27,363 28,989		

\*1961 production figures only: 1959 and 1960 figures not available.

TABLE IV-2 ESTIMATED AND PROJECTED SHARE OF NATIONAL AND STATE PRODUCTION BY MAJOR COMMODITY GROUPS

Commodity Group	1959-61 average	Approximate		Year	Alternative			
		Current Normal			One	Two	Three	Four
			%	%	%	%	%	%
Vegetables* (% of U.S.)	1.564	3.385	1980	2.74	3.39	5.39	3.47	
			2000	2.11	3.39	8.66	2.82	
Small Fruits* (% of U.S.)	6.438	6.515	1980	5.77	6.52	6.46	5.96	
			2000	4.23	6.52	6.19	5.25	
Tree Fruits* and Nuts (% of U.S.)	0.185	0.240	1980	0.21	0.24	0.36	0.23	
			2000	0.15	0.24	0.64	0.18	
Specialty Horti- cultural Crops (% of State)	5.158	7.600	1980	6.88	7.60	11.35	8.98	
			2000	5.78	7.60	18.00	11.20	
Small Grains* (% of U.S.)	0.047	0.037	1980	0.03	0.04	0.03	0.03	
			2000	0.03	0.04	0.05	0.01	
All Hay (% of W.V.)	NA	13.100	1980	10.08	10.22	12.39	9.78	
			2000	8.49	10.10	13.18	6.66	
Grass Seeds and Legumes (% of U.S.)	5.139	6.575	1980	6.82	6.58	6.28	5.19	
			2000	5.74	6.58	7.07	3.51	
Specialty Field Crops (% of U.S.)	0.041	0.076	1980	0.06	0.08	0.11	0.07	
			2000	0.05	0.08	0.18	0.20	
All Livestock (% of State)	**5.967	5.771	1980	4.48	5.77	6.21	4.93	
			2000	3.44	5.77	7.04	3.95	
Poultry (% of State)	**11.220	15.830	1980	12.83	15.83	20.46	13.71	
			2000	9.80	15.83	33.35	10.95	

From estimates of Marion County Extension Service, Salem, Oregon.

\*Share of production is weighted average of shares of individual crops. Does not consider crops not grown in this area.

\*\*1961 Figure: 1959 and 1960 not available.



TABLE IV-3 LAND IN FARMS, MARION COUNTY, HISTORICAL  
 LAND IN FARMS, MARION COUNTY  
 THREE ALTERNATIVE PROJECTIONS  
 (Alternative 4 is similar to #2)

	1949* Acres	1954* Acres	1959* Acres	1964* Acres	1969** Acres	Alt. #1		Alt. #2		Alt. #3	
						1980 Acres	2000 Acres	1980 Acres	2000 Acres	1980 Acres	2000 Acres
Farm Woodlots & wasteland-roads-buildings, etc.	117,687	94,174	87,884	73,282	73,282	71,932	69,282	71,932	69,282	71,932	69,282
Non-cultivated pasture.	28,223	32,474	17,685	26,874	26,000	26,000	26,000	26,000	26,000	26,000	26,000
Sub total	145,910	126,648	105,569	100,156	99,282	97,932	95,282	97,932	95,282	97,932	95,282
Hay and silage and cropland grazed	67,331	66,738	56,648	57,164	39,584	20,354	11,929	25,063	22,502	31,473	30,977
Sub total	213,241	193,386	162,217	157,320	138,866	118,286	107,211	122,995	117,784	129,405	126,259
Cropland harvested	150,132	152,652	158,881	144,719	166,784	113,796	77,652	127,819	108,287	137,229	168,034
Sub total	363,373	346,038	321,093	302,039	305,650	232,072	184,863	250,814	226,071	266,634	294,283
Cropland not harvested and not pastured	26,310	21,716	30,304	31,585	16,940	16,940	16,940	16,940	16,940	16,940	16,940
Total land in farms	389,683	367,754	351,397	333,624	322,590	249,012	201,803	267,754	243,011	283,574	311,223

\* Census of Agriculture

\*\*Current normal estimated from Marion County Extension Service figures

Figure IV-1. Marion County Cropland and Pastureland

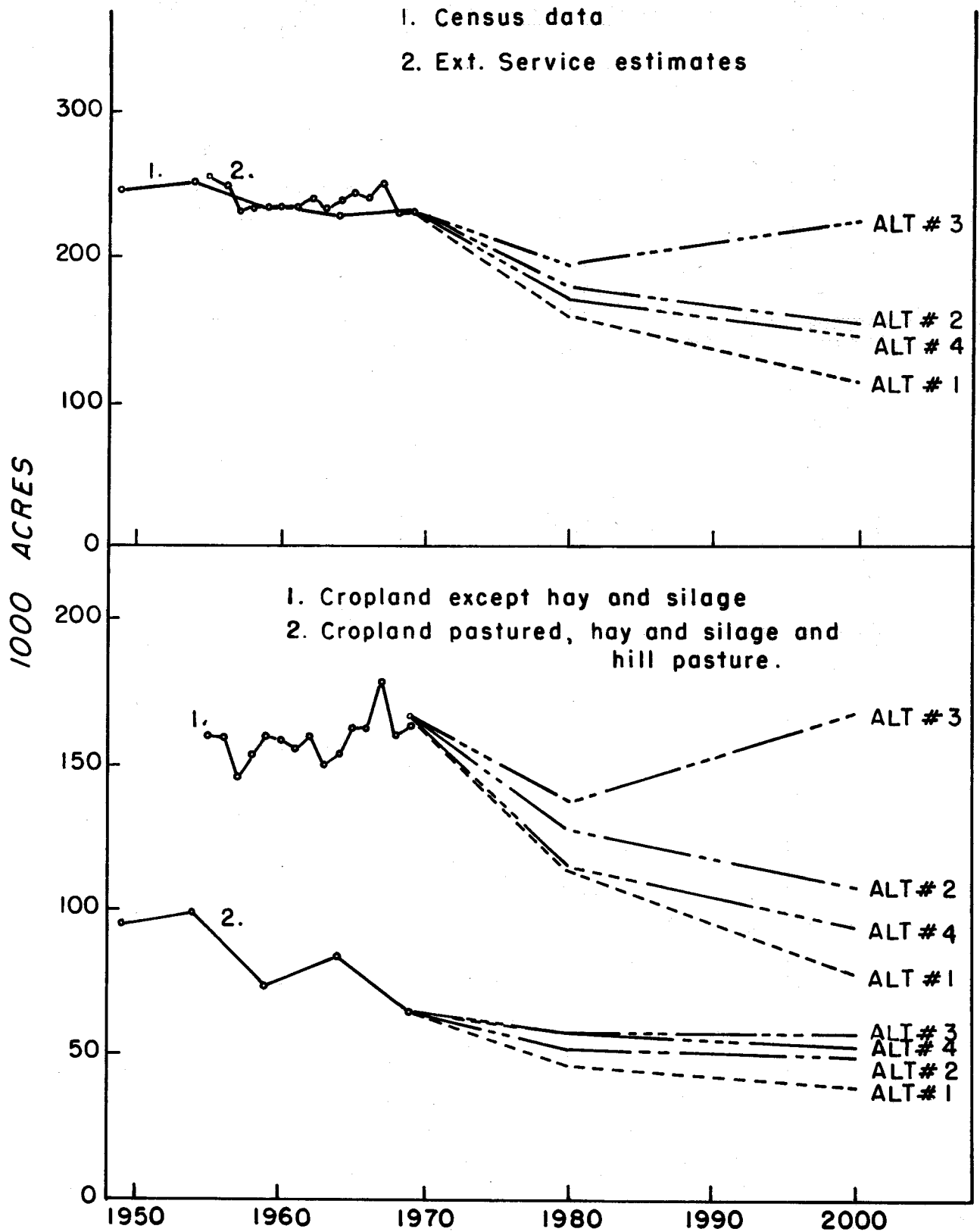


Figure IV-2. Land in Farms and Uses, 1950 with Projections to 2000, Alternative # 1

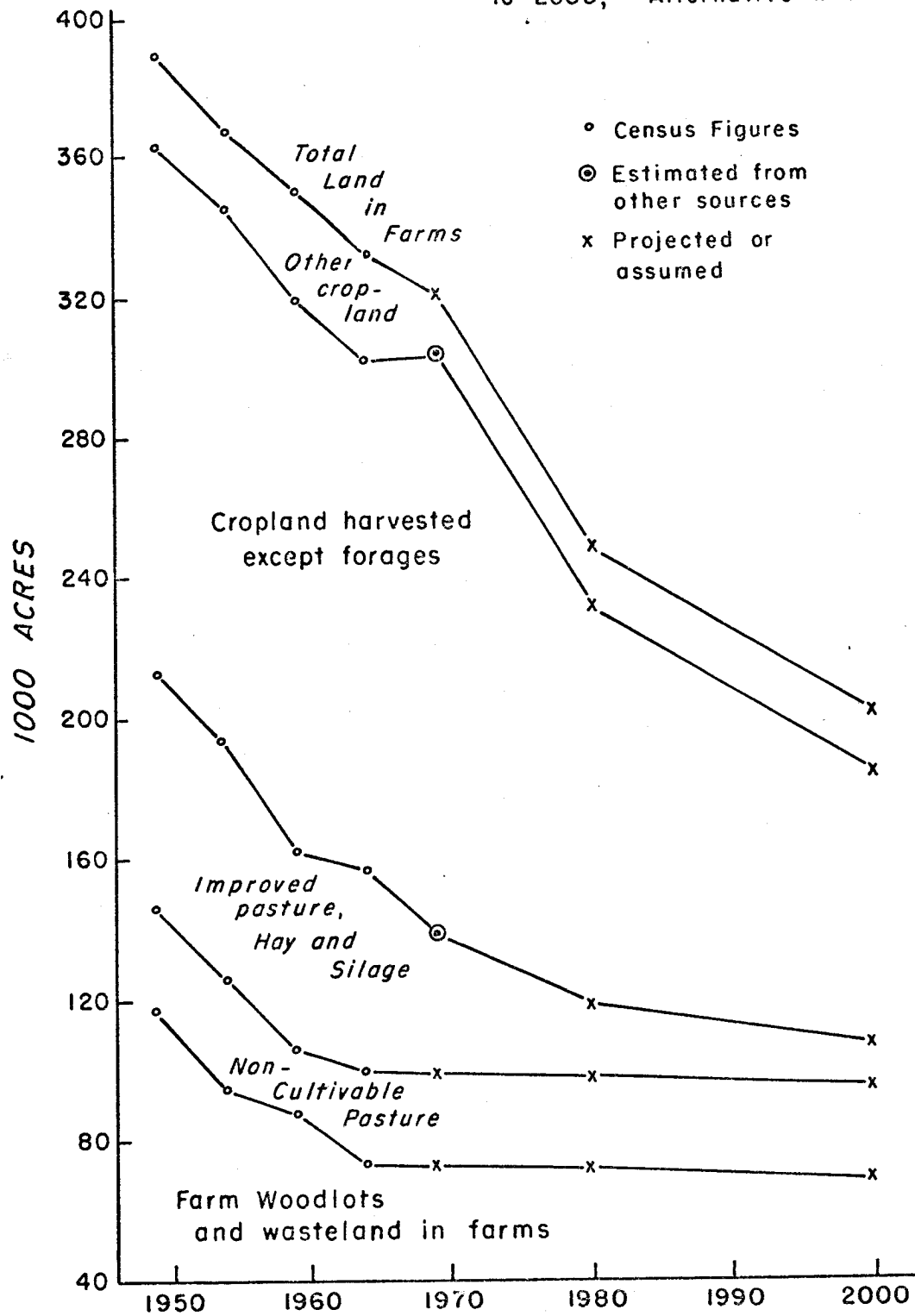


Figure IV-3. Land in Farms and Uses, 1950 with Projections to 2000, Alternative # 2

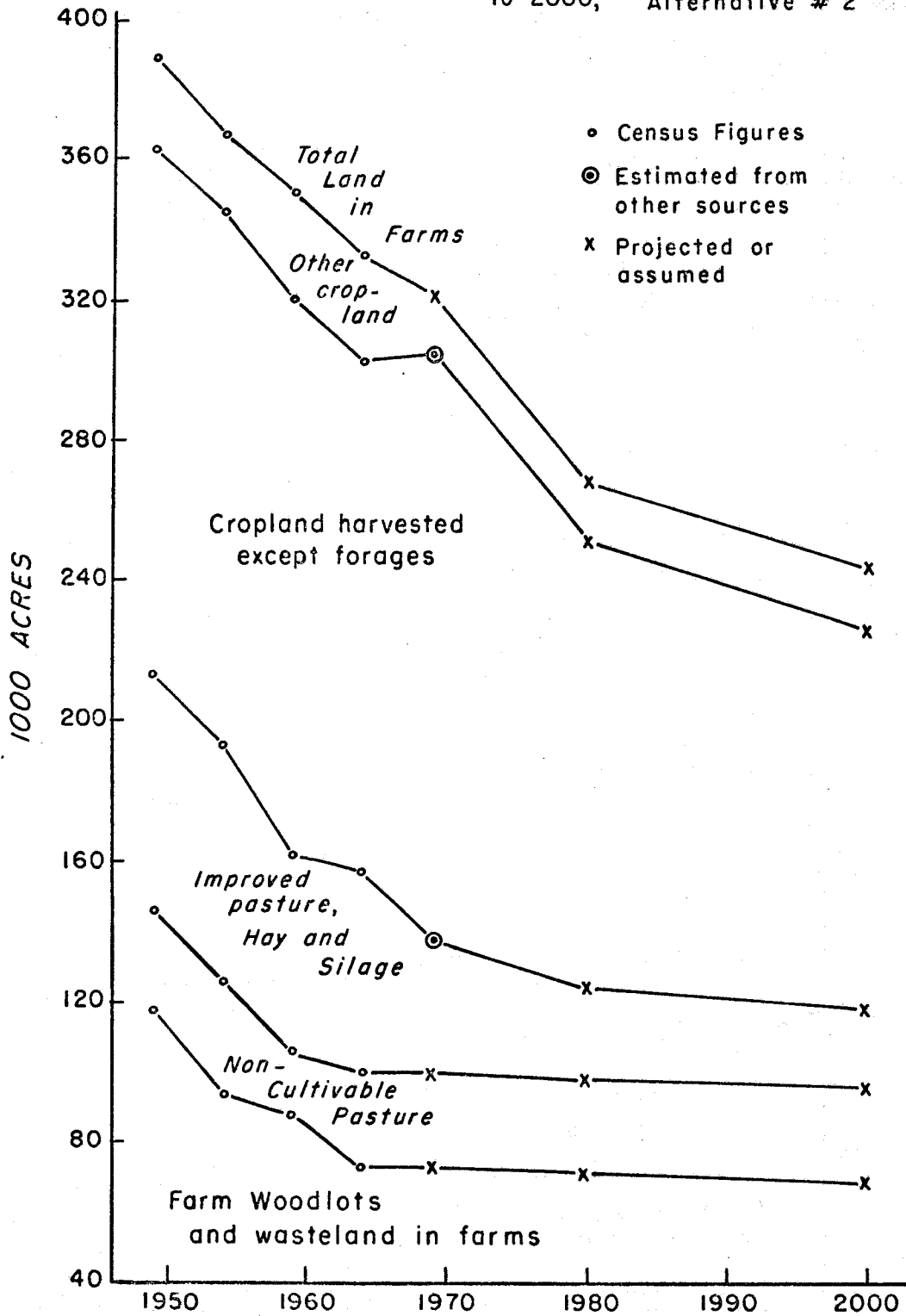


Figure IV-4. Land in Farms and Uses, 1950 with Projections to 2000, Alternative # 3

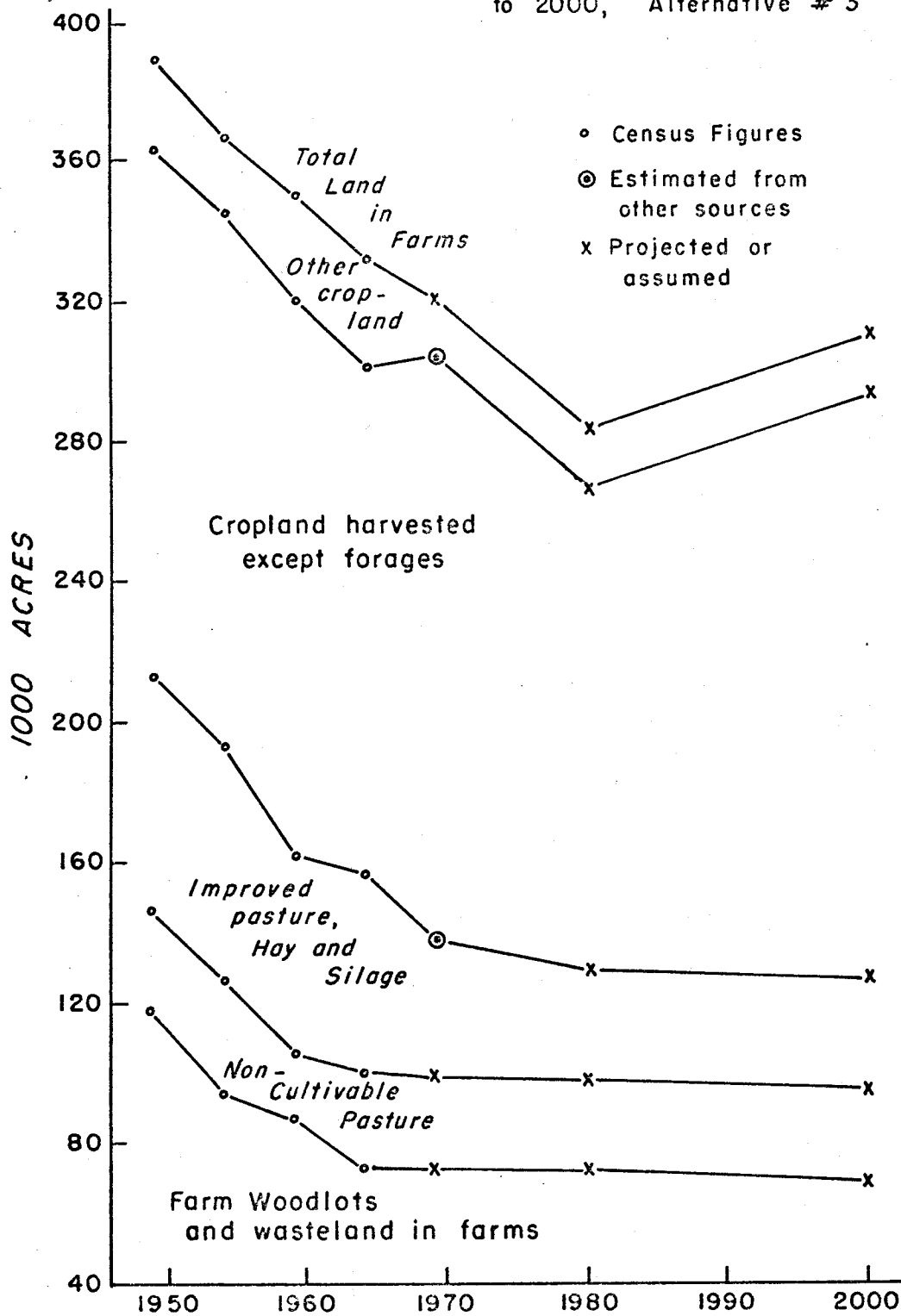
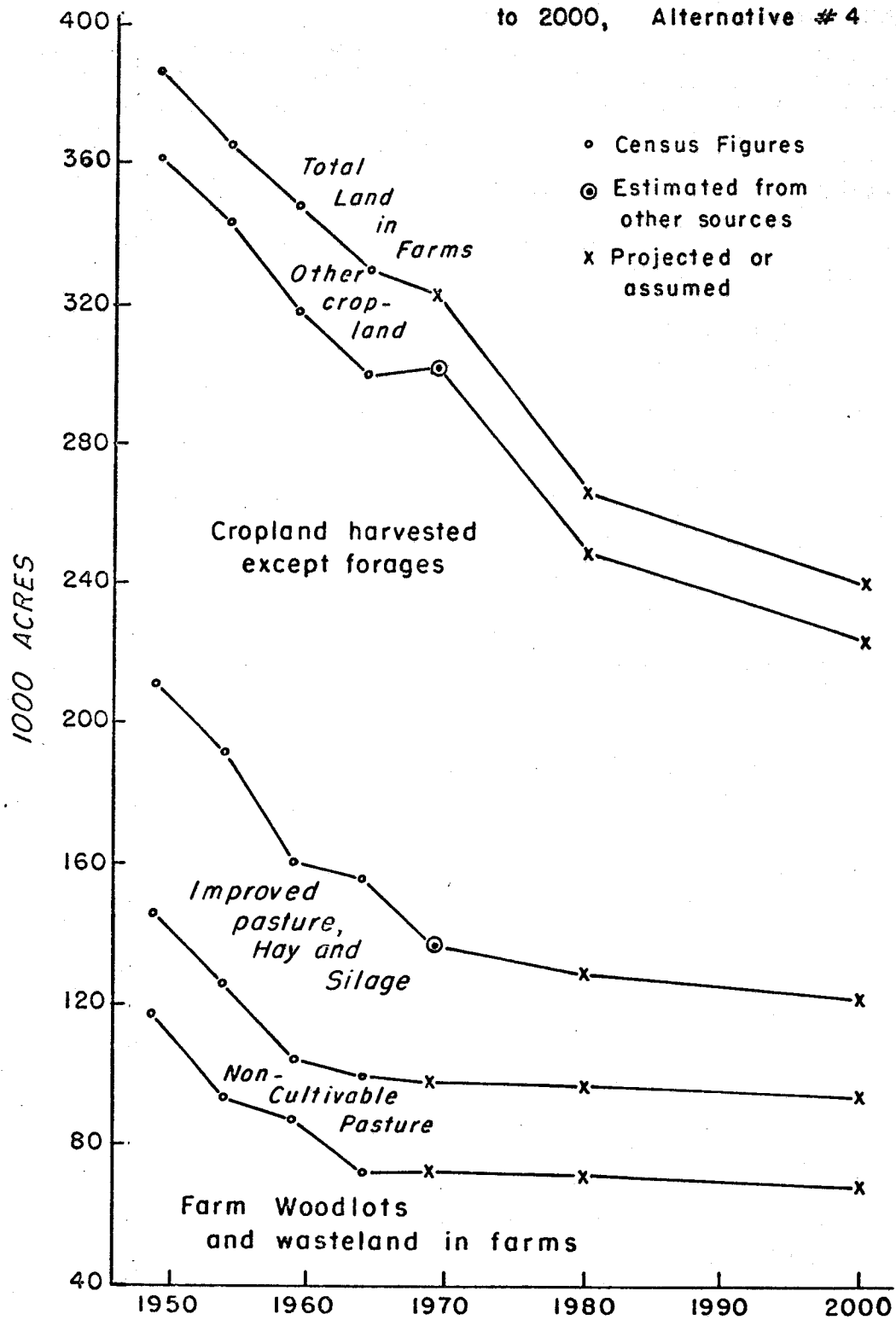


Figure IV - 5. Land in Farms and Uses, 1950 with Projections to 2000, Alternative # 4



# Chapter V

## ECONOMIC ASPECTS OF MARION COUNTY AGRICULTURE

The purpose of this brief summary of the economic aspects of Marion County agriculture is to show the meaning in dollars and cents of some of the things that have been brought out in other sections of this report. Figures include farm income but also go beyond the farm gate and explore what agriculture may mean to the community in general. Value added in processing and handling of farm products is approximated, based on figures for the State of Oregon. Influences of a strong agriculture on employment are hinted at. This area involving employment may be an important one to expand upon for future planning purposes.

### Relation to land use planning

The information in this chapter is designed to give an idea of the economic activity that results in agriculture from the raw products coming from Marion County economy. Products grown here may be processed in other areas, thereby providing income and jobs outside this county. Also, farms in other counties grow crops that are processed here which favorably affects availability of off-farm employment for the citizens of this county. Therefore, the ideas here relate closely to land use decisions in Marion County because only the economic influence of products grown on Marion County soils is shown.

### Economic influence of agriculture

A large percentage of total farm production is sold by farmers. Value of farm sales plus value added in handling and processing after the products leave the farm represents most of the market oriented economic activity in the agricultural industry.

Figure V-1 may help the reader visualize the economic influence of the raw materials originating from farm lands in Marion County. Of roughly \$53,600,000\* received by farmers for the sale of products grown in 1969, Marion County Extension Agents estimate 85% is paid out for hired labor, gas and oil, interest on capital, insurance, and other expenses of running the farm operation. Only a small portion of the total is the actual return to the farmer or farmer's personal income. This is his return to his own labor, family labor, his managerial efforts, his own capital investment and his land, if he owns the land. This is the farmer's return to the resources he provides. If he does not own the land, he must pay rent to the owner. This then becomes a cost to him and appears in the \$45,600,000 shown as goods and services supplied to farmers.

Not all of these services and goods supplied to farmers are produced in this county, or even in the State of Oregon, so this figure does not reflect the immediate impact on the local economy only. The purchase of such things as equipment and petroleum products which are produced elsewhere will cause a boost to those areas rather than to this one. However, some increase in off-farm business does result from sales and service by local dealers. Probably most of the labor supplied to farmers comes from citizens of this county and therefore tends to further increase economic activity here.

\*Does not include farm forestry or minor crops.

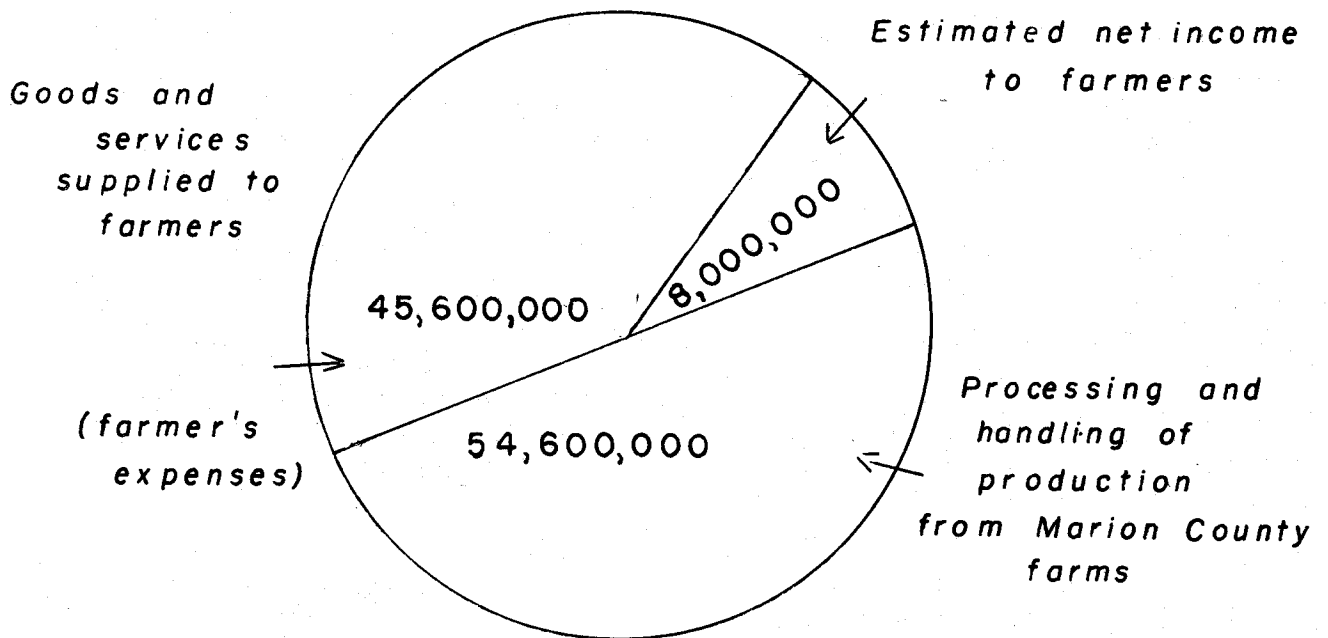


Figure V-1 Breakdown of Economic Activity in Agriculture resulting from Farm Production on Marion County Soils

We may assume most of these products are processed in this county and that most labor is supplied by local persons. Perhaps about 2,680 full-time year-round worker equivalents are associated with the processing of these products. This value added in processing has been estimated from figures developed for the State of Oregon, which emphasize only the value added by the "first handler" to receive products from the farm. To estimate the total impact of Marion County farm production would require consideration of operations such as storing, financing, transporting, wholesaling, jobbing and retailing in addition to the initial processing of these products. Of additional interest to this county would be to explore how much of this elaboration of farm products is likely to occur in Marion County, providing additional job opportunities to persons here.

Economic and social factors influencing rural land use decisions.

Although farm receipts have increased in recent years, farm expenses have increased faster. Current economic conditions are forcing a number of operators to leave farming every year. For those farmers, it is usually contrary to their wishes and may be a traumatic experience.

Age characteristics of Marion County's agriculture are significant. Average age of all farmers in the county is 51 years. Many are looking forward to retirement; some are subsisting until then. Their land is important and has a particular value to them as retirement approaches.

Many farmers actually see the sale of their land as the best alternative to leave agriculture and still have something to show for their life's work, or to avert a loss of their farm operation. Older farmers often see their land as the only significant resource to support them in retirement. Land use decisions, under such conditions, may greatly influence these persons' futures and the fortunes of themselves and their families. They may have difficulty in supporting some land use patterns deemed to be in the public interest.



Taxation policies may have a substantial impact upon land use. Property taxes, for example, influence the way land can be profitably used. A farm located in proximity to an urban area, with relatively high property taxes in support of urban services and education, must select more intensive enterprises to make a profit or yield, by selling prematurely, to these pressures.

Scatteration patterns of development and premature land sales for non-rural uses may create pressures on nearby farm lands which, in the long run, can make the farm operation unprofitable. Non-farm people, having moved to the country, do not always share the same values with farmers. Mixed uses of land are not necessarily in harmony with desired or proper patterns for a given area.

The inherent right to ownership and use of land is prized in our rural communities. Most rural people are proud of their soil stewardship, believing they can and do improve their own land, giving some of themselves to the land they nurtured during their life time. They often feel, then, that the ability and right to use or sell the land as they see fit belongs to them.

Public land use policies, and the decisions based on them, may, and often do, conflict with such rural values. Land use controls are particularly difficult to accept for many people.

These economic and social factors, and probably a number of others not mentioned, are important to land use decisions. They may be counter to desired land use programs and result in a lack of solid rural support for such programs. Only by more fully understanding the impacts of land use decisions on the rural community and also develop an appreciation for the interests of urban oriented persons and groups can the planning process account for these conflicts and attempt to minimize them.

#### Significance to the people of Marion County.

If farming activities change not only farmers will feel the effects. Businesses which serve farmers - - processing plants, trucking companies, and fertilizer distributors - - will feel an immediate impact, along with the persons who sell their labor directly to farmers. These persons who depend upon agriculture for their livelihood spend a great deal of their income in the stores and businesses of local merchants. This means that restaurants, service stations and drug stores will also feel the impact of any major changes in the agricultural sector of the economy. If incomes in agriculture go up, these people will create more of a demand for doctors, plumbers, construction firms, etc. To get at the actual effect on economic activity that an increase in agriculture income would have on the local economy would require the use of a multiplier. A multiplier would show the total economic effect generated in farming activities on off-farm agriculture businesses, and also on the rest of the economy.

In four independent studies made on smaller agricultural communities in the State of Oregon, the business multiplier for the agricultural industry was found to be between \$1.50 and \$1.80. This indicates that for each dollar of revenue coming into an agricultural community there were

immediate impacts of expenditures covering direct agricultural costs. For each dollar received in agriculture, an additional 50 to 80 cents of impact is indirectly generated in other businesses throughout the local economy. These are in terms of increased business to gas stations, restaurants, grocery stores, doctors and other service-oriented retailers. Although the four economies studied are smaller than Marion County, our general information would lead us to believe that the multiplier for Marion County would tend to be toward the upper end of this range because its economy is probably more self-sufficient.

Figure V-2 shows the total value of production and value of sales plus value added in processing and handling. Current prices are used for projections and by assuming no greater relative amount of processing of farm products than is done today. However, in past years the value added from off-farm elaboration of farm products has been growing as a percentage of value of farm production. For purposes of consistency, only commodities accounting for at least \$100,000 or more than 1000 acres are included. The following graphs give the breakdown for each type of crop. For space reasons, a breakdown for individual crops is not shown. This information is not being copied for reproduction but is available for review if questions arise.

Figure V-2. Economic Importance of Marion County Production  
 Historical and Future (Current prices and dollars used for future)

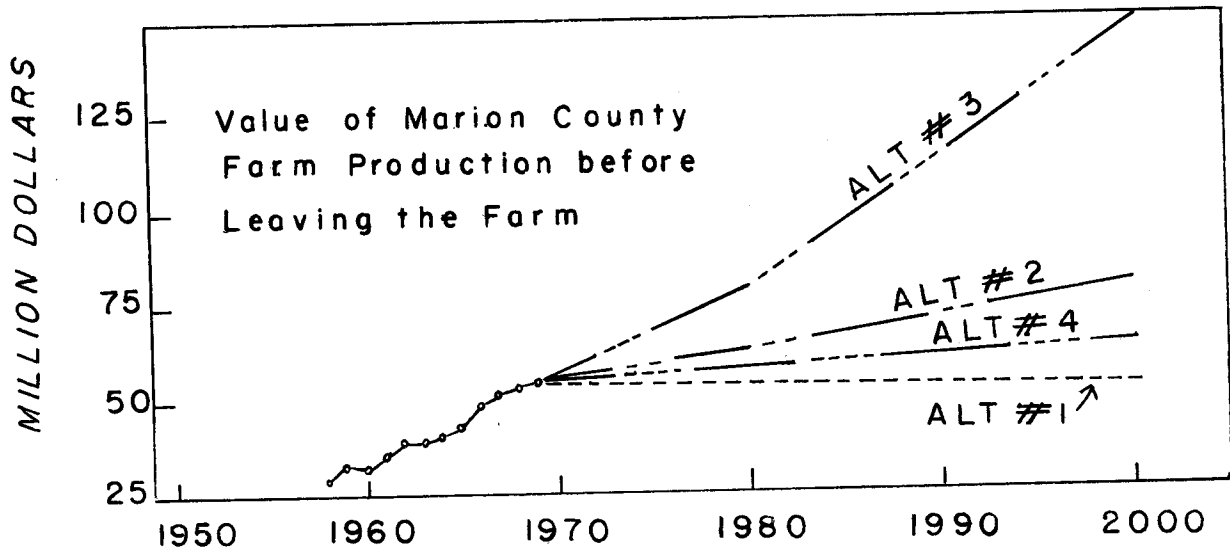
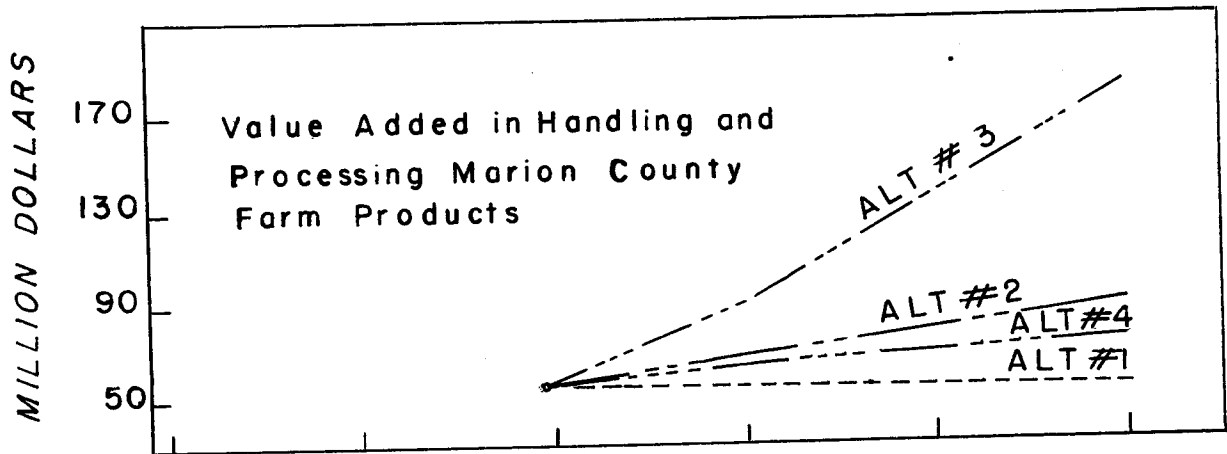
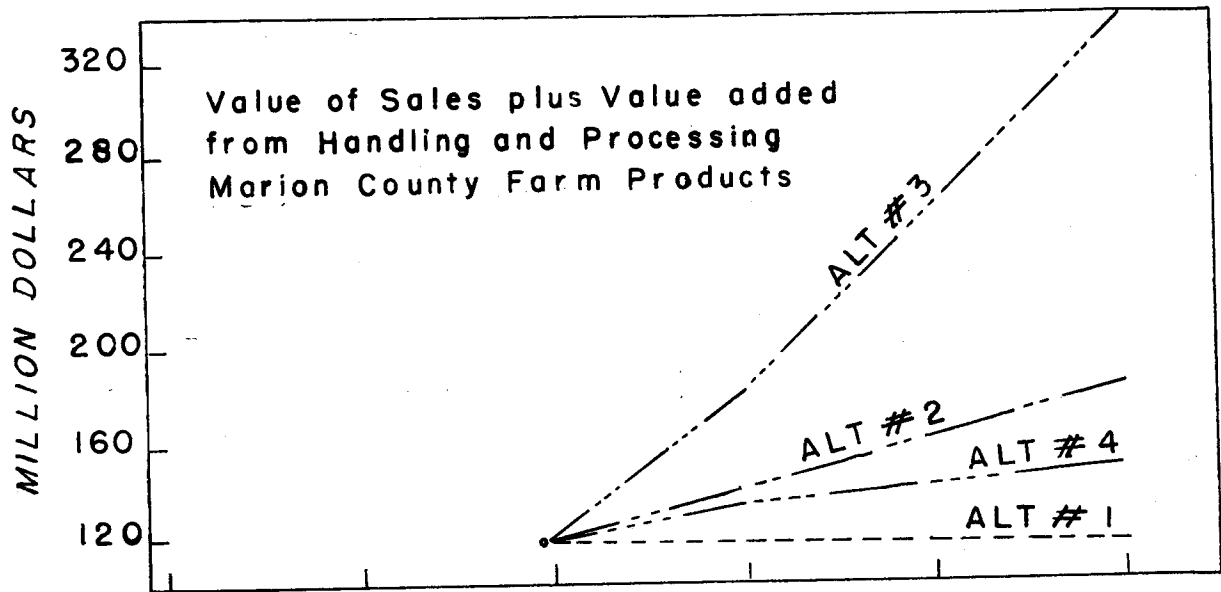
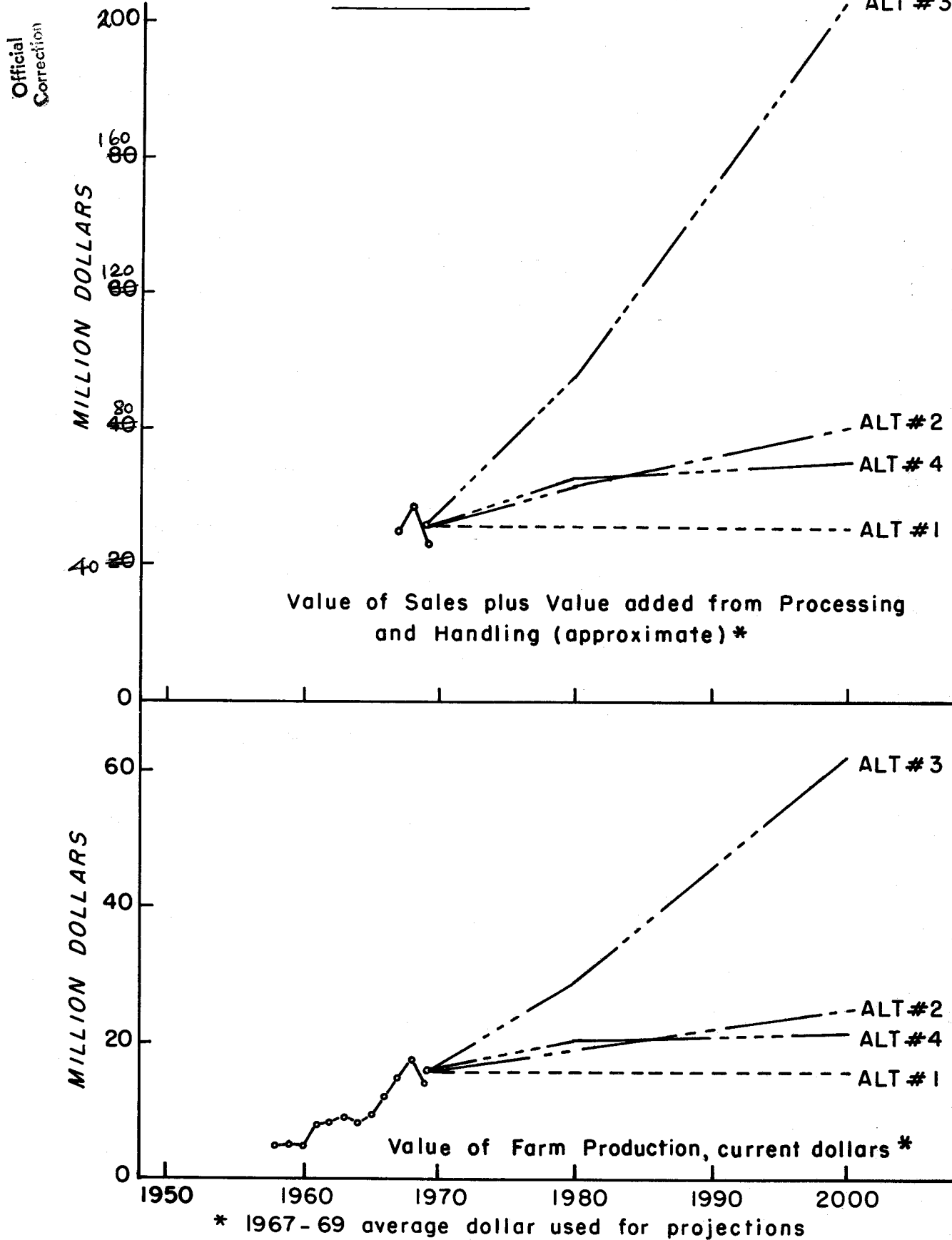


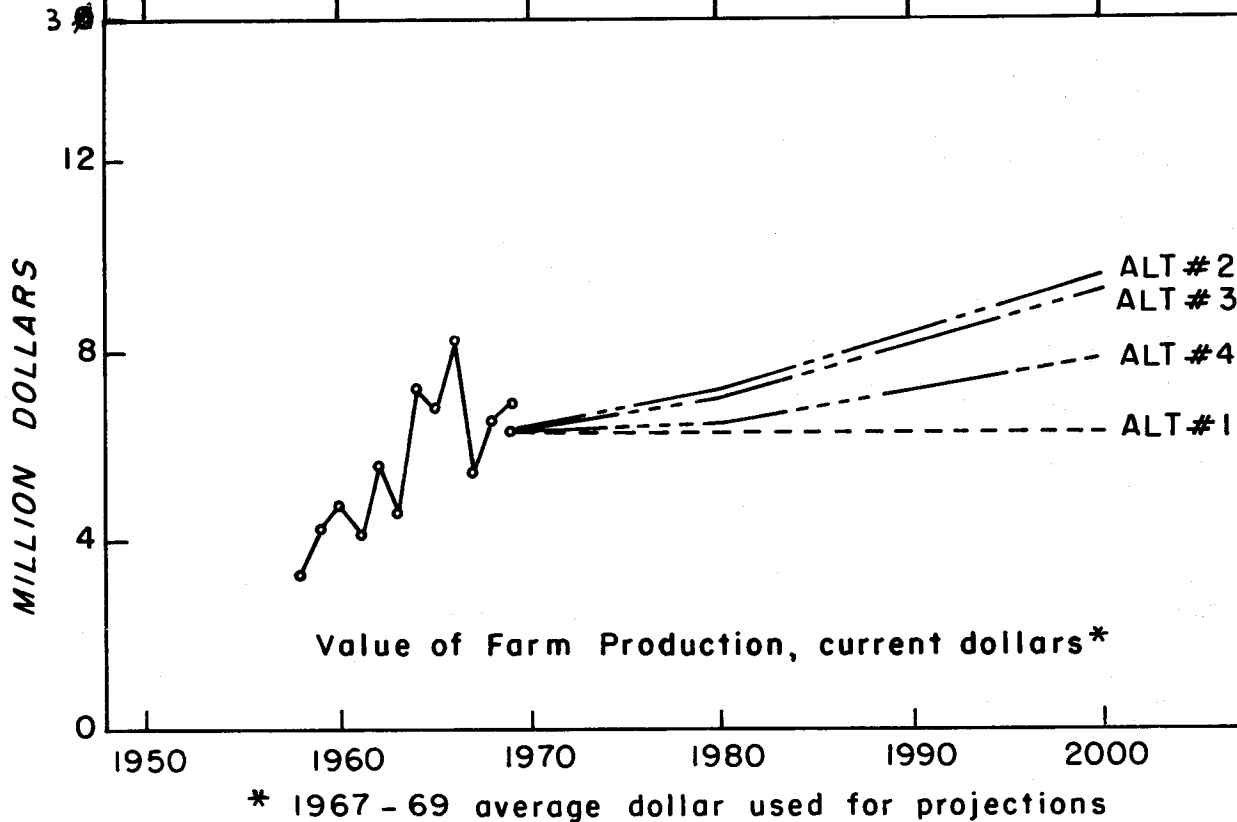
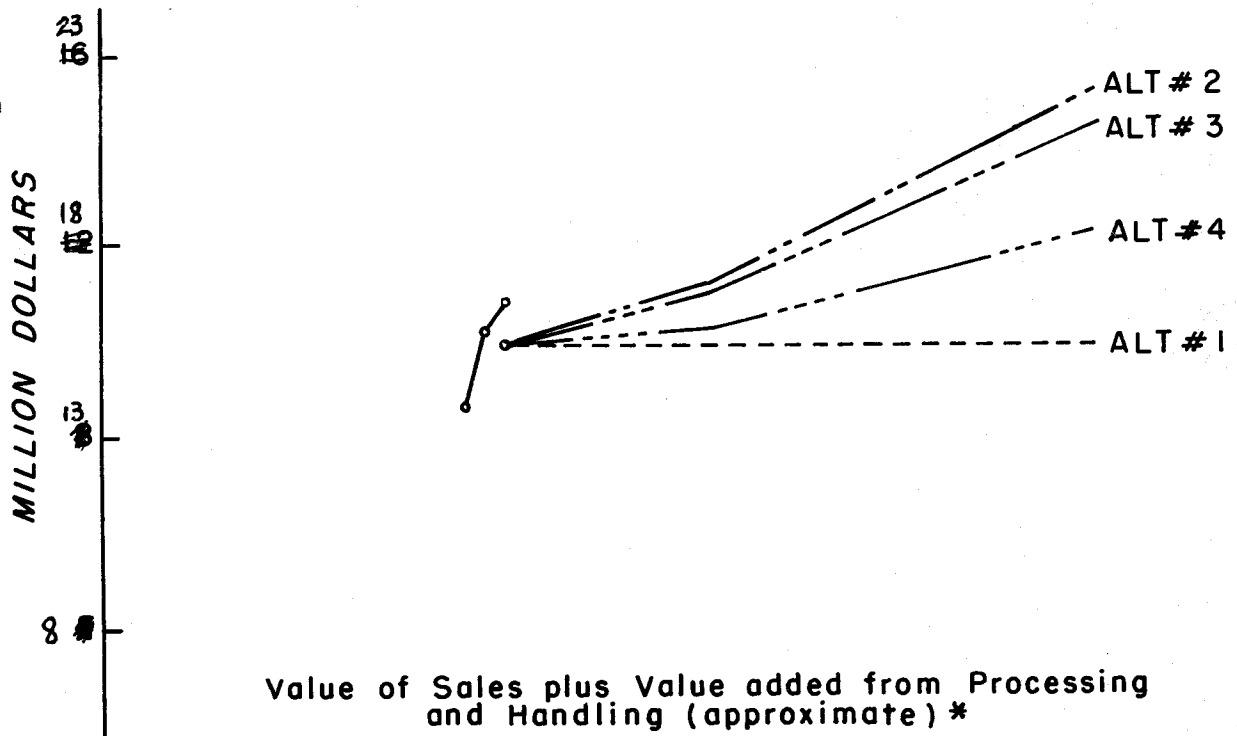
Figure V-3. All Vegetables, Marion County



\* 1967-69 average dollar used for projections

Figure V - 4. Small Fruits, Marion County

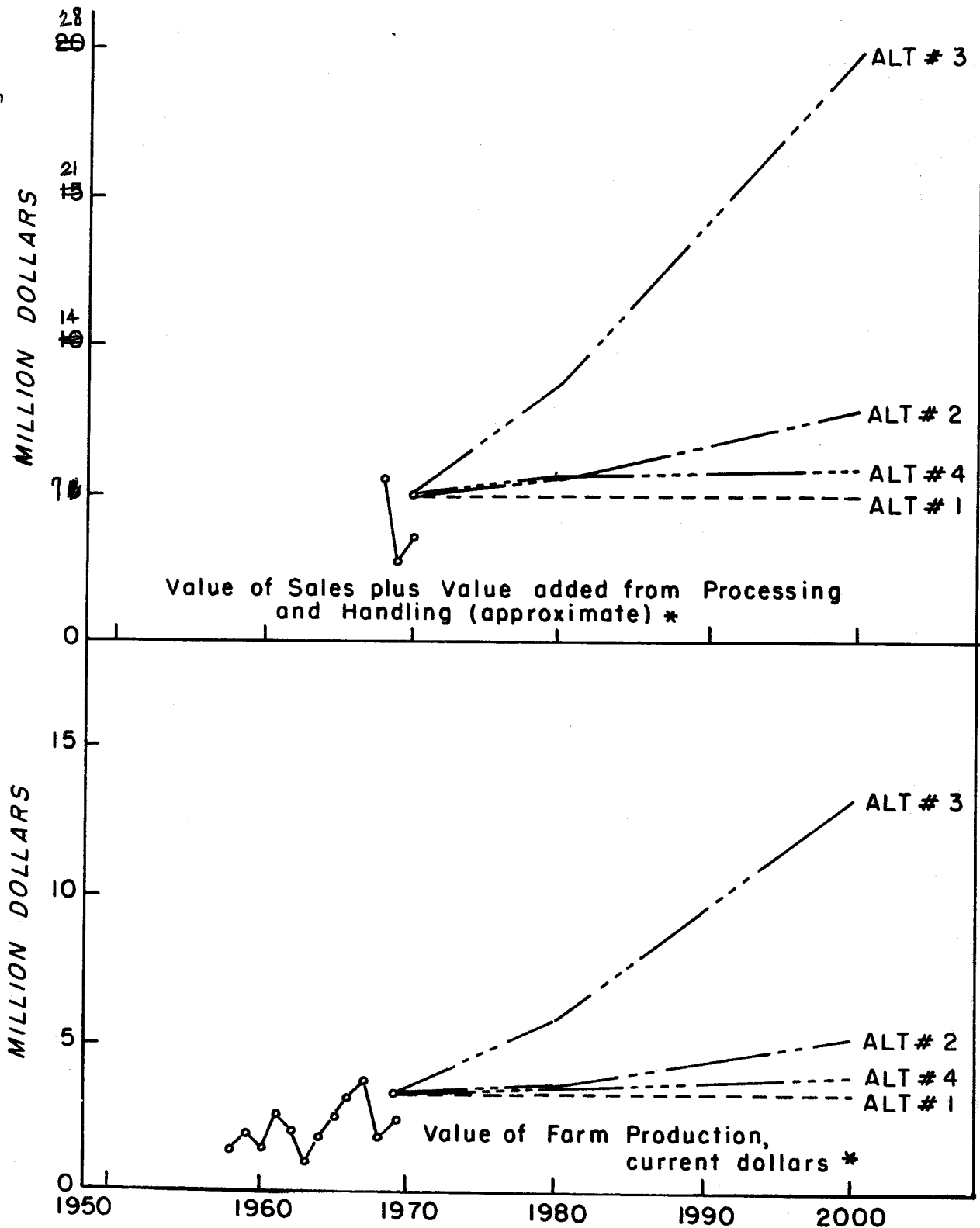
Official  
Correction



\* 1967 - 69 average dollar used for projections

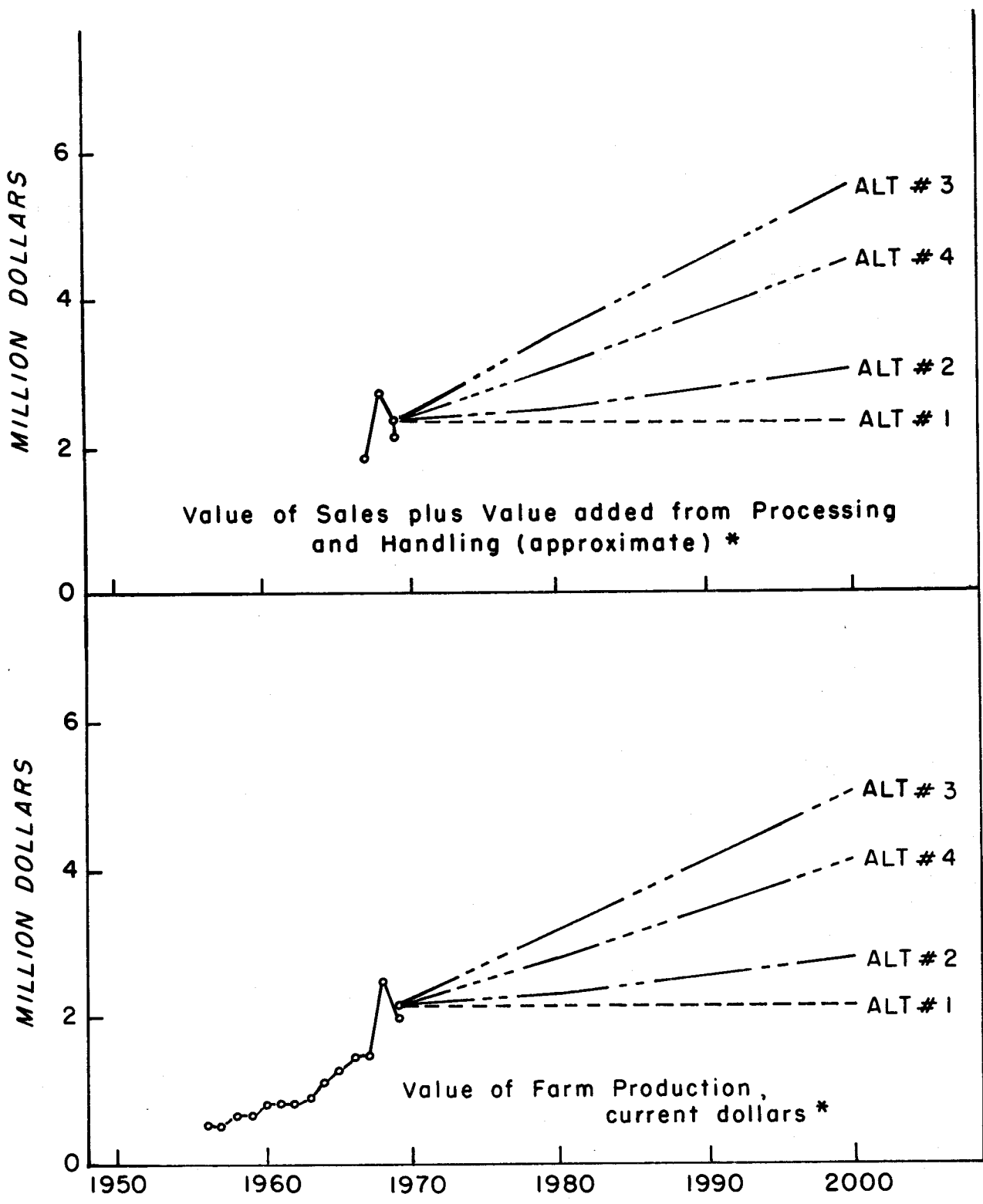
Figure V-5. Tree Fruits and Nuts, Marion County

Official  
Correction



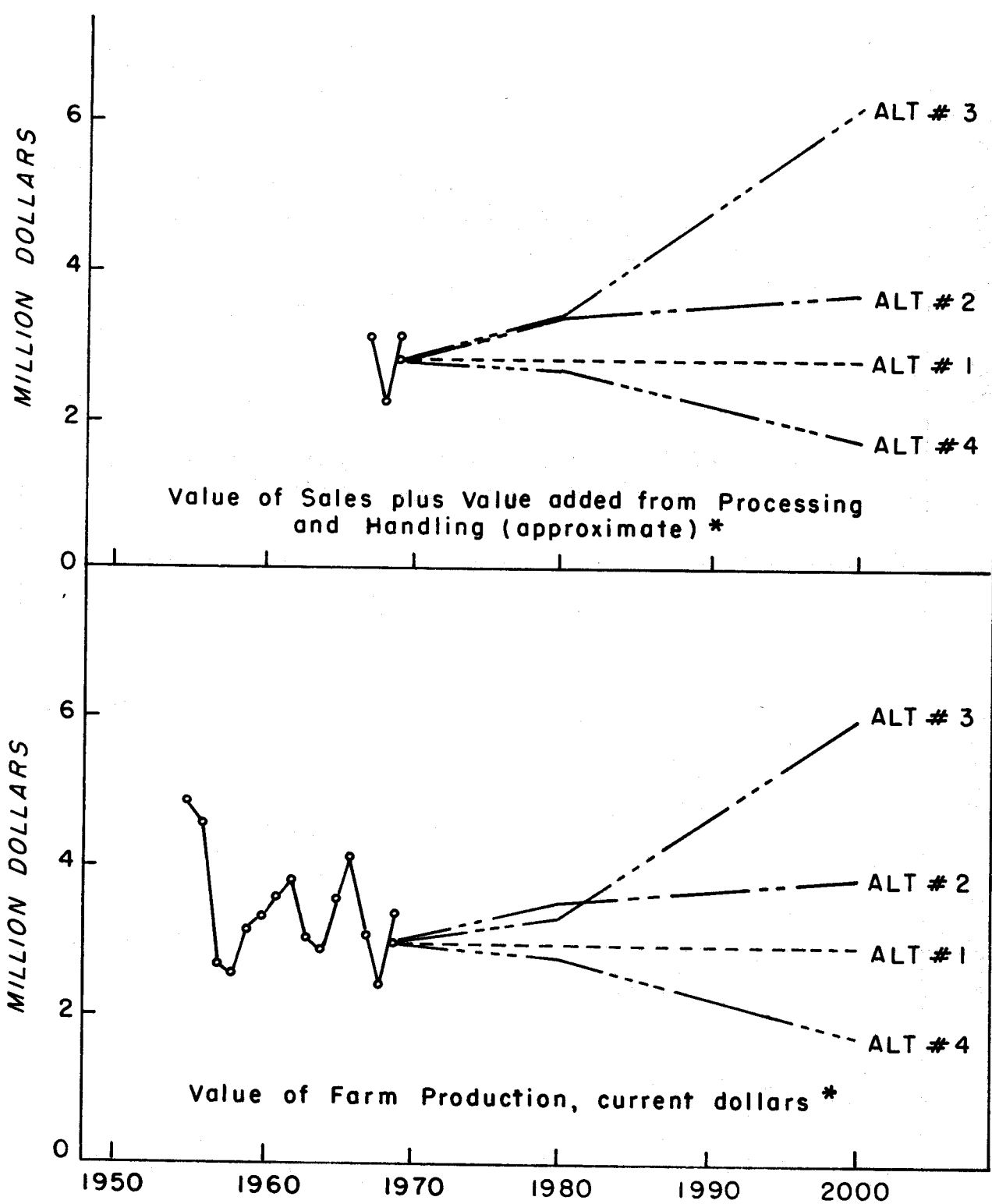
\* 1967 - 69 average dollar used for projections

Figure V - 6. Specialty Horticultural Crops, Marion County



\* 1967 - 69 average dollar used projections

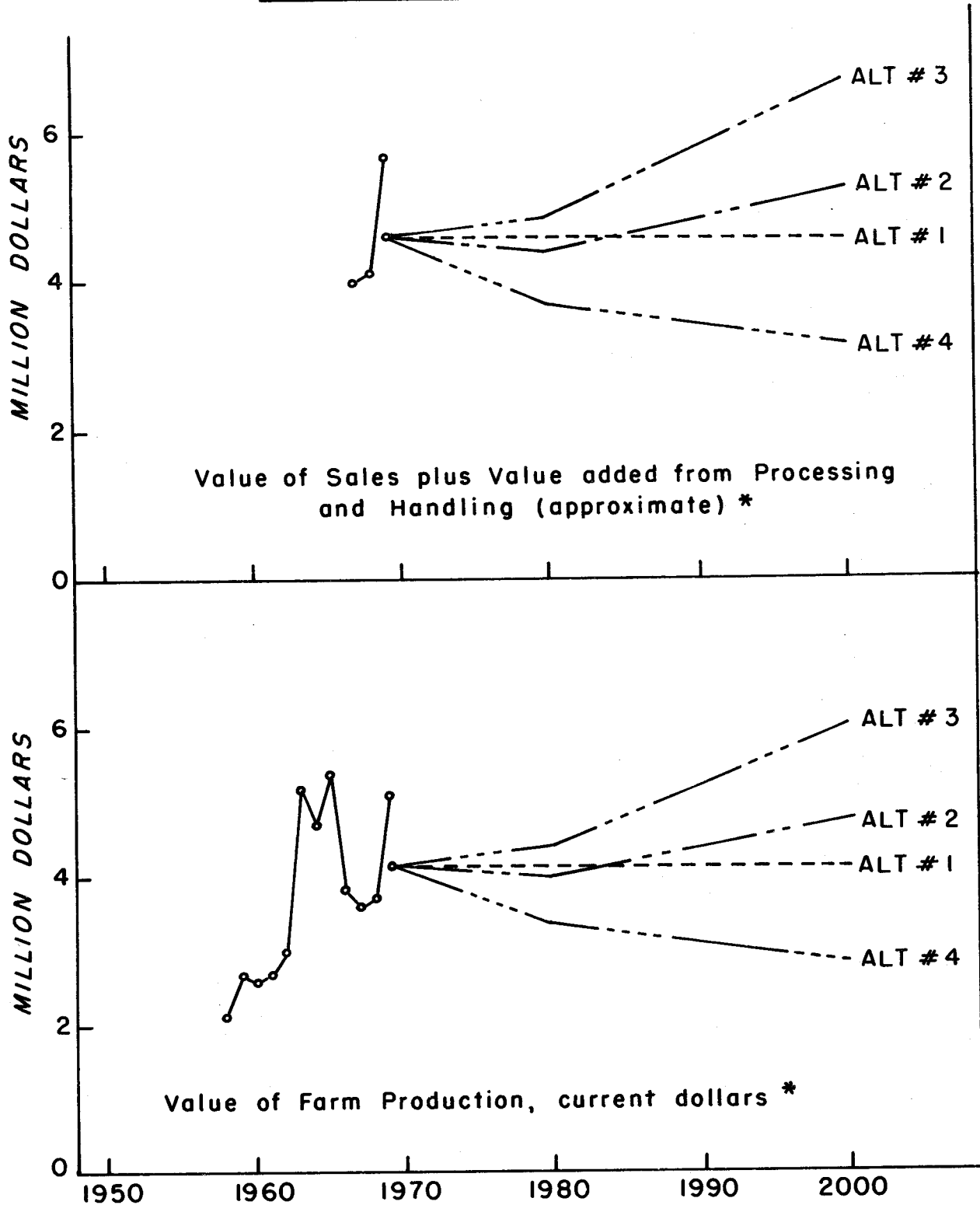
Figure V - 7. Small Grains, Marion County



\* 1967-69 average dollar used for projections

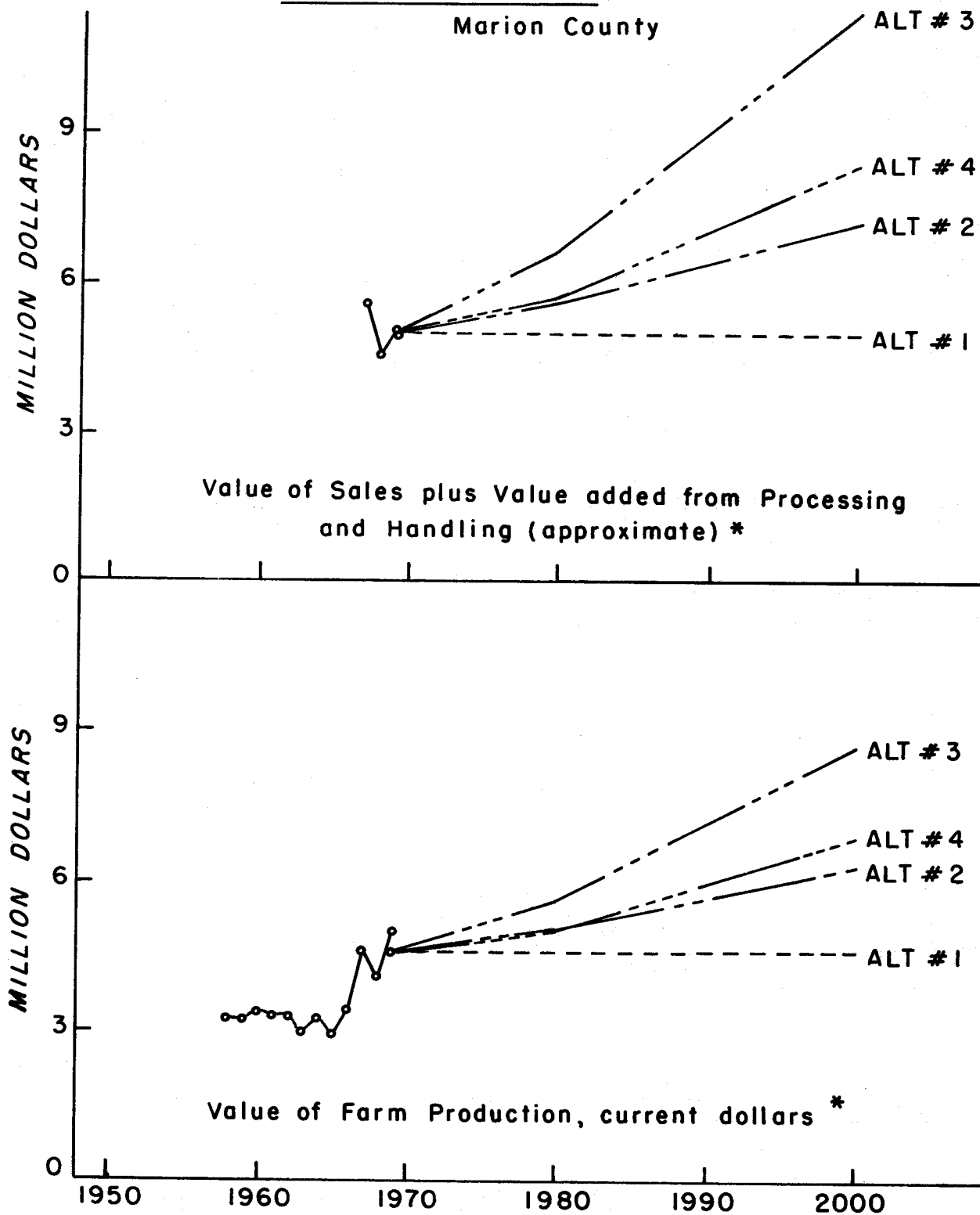


Figure V - 8. Grass and Legume Seed, Marion County



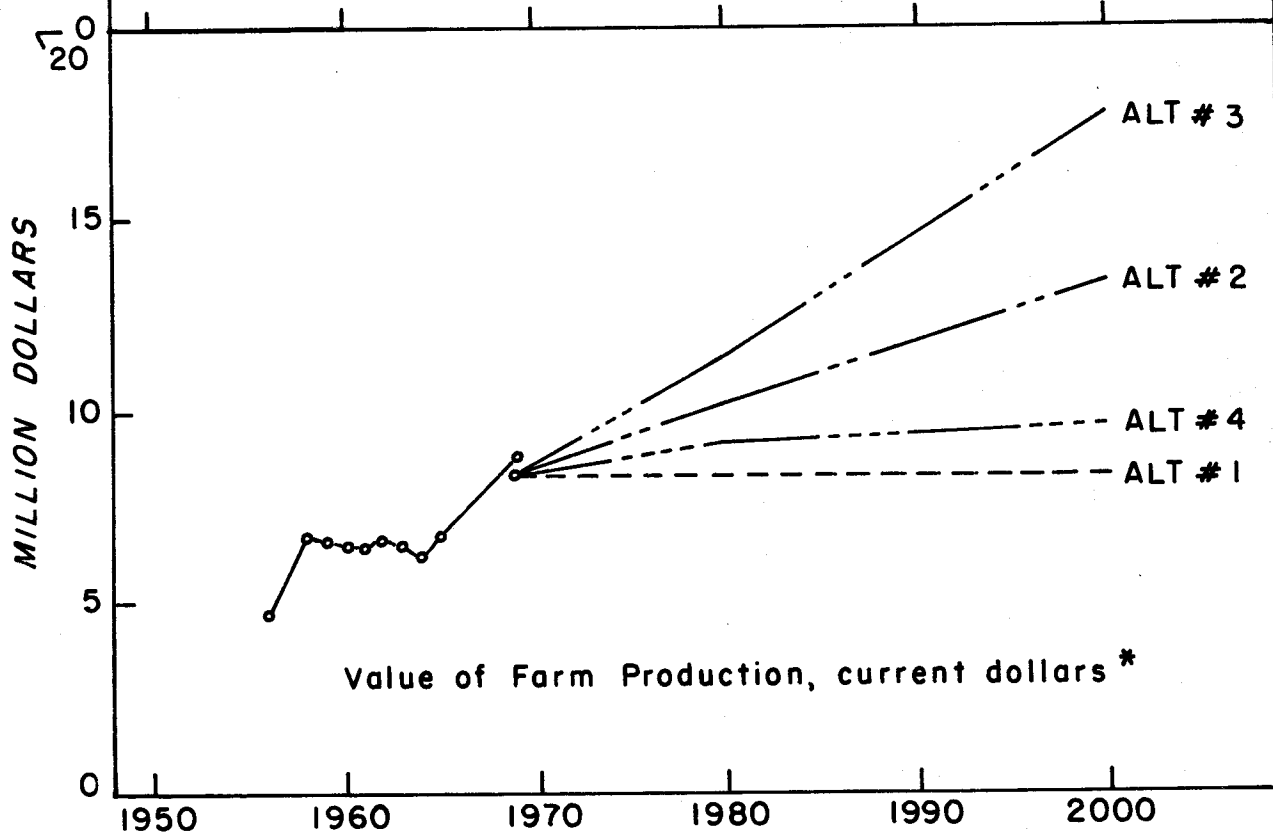
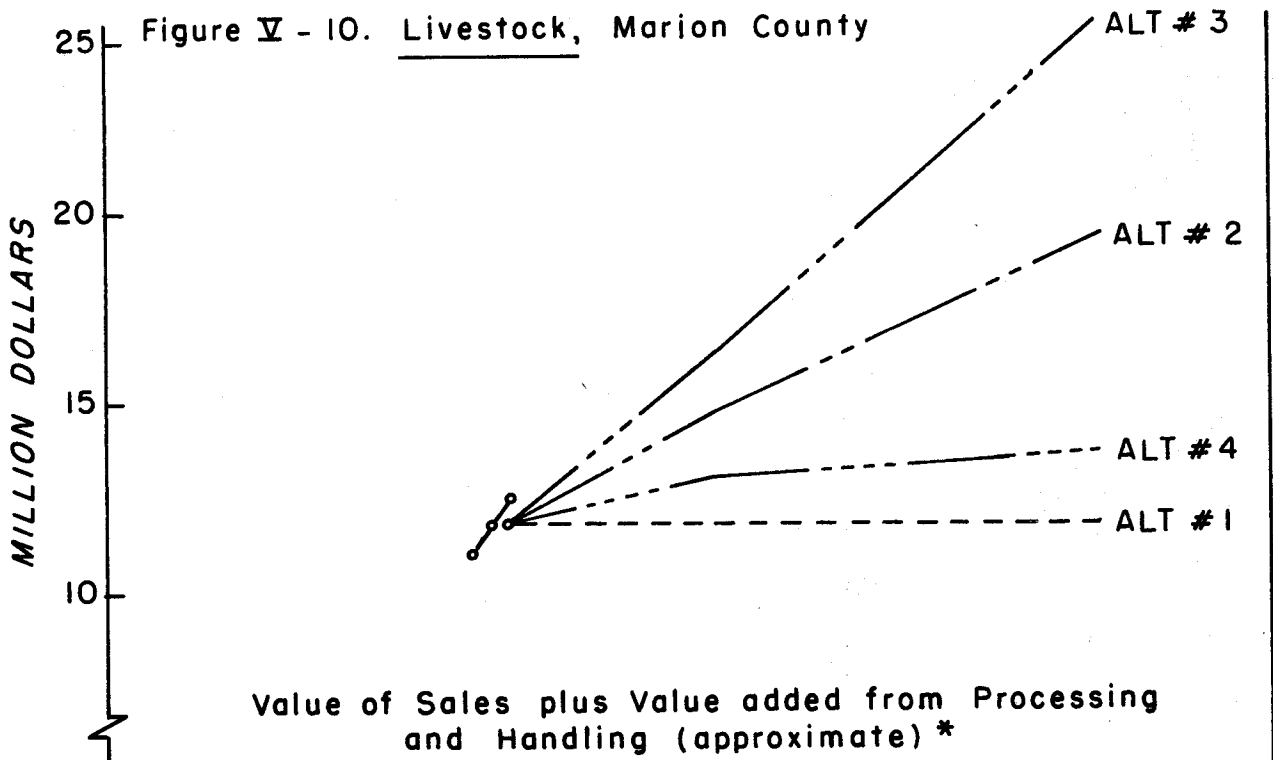
\* 1967 - 69 average dollar used for projections

Figure V - 9. Specialty Field Crops,  
Marion County



\* 1967 - 69 average dollar used for projections

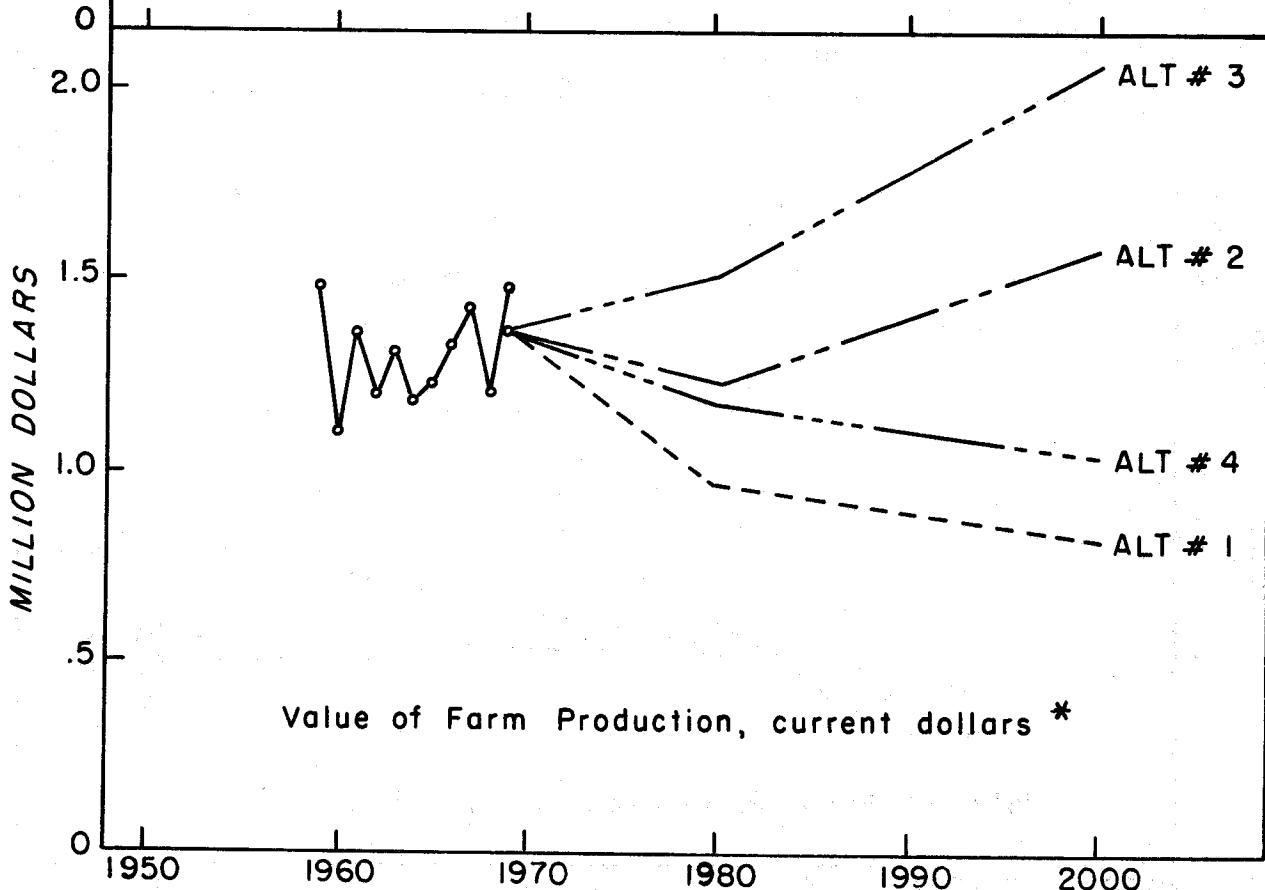
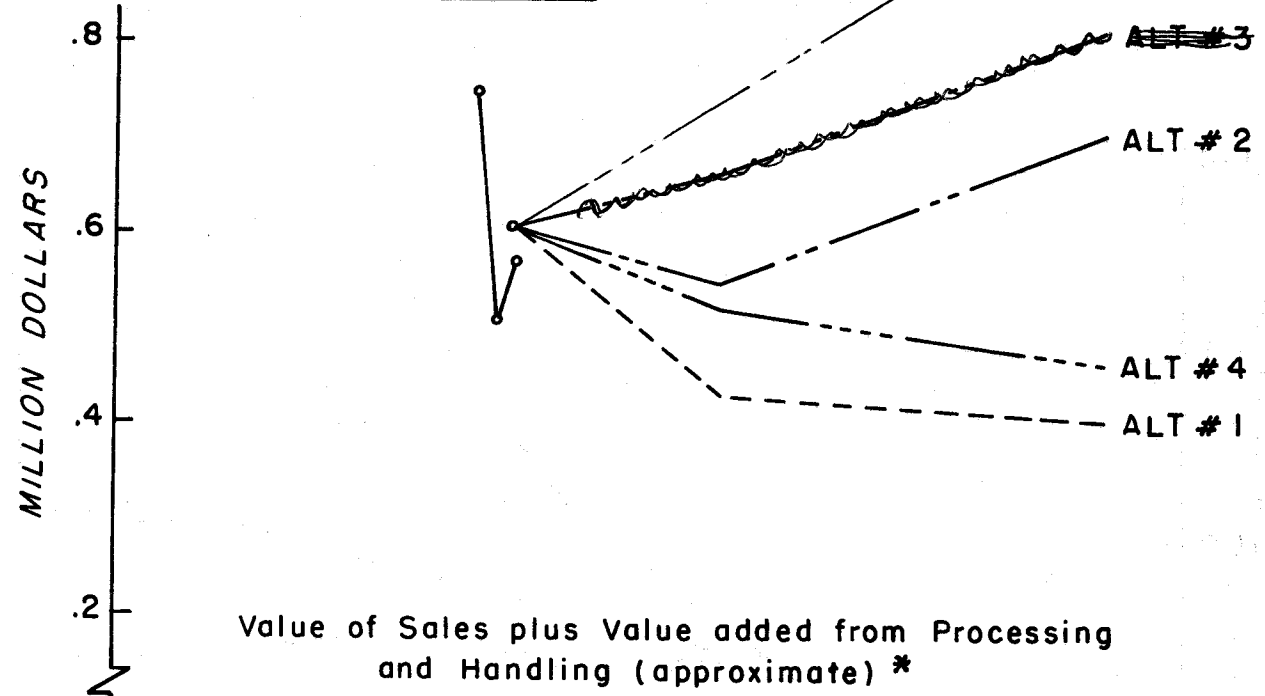
Figure V - 10. Livestock, Marion County



\* 1967-69 average dollar used for projections

Figure V - II. All Hay, Marion County

(0.97 million)  
ALT # 3



\* 1967 - 69 average dollar used for projections

26 25 Figure V - 12. All Poultry, Marion County

Official  
Correction

MILLION DOLLARS

21  
16  
11  
6

Value of Sales plus Value added from Processing  
and Handling (approximate) \*

ALT # 3

ALT # 2

ALT # 4

ALT # 1

MILLION DOLLARS

20  
15  
10  
5  
0

Value of Farm Production, current dollars \*

ALT # 3

ALT # 2

ALT # 4

ALT # 1

1950 1960 1970 1980 1990 2000

\* 1967 - 69 average dollar used for projections

# Chapter VI

## SOIL PRODUCTIVITY AND LAND USE

This information may be considered one of the more important to planning. Which areas are to be taken out of agriculture first? At what rate is it preferable to take these lands? What are the costs and benefits to the community and to individuals of removing these lands first and not others? These questions are interrelated with each other and point out some of the basic issues that need to be explored. This chapter points out some ideas related to soil productivity and land use.

### Technology and yields

Historical yield increases show that farmers have been using modern technology to apply more capital and more careful management to use the soil more efficiently. In many cases, characteristics of soils have actually changed due to treatment such as artificial drainage, commercial chemical application, operation of heavy equipment, irrigation, etc. There are naturally certain limitations placed upon the farmer stemming from the natural characteristics of each soil.

Some soils may respond more readily to some of these practices. Others may require more expensive methods to partly overcome limitations. Consider, for instance, the OSU experiment on Dayton soils which demonstrated effective, but more costly, techniques of getting respectable yields on this poorly drained land.

### Other factors influencing soil productivity

The difficulties involved in correcting some of the problems caused by natural soil limitations is one important aspect to consider when looking at this natural resource. Another might be the soil's ability to produce for agriculture under current or anticipated methods of farming. This would indicate what is generally thought of as soil productivity but does not consider the soil's potential or limitations for other uses.

Some soils that are producing a great deal at present may not have the greatest potential for the future. When considering differences in yields from one soil relative to another it must be remembered that the soil is not the only factor which influences yields. Location of processing plants, methods of transporting raw products, nature of available technology, the age of farmers in a particular area, etc., all play a role in determining what will be produced on the land.

Another problem comes up in trying to compare four tons of strawberries per acre on one soil to sixty bushels of wheat on another. How can these crops be compared unless they are put in terms of dollars. This introduces market factors that determine the price of each commodity and questions can be raised about the costs of production of each crop. Another question probes into the area of changing cropping patterns. An idea of what a soil group is producing now can be presented, but what assurance is there that the same crops will be found on these soils twenty years from now?

No attempt is made here to answer all of these questions. Furthermore, only one side of the coin is being examined here. The other side to consider is the alternatives for urban uses of land. What benefits and costs to society result from urbanizing first on low hill lands, then on valley floor soils; or visa versa?

### Soil resource groups

A classification of soils developed by the Economic Research Service and the Soil Conservation Service has been used for this report. The thinking behind this system is that all soils in each grouping will produce about the same for agricultural purposes. "A Soil Resource Group has been defined by the Economic Research Service as a group of land capability units having similar cropping patterns, yield characteristics, response to fertilizers, management and land treatment measures. The group is intended to be sufficiently homogeneous to permit a reasonable degree of accuracy in estimating and projecting yields." Some problems with these kinds of assumptions have been pointed out and should not be ignored. Table VI-1 at the end of this chapter shows the major soils series and land capability classes in each soil resource group of Marion County.

### Availability of land in soil resource group

The total measured acreages in each soil resource group (SRG) is shown in Table VI-1. The question to be raised is, if the same crops were to continue being grown on the same soils, what amount of land in each soil group would be needed to reach the various objectives, i.e., the productions for each alternative?

Because this is rather lengthy to calculate, it is shown for only two points in the future, alternative 3 in 1980 and alternative 2 in 2000. The resulting cropland and pasture acreage needed in each soil group are shown in Table VI-2. As can be seen, not only does acreage of cropland decrease overall, but also needs in each soil group decrease, but at varying rates. Most of these crops can be grown on a variety of soils. Changes in social and economic factors may cause some crops to switch from one soil group to another. An example is the continuing change from grain production to more intensive crops on terrace soils, such as the Woodburn series. Woodburn soils are capable of producing on the average much more than they are today by simply changing the cropping pattern.

### Average production per acre

Average intensity of production found on different soils would be one kind of useful information. This would give an idea of the average amount of production that would have to move to another area if certain soils were removed from agricultural use. This production could move to another area of the county, but it may also move to another county, or another region entirely. This would result in a stimulus to that area's agriculture and tending to render Marion County Agriculture less able to compete with other areas.

To illustrate this, acreages of each crop grown on each soil group were approximated as were yields for each crop by soil group. From this, the

value of farm production per acre and the value added in processing the portion sold were added. The first thing to note is that this is an estimate of current conditions and in no way is an attempt at showing relative potentials of these soils. The second is that this is not an attempt to show what the value of each soil should be to the economy. The production of each acre of soil is the result of more than just the soil resource. Present cropping patterns have a large influence on the resulting value of production per acre. So do factors such as prices of different commodities, cultivation practices, marketing contracts, etc.

The value of livestock production and processing were omitted from this analysis because of the difficulties of tying this directly back to the land resource. Forage production was included, however.

In an attempt to define what influence soil quality has, yield indexes were created and averaged for each soil group. The average of the indexes for SRG 120, for example, came to 90.4 for the fifteen crops shown for these low hill soils. SRG 180 averaged 102.9 for 19 crops compared to an average yield index of 101.8 for the terrace soils, SRG 410. The 410 group produces 40 major crops, but it also includes three times as much land as SRG 180. The other soil groups could not be handled in this manner because so few crops are grown that yield indexes are difficult to compare.



TABLE VI-1 DESCRIPTION OF SOIL GROUPS

Soil resource group	Principle soil series	Land capability classes	General location	Total measured acreage
120	Nekia, Jory	11 & 111	Low foothills	105,243
122	McCully, Nekia	IV	Steeper foothills	20,499
124	McCully, Nekia	VI & VII	Very steep foothills and uplands	62,698
180	Cloquato, Newberg, Chehalis	1 & 11	Recent alluvial soils	38,926
300	Clackamas, Sifton Salem	11 & 111	Gravelly terrace soils	22,520
370	Camas, Witzel, Stayton	IV & VI	Shallow droughty soils of terraces, flood plains, and foothills	9,475
410	Woodburn, Amity, Willamette	1, 11, & 111	Soils of Willamette Terrace	145,416
450	Concord, Wapato	111 & IV	Poorly drained soils of flood plains and terraces	30,377
460	Dayton, Courtney Bashaw	111 & IV	Poorly drained, fine textured soils of terraces	23,500
660	Labish, Semaihmoo	111	Poorly drained soils on shallow old lake bottoms	2,320

TABLE VI-2 CROPPING PATTERN AND ACREAGE BY SOIL RESOURCE GROUP

Soil resource group	Total acreage of crops 1967-69 average	Major crops currently grown	Possible acreage* for Alternative 3, year 1980	Possible acreage* for Alternative 2, year 2000
120 Nekia, Jory	40,697	Grass seed, hay & pasture grain, tree fruits & nuts, small fruits	27,688	22,108
122 McCully, Nekia	4,033	Hay & pasture, grass seed, cherries, plums & prunes	3,018	2,146
124 McCully, Nekia	26,000	Pasture, mostly unimproved	26,000**	26,000**
180 Cloquato, Newberg, Chehalis	20,328	Vegetables, small fruits, hops, mint, grain, forage	14,668	14,147
300 Clackamas, Sifton Salem	10,591	Wheat, sweet corn, snap beans, tree nuts	12,526	7,007
370 Camas, Witzel, Stayton	2,712	Grass seed, sweet corn, snap beans	2,454	1,701
410 Woodburn, Amity	110,543	Grains, grass seed, forages, vegetables, small fruits & tree fruits & nuts, etc.	95,914	70,242
450 Concord, Wapato	11,891	Hay, pasture, grass seed, snapbeans	8,547	7,245
460 Dayton, Courtney	7,916	Hay, pasture, ryegrass, barley	3,841	5,045
660 Labish	1,429	Onions	1,316	1,147

\* Keeping cropping pattern constant

\*\* Assumed to be constant

TABLE VI - 3 VALUE PER ACRE OF CROPLAND OF AGRICULTURAL PRODUCTS\*  
 BY SOIL RESOURCE GROUP (DOLLARS PER ACRES)\*\*

Soil resource group	Farm production	Value in processing	Total current value	Total value Alternative 3, 1980	Total value Alternative 2, 2000
120	116	61	177	351	444
122	103	91	194	418	522
124	40	0	40	44	47
180	305	464	769	1823	1700
300	296	631	927	1434	2229
370	207	430	637	1535	1608
410	192	230	422	771	1020
450	154	242	396	910	1008
460	51	2	53	71	99
660	1307	353	1660	2794	3320

\* Livestock and specialty horticulture crops are not included. Forages are included however.

\*\* 1967-69 average prices used throughout.

The figures in the above table do not represent productive capabilities of the soils in each group. Rather, these figures show effects of recent cropping patterns, prices, etc., as well as productivities.