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'66

A WORKING DOCUMENT

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EXTENSION'S FIVE YEAR

AGRICULTURAL OPPORTUNITIES PROGRAM

A WORKING DOCUMENT

Published By: THE NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

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PART I

INTRODUCTION

PURPOSE AND PROCEDURES

In September 1961, Director R. W. Shoffner appointed a committee and asked it to develop a five-year program for the North Carolina Agricultural Extension Service. He asked that specific income goals be set for the agricultural phases of the program.

This committee decided that it would not be realistic for it to attempt to develop such a program alone. Instead they decided to seek assistance from each county and from other members of the North Carolina State College Faculty.

Each county Extension staff was asked, after consultation with local lay leaders, to provide the following information for their county:

1. 1961 gross income by commodity.
2. 1966 gross income goals by commodity.
3. Major problems that must be overcome if the 1966 goals are to be attained.
4. The educational approaches that are needed to reach the 1966 goals.
5. The family living goals that can be attained by 1966.
6. The major problems that must be overcome if these family living goals are to be attained.
7. The educational approaches that are needed to reach these family living goals.

All counties provided this information and the county data included in this document was compiled and summarized from these reports.

On the campus a series of interdisciplinary committees were established to examine various phases of the Extension Program. These committees included representatives of various disciplines and members of the resident teaching and research faculty as well as Extension specialists. Each of these committees was asked: (1) to review the trends since World War II affecting the assigned phase of Extension work, (2) to indicate what the present situation is in this area, (3) to suggest goals for 1966,[1] (4) to specify the clientele to be reached, and (5) to indicate the problems to be overcome if the goals were to be attained.

Such interdisciplinary committees were set up to study the following phases of the Extension Program:

1. Horticulture
2. Field crops
3. Livestock, poultry, feed grains, forage crops, and protein sources
4. Forestry
5. Marketing
6. Home economics
7. Youth programs
8. Information
9. Community

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[1] Committees concerned with agricultural commodities and with forestry were asked to suggest specific production and income goals for each commodity.

In addition, a committee was asked to examine North Carolina's human resources in relation to Extension programs.

Thus, the program committee asked for and received information and carefully considered judgements from many sources.

The primary purpose of this working document is to make as much of this information and thinking as possible readily available to all Extension personnel concerned with the development of programs.

The purpose of the publication 1.6 in '66 was to set forth some goals and a general framework of a state-wide Extension program. This, of course, is in no sense a complete program. This simply provides a framework of a state program. Within this framework each specialist group and each county staff are expected to work out the details of their own program. It is hoped that this working document will be another useful source of information as programs are more completely developed.

Similarly, this document should prove useful to the administration and any future program committees as the framework of the state program is further developed or revised.

PLANS FOR ACTION

The effective implementation of any Extension program is, of course, ultimately dependent primarily upon the actions taken at the county level and at the individual department level. There are, however, a number of changes of a general but very important nature that are in process. Some of these are discussed briefly below.

1. Greater Emphasis on Income Generating Activities

The North Carolina Agricultural Extension Service will give great emphasis to income generating activities. It will strive to move income generating activities forward with special emphasis on higher crop yields and more efficient livestock production. The all-practice demonstration method will be emphasized in bringing all pertinent research to bear on problems affecting efficiency of crop and livestock production.

Work to improve farm management and the use of farm records as guides to more efficient farm production and marketing will be emphasized.

New sources of agricultural income will be vigorously sought and developed in those areas where studies indicate such opportunities exist.

The development of an expanded food processing industry in N. C. will be reflected in extension's activities.

2. More Specialized and Better Trained Personnel

Insofar as possible the responsibilities of agents within counties will be more limited and more clearly defined in order to allow for further specialization. In addition, some marketing areas and other geographic areas will have agents assigned to work with particular aspects of farming, family living, youth development, or other special interests on a multi-county basis. State staffs will also have to specialize more than ever before.

Extension will need staff members who are better trained. Regular training at the post-graduate level will be expected of virtually all extension workers. Training must also go beyond technical subject matter for the expanded job of adult education that we must be prepared to do. All staff members must have or must acquire, through inservice training, an appreciation of the basic principles of the social sciences, including sociology and psychology, so they may work more effectively with people. Training and retraining of extension workers will be an absolute necessity.

3. Organizational Structure and Functions Adjusted to Meet Changing Educational Needs of People

New programs often cut across departmental lines. They involve men, women, and young people in a single program, and they deal with a highly specialized clientele. Traditional administrative structures may not always be adequate to meet their needs. The N. C. Agricultural Extension Service will keep flexible and alert to emerging needs and adjust its programs accordingly.

Extension, in its awareness of persistent change, has initiated various programs to help rural people solve their adjustment problems. These programs include public affairs, community and area development, and farm and home development.

These growing administrative responsibilities may necessitate some reassignment of present personnel and other changes.

4. More Emphasis on Program Planning, Leadership, and Evaluation

Stronger program planning procedures will strengthen every phase of the N. C. Agricultural Extension Service. Subject matter specialists will be involved in program planning and program development at the county level. There will be an ever closer relationship between research and extension in the planning procedures. The people to whom a program is directed will help plan it.

We will train and use more leaders in adult and youth programs. These leaders can serve as organization and, in some instances, subject-matter leaders.

We know lay people can handle these responsibilities adequately and are proud of the opportunity to serve. The way in which our extension programs are planned and developed is, in itself, an educational process. Program planning can teach leadership, citizenship skills, and appreciation of both the scientific problem-solving process and of democratic group action. Extension staff members will pretrain as well as train these leaders for their jobs. Leaders will be adequately informed as to their functions.

Extension has a single function to perform--education for action. Such action will be supported by facts derived from and directed at specific needs and problems.

The "scatter shot" is of little use. Extension staff members will provide direction.

To meet these changes, Extension will develop more effective evaluation techniques for its programs. Only then will we be able to evaluate, adjust, and discard obsolete programs and adopt new ones as the needs for them are identified.

5. Cooperative Effort and Support to be Sought

The goal, 1.6 in '66, is designed to benefit many people. It will require the enthusiastic support of many leaders, agencies and business firms. Strong efforts have been and are being exerted to bring support together from many areas.

PART II

REPORTS OF CAMPUS COMMITTEES

REPORT OF HORTICULTURE COMMITTEE

North Carolina is now producing $144,509,163 worth of raw horticultural products. Another 72 million dollars is spent by gardeners for seed and supplies. This second figure, of course, is not income generating to the farmer but it is income generating to agri-business. Within five years the income from horticultural products may be expected to increase by around 33 per cent or $47,384,837. The following table shows in summary form the past, present, and projected volume and value of horticultural products (next page).

The over-all picture for horticultural crops in North Carolina looks reasonably bright. As our population increases, there will be an increased demand for fruits and vegetables. Within the next 10 to 15 years we will need 21 per cent more fruits and around 43 per cent more vegetables. Presently, 20 per cent of the food dollar is spent on fruits and vegetables, and more than one-third of the food consumed in the United States comes from these products. The national per capita demand has changed little in the past 15 years. The demand for the product form has changed from predominantly fresh to about equal volumes of fresh and processed. This trend will continue as consumers choose to spend less and less time in food preparation.

In the ornamental field, the opportunities are almost unlimited. The building boom for the past 15 years has created the greatest demand for ornamental plants in history. Our nursery industry has made a four-fold increase in value in the past 10 years, and is continuing to expand at a rapid rate.

Most horticultural crops are grown on comparatively small units and still require considerable hand labor. This is rapidly changing, but may always lag behind most other crops because of the tender, fragile and perishable nature of the crops. Presently, North Carolina, with its small farms and adequate labor, can compete with other areas on a number of horticultural crops. It is important, however, that we move rapidly to increase efficiency, especially in mechanical harvesting. In order to mechanize, larger units will be needed. One answer to this problem is for single operators to lease large tracts of land and operate much as they do in California.

The structure of the marketing processes has changed nationally from local and terminal facilities with individual buying and selling to unified sales direct to wholesalers and supermarkets. North Carolina growers have made a very limited shift with a small number of commodities.

An important factor in the supply and demand of horticultural crops is the strong role that processing is now playing and will play in the future. For many years, North Carolina's nearness to markets gave us a distinct advantage over competitors located a greater distance from the large, populated centers. Since transportation, refrigeration and storage have improved, North Carolina's unique location has become less important. Nationally, the acreage of vegetables grown for processing has doubled in the past 20 years. The acreage grown for fresh market has risen approximately one-fourth. About one-half of the fruit production is for processing.

SUMMARY CALENDAR -- Long Range Plans

Crop	1945 Production	1945 Value	1961 Production	1961 Value	1966 Production	1966 Value
Cucumber, processing	425,000 bu.	$ 438,000	1,238,000	$ 1,401,000	3,045,000	$ 3,542,000
Peppers	108,500 cwt.	933,000	262,000	2,796,000	477,000	4,280,000
Beans, snap	315,300 cwt.	1,323,000	429,800	2,423,000	1,094,400	5,313,000
Tomatoes	95,400 cwt.	405,000	191,000	1,054,000	488,000	3,587,000
Other vegetables*				7,575,000		14,622,000
Home gardens**				67,875,000		65,000,000
Sweet potatoes	3,465,000 cwt.	13,797,000	2,420,000	11,132,000	4,125,000	16,500,000
Irish potatoes	5,250,000 cwt.	15,050,000	3,691,000	7,281,000	3,000,000	6,500,000
Watermelons	580,000 cwt.	702,000	545,000	681,000	1,050,000	1,700,000
Cantaloupes	210,000 cwt.	825,000	144,000	533,000	150,000	600,000
Strawberries	3,575,000 qts.	1,151,000	2,990,000	2,000,000	8,050,000	4,000,000
Blueberries 1950	681,600 pts.	86,000	11,700,000	4,000,000	21,600,000	8,000,000
Apples 1950-59 av.	1,490,000 bu.	2,980,000	3,041,163	5,758,163	5,000,000	8,000,000
Peaches	1,072,000 bu.	2,465,600	1,500,000	3,000,000	2,000,000	3,000,000
Nursery	1,300 acres	2,500,000	3,500	10,500,000	5,200	16,500,000
Outdoor flowers & bulbs	900 acres	1,800,000	2,500	6,000,000	3,000	7,250,000
Greenhouses	1,200,000***	3,250,000	3,500,000	10,500,000	4,500,000	13,500,000
		$47,705,600		$144,509,163		$181,894,000

* Includes lima beans, beets, cabbage, sweet corn, cucumbers, lettuce, onions, asparagus, broccoli, carrots, cauliflower, celery, eggplants, leafy greens, okra, southern peas, pumpkins, squash, turnips, and others.

** Based on farm census figure of 154,263 acres of farm gardens. Calculated at value of $400 per acre.. Value increased by 10% for value of non-farm gardens.

*** Square feet . . .

The fresh market demand for most horticultural commodities will continue to greatly exceed the supply from North Carolina producers. Each commodity must be considered separately in deciding the time to shift, if at all, from fresh to processing markets.

Future developments in the processing industries depend on availability of adequate capital, competent management, changes in food consumption patterns, and large production units.

The mortality rate of the small to medium sized food processor has been exceedingly high during the past 10 to 15 years. The large efficient operator has succeeded at the expense of small, less efficient operations. A few large successful operations is more conducive to the sound food processing industry in North Carolina than many small uneconomical sized units.

One of the most important national trends in the industry has been the shift in production areas. Production is moving west. The western states in 1935-1938 produced 20 per cent of the national total production. By 1955-1958, the west had increased its production to 46 per cent of the national total. At the same time, the South Atlantic group had dropped from 15 to 7 per cent of the total production.

In the field of horticulture, there are no acreage controls and no price supports. Except for seasonal floods on the market, there are no surpluses, and when surpluses occur, supply and demand soon strike a balance. At present there is no shortage of any horticultural products with the possible exception of muscadine grapes and ornamentals. Any expansion that North Carolina makes in fruit and vegetables, except to take up the slack in population increase and per capita consumption, will come at the expense of growers in other areas. Because of competition, lack of support prices and acreage controls, efficiency is more imperative in horticultural crops than in most farm crops.

The committee feels that the greatest potential for increases lies in the following crops: Flower and nursery crops, apples, blueberries, sweet potatoes, pickling cucumbers, tomatoes, peppers and watermelons. It is suggested that work on these crops be more intensive than on other crops.

Four crops -- muscadine grapes, carrots, celery and spinach -- show considerable promise as new sources of income. Presently, these crops have little commercial value in the state, but several concerns are interested in the possibilities of having these crops produced for processing. These possibilities should be fully exploited. Expansion of peach production in the Piedmont has considerable promise as a new source of income for that area.

Horticulture is such a diversified field that few general statements can be made. Attached is a break-down of the major horticultural crops.

CLIENTELE: The clientele will vary depending on the commodity, but in general, it will include all those people who control decision making directly and indirectly. The method of working with the clientele will vary greatly. This is discussed under each crop. Mass media and the "shotgun" approach will be used in working with home gardeners whereas the "rifle" approach is suggested for those growing specific commercial crops. Home gardening and landscaping are two fields in which the Extension Service can serve the urban as well as the rural people. This service can be done largely through mass media.

PROBLEMS TO OVERCOME: The problems vary with the commodity and are discussed under each crop. In general, they consist of changing attitudes and putting into practice all available cultural information, including disease and insect control. Perhaps the most important problem of all is financing. Growers will need to have sound farm enterprises and organized marketing in order to justify commercial financing.

REORGANIZATION OF EXTENSION SERVICE: Over the past 50 years our State has shrunk in size because of our improved communication system, modern automobiles and good roads. Our farm clientele has also changed from predominantly general farmers, with little or no formal education, to specialized farmers with more formal education. Because of these developments, the following suggestions are given for consideration:

A few counties are perhaps big enough to have a staff of highly trained men and women. We might profitably consolidate personnel in some other counties. For example: X, Y, and Z counties might pool their extension personnel. The office would be located in a central location. One man would become supervisor with a title of say, "Agricultural Director"; under him would be men and women trained in various specific fields ...they might be called "Agricultural and Home Advisors".

Along with, or independent of this proposal, another suggestion is offered... Train some of the present assistant agents and place them as specialists on an area basis. They might be trained in several disciplines and/or commodities (but not too many) and would be administratively responsible to the specialists in charge at the College.

Landscape Horticulture

HISTORY: Landscape horticulture (Landscape gardening) is growing by leaps and bounds. Twenty years ago it was an art...almost exclusively for the more cultured women. Today, thanks largely to garden clubs, it is the favorite topic for practically all women. Twenty years ago most men looked on landscape horticulture as a feminine activity and shunned it like a plague. Today landscape horticulture is the number one hobby for men in America.

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GOALS: By 1966, production could increase by 50 per cent. This does not necessarily infer a tremendous increase in acreage, since a shift to bed-planting rather than row planting could account for this increase.

Use of chemicals for weed control is a necessary practice for industry expansion. Lower cost of production through lowering labor costs will be essential. By 1966, one-third the acres in nursery stock could be treated with chemicals for weed control. Less than 1 per cent are treated now.

Small, part-time boxwood growers in the Swain County area could in five years realize a 50 per cent increase in profits simply by marketing cooperatively. Growers in the mountain counties commonly receive $1.25 to $1.50 and $2.25 to $2.50 for boxwood plants that retail for $11.50 and $22.50 in Raleigh. By digging their own plants and marketing cooperatively they could receive about one-fourth the retail price for their plants. A more orderly marketing arrangement by other small growers throughout the mountain counties could boost their profits by 25 per cent.

Ninety-five per cent of the ericaceous plants shipped from the mountain counties are either native collected stock or are grown from "cut backs" (stumps collected from the wild and grown in the nursery for a few years). A better quality and higher profit plant could be produced from cuttings. In five years 20 per cent of the nursery grown plants can be from cuttings provided research presently underway provides technical knowledge for economical propagation of native ericaceous plants.

PROBLEMS TO OVERCOME: Effectiveness of weed control chemicals must be demonstrated on various soil types and on various plant species so that growers in a given area can observe and develop confidence to use.

More research is needed to know how to economically root native ericaceous plants.

The biggest problem to overcome is a deficiency of trained nurseryman capable of developing and carrying out the specialized procedures necessary for economical and precise production.

We need more county and/or area extension personnel trained in nursery work who can work more closely with industry leaders and to train part-time growers in the basic cultural procedures specific to the area. Such a person is needed especially in the Avery County area to overcome marketing problems, especially for the smaller part-time growers.

Flower Industry

HISTORY:

N. C. Floral Products	1950	1960
Bulbs & Other Outdoor Crops:		
Acres	1,400	2,500
Sales (Dollars)	2,800,000	6,000,000
Under Glass		
Square Feet	1,500,000	3,500,000
Sales (Dollars)	4,200,000	10,500,000

North Carolina was one of the four states with major increases in commercial cut-flower production during the past decade. North Carolina carnation growers increased production by more than one million blooms from 1950 to 1960; pompon chrysanthemum production increased by more than 100 thousand bunches, and gladiolus production increased by 1.3 million dozen of spikes (118% increase). In 1960, North Carolina was ranked fourth in the Nation in production of asters and became a leading peony-producing state with a production increase since 1949 of more than one million flowers (125% increase). Rose production also made a significant advance in North Carolina. With the exception of gladiolus, none of these crops exceeded 15 per cent of the state's total production of cut flowers. This indicates the diversity of cut flower crops which can be produced in North Carolina.

SITUATION: The industry under glass is fairly well distributed throughout the state with a diversity of crops. Carnations, asters, stock and snapdragons are more prevalent in western North Carolina. The bulb and other outdoor crops are centered around Castle Hayne; however, there is a secondary center for gladioli around Hendersonville.

GOALS: In general, the goal is to increase production since production in North Carolina only equals about 50 per cent of the consumption. The goal is to increase growing area under glass and plastic by one million square feet by 1966, primarily by pushing use of plastic covered growing structures. Also, increase carnation production one million blooms...produce 50 thousand cut roses outdoors for commercial use.

CLIENTELE: Present growers plus industry leaders in other states who may be looking for an "ideal" area for relocation or for expansion.

PROBLEMS TO OVERCOME: Need more research data on details of culture under plastic...need research data on variety and cultural details for outdoor rose production in the southeastern part of North Carolina...Need backing (money) to use in informing out-of-state industry leaders of North Carolina's tremendous potential in the floricultural industry...Need trained specialists in areas such as Castle Hayne to work closely with growers of outdoor cut flowers.

"New" Vegetable Crops

HISTORY: The following crops have not been produced on a large commercial scale in this state. They have a potential in areas suggested:

Carrots -- for processing in east and west.
Celery -- for fresh market in east (limited in west).
Spinach -- for summer production in west...fresh market.
Lettuce -- for summer production in west...for fresh market.
Garden peas -- for processing in west.
Broccoli & Cauliflower -- for processing in east.
Greens (spinach, collards, kale, mustard, etc.) -- for processing in east.
Okra -- for processing in east and Piedmont.
Rhubarb -- for processing in west.
Southern Edible peas -- for processing in east and Piedmont.

PRESENT: All of the above crops are grown on a very limited scale at present. Some are not being grown for processing, but probably could be if outlets were available.

GOALS: No specific goals for these crops can be set up at present. Expansion of these crops depends almost entirely on research and development of market outlets.

CLIENTELE: Generally same as for other vegetable crops.

PROBLEMS: Need research and research data on each of these crops. This can be obtained only through intensive research. The new experiment station at Fletcher will provide some of this information. Some research facilities for the Tidewater area should be provided... potential for that area seems good... research personnel should be stationed in the area to explore production potential of these crops. Extension could follow the research findings with research-type demonstrations in the field.

Research type demonstrations are too slow, i.e. by the time we can get around to solving all of the celery problems the celery firm now producing in Hyde County may have to get out of production. The same might be true of the carrot production (for Gerber Products Co.) in Hyde and Pasquotank counties. Research type demonstrations are effective in determining some of the factors limiting most efficient production but not all of them. Where such new crops are concerned, if a definite potential exists, a crash research extension program would bring about quick tangible results.

Home Gardens

HISTORY: According to census figures we had 263,354 farms with gardens in 1945, valued at $30,295,354. In 1959, we had 164,680 acres of gardens and in 1960, we had 154,263 acres of home gardens.

The number and acreage of home gardens has been gradually decreasing. This is due largely to the decrease in number of farms and the tendency toward specialization. As farmers specialize in commercial production they increase their farm income from the commercial commodity and are better able to purchase some of the food they produced before concentration or specialization.

PRESENT (1961): Acreage was probably below the 154,263 acres in 1960 (no figures available). This trend will continue to go downward as number of farms decrease, size increases and farmers specialize in commercial production.

GOALS: Our goal is to have farm families eat better and more economically. If they can concentrate on commercial commodities and make more money with which they can buy all of their food they should do so. Operations and income on most small farms, however; are such that they could produce a large portion of their food in addition to their commercial products. Our goal is to get these farms to produce bigger and better gardens and thus save $400 per year on their food bill.

By 1966 acreage and number of farms will decrease but value per farm should increase. There will also be a larger number of urban gardens as the urban population increases. Goal for 1966 is a garden value of $67,875,000.

CLIENTELE: This program will be directed primarily toward small farmers, part-time farmers and other lower income groups. General and timely information will be channeled to all gardeners (rural and urban).

PROBLEMS: Low income group fails to realize the value of a garden. Best cultural practices are not being followed and thus results are not what they should be. The biggest problem is motivation. Problems can be solved by: (1) Continue mass media education to show "why" and "how", (2) Special emphasis on "why" and "how" with those low income families in special extension programs.

Sweet Corn

HISTORY (1949-1960): The following statistics give an indication of past history:

	1949	1960
Acreage	7,200	5,500
Yield	75 cwt.	56 cwt.
Production	342,000 cwt.	308,000 cwt.
Value	$ 1,197,000	$ 939,000

Production is primarily in the early counties of the east (Duplin-Carteret-Chowan area) and the mid-summer counties of the west (Henderson County area).

Per capita consumption for fresh market and canned corn has increased only slightly and about doubled for frozen corn.

Production for processing does not seem feasible at present because of low yields and corn earworm problems.

PRESENT: The statistics for 1961 were as follows:

4,500 acres	292,000 cwt. production in state
65 cwt. per acre	$ 1,153,000 value in state

All sold on fresh market. Over 80 per cent in the east sold for early corn in late June and early July. Remainder sold on local markets during summer.

Quality is good where insects are controlled and corn is cooked rapidly and shipped under refrigeration.

GOALS: Increase yields by 10-25 per cent with acreage remaining about the same. Most room for improvement is in east for early markets.

CLIENTELE: Same as for other vegetable crops.

PROBLEMS: Low yields, improper harvesting and handling, poor earworm control.

Earworm control is greatest production problem. There are several earworm "resistant" varieties being tested. If these have the resistance and the quality we could increase our acreage -- if we harvest and handle the corn properly.

Continued research on variety testing (particularly earworm- resistant varieties) and insecticidal control are needed. Only growers with irrigation should be encouraged to grow sweet corn in the east. All sweet corn should be cooled and shipped under proper refrigeration.

Pickling Cucumbers

HISTORY: Gradual and continuous increase from 5,000 acres and a farm value of 1/2 million dollars in 1945 to 14,600 acres and a value of 1 1/2 million dollars in 1960. Yields and prices remained virtually unchanged. Better growers have increased their yields as result of educational programs.

Production has been largely confined to the tobacco belt because tobacco labor can be used for harvesting pickling cucumbers prior to tobacco harvest.

Continuous acreage increases have been due to:

1. Search for additional sources of income as a result of tobacco allotment reductions.
2. Increased per capita consumption of pickles due to promotion by the industry, availability of a greater variety of pickle products, and better general economic conditions.
3. Development of the "Fresh Pasteurized Pickle". This is a relatively new process, developed at State College, which permits packing of fresh pickles and having them on the grocery shelf within 5 days of harvest.
4. Progress in transportation facilities. Northern processors may now buy fresh stock from southern states to lengthen their packing season.
5. Our early season results in harvests just prior to the peak summer sales. Summer sales are heavier because of more picnics, salads, sandwiches, etc. during this period.

Production requires about 120-man hours of labor per acre -- about 70 per cent involved in harvesting.

PRESENT: Pickling cucumber production is now largely in the tobacco belt with mostly small or tenant farmers because of the high labor demand in harvesting. Better growers get yields of 200-300 bushels per acre. Low yields are largely due to poor stands, undesirable planting sites, short harvesting period due to other crop interference, and lack of production knowledge on part of the growers.

All acreage is contracted. The four largest North Carolina processors contract for over half of the acreage in this state. About 50 per cent of the pickling cucumbers grown in this state are shipped to out-of-state processors.

GOALS: Based on anticipated demand, acreage of pickling cucumbers should increase by at least 100 per cent by 1966. Yields should increase by 50 per cent. Some of this acreage increase will come about in the tobacco belt but much should come from the Tidewater area as well as the mountains. All pickling cucumbers are now produced under contract with the processor or processor's firm. This arrangement is satisfactory and will continue as long as hand harvest continues.

If harvest mechanization becomes a reality, some of the small growers will become larger; some of the small growers will drop out and other larger growers will begin producing pickling cucumbers as a new crop.

The anticipated demand increase is based on population increase, our relative nearness to the larger markets and processing plants, our natural climatic advantages, availability of land, and ever increasing processor interest in expansion.

CLIENTELE: Educational efforts will be directed largely to area extension personnel, responsible for this commodity group, as well as receiving station managers who are responsible for securing acreage and advising their contracting farmers. Only those farmers who can profitably produce and harvest this crop will be encouraged to grow it. As mechanization takes over there will be a switch in acreage with major production moving out of the sandy soils in the tobacco belt to the more organic soils in the Coastal Plain and Tidewater area.

PROBLEMS: 1. Labor requirements in harvesting is one of the major problems. Commercial research is underway to solve this problem. Our experiment station could help speed up the mechanization of harvest through practical research. Mechanization would permit increasing size of plantings of from the present one-two acre per farm up to 10-50 acres per farm. Until mechanical harvesting is a reality we need a stop-gap program. This should be centered around increasing yields per acre and decreasing production costs. This can best be accomplished by:

1. Teaching growers groups recommended practices and production procedures. (such as proper use of fertilizers, pesticides, bees, etc.).

2. Research on production practices necessary to increase yields.

3. Extension-research type demonstrations on increasing plant populations plus stepped up fertility and moisture control practices.

4. Development of new varieties and cultural practices which will reduce harvesting labor and lend themselves to mechanization.

5. Revamp extension boundary lines. Put all agricultural agents in an "agricultural area" unit. This area would consist of 2, 3, or more counties having similar natural resources. One agent would be designated as "Area Director". The other agents, under this Area Director, would become area subject matter specialists.

Example: Bladen, Columbus and Robeson Counties now have 12 agricultural agents assigned. Of these 12, make one "Area Agricultural Extension Director"

and divide up the remainder into commodity or problem areas. This could mean specialists in the following type of fields.

2 -- livestock	2 -- field crops	2 -- tobacco
1 -- small fruits	2 -- community development	1 -- poultry

1 -- vegetables (concentrate on sweet potatoes and pickling cucumbers).

The area specialists would concentrate on their commodity until his program was well established in the area, at which time he would either be switched to another production area to work with the same commodity or stay in the same area and begin work on another potential commodity.

Cabbage

HISTORY (1945-60): Acreage and yield have remained about constant.

	1945	1960
Acreage	8,800	8,700
Yield	138 cwt.	142 cwt.
Value	$ 1,467,000	$ 1,626,000

Production is during three distinct seasons:

Late spring -- in Pasquotank-Currituck-Carteret county area.
Late summer -- in Watauga-Avery-Ashe-Henderson-Jackson county area.
Late fall -- in Pasquotank-Currituck-Carteret county area.

Per capita consumption has gone down slightly...probably due to greater availability of other vegetables.

Yields have been 6-7 tons...too low to make good profit, particularly during glut years. Requires $112 direct cash expense and 142-man hours to produce an acre.

PRESENT (1961): Production is where it should be...in the extreme east (for early and late crops) and west for summer crops. The statistics for 1961 were:

	Acreage	Yield	Price	Value
Late spring	2,100	128 cwt.	1.55	417,000
Late summer	4,200	153	1.71	1,100,000
Late fall	3,400	130	1.10	486,000
Processing	100	291	.84	24,000
Total	9,800			$ 2,027,000

Virtually all sold on open market...about 10-15 per cent used for kraut. Farmer and processor becoming more contract-minded.

Quality is good. Northern buyers prefer our early and late cabbage. Insect control not as good as it should be.

GOALS: Increase yields by 75 per cent...acreage to remain about same. This would raise our value to $ 3,547,250. Most room for improvement is in east... we can out-produce our competitors easier during the late spring and late fall. The new F-1 hybrids make mechanical harvesting appear to be possible. They produce well and mature uniformly (90-100% at one harvest). Cabbage for processing should be contracted to reduce risk and to insure higher yields (by use of larger processing varieties).

CLIENTELE: Same as other vegetable crops.

PROBLEMS: Low yields, lack of uniformity in head size and maturity, poor insect control, weeds, improper fertility (also too low pH and not enough Boron fertilizer used); too much hand labor in planting and harvesting.

Fertility problems best corrected through result demonstrations.

Lack of uniformity in head size and maturity will probably be eliminated by using new F-1 hybrid varieties after more extensive testing in 1962.

Continued research on insecticides is needed to combat insect-resistance and residue problems.

Research needed on direct seeding and chemical weed control to eliminate hand setting.

Coordinated research-type demonstrations needed to evaluate feasibility of mechanical harvesting of the new F-1 hybrid varieties.

Coordination of marketing needed.

Peppers

HISTORY: Acreage for fresh market increased from 3,100 in 1945 to 5,200 in 1960. Value from $933,000 to $1,267,000 and yield from about 35 cwt. to 37 cwt. per acre. In 1960 we ranked 3rd in acreage.

Peppers for processing (bell, pimiento and hot) increased from essentially none in 1945 to over 2,000 acres in 1960 with a value of over one-half million dollars.

Fresh market acreage has been concentrated in the Duplin-Sampson County area because of the suitable early soils and available labor. Gradual increases in the Henderson County area has been a result of expanding southern markets. Processing peppers are produced largely in Harnett, Sampson, Rutherford, Clay and Cleveland counties because of the nearness to existing processing plants. High real-estate values of northern farmland also is responsible for movement of some northern acreage into southern areas.

Per capita consumption -- both fresh and processed -- increasing slightly. This is due to better transportation for fresh, new processes for canned-frozen green pepper halves, a greater variety of canned and pickle products and greater consumption by the meat packing industry.

PRESENT: In 1961 we grew 5,500 acres for fresh market with value of $1,920,000. For processing about 2,000 acres with a value of about $500,000. Present average yields are about 35 cwt... could easily be 60-70 cwt. Our yields are low due to poor plants... careless and inefficient production practices by small growers.

Competition on fresh market is from late crops of Florida, main crops of Louisiana and Mississippi and early crops of New Jersey.

GOALS: Increase value by $1 million. Keep fresh market acreage about where it is... increase yields by 50 per cent to take care of population and per capita consumption increase.

Increase processing yields by 50 per cent and double the acreage by 1966... primarily in the Harnett-Sampson, Rutherford-Cleveland, and Clay county areas. These increases are based on population increase, increased per capita consumption, greater use of processed products... faster shift of northern processors into the south, and our ability to out-produce Louisiana and Mississippi.

CLIENTELE: District commodity specialists and fieldmen for processing companies. The small 1/2 - 1 acre farms will give way to the 5-10 - or 20 acre farmers who become efficient producers.

PROBLEMS TO OVERCOME: (1) Technical and Economic -- Need higher per acre yields stumbling blocks are poor plants, disease and improper cultural practices. Need method and result demonstrations on plant production, crop rotation and proper fertility practices. For processing, direct seeding in the field may be the answer... if we can work out weed control... research type demonstrations can probably solve this problem. This would reduce production costs by about one-third.

Growers must realize that peppers can be a source of good income if handled properly... at present grown by many for "Pepsi Cola" money.

(2) Education and Motivation -- Largely through method, result and research type demonstrations put on by area or county specialists. More field meetings with growers and more planning meetings with area or county specialists.

Tomatoes

HISTORY:	1945	1960
Acreage	2,400	3,000
Yield/Acre	35 cwt.	50 cwt.
Value	$ 405,000	$ 705,000

Essentially all production is for fresh market...attempts at production for processing in east failed, primarily because of high temperatures and diseases. Field tests in Upper Piedmont indicate a possibility of processing production in that area.

Production for fresh market is in 3 general areas: (1) Scotland, Brunswick, Carteret, Currituck counties...early crop in east. Production scattered, unorganized, generally on a hit and miss basis. No sound production and marketing patterns. (2) Rowan-Lincoln county area -- Greenhouse and early field production for local (Charlotte, etc.) markets. Gradual expansion since plastic greenhouses...better growers gross over $1,000 on field tomatoes. (3) Haywood-Henderson county area -- trellised, vine-ripened tomatoes for summer and early fall harvest. Generally well organized production and marketing. Started with a few acres in 1957...increased to over 500 acres in 1960 with estimated value of over half-million dollars. Generally high yields and high quality.

Per capita consumption is gradually increasing -- for fresh and processing. Annual per capita consumption of 45.1 pounds for period of 1940-44; 55 pounds in 1960 and expected to go up to about 65 pounds by 1975.

PRESENT:

	Acres	Yield	Price	Value
Early summer (east)	2,400	48 cwt.	5.20	$ 598,000
Late summer (west)	300	95 cwt.	6.05	460,000

Yields are too low throughout. Quality in east poor due to premature harvesting, improper handling and poor cultural practices. No organized production in east.

GOALS:

Increase yields in east by 50%	$ 350,000
Increase acreage in east by 50%	500,000
Increase acreage in Piedmont (greenhouse and field)	750,000
Increase mountain acreage by 200%.....	1,000,000
Total Value of Increases	$ 3,600,000

These increases are based on: (1) Increase in use of plastic greenhouses... for plant and fruit production, (2) increase in population and per capita consumption, (3) higher yields and better quality throughout the state...primarily in the east, (4) organization of production and marketing in eastern counties.

CLIENTELE: Educational efforts will be directed toward area or county specialists. More all practices demonstrations with farmer having production potential. Only farmers with this production potential will be encouraged to produce this crop.

PROBLEMS: (1) We need a good, early, fusarium wilt resistant variety for the east. Yields are too low...too many haphazard producers...might be overcome by concentrated educational efforts...particularly in varieties, plant production,

fertilization and disease and insect control. Need organized production and marketing in east...again possible through concentrated effort in education. Too many growers produce tomatoes as a "catch" crop. Need specialization by farmers and agricultural workers. Need more information on potential of upper Piedmont for processing tomatoes. This will require field testing with cultural practices and disease control as prime considerations.

(2) Education and motivation to be through county or area specialists working closely with farmers having production potential. All practice demonstrations with farmers having production potential. More field days and tours. Less mass media. State specialists to spend more time training county or area specialists. More training schools for county or area personnel by specialists from all departments involved.

Snap Beans

HISTORY: -- Acreage increased from 13,200 in 1945 to 15,700 in 1960. Value increased from $1,631,000 to $3,424,000. Yields per acre virtually the same at about 25-30 cwt. per acre. Production is concentrated in the Southeastern, Northeastern and Western counties. In 1950 we ranked 2nd in fresh market acreage and 14th in processing acreage.

Total per capita consumption has gradually increased -- fresh consumption is going down -- canned and frozen going up. National production reflects this consumer trend more than N. C. production. Our fresh market production has remained virtually the same--processing acreage went from 2000 to 3500. National acreage for processing surged ahead of fresh market acreage in 1955 (for the first time) and has remained ahead with the gap continually widening.

Eastern North Carolina has the soils and climate for good early and late production. Fields are sufficiently large to permit mechanical harvesting. Western North Carolina has ideal climate for production of high quality beans over a long period of time but is more limited on land availability.

Yields have been low -- quality not as good as it shoud be.

PRESENT: Produced 13,400 acres in 1961 -- 4,200 spring (east); 5,000 summer (west); 900 fall (east) and 2300 for processing (mostly west) -- valued at $2,607,000. Leading counties in production are Henderson, Ashe, Currituck, Duplin, Avery and Watauga. Technology now available to produce 60 cwt. per acre -- about double out present average -- many better growers are doing this. Most farmers are not using all technology available to them. Mechanical harvesters are beginning to come to this state -- we had 4 operating in 1961. Mechanical harvesters are now being used for processing beans only.

GOALS: Increase value by 2 - 2 1/2 million dollars. By 1966 our acreage for processing could increase 300 per cent -- mostly in the west. Our fresh market acreage should remain about the same but our yields could increase 50-100 per cent. This is based on expected per capita consumption and population

increase. Due to geographical location, we are in better position to get a larger share of the fresh market trade. Even though fresh market consumption is going down, there will always be some fresh snap beans sold and we are in position to get a lion's share of this market -- if our production is efficient.

Areas suggested for production are Henderson, Transylvania, Ashe, Duplin, Currituck, Tyrrell, Washington, Hyde and Beaufort. This is based on availability of suitable land as well as climatic conditions and mechanization.

CLIENTELE: Educational effort will be directed at area or county extension personnel who are responsible for this commodity as well as the local purchasing agents of the produce. Purchasing agents (for fresh market or processing) have considerable influence on farmers production practices. The small one-acre growers will have to get in the 5 - 10 - 20 acres class or be forced out of production. This has already happened in New York--the leading snap bean state.

PROBLEMS: (1) Technical and Economic: We need a high yielding, high quality snap bean suitable for both fresh market and processing. Bush Blue Lake varieties are now on the verge of release and should fill this need. Plot and field testing of these varieties and strains will determine those most suitable.

Yields will have to be increased through better soil selection, crop rotation, and better management of all other cultural practices (spacing, speed of planting, method of fertilization, etc.). Adequate moisture from blossom to harvest is essential. This means irrigation.

Labor for harvesting is a bottleneck. Beans for processing must be picked mechanically which means large, level fields. Beans for fresh market will still be hand picked for next several years -- yields must be high enough to pay high labor cost and still make a profit. (2) Education and Motivation: Best accomplished through method, result and research-type demonstrations. More "snap bean" meetings and fewer "general vegetable meetings." More field days at harvest time to point out effective production and harvesting techniques. This could best be accomplished through county or area commodity specialists.

Sweet Potatoes

HISTORY: Acreage has declined since 1945 -- from 60,000 acres to 24,000. Value of production has dropped from $13,797,000.00 to $9,439,000.00. Yields per acre increased -- from 105 bushels in 1945 to 162 in 1960. Most of this increase came in the last five years. Production has shifted from small acreage scattered over the east and Piedmont counties to a fewer number of counties, all in the Coastal Plains. Shift in location of production is due largely to soil type and markets -- the best soil being the best tobacco soil. Acreage per farm has about doubled -- very few grown for home use -- most fresh market buyers (shippers) grow large acreages.

Over-all consumption has declined -- from 19.5 pounds to 7.7 pounds in 1960. Fresh product is marketed as it was 30 years ago, in bushel baskets, often poorly sized and graded, washed but skinned to the point of no eye appeal. Decline in

consumption also caused by high price, inconvenience in preparing the fresh product for table use, and poor quality.

Rapid shift from fresh market (national and local) to processed products has taken place in the last five years -- N. C. among the last to shift--has only four canning plants -- 20 per cent of N. C. crop goes into cans. In Louisiana, 50 per cent of crop is canned. First plant in U. S. manufacture of flakes is now in operation in Windsor, N. C.

Processing is expected to reverse the consumption trend just as it did in white potatoes. Much hinges on the success of this first flaking plant. Big food manufacturers with national distribution are watching this operation closely.

Eastern N. C. has the soil type, the varieties, the climate, and the know-how to grow this crop as cheaply and as efficiently as any of its competitors -- already has one of the highest per acre average yields in the U. S. We have a geographical advantage over most of the other producing states--freight rate advantage to the northeastern terminal markets.

PRESENT: Now growing 22,000 acres -- yield now at 200 bushels per acre -- an all time high. Five highest counties in order of acreage are: Johnston, Columbus, Sampson, Martin and Pitt. Technology now available to produce 750 bushels per acre. Best growers now often exceed 600 bushels per acre. If all technology of production were applied generally, average yield could be increased at least 50 per cent by 1966. Present acreage per farm as well as concentration of acreage in any county, or within reach of a processing plant, is a major problem to success of processing.

Backbreaking work in harvesting the crop has caused a decrease in acreage... the first mechanized harvesters are on the market...this could increase acreage for processing as well as total acreage.

Capital and business organizations are available to buy more raw material for fresh market and for processing than now produced...capital is needed for building and operation of processing plants...management needed for same.

GOALS: By 1966, production could increase to 7,500,000 bushels -- approximately 30,000 acres. This is based on expected population increase and increase per capita consumption. In setting this goal, it is assumed: (1) That growers will give up some of their income to prevent the back-breaking labor now necessary to produce sweet potatoes for fresh market. (2) That flakes (instant sweet potatoes) are accepted by the public. (3) That the present trend of high prices received by the grower for fresh market product is reversed.

The reverse trend in consumption is to be brought about by marketing a better product fresh, more processed products (canned, flakes, instant pie mixes, puddings, etc.), advertising, promotion, mechanization of harvesting and handling from field to plant, new varieties and increased yields. It is further assumed that flakes will be produced and marketed with national distribution by major food concerns. It is also assumed that North Carolina will get a lion's share of these plants.

Area recommended for increase includes Johnston, Harnett, Sampson, Wayne, Wilson, Nash, Edgecombe, Pitt, Martin, Greene and Lenoir counties. This is based largely on soil type.

Local interest needed now to entice food producers and food marketing agents to locate plants here to produce flakes or tie in with local capital and management to market the product produced. Most plants will locate either here or in Louisiana. Louisiana is the largest producer and has the most canning plants. North Carolina has high yield, is No. 2 producer in the United States, but has the most renowned scientists in the production of flakes who has patents pending on processes vital to top-quality flake production.

PROBLEMS: Most pressing is mechanization of harvesting and handling from field to storage and processing plants... use of all technology in production, and perfection of processing techniques, consumer acceptance of flakes... and a variety with tough skin to take mechanical harvesting. Also needed is better design of equipment used to wash, wax and pack product for fresh market, as well as an automatic sizer.

SOCIAL: Sweet potato growing is considered anything but a prestige crop... considered by many to be poor man's food... yet one of the most nutritious crops grown -- high in vitamins A and C and minerals. Considered by many to be a high-caloried fattening food, although a mistaken idea. The crop needs a boost from agricultural leadership.

EDUCATION & MOTIVATION: Educational work will be a rifle rather than a shotgun approach. Result and method demonstration as well as tours will be the heavy artillery -- including research type demonstrations or tests. Mass communication media will be of little use. Must work through area development organizations, bankers, credit, organizations of all kinds, industrial development groups, chambers of commerce and the like, to motivate both growers and capital to the opportunity that beckons. Highly trained specialists needed to do this work. Area specialists are suggested to work under the state specialist. Also need more time at the county level by the agent or one of his assistants who will spend most of his time with this particular commodity. Considerations should be given to breaking the barrier of county lines and allowing an experienced trained person now serving as a county agent to work in two or three counties on one commodity. Some of the present assistant county agents could be given special training and put on an area basis.

White Potatoes

HISTORY: In 1945 the North Carolina potato crop had a production value of $15,050,000... $7,606,000 in 1960. Acreage dropped from 70,000 acres to 31,400 in 1960. Production decreased slower than acreage since yields increased from 75 to 130 cwt. during the period. By contrast, Idaho increased its acreage 60,000 acres in the last five years.

The crop is grown in two distinct areas -- early crop along the coast in 8 counties...late fall crop generally throughout the mountains. Acreage performance in east, large...most growers market their own product. In the west, the acreage is small and often grown without mechanical equipment. Few very large growers in Henderson, Ashe and Transylvania counties.

Per capita consumption declined for many years until 1948 when it reached 111 pounds...has fluctuated slightly around this ever since. Rapid shift in consumption in the past five years from fresh to processed product. In 1960, for first time, more money was spent by consumers for processed potato products than fresh...frozen french fries and flakes account for most of upsurge in consumption. Idaho leading state in processing at present time.

Eastern North Carolina has been noted for marketing the poorly graded and sized, badly skinned, immature product for years. Attitude of grower has been to be the first on the market...harvesting week early ruins price and sales for all... product is perishable...can't be stored...if left in ground it usually rots by August.

Yields have increased over the years but not high enough to compete with California, Idaho, Maine and others...climate makes eastern North Carolina a marginal area...we plant in cold soil, grow and mature under warm conditions... the reverse is ideal.

PRESENT: Growers planting several varieties...Pungo, Katahdin, Cobbler and Sebago. Still looking for ideal early variety...one to follow with soybeans...soils kept acid...hurts yield of all crops grown in the rotation.

Until recently, grew largely Sebago for "chip" market...low yields forced growers to look for other varieties and outlets.

National potato picture bleak...over-production and low price...large carryover of stored crop adversely affects North Carolina eastern market in June and July.

Little of our crop goes to processing outlets...what does is for chips. Our product unsatisfactory for flakes and french fries...low solids content.

GOALS: To hold acreage and production in line with national needs...at present or slightly lower level.

PROBLEMS: When you add up low yields, low solids content, overproduction in the U. S., a perishable fresh product (and it poorly harvested, graded, handled and marketed), you fail to find grounds for expansion in the industry. This is the picture in the 8 eastern North Carolina producing counties.

In western North Carolina the acreage is small. The eating quality of the product is good. It is stored and sold in the immediate area of production. As long as the acreage remains small the growers will make a normal profit. We see little chance for expansion...high yields and lower costs of production from competition will prevent it.

Watermelons

HISTORY: North Carolina produces only 2 per cent of national crop -- 14,500 acres in 1960, 12,200 in 1945. The high during the period was 15,000 and the low 9,200 acres. The value of the crop has ranged from $315,000.00 to $1,067,000.00.

Early in the period the crop was grown on the poorest soils, largely sands. In later years, this practice has changed for the better. Yields have been low -- increased 20 per cent in last five years. Watermelons have been grown as a "catch" crop...little technology of production used...marketing done by the grower...most sold to trucker-hucksters at the field. Large growers often ship to terminal markets on consignment. Some melons now sold through cooperatives employing their own marketing firms.

PRESENT: 1961 was a bad year...epidemic of downy mildew and anthracnose reduced value and quality...price low...growers dissatisfied with Charleston Gray...blame it instead of disease for production and marketing problems.

Growers coops employing established marketing organizations to sell their products giving strength to the picture. Need more such organizations.

Watermelons found to be sting-nematode resistant...peanut areas growing them in rotation to a limited degree...further increase expected there if recommended techniques can gain acceptance. North Carolina has a geographical advantage -- it is one of the closest producing states to the large consuming centers. Freight is one of the biggest items in cost of marketing--often higher than sales price of product. North Carolina has a climate and the soil to be one of the leading watermelon producing states.

Enough melons now being grown for U. S. consumption. Increase here has to come at expense of other areas. We can compete successfully using best of technology in both production and marketing. Watermelons are a luxury item...competes with peaches and small fruit for consumer's dollar. People have more time to play...cooking out, watermelons fill the bill for desert...more cut melons being sold at retail level.

Most of production now located in four areas -- area 1: Hoke, Scotland, Richmond, Cumberland. Area 2: Sampson, Duplin, Wayne. Area 3: Wake, Harnett, Johnston. Area 4: Bertie, Chowan, Gates, Hertford, Northampton.

In area 1, considerable acreage on marginal land -- sand.

At least some satisfactory marketing agencies are presently operating in some of the producing areas above -- more are needed for expansion in some of the areas.

Growers in all areas are not using all of the production technology available - average yields too low -- some growers producing 36,000 pounds per acre; however, where state average is 6,500 pounds. Very little emphasis on concentrated production and marketing by business men -- on a local county and area basis.

GOALS: Eastern North Carolina can increase its gross income from watermelons in the next five years by at least one million dollars -- from 5,000 more acres concentrated in the areas listed in item No. 2.

Growers will have to do more specializing...use technology in production to produce high yields and quality. Growers need to organize to arrange for best possible marketing methods and agencies.

CLIENTELE Business leadership -- Local county and area will have to be sold on production of the crop as well as the growers--large growers at that. Production must be planned around a well-organized marketing firm or firms. Start with business leadership and large growers.

PROBLEMS: (1) Low yields (lowest in the country) -- needs application of research only to be solved. (2) Small acreage per farm -- lack of labor to harvest. Conflict with tobacco harvest. (3) Market wants smaller varieties -- research here and elsewhere underway on this. (4) New growers -- need guidance. (5) Acreage planted as a "catch" crop. (6) Labor to harvest.

Suggest Extension Service have one or more area specialists to work with watermelons. We have assistant agents with experience that with little extra training could do the job efficiently.

Cantaloupes

HISTORY: The value of North Carolina crop now is about $600,000 -- a decrease of $225,000 since 1945. Acreage declined from 5,000 acres to 3,900...yield per acre has fluctuated between 35 and 55 cwt. per acre...about half that of average for U. S. In the 1930's and early 1940's the product was sized, graded and crated, but due to poor quality product it did not compete with that from other areas. As better varieties were developed, especially for the west, and improved handling and marketing practices were developed, a shift in acreage in favor of the west took place. The gap has continued to widen as time goes on.

Most acreage grown in five counties: Scotland, Hoke, Chowan, Wake and Rowan.

During this period all production sold "green" and in bulk...most of it goes to curb markets...when sold by chains it is at a greatly reduced price (big melons at low price).

PRESENT: Yields extremely low...product generally of poor quality...entire production on market during a three week period. Growers have not, and still do not have, a variety that will produce a consistently good quality product that will compete with that of the west.

Extension Service doing nothing to encourage acreage...don't intend to until a variety is released that fits our conditions...some breeding lines under test now that look good.

GOALS: As much as 65,000 acres (half of the national production) should be the goal of the southeastern states if and when a variety mentioned above is developed. Of this, North Carolina could have a lion's share if you assume that soil and climate is a major importance. On the other hand, there is a conflict with tobacco for the use of soil, labor, and management.

In conclusion, no increase in acreage is recommended in the immediate future.

Muscadine Grapes

HISTORY: In 1960, 350 acres of muscadine grapes were harvested in North Carolina. Income from this crop was estimated at $85,000. Muscadines are native to the coastal area; many of the older varieties originated as seedling selections from the wild and are recorded in 18th century N. C. history.

The muscadine grape has been cultivated to some extent in eastern North Carolina; however, there have been few attempts at a commercial venture. These few ventures have failed in most cases. There is only a very small acreage grown commercially in North Carolina, and production practices are not conducive for highest yields.

In past years, little has been done to improve the varieties or cultural methods of this crop. All the varieties selected from the wild were dieocious plants, i.e. staymenite and pistillate flowered. These varieties were not as dependable for yield as would be a perfect flowered variety. In the past 15 years, perfect flowered varieties have been developed. Quality and consumer acceptance have not been as good as needed.

Breeding programs at N. C. State and other institutions have accumulated a host of material that should change the variety situation in the next few years.

Almost nothing has been done on marketing problems and utilization of this product.

PRESENT: In 1960, 350 acres were reported in the farm census. Most of this acreage is in form of a few vines on most eastern N. C. farms. No training and very little pruning has been given these plants. Commercial plantings have had no care, and the harvest has been what the Lord provided. Grower attitude has been that of neglecting the planting. Technology is available if only used.

In the past five years, demand for muscadine grapes for processing has exceeded the supply. In 1961, processor price was $200/ton. With a 3 to 5 ton yield, good returns are possible.

Trial sales of fresh market grapes packed in quart containers reported very good. The big problem is an adequate supply of high quality grapes.

Processors are anxious to obtain sizeable quantities of the white varieties. One processor has expressed a desire to contract for 200 acres to be planted in 1962.

GOALS: In 1966, 500 acres of new plantings of muscadine grapes could produce a $500,000 per year income for eastern N. C. farmers. This will be a new source of income for the area. Most of this acreage will be sold for processing purposes. Some small acreage may be diverted into fresh market as quality and yield reach a profitable point.

Possibilities seem unlimited for both processing and fresh market acreage in eastern North Carolina.

PROBLEMS:

1. Grower attitude.
2. High investment for 3 years before a return is realized.
3. Older varieties being preferred by processor.
4. Lack of adequate testing of new varieties.
5. Proper training by growers.
6. Proper pruning by growers.

EDUCATION & MOTIVATION: Plantings of muscadine grapes will be concentrated into one or more rather limited areas. Growers will have to be "spoon fed" to get these first demonstrational plantings producing profitably. Current plans are to begin with growers planting 3 to 5 acres. Growers will be selected that can and will expand acreage in the next 3 or 4 years. By concentrating in an area, market facilities can be developed easier.

Closely supervised result demonstrations by specialist and county personnel will be the key to success. Agent training will be given so that assistance will be available in the county. Several successful plantings will create further interest in the new crop.

Utilization of fruit from college plantings to determine fresh market potential will be a help. Answers will be available on shipping qualities and package possibilities, for fresh market plantings.

Success of this crop lies in the interest and foresight of trained horticultural leaders. Close coordination between N. C. State College and county personnel is very important. Agent training and interest in the counties will be one of the largest jobs. An agent with horticultural training located in southeastern N. C. could easily handle all of the fruit crops in that area, and could contribute much to the success of this new crop.

Blueberries

HISTORY: Blueberries were commercially planted in North Carolina first in 1933. Acreage grew to about 1000 acres in 1945. Canker disease threatened the industry to extinction in the late 40's. In 1951-2, the first of four canker resistant varieties rejuvenated the industry, and since that time acreage has increased 15 per cent a year. Industry is centered in southeastern North Carolina with Pender, Duplin, Bladen, New Hanover and Brunswick counties the center. Much of the acreage is in rather large plantings. Most older growers average more than 40 acres.

Growers have been well organized. Two marketing coops have sold majority of the fruit. North Carolina enjoys a three-week early market advantage over other blueberry producing areas. North Carolina is the southern extremity of the natural habitat of the highbush blueberry. Prices for last 10 years averaged 26 to 40¢ a pint with a 10-year average of at least 32¢. This is somewhat above prices in other areas. Yield has been lower in North Carolina than in New Jersey and Michigan.

Abundant labor has been available for harvest. In 1961, harvest cost in North Carolina was 4 - 4 1/2¢ a pint. New Jersey costs were 9¢ a pint plus furnishing housing for migrants. As large acreage is concentrated in small areas, labor may become a problem in North Carolina.

All of high quality fruit is sold fresh over 2/3 of the United States. Small quantities of berries have been frozen and sold to processors.

In the past five years, over 80 per cent of plantings were in Wolcott variety. Main bulk of crop will be harvested in a 3 1/2 week period in next few years.

In the mountains of North Carolina, parental breeding material has been obtained. Variety planting trials have been successful. On elevations above 3,000 feet, a very late crop has been possible. This season extends beyond that of northern blueberry areas (Michigan, etc.).

PRESENT: Three thousand acres -- yield of 400 - 12 pt. flats/acre--estimated in eastern North Carolina in 1961. Market price good with coops and two independent buyers handling 90 per cent of crop.

Biggest problem is water. Many plantings still not providing for adequate drainage. Proper land preparation before planting is necessary. Many times preparation can cost $1,000 an acre. Irrigation is needed many years. Only a few growers provide this. Fertilization is done in an established pattern. Best growth and yield are not obtained. Technology available to increase yield 35 per cent.

No uniform grades and standards other than size (4). Each grower packs on farm. Much quality lost before fruit utilized. Central packing and pre-cooling possibility in next five years. Technology available to increase efficiency of present methods.

Insects a problem for quality. Materials available for control if used properly. Adequate existing know-how and equipment not being used.

Replant soils are being utilized to some extent. Unlimited sites available for expansion from present area to Virginia line.

Blueberries now a luxury item in stores. Most of crop sold in northern cities, but southern markets are expanding. Marketing organizations doing good job, but much promotion need be done on consumer sales utilization in southern area. Proper grading, packing, and differential pricing would help situation.

Interest is building in western North Carolina for increased plantings. Prices have been good, and northern varieties seem well adapted.

GOALS: By 1966, production in eastern North Carolina should increase to 4,000 acres with a gross income of $8,000,000. This is based on present acreage increases and an increase in yield of present acreage. Areas recommended for increase include Pender, Bladen, Brunswick, Onslow, Craven and Carteret counties. This is based primarily on available sites and labor.

Acreage in western North Carolina can also be expanded from 25 at present to 200 - 300 acres. Gross income in that area should be from $1,500 - $2,000 per acre when full production is reached. Most of this expansion should be in the higher elevations of Watauga, Avery, Mitchell, Caldwell, McDowell, and Ashe counties.

PROBLEMS: Most pressing need is grower attitude. Most growers are rather possessive in their attitudes and methods. Willingness to cooperate and follow technology in producing quality and maintaining it is sorely needed. Best use of known technology would increase yield and quality. Cooperation on past harvest studies would materially affect product being shipped.

SOCIAL: Blueberries have been luxury fruit. Profits have been based on scarcity. Growers and consumers alike need to understand the best methods of crop utilization.

EDUCATION AND MOTIVATION: Educational work should first be aimed at grower confidence in workers on local and state level. Result method demonstrations, including research type, will help immeasurably in introducing the best methods. Timely tours or on-farm meetings will also contribute. Mass media can help immeasurably in acquainting consumers of the merits of this fruit. This method can also be effective in timing pest control work.

Promotion of blueberries in western North Carolina can best be done by "spoon feeding" several growers to success. Plantings growing successfully in several communities will stimulate intense interest after the first few harvests.

Because of its pecularities, blueberries need highly trained personnel leading the program. An Extension Specialist should be utilized to coordinate closely with research in setting up research and result demonstrations. Additional assistance of a vigorous county program is necessary. An area specialist to work directly in the field with growers and to closely supervise result and research demonstrations would be highly desirable. Area specialists could work with other fruit crops in the area as well. For this reason, he should be a horticulturally trained person with some experience with these various crops.

Strawberries

HISTORY: Strawberries have been produced in southeastern North Carolina for many years. The industry has centered in Sampson, Duplin, Pender and Columbus counties. Acreage has been steadily declining. In 1945, 2,500 acres were in production, and in 1961, 1,300 (value $2,000,000) acres were harvested. Several factors are responsible for the decline. Nematodes, viruses, diseases, insects, weed and grass

control, marketing problems, and grower attitude are responsible. With good cultural practices, present varieties are able to yield over four times the state average.

In 1950, a new variety, Albritton, was released by the N. C. Agriculture Experiment Station that rejuvenated the industry for a few years. Soon after its release, acreage went up to about 2,500 acres. The interest soon dwindled, and acreage has been low since. In 1960, a national market firm began operation in the state, and built a pre-cooling facility at Burgaw. They encourage use of a new packing container, precooled the fruit and added impetus to the market structure. The 1961 season was exceptionally good. High yields were harvested, and prices were above average for the season. Some growers grossed over $4,000 per acre. Interest in the southeastern North Carolina area has increased, and in 1962 a 10 per cent increase in production should be noted.

Strawberries ripen first among the state's fruit crops. Net income of $500-$1,000 an acre is possible. Grower attitude is hard to change. Many fields are handled well until July when attention is given to tobacco harvest. Weeds, grass, and nematodes ravage the planting then.

Good plant source has been a problem. A certified plant program that has developed over the past few years has done much to help.

Strawberries are grown in every county in North Carolina. Little emphasis has been placed on this acreage, but many people are supplementing their income from a small acreage sold locally. Some growers report $2,500 per acre gross sold this way.

Some semi-commercial acreage is grown in the mountains. This gives N. C. strawberry season a range from the last of April until June 25. Lack of suitable varieties for shipping has hampered expansion as well as some of the other problems listed.

PRESENT: In 1961, 1300 acres were harvested with a value of two million dollars. Most of the eastern commercial crop was sold through auctions at Chadbourn, Wallace and Mt. Olive. A commercial buyer also operated at Burgaw.

Growers are not doing the best job of production, but rather putting strawberries second to tobacco. Grower attitude needs be changed to produce top yields and preserve quality after harvest.

In all areas of the state, many thousands of plants do not produce satisfactory yields for lack of care. Many times, growers knowledge of crop is more than is practiced, but in most cases, known technology has not reached the grower.

GOALS: Acreage increased in eastern N. C. by 500 acres by 1966 (value one million dollars). Gross income from present acreage can also be increased by 200 per cent by rise of present technical know-how. Possibilities for 15 acres or more in each of 100 counties to be sold locally. This could mean $30,000

average per county. By concentrating effort in this direction, 500 acres could be planted by 1966.

PROBLEMS:

1. Grower attitudes
2. Nematode control
3. Proper fertilization
4. Grass and weed control
5. Adequate insect and disease control
6. Harvesting and post-harvest handling
7. Marketing customs

EDUCATION & MOTIVATION: Growers can increase yield and quality by proper attention to various cultural practices. In eastern North Carolina most berries will remain fresh market fruit. One problem has been lack of trained personnel and time to follow up on various practices. Method and research type demonstrations in each community growing berries in eastern North Carolina will do much for adoption of known practices. In other areas, several successful all practice demonstration plantings will serve to get farm families supplying a community need. Training on the county level would serve as an invaluable tool. It is recommended that a three-week summer school course in small fruits for agents attending Extension summer session be offered in 1962. This will serve as a beginning for an individual county program. As suggested for other crops, an area fruit specialist in southeastern N. C. could serve blueberries, strawberries and muscadine grapes. From direct field work and grower contacts, he could serve as a valuable tool in these crops. Coordination between area man, college specialist and research could bring a better program.

Mass media would be used for a statewide program plus use of timely letters and notes to agents and growers. This type information coupled with interested trained county personnel could increase acreage in all parts of North Carolina.

Apples

HISTORY: Apple production in North Carolina has shifted from the few-tree home orchard and the very small commercial orchard in most North Carolina counties to a 5 to 8 million dollar industry of commercial orchards in 15 counties. 133,418 farms reported 2,730,369 trees in 1945; 99,109 farms reported 1,651,208 trees in 1950; 19,651 farms reported 884,561 trees in 1954; and, 10,441 farms reported 579,169 trees in 1959.

The drastic drop in farms and trees from 1945 to 1959 represents a change of method on reporting. The early figures represents farms with one or more trees and the later figures indicated mostly commercial plantings. Yield has increased from 1.03 bushels per tree in 1945 to 5.29 bushels per tree in 1959.

PRESENT: When you take a look at the present North Carolina apple situation you are looking at a partially completed long range plan adapted by the Horticulture Department to produce more and better apples at a profit to the producer and a bargain to a satisfied consumer. Three main problems were realized by the Horticulture Department over 10 years ago. (1) Low yield per acre, high unit

cost; (2) quality of fruit lower than need be; (3) fruit not bringing the top dollars. Production has centered in 5 areas: Hendersonville, Waynesville, Mt. Mitchell, Brushy Mountains, and Cleveland-Lincoln-Gaston. These areas produce largely 4 varieties. 1961 - 35 per cent Rome Beauty, 33 per cent Red Delicious, 13 per cent Stayman, 18 per cent Golden Delicious, and 9 per cent for all others.

The overall original plan calls for unified statewide marketing of the major part of the crop, particularly Red Delicious. The forerunner of this plan was the organizing of the N. C. Apple Growers into a state group in 1955 under the leadership of M. E. Gardner, then head of horticulture. This association has grown and 3 co-op marketing groups have been formed: Brushy Mountain, Mt. Mitchell and Western North Carolina at Hendersonville. The latter has 58 members and facilities to pack 8,000 bushels per day. These 3 co-ops handled approximately 250,000 bushels and other packing plants 818,610 bushels of the 1961 crop.

The present methods of conducting educational work consist of an out-of-state tour each year, winter schools in 5 major areas, pre-harvest tours in the 5 major areas. A state apple meeting featuring out of state speakers, A North Carolina-Virginia area apple school plus county meetings, tours, demonstrations followed by publications, newspaper, radio and TV material makes a well-rounded program. All of these have been well attended; this indicates the present producers are conscious to learn.

GOALS: By 1966 production could increase to 5,000,000 bushels with present trees in the ground and continuation of present grower assistance with competent personnel. The dollar value will also increase probably to 7 or 8 million, because Red Delicious and Golden Delicious will make up the major part of production and indications are we will increase the grading and packaging and reduce bulk selling. Production will continue to expand in the Hendersonville area and probably rapidly in the Cleveland-Lincoln-Gaston-Catawba area. By following the original long range plan more refrigerated storages are being planned. This will help maintain high quality for short or long periods and will extend the marketing season as well as release market pressure at harvest time. More fruit will be processed. The 250,000 estimated processed in 1961 will probably double in the next five years with present facilities and could increase more with new facilities.

The historical price trend of fresh market and processing apple prices and the ratio of fresh and processing varieties in production in North Carolina, emphasize the need for caution in recommending changes. The national supply of processing varieties, the storability of the finished product, and substitute products, all tend to facilitate orderly management of large inventories. This results in both short and long-run low price levels relative to fresh market prices.

More use of mechanical devices, such as a hole digger, tree hoes, power mowers, power pruners, air blast sprayers, bulk boxes, high lift, picking devices, etc. linked with better aids such as better fungicide and insecticides, chemical thinning, chemical weed control, stop drop sprays, stop scald, regular refrigerated storages and maybe controlled atmosphasic storages will be common in five years.

Marketing personnel will shift from the present type interested only in the percentage they get on sales to personnel interested in apples and in doing a job of selling. More North Carolina apples will be on the market produced on many farms, packed in a limited number of places, graded and packed and sold across one desk.

CLINETELE: The present day apple producer ranges from a poorly educated person to a college graduate and growers producing 5 to 10 thousand bushels of fruit up to our largest grower producing 150,000 to 200,000 bushels. Attitude and not formal education appears to be the difference between profit and loss in an operation. Many of our present growers know more than we give them credit. Present day salesmen for chemicals, machinery and supplies are well trained in this field and continued use of these at State, area and county events will continue to strengthen our program. Most present day so called apple salesmen don't sell but just fill orders. They either don't want to learn or else haven't been exposed. It is high time we employ trained personnel for this job and not just trust to luck that the one looking for a job is our man.

PROBLEMS: Technical and economic: Need earlier production, more yield per tree, higher percentage top grade fruit, better maturity standards and better trained salesmen and better marketing facilities.

EDUCATION AND MOTIVATION: Seeing is believing and the apple producer must see. If you use one most successful apple producer who has netted 1,000 dollars acre-average for 5 years on 20 acres of orchard as an example, you will find he obtained his know-how from seeing. This consisted of method and result demonstrations, in state and out-of-state, and attending state area and county apple meetings. This was supplemented with mimeographs, bulletins, newpaper articles, radio and TV programs. He is not a high school graduate and didn't have money. He has a good attitude. Many more N. C. apple growers can do 100 per cent better if they want to. This want is increasing each year. An extension worker charged with the responsibility of working with apple producers in a given county, even though it be only part-time, will greatly improve the distribution of information and the inactment of recommended practices. This will facilitate the use of result demonstrations which have been so beneficial in the past.

Peaches

HISTORY: Peaches in the Sandhills date back to 1890, starting after a turpentine industry and the cuttings of hugh stands of long leaf pines for timber. The Sandhill peach acreage is spread over 6 counties; Montgomery, Richmond, Moore, Lee, Anson and Scotland. Records of the first picking of Elberta dates back to 1911. Today this variety still makes up a large part of the total production.

Farms and Trees 1945 - 1959

	Farms reporting peach trees	No. of trees
1945	98,818	3,196,650
1950	61,751	1,850,475
1954	10,857	1,104,764
1959	5,259	1,037,684

The drop in Number of farms and trees is due mainly to a change in the method of reporting.

PRESENT: Reports from the large growers and from county agricultural agents indicate that the peach acreage in the Sandhill area is holding its own, but the report turned in by the growers, as their tree count for assessment, shows a crop of 1,000 acres in the last 3 years.

Tree yield and total bushels produced shows a similar questionable situation. Present average yields are less than one bushel per tree. In fact, .83 in 1959. While this is the yield turned in, yields at the Sandhill Experiment Station and records taken in growers orchards, while our Experimental force was doing off the station work indicate a yield of 4 to 6 bushels from regular trees and up to 10 bushels on large well kept trees.

Almost every grower feels he can do his own marketing and really seems to enjoy bickering with the truckers. As far as group marketing, all are suspicious of each other. The biggest problem at the present time would be (1) green fruit, harvesting prematurely. This has been suggested by members of the horticulture department for years as one of the main problems in the N. C. peach industry. During 1961 pressure testing was set up.

RESULTS: 360 fruit samples; 720 pressure readings; 9 varieties; early June to August. Pressure 0 - to 30 lbs...tester doesn't record over 30 lbs. Results on all varieties showed 16 per cent in 0 - 10 lb. group; 24 per cent in 11 - 20 lb. group; 60 per cent in 21 - 30 lb. group. The 21-30 lb. group, consisting of 60 per cent of the fruit tested, was entirely too hard, hycrocooling was a waste of time and effort. Also, one-fourth of the real volume was lost due to early harvest. Furthermore, the fruit in the 21 - 30 lb. group did not ripen properly thus making a dissatisfied customer. This test showed that the Mayflower had only 3 per cent of its fruit in the group 21 - 30, while Elberta had 42; Redhaven and Southland each had 53 per cent; Keystone, 60 per cent; Coronet, 66 per cent; Blake 70 per cent; Dixired 84 per cent; and Cardinal was the worse at 86 per cent. It is interesting to note that approximately one-fifth of our production is of the last two varieties which would indicate that a large percentage of our fruit is going to market entirely too green.

Second problem -- tree loss. Trees in the Sandhill area do not live long. Eight years is common with a few going to 14 or 15 years. Nematodes and a few diseases may be the cause. Much work has been done on this and some solution is on the horizon.

Third problem -- An abundance of early varieties were set when early peaches were bringing $5 to $10 per bushel. Today, these varieties are in full production not only in N. C., S. C., but Ga. as well. These early varieties are for fresh market. They are clings or semi-clings and thus are good mostly for only fresh use.

GOALS: Production in the Sandhill area is due for an increase. Perhaps, 10 per cent while in the Piedmont and mountains 100 per cent increase would be possible in the next 5 years.

Our present production should increase so we would be producing approximately 2 million bushels by 1966. This increase will be possible by: (1) utilizing the newer varieties which are being developed at our station and other research stations; (2) extending the season; (3) better nematode control by soil treatment and by better rootstock; (4) by the use of better insect and disease control.

The dollar value may increase to $3,500,000 or possibly $4,000,000. This income will be in selling more bushels, especially in the Piedmont and mountains. It is doubtful if the net return to the growers will be any higher per bushel. In fact, if the volume is assembled and packed by a central agency the net return per bushel may drop due to the additional cost not now encountered and a percentage of fruit dumped which is not mixed in with good fruit. Plantings in the Piedmont and some areas of northwestern North Carolina look promising. The trees grow larger, produce more and last longer than in the Sandhill area. The enthusiasm in the latter two areas is good and new acreage is anticipated.

CLIENTELE: The growers in the Sandhill area vary from a grade school graduate to a college graduate. His knowledge of peach production is better than he uses. His education is not a determining factor. If it is, it is not evident. Some of the present marketing firms are also producers and their operations may or may not be the best. They can perform well, especially in periods of shortage. We have done very little toward training existing or new personnel in the marketing operation.

Past theory on marketing peaches appear to have been "be first on the market, get the money and don't worry about next year or even the late varieties this year."

Commercial firms selling spray materials, spray equipment, materials and supplies have well informed personnel and have cooperated nicely with college and extension personnel and this has been a great service to the industry.

PROBLEMS: Technical and Economics: We need to improve tree replant problems. Low yield per tree, low percentage of high quality fruit, lack of maturity standards, training for salesmen and the marketing facilities.

EDUCATION AND MOTIVATION : The program used on apples has been very successful. Its adoption to peaches was started two years ago. However, the peach grower is an entirely different individual and only by personal contact does he seem to accept new ideas.

Result and method demonstration on his farm may be the answer. Written material doesn't seem to penetrate. Area and county meetings are poorly attended. Well trained commercial folks work the area with machinery, materials and supplies and excellent facilities and staff are available and they are not able to penetrate. The excellent facilities and staff and personnel from State College, as well as the Sandhill research station have not been able to penetrate some of the growers.

County agents in some Piedmont counties and northwestern counties are anxious to learn. They have growers anxious to learn. Result and method demonstrations are underway with these. The inclusion of peach information at apple schools, at that time called fruit schools, has seemed to be filling the gap in this particular situation.

REPORT OF FIELD CROPS COMMITTEE

I. Introduction

A. Scope of committee action

In the beginning the committee decided to limit its discussions to the following crops: barley, corn, cotton, peanuts, oats, sorghum, soybeans, tobacco, wheat, and miscellaneous or new crops. The subject matters of agricultural engineering, crop production, plant breeding, entomology, pathology, sociology, economics, and soils have been brought to bear on the above mentioned commodities.

B. Relationship to other committees

The relationship to other inter-disciplinary committees should be pointed out. The committee on livestock, poultry, feed grains, forage crops, and protein sources has considered some of the same subject matter listed above. Obviously, feed grains and protein sources are overlapping. The whole area of forage crop production could have been included in this committee's report but is not because of its consideration by the other committee.

There has been no cross discussion with the Horticulture Committee, although undoubtedly many of the general aspects of this report will likewise apply to horticultural crops.

II. General remarks on Extension program

A. Population changes

Historically, North Carolina is a rural state. While the trend of people moving from rural to urban areas has been similar to that in the nation as a whole, we are much behind the national level in this respect. In 1960 we had 60 per cent rural population, the percentage of the United States in 1900, and just double the national rural percentage at the present time. It should be pointed out that approximately 70 per cent of the rural population is now classed as non-farm population. In 1959 the agricultural census showed the state had 49,797 farms with incomes above $5000; 70,220 farms were listed in the less than $5,000 but more than $50 bracket. An additional 70,498 are listed as "other farms"; for example, residential farms. It is obvious that these population figures indicate a change in our proportion of rural to urban people and a very decided decrease in the number of farms. The decrease in the number of rural people percentage-wise and in the number of commercial farms is a continuing trend which has been underway for a long time. It is assumed that these trends will continue at least during the five-year period under consideration in this report.

B. Social changes

A great deal could be said about the adoption of agricultural practices in relation to social changes. It seems unnecessary for each of the inter-disciplinary committees to go into great length on the processes of adoption of new practices or into the complexity of work with various types of people who are referred to as innovators, early adopters, early majority, late majority, and laggards.

C. Role of specialist and county worker

These items are very important in connection with the identification of the clientele of the Extension program. During the all day meeting on January 5, 1962, there was a great deal of discussion on the role of the county worker and specialist. We endorse the general idea of more specialization and training for extension workers at all levels. While this can be set as a goal, it is recognized that it cannot be accomplished overnight with the many individuals now in the Extension Service. Well informed specialists can only remain so by having sufficient time to study, read, and digest the new developments in their fields and their significance in relation to the farm operators. If a specialist is to use his time effectively, he should have the opportunity to train those at the county level who are able and have time to instruct the farm operator.

It may be argued that the present organization provides for the step-wise instruction advocated here. However, it is evident that in practice this is not the case. One important reason may be the emphasis the administration has placed on organizational detail and records of activities such as how many farmers have been contacted, how many miles driven, and how many meetings held. Acknowledgment that such statistics are meaningless and the only significant question is what impact we have had on resource development is a first step toward better performance.

For extension workers at both the state and county level to be leaders in competition with the increasing role of people in other industries, it is necessary that they be well trained and continue to keep up their in-service training. A balance between methodology and subject matter is important. Such a statement as, "The pipe line may be more important than what goes through it," is too one-sided. Likewise, source people should acknowledge the fact that the agricultural extension programs working with farm problems must realize that many economic and social aspects are involved as well as subject matter and production of commodities. Extension undoubtedly should go down a middle-of-the-road course in dealing with clientele. We should be prepared to have someone take the lead with our commercial or large operators. In order to do so, we may need to reduce our present personnel at the county level and increase those with specializations. This may be best done in some commodities on a small area basis. In other commodities the areas may be considerably larger.

D. Relationship to other organizations

The relationship of the Extension Service to other organizations should be looked at constantly. One of particular interest which needs study is its relationship with the vocational agricultural teachers. This is a large group which is in close contact with many of the farm people. More emphasis should be placed on extension and agricultural teachers working together. It is recognized that this is currently working very satisfactorily in some counties.

The new concept of agriculture which has been expressed in the change in teaching curricula should be reflected in Extension's role with agri-business groups and individuals. Agricultural suppliers, buyers, utilizers, bankers, and other related groups should be included as part of the clientele.

E. Publications

The most effective use of publications should be encouraged. Publishing a large number of a folder or bulletin and distributing it indiscriminately in the counties has not been an effective use of publication funds. Perhaps a considerable amount of study should be given to the distribution of Extension publications. For example, some publications might be distributed by other agencies, such as seed and fertilizer dealers.

III: Assumptions for predicting 1966 goals

A. Government programs

After a considerable discussion of the federal government commodity programs, the committee chose to assume that these will be essentially the same in 1966 as in 1961. Many different assumptions could have been made with reference to the government control programs but this seemed to be the best one to make for all commodities.

B. International or naturally caused catastrophes

It was assumed that no international catastrophe or no extremely widespread naturally caused catastrophe would affect the programs as they are extended to 1966. Obviously, an all-out war effort would drastically modify the goals which have been set here. Likewise, some unforeseen catastrophe in the form of an uncontrollable pest or weather hazards could materially affect the goals.

C. Continued present trends in industralization

It was assumed that the present trends in industrialization, especially in the Piedmont, will continue and that population shifts will follow the trend set during the decade 1950-1960.

Table 1. Acreage, yield, and production of principal crops and realistic goals for 1966.

Crop	Quantity unit	1950-59 ave./A.	1961 Crop Year Acres harv. 000	Yield/A	Production 000	N. C. as % of U. S. prod.	1966 Goals Acres harv. 000	Yield/A	Product 000
Corn	bu.	33.4	1400	48	67,200	1.8	1450	55	79,750
Grain sorghum	bu.	28.2	55	34	1,870	0.4	60	37	2,228
Barley	bu.	31.6	62	43	3,053	0.8	55	52	2,904
Oats	bu.	33.6	236	41	9,676	1.0	240	43.5	10,440
Wheat	bu.	21.4	407	28	11,396	1.0	350	28	9,800
Soybeans	bu.	18.5	596	23.5	14,006	2.0	700	28	19,600
Tobacco, lb.	lb.	1415	472	1788	844,400	42.0	500	1900	950,000
Cotton	bale	340*	405	332*	280	2.0	450	500*	450
Peanuts	lb.	1502	176	1775	312,400	17.7	178	2000	356,000

*Quantity unit lb.

Table 2. High farm production in North Carolina

(Reported and Estimated)

Crop	1961	1966 Estimate
Barley, bu.	80	85
Corn, bu.	165	200
Cotton, lbs.	1200	1400
Oats, bu.	110	115
Peanuts, lbs.	4000	4500
Sorghum, bu.	75	90
Soybeans, bu.	50	55
Tobacco, lb.	3000	3500
Wheat, bu.	55	60

Table 3. Farm income potential from field Crops

Crop	Production increase 1966 goal-1961 production	Unit price	Income estimated dollars
Corn	15,350,000 bus.	$1.06	$16,271,000
Grain sorghum	358,000 "	1.00	358,000
Barley	(149,000) "	.90	(134,000)
Oats	764,000 "	.60	687,000
Wheat	(1,596,000) "	2.00	(3,192,000)
Soybeans	5,594,000 "	2.30	12,866,000
Tobacco	105,600,000 lbs.	.55	58,080,000
Cotton	170,000 bales	159.00	27,030,000
Peanuts	43,600,000 lbs.	.10	4,360,000
		Gross increase	$119,652,000
		Gross loss	(3,326,000)
		Net increase	$116,326,000

D. Transportation rate changes

It was difficult to reach a final decision on transportation rates, especially grain rates. The proposed changes by the Southern Railway for rates east to west would modify the feed grain situation considerably. Should the new lower rates on rail shipments from various points in the Midwest or from the eastern part of the state to the Piedmont become effective, this would intensify the need of efficient production of feed grains by growers in the state who continue to produce either their own feed or feed for sale. Since this state is a deficit grain area, and current prices are usually based on the Chicago price plus transportation cost, lowering of the transportation cost would undoubtedly be reflected in a lowering of our local market price.

E. Soil management

Soil management in the three main geographical areas of the state has been described by the livestock committee and will not be extensively treated here.

After reviewing the rough draft of the report submitted to the livestock committee, this committee would in general go further in advocating that improved soil management and actual capital improvement of soil may be underway to a greater extent than indicated in the other report. By this we are referring to the greater use of deep plowing, or soil modification, land leveling, and other procedures which would make land more valuable and productive for large scale mechanized farming.

F. Mechanization and pest control

We have made the assumption that mechanization of all commodities listed will continue at an accelerated rate during the five-year period under consideration. No attempt has been made to indicate the actual cost or benefits of mechanization since this would require a great deal of effort and assumption of farm size in the various commodities.

We have made the assumption that pest control practices will be improved during the five years. No details or lengthy discussions on entomological or pathological factors or weed control will be included although we assume that work will continue in all of these areas and that adoption will increase at a rapid rate especially by commercial operators.

IV. Individual crop reports

Barley

I. Barley acreage has grown from 42,000 acres in 1945 to 75,000 acres in 1960. It is the one small grain crop which increased almost constantly over the years.

A. Government programs had not influenced production until 1961. There will be an influence on acreage in the future.

B. Barley is grown primarily in the Piedmont, and to a large degree is consumed on the farms where it is grown. The volume of barley has not been sufficient for ready acceptance by all the feed industry. They have expressed interest in barley if they could buy in quantity.

II. The development of practical smut control has sponsored new interest for barley producers. A new variety is now being introduced that has resistance to smut. This particular disease has probably been the major influence on limiting barley production through the years.

There has been increased acceptance of the better production practices for barley. As with other small grains, the dependence on lespedeza as a companion crop to supply nitrogen has decreased. More emphasis on grain yields has resulted.

Disappointing oat yields have caused some producers to look with more interest on barley.

III. Barley production will probably total 2.9 million bushels on approximately 55,000 acres in the near future. This projection assumes a continued influence of the feed grain program. Without this influence, barley might well be grown on more than twice this acreage by 1966.

The concentration will no doubt continue to be in the Piedmont area.

IV. Extension clientele. Production efficiency and improved storage to prevent loss of quality should be the emphasis for barley extension programs. These should be focused in the Piedmont area and associated with livestock producers.

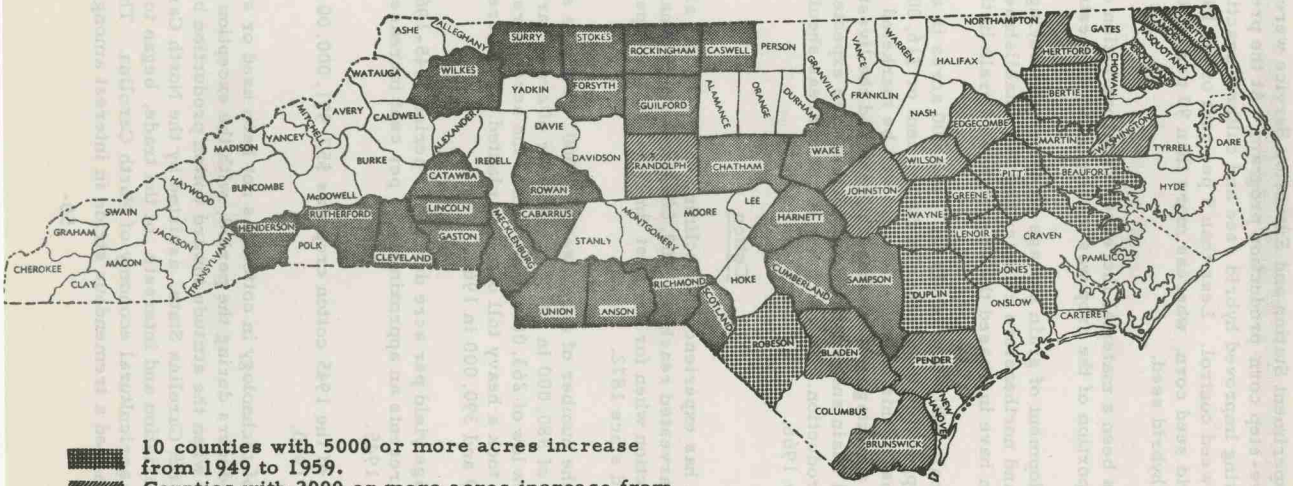
Corn

I. This feed grain has undergone rather marked changes in the period 1945-1960. On a state-wide basis, the major change has been a reduction in the acreage planted to corn with a decided increase in the production per acre. Total state production in 1945 was 55,000,000 bushels as compared with 84,000,000 bushels in 1960. The number of acres planted was reduced by 550,000 to a total of 1,750,000. Unfortunately, the value of the grain changed from $1.48 per bushel to approximately $1.00 per bushel, making the gross return from the crop essentially the same in the two years.

A. Government programs had little effect on the change in corn production until the 1961 season when the feed grain program was initiated. A total of 64,000,000 bushels was produced in 1961.

B. Urbanization and industrialization had a much more marked effect on the change in areas of production. The six counties, Buncombe, Guilford, Forsyth, Durham, Mecklenburg, and Wake, each including a large city, decreased in corn acreage by 46 per cent. In contrast, the state corn acreage decreased only 14 per cent and six counties in the central Coastal Plain area--Wilson, Johnston, Wayne, Lenoir, Greene, and Pitt-- increased by 15 per cent during the same corresponding years. Three counties in the northeastern part of the state where corn is considered a cash crop decreased by only 8 per cent during this time. Ten counties in the Coastal Plain area increased corn acreage from 1949 to 1959 (see map) by 5000 acres or more. An additional 12 counties increased corn acreage by 2000 acres or more. During this same period 24 counties, mostly in the Piedmont area, decreased corn acreage by 5000 acres or more. These shifts in corn acres have been influenced by industrialization in the Piedmont and conversion of row crop land to improved pastures (see soils report Livestock Committee.)

CORN DATA



10 counties with 5000 or more acres increase from 1949 to 1959.

Counties with 2000 or more acres increase from 1949 to 1959.

24 counties with 5000 acres or more loss from 1949 to 1959.

for new and recommended practices, varieties, new insect control programs, and other factors.

The appearance of mechanical harvesters in the 50's which showed an increase from 25 in 1954 to 300 in 1960 has opened a completely new horizon in a desire for applied technology for the producer.

The movement from small to large farms is the current strong trend which calls for more detailed and thorough management and organization.

A. Government programs have had a direct effect on the cotton program in the past 15 years.

Various legislative matters to include the Soil Bank and Acreage Reserve of the late 50's, the A and B choice program of 1959, and the minimum allotment portions of the program during the middle fifties--all have directly, or indirectly, caused the drastic reduction in cotton acreage in North Carolina. 263,000 acres were harvested in 1958--the smallest since 1866--and this is a direct result of 197,000 acres being placed in the Acreage Reserve Program that year. A discontinuance of the ARP in 1959 resulted in an increase of 127,000 acres and approximately the same number of acres harvested in 1960.

B. Since World War II, industrialization, cost of production, and shortage of labor have had a terrific impact on cotton production, especially in the Piedmont area where cotton was formerly the largest cash crop. With the exception of Cleveland, the top 10 cotton counties were in the Coastal Plain in 1960 compared to only six in the early thirties.

In addition to the above factors, complete or partial mechanization is moving a vast percentage of our cotton production to the flat level fields of the Coastal Plain. In 1966 it is estimated that less then 15 per cent of the total will be produced in the Piedmont if the current trend of the above factors continues.

III. An average of 500 pounds of lint per acre in 500,000 acres is the accepted goal by cotton leaders and promoters in 1966, provided no major shakeup in allotment and price support occurs within the period. Good farm production should exceed 750 pounds.

IV. The clientele with which the educational effort must occur will be with the cotton improvement and promotional groups within the major counties where cotton is produced. The greatest amount of research and technology will continue to be absorbed by those producers who are using all means available to increase and improve production.

V. One major problem is that with vast changes going on in the economic phases, our research will find it hard to supply the answers desired by producers and processors due to lack of facilities and time.

Another major problem is the void that exists between those producers who seek higher production and those content to keep producing cotton simply to hold allotment or as a crop to rotate with others.

A stepped-up program of Extension personnel in conjunction with local organizations is needed and must be utilized to narrow the above mentioned void.

Peanuts

I. Major changes have occurred in peanut production during the 1945-1960 period. Harvested acreage has decreased from 334,000 acres to 178,000 but average yields have increased from 862 to 1810 pounds per acre. These changes made it possible to produce 31 million more pounds of peanuts on 156,000 fewer acres in 1960.

A. Government programs were in effect during the entire period. These programs tended to reduce acreage as yields increased and to confine peanut production to those farms and areas with a historical record of production.

B. Urbanization and industrialization had no marked effect on the area of production. Allotments have been decreased on a percentage basis so that each county had about the same percentage of the state allotment in 1960 as in 1945.

II. Very little technical information was available on peanuts in 1945. Since that time new technology has reached peanut growers in ever increasing frequency. Research work along a broad front during the 1940's and early 1950's laid the foundation for a stepped up educational program beginning in 1963. Major changes in production practices that have occurred since 1945 may be listed as follows:

1. The release of three improved varieties and the acceptance and use of these varieties on 95 per cent of the total acreage.

2. The development and acceptance of a leafspot control program.

3. The development and acceptance of a southern stem rot control program.

4. The development and acceptance of a sound insect control program.

5. The development of a sound fertility and rotation program.

6. The development of new methods of planting, cultivation, and harvesting.

7. The development and widespread use of specialized machinery for cultivation, digging, combining, and mechanical curing.

III. A production goal of 390,000,000 pounds on 178,000 acres is anticipated for the state by 1966. The minimum allotment set by Congress is 178,000 acres for North Carolina. Because of government programs and past production history, no change in area of production is expected. Top farmers in those counties where peanuts are the major source of income should pass the 4800 pound per acre mark by 1966.

IV. Extension clientele. Because of the rapid mechanization of peanut production and the resultant need for less hand labor, the number of people in peanut production will decrease significantly. There will also be a trend for consolidation of farms which will reduce slightly the number of ASCS peanut

contracts. The losses in clientele directly involved in peanut production will more than be offset by an increase in the amount of time spent with another group--those in the agribusiness field and in the peanut industry itself. In addition, as peanut production becomes more specialized there will be an increase in the amount of time spent with individual producers.

V. Problems to be overcome.

A. Technological and economic

Several technological and economic problems must be solved during this five-year period if rapid advances are to be achieved. Among these are: (1) the development of an effective and economical herbicide to greatly reduce or eliminate hand labor; (2) the development of higher quality, higher yielding varieties; (3) the development of an effective and economical insect control program; (4) an increase in the percentage of the crop combined and mechanically cured--most of this increase must come from the development of custom combining and curing since the majority of growers with operations large enough to justify this type of operation have already made the change.

B. Education and motivation

Recent surveys have indicated that in most of the peanut producing counties only 40 per cent of the growers are producing yields above the county average. These surveys have also indicated that contacts by educational agencies are much higher among the above average producers than the below average producers. Efforts must be made to contact and influence all peanut growers. Other factors that need to be overcome are complacency, resistance to change, and lack of enthusiasm.

Oats

I. Oat acreage in 1960 was 241,000 acres, partly influenced by unfavorable seeding conditions. This is below the 375,000 acres harvested in 1945. During this 15-year period, however, oat acreage reached almost one-half million acres in 1956, with a 40-bushel yield per acre that same year.

A. Oat production has not been influenced by government programs during this period.

B. Oat production has been under several pressures recently.

1) Oat prices declined from an average of .80 per bushel in 1945 to .67 in 1959.

2) Acreage has increased significantly and then decreased in both Coastal and Piedmont areas. Eleven Southern Piedmont counties harvested 154,000 acres in 1956, and dropped to 65,000 acres in 1960. Thirteen Southern Coastal counties grew 81,000 acres in 1956 and reduced to 40,000 acres in 1960.

In the Coastal Plain, the reduction in oat acres has occurred during the same period that wheat acreage has increased. This infers that the potential success for economical production for wheat was considered greater for wheat than oats. The decrease in acreage of oats in the Piedmont occurred simultaneously with an increase in barley acreage.

II. Problems in oat production have developed faster than research could meet them. Severe pressures from soil-borne viruses, insects, and insect transmitted viruses have relegated the attitude of confidence farmers once had for successful oat production to one of uncertainty.

Many producers still grow economical yields of oats and hope to continue. Other growers who once grew good yields have found themselves faced with problems which they could not control. Their only alternative is to grow other grain crops.

III. A production goal of 8 to 9 million bushels of oats from approximately 200,000 acres is estimated for 1966. Top producers should be at 125 bushels per acre.

IV. Extension clientele. The Extension program should be alert to disseminate research results now being developed toward control of some serious problems now apparent. In the meantime, efforts should be directed towards correcting other causes of low yields, such as the use of improved seed quality, more adequate fertility, and cultural practices. These efforts should be in both Coastal Plain and Piedmont.

There may be need for more effort in evaluating alternatives for production of grain in given areas.

Grain Sorghum

I. Grain sorghum production has developed in North Carolina from only 2,000 acres in 1945 to 84,000 acres in 1960. The peak of 99,000 acres was reached in 1958. The record average yield was 40 bushels per acre in 1960. Four counties in the southern Piedmont (Stanly, Union, Anson, and Cabarrus) produce approximately half the state acreage.

A. Government programs did not influence grain sorghum acreage until 1961, when 25 per cent of the 1960 acreage was entered in the Feed Grain Program.

B. Crop hazards have largely influenced grain sorghum introduction and concentration. Grain sorghum rose to its largest acreage in the Southern Piedmont following several successive summer droughts that reduced corn yields. Grain sorghum was introduced in the area to help supply the need for livestock feeds.

Several northeastern counties began to grow grain sorghum as a late grain crop following potatoes and other spring harvested crops. Interest has declined in the area, however, because of bird damage. This area comprises an extremely large roost for blackbirds.

II. Introduction and adoption of new technology has developed during the 15-year period. One of the most significant developments was hybrid seed, and farmers accepted hybrids quickly. Many farmers have combines for other crops, and the use of sorghum has helped to extend the use of this equipment.

Problems remain for grain sorghum. Bird damage and insect damage are especially troublesome since practical controls for these problems have not been fully developed.

The development of better adapted hybrids could stimulate higher yields. Presently, the hybrids used were developed for other areas. Major weaknesses are susceptibility to diseases and lodging.

Feed manufacturers often omit grain sorghum from their formulas except in areas where the supply is large enough to permit long periods of registered formula production. Much grain sorghum is fed on the farms where it is produced.

III. A production goal of 3,000,000 bushels on somewhere near 60,000 acres is anticipated. This is based on the assumption that the Feed Grain Program will continue and affect production. The concentration of acreage in the Southern Piedmont area is expected to continue. Top farmer yields should go above 150 bushels per acre.

IV. Extension clientele. The Extension program should concentrate on efficiency of production. Yields per acre have not matched yields of corn, the major grain crop for which sorghum is supplementary. Emphasis should be on disease control, weed control, and improvement in fertility practices.

Soybeans

I. Soybean acreage, production, yield per acre and total crop values have been rising since 1945. From an average yield of 12.5 bushels per acre from 216,000 acres in 1945, the current production has reached 23.5 bushels per acre on 609,000 acres. The prices have been influenced periodically by changing international situations. In 1945, prices averaged $2.57 per bushel. Average prices in 1959 were $2.10 per bushel. North Carolina soybean production generally reflects the increase in production that has occurred nationally.

A. The increase in soybean production has been influenced by several items. Among them are:

1. Increased consumption of soybean products in the United States.

Many products are newly developed from research on soybean utilization. Soybean products have found markets as economical

substitutes for other products (margarine, cooking oil, protein feeds for livestock).

2. More efficient processing methods.

   Most soybeans are now processed by solvent extraction, an improvement over hydraulic press and expeller processing equipment.

3. Export promotion.

   The Soybean Council of America has established offices in many countries to introduce, promote, and service oil imports from the United States.

4. Government programs.

   Soybeans have not yet been under production restrictions but price supports have helped to establish price floors and provide economic stability to the soybean industry. The most influential government action on soybeans has been the impact of the PL 480 program under which foreign buyers purchase United States soybeans with their own currency, which establishes in interchange of trade between their country and the United States.

5. International political change.

   Red China and Manchuria, the traditionally heavy producers of soybeans in world trade, are now behind the Iron Curtain. Under existing international trade agreements, many countries, especially western European areas look elsewhere for their soybeans and soybean products. The United States has been able to supply this demand.

6. Changing farm situations in North Carolina.

   For this state there has been a trend towards redirection in acreage of allotted crops (tobacco, cotton, etc.), increasing farm size, and mechanization. Soybeans lend themselves to these changes, inasmuch as the increased production has found markets up until the present time.

7. Export advantages for North Carolina.

   The proximity to East Coast ports has given North Carolina soybeans some advantage until recent years. The development of the St. Lawrence Seaway now reduces this advantage but still many soybeans from the East Coast area move into export channels.

B. Soybean production acreage is most intense in the eastern counties of the state. Soils and climatic conditions there are usually well suited for soybeans and corn and these are the predominant cash crops. Throughout the remainder of the Coastal Plain counties soybeans and corn supplement the income from tobacco, cotton, peanuts, and horticultural crops. Soybeans here are used on the acres not needed for or not best suited for the higher per acre value crops.

II. The adaptation of increased technological practices has caused the per acre yields to practically double in the past 15 years.

A major influence was the development of superior varieties. Lee and Jackson varieties were introduced about 1952, after two or three years acreage was almost entirely planted to these new varieties, especially Lee. The 1951-55 average yield of soybeans in North Carolina was 16.5 bushels per acre. In 1956 the yield reached 21.5 bushels and has since increased to 23.5 bushels per acre in 1961.

Increased fertility levels have also contributed to increased per acre yields. The major rotation crop for soybeans is corn. The increase in fertilizer applications to corn and soybeans in rotation has made its impact on soybean yield increases.

The development of grain handling facilities and processing units in the state has created better market conditions and motivated interest in soybeans.

The Extension efforts during this period have been directed towards a combination of practices that include adequate use of lime; increase in soil fertility; adaption of most suitable varieties, disease, insect and weed control; and cultural practices that result in more efficient production of high quality soybeans.

III. A production goal of 25-30 million bushels of soybeans on one million acres is possible in the state under certain assumptions. These assumptions include:

A. Continuing demand for soybean products by an expanding population.

B. A continuing and possibly increased livestock and poultry industry which needs protein meal.

C. A continuation of current government influence, i.e. P.L. 480 with no production restrictions.

D. A potential expansion of soybean protein in the human diet in a world situation where nutrition needs to be improved. Here is an area virtually untapped except in some of the Asiatic countries.

Production efficiency should continue to advance. Per acre average yields should reach 25-28 bushels, with top yields over 60 bushels per acre.

IV. Extension clientele. The concentration of efforts might well be directed in upper Coastal Plain and even Piedmont areas where production efficiency has not yet reached the levels of the eastern counties. Many farmers in the Tidewater counties already produce at levels consistent with research efforts. A continuation of efforts is necessary in these counties, however, in reducing costs per acre, improving quality through insect and weed control, and motivating the less efficient producers to production levels already attained by their neighbors.

Tobacco

I. This crop produces about 50 per cent of the total cash farm income in North Carolina on about 9 per cent of the crop land.

F. C. Tobacco Production in North Carolina — U. S. Disappearance

	Harvested acres (000)	Av. yield lbs/A	Production (000)	Price $/cwt.	Value (000,000)	Total (000,000)	Export (000,000)	Domestic (000,000)
46-48	726	1172	848,185	46.92	398	1123	433	691
49-51	665	1283	856,015	52.69	451	1211	456	754
52-54	698	1220	873,295	52.67	460	1209	426	783
55-57	558	1543	863,683	53.14	459	1210	487	723
58-60	449	1690	758,132	59.09	448	1210	446	764

A. Government Program-- The acreage is under strict control. The acreage was reduced by over 27 per cent in the period 1956-57. However, yields have been increased progressively to the extent that total production in 1961 is back to about where it was before the 1957 acreage reduction.

The price margin between grades has narrowed greatly under production controls, under a grading system that falls short of fully describing quality in tobacco, and under a price support program that frequently does not favor the desirable or penalize the undesirable.

B. Urbanization has had little effect on the changes in areas of production. Some land that has been used for housing or industrial development has lost acreage, but the acreage has been distributed to nearby farm land, mostly in the same counties.

C. Industrialization has absorbed labor from tobacco farms in many areas to the extent that labor is hard to get, expensive, and lacking in experience and proficiency.

D. Demand for tobacco as to quality has been a changeable and elusive thing. The health scare brought on the filter tip cigarette. This resulted in a change in the characteristics of tobacco desired by companies.

II. Tobacco farmers are said to accept and adopt new methods and technology quicker than some other groups of farmers. There has been a tremendous increase in use of technology in the last 15 years.

A series of county and community meetings, field days, demonstrations on farms in the counties, field meetings, radio and TV programs, and news items serve to keep farmers up-to-date and on their toes regarding the results of research findings.

High yielding, disease resistant varieties; improved fertilization; the use of chemicals in controlling weeds in plant beds; the use of chemicals for disease and insect control; and the increased use of tractors, transplanters, fertilizer distributors, and mechanical harvesters all have contributed to the grower's success in tobacco production.

Further developments in mechanical harvesting and bulk curing of tobacco are underway.

Since the tobacco allotment is on the land rather than on the man, there has been little change in the areas of production. This is likely to continue except for minor changes allowed through the new policy of permitting the leasing of small allotments to other farms. However, these leases permit the transfer within the county only. This does not permit the combining of allotments into larger units. These combinations will likely apply more to the smaller allotments rather than to the medium or larger allotments.

III. Goals. Assuming continuation of government programs similar to those affecting tobacco at present:

F. C. Tobacco Production and U. S. Disappearance 1965

	N. C. Flue-Cured Tobacco Production					U. S. Disappearance		
	Harvested acres	Av. yield lbs/A	Production (000)	Price $/cwt.	Value (000,000)	Total lbs. (000,000)	Export (000,000)	Domestic (000,000)
1966(est.)	505	1900	959,000	65.00	623	1444	460	984

Domestic consumption of cigarettes will increase at the rate of about 3 to 5 per cent. In recent years domestic use of tobacco has not increased as fast as the increase in number of cigarettes manufactured. This has been due to the smaller size of cigarettes, the use of less tobacco and the use of re-processed leaf and stem. However, this trend has leveled off. In the past year, the amount of tobacco used has increased at about the same rate as the increase in the number of cigarettes manufactured. The effect of the health scare has diminished.

IV. Clientele. Special educational programs on a high plane should continue to reach the progressive and agressive farmer, farm leaders, agricultural

workers, industry management, banker, merchant, fertilizer dealer, seedsmen, and other allied interests. Continue to strive for ways to reach and motivate the producers who fall below county and community average to increase this grower's productivity. Strive for greater efficiency in routine and management effort. Concentrate on maximum net return. Concentrate on the coordinated effort of all groups who share in the benefit from the crop and all those who have responsibilities for one phase of the program or another.

V. Problems to be overcome.

1. Technical and economic.

a. Follow sound proven practices, perform all operations with efficiency, at the right time and in the right way so as to reduce or eliminate the risk of crop failure or partial failure.

b. Use irrigation properly.

c. Fertilize according to soil test, depth of topsoil and the amount of rainfall during the growing season.

d. Because of the high cost and quantity of labor required to produce tobacco, it is most important to organize the farm operation for the most efficient use of available labor. On some farms additional mechanization to save labor is advisable. However, the grower must weigh the cost of and availability of labor against the cost of and efficiency of the machine.

e. There is yet no universally acceptable and recognized description of quality in tobacco that really makes a difference and that is borne out in market price.

The present Government grading system falls short in describing many of the characteristics of tobacco that are said to be important.

The price support schedule has followed a trend toward reduced spread between the grades of tobacco. The price support does not always favor the desirable nor penalize the undesirable.

The success and future of the tobacco industry, at all levels, is dependent upon gaining active support of all groups who share the responsibility for one phase or another.

Simply talking about quality, production and marketing practices and the failure of the other man to make improvements will not get the job done. All concerned must do their part.

The agricultural, industrial and allied groups involved in tobacco must form an agri-business partnership. They must work together to bring about improvements needed in all areas of the tobacco program.

1. Tobacco prices paid by the companies need to realistically reflect desirable and undesirable characteristics of tobacco presented at the market place. This is true for all buyers. Too frequently market prices ignore mixed grades, pale, slick tobacco, thread, large hands, etc. Yet these things are often criticized by buying interests.

2. The tobacco grading system needs to describe the quality characteristics of each basket of tobacco. The grade should identify desirable and undesirable characteristics that are important to the trade and consumer. Too frequently mixture, thread, large hands, slick, toady, pale tobaccos may not be identified as such.

3. The price support program needs to reflect desirable and undesirable characteristics of tobacco. The support price has a great deal of influence at the market. It is just as important for the price supports to encourage desirable quality, good handling, etc. as it is for the buyers to do so.

4. The acreage control program needs to be as realistic and as accurate as possible in line with effective supply and demand in the domestic and foreign markets. We must be aware of the effect on our own industry of quality, price, and production costs of tobacco produced in foreign countries and of regulations, laws and tariffs in importing countries.

5. The tobacco warehousemen have very important roles and responsibilities in a cooperative effort to improve and build the tobacco program. Their support of a coordinated effort is important.

6. North Carolina State College needs to supply as much up-to-date information on tobacco as possible through its basic and applied research. This information needs to be passed on by the Extension and teaching program to the farmers, to all segments of the tobacco industry, and to the people in general.

7. Tobacco farmers need to utilize the proven production and marketing practices to produce the most desirable quality as efficiently and economically as possible. The grower needs to have pride in the quality and appearance of his tobacco. Satisfaction the consumer will get from the use of his tobacco also must be considered. This calls for selection of proven varieties, sound cultural practices, chemicals, and curing and marketing practices that will produce a product that will provide maximum satisfaction in the domestic and foreign trade. A sound, healthy, growing industry cannot be built on "what we can get by with" at the farm, market or in the processing plant.

2) Extension and Motivation

a. Interpret research data, adapt and present it to leaders and growers effectively so it will be understood and used.

b. Help growers to evaluate and analyze information, problems and solutions rather than try to tell them what to do.

c. Gather, analyze and distribute information to growers from research, farmers' experiences, and commercial sources on tobacco production and marketing to aid the grower in increasing his net income and insure the industry of a continuing supply of good quality tobacco.

Wheat

I. About 1945 wheat started a decline that has seen acreage reduced from over one-half million acres to about 370 million acres in 1960. Production is up, however, because of increased per acre yields. North Carolina had an average yield of 23.5 bushels per acre in 1960 (29.0 bushels per acre in 1961) compared to 14.5 bushels per acre in 1945. Total production was about 6 1/2 million bushels in 1945 and 7 1/2 million bushels in 1960.

A. Governmental programs have restricted wheat production during this period. However, there has been considerable planting under the provision that permits up to 15 acres of wheat to be planted and sold from a farm without penalty, even without an allotment.

B. There has been a significant shift in acreage in the state in more recent years. In 33 Piedmont counties, 250,000 acres were produced in 1954, while in these same counties only 200,000 acres were produced in 1960. At the same time 41 Coastal Plain counties increased their acreage by 52,000 acres. It seems to be significant that in this same period the Coastal counties decreased their oat production by 60,000 acres.

Farmers in the Piedmont counties placed considerable acreage in the Soil Bank program, much of it for the maximum time of 15 years.

Coastal Plain farmers benefit by planting small grain in rotation with tobacco, peanuts, and other crops. Because of severe disease and insect problems with oats, many growers shifted to wheat for these rotation benefits. Also, wheat provided a better opportunity for a cash crop than oats because of the difference in price structure and yield potential between these two small grain crops.

II. Wheat production has been almost completely mechanized over this 15-year period. Other technology has been improved. Varieties with higher yield potential and more resistance to diseases have been developed by plant breeders. Much has been learned about improved fertility and cultural practices. Farmers have turned to increased applications of nitrogen in

preference to the old "red clover and grain" combination in which the red clover was to provide most of the nitrogen for the grain. Also, there has been less dependence on lespedeza interseeded in grain for a hay crop in recent years. This leaves the farmer free to try for higher yields of wheat without the fear of penalizing the lespedeza.

Development and promotion of commercial and on the farm storage facilities, in addition to improved means of controlling insects in stored grain, have helped many farmers to realize greater profits from wheat. There is still need for improvement in this regard, however.

III. The production of wheat in 1966 will be determined largely by governmental programs. A new wheat program in 1961 will have a marked effect on the current crop and this program will probably continue. An important consideration that seems to have been overlooked is that North Carolina farmers produce a type of wheat (soft red winter) that is not in surplus. The anticipated carryover of the national stock of this type of wheat in 1962 is near 30 million bushels. That quantity is little more than a comfortable working stock for seasonal transition. Furthermore, this type of wheat is produced only in areas of relatively high rainfall and other specific climatic conditions and is, therefore, not subject to production in the more arid midwest. Since soft red winter wheat is used preferably for pastries, cakes, crackers, and family flour, it is not even competitive in a real sense with the hard wheats which are stored in large abundance. These hard wheats are preferable for bakery bread.

The state as a whole is caught in the position of a need for locally produced wheat to supply industry with a product which is needed and is not in an unhealthy surplus. At the same time, an individual farmer finds it to his economic advantage not to plant wheat because the remuneration from the government is equal to or greater than his expected profit with all risks removed.

It can only be assumed that this situation will continue and the production of wheat thereby established. It is doubtful that more than 5 million bushels of wheat will be produced in 1966 on less than 200,000 acres. State average yields should range from 25-30 bushels per acre, with top yields above 60 bushels per acre.

IV. Extension clientele. The Extension program should be geared to high production efficiency in both Piedmont and Coastal areas and should promote optimum fertility, quality seed, disease and weed control, and more adequate storage for safe storage and insect control.

Miscellaneous Crops

No detailed discussion will be given on miscellaneous crops. They are mentioned here only because they are of particular interest to some individuals. They are important in specialized cases and should not be overlooked by the Extension program.

Of special interest at the present time is the crotalaria story which is well-known to most Extension people. Research is underway to find a replacement for crotalaria as a cover crop particularly on light sandy soils. Crops under investigation which might play a small role are castorbeans, sunflower, and sesame. It is not anticipated that any of the new crops under study will contribute any major source of farm income in the next five years although to certain individuals they may be very important.

REPORT OF LIVESTOCK, POULTRY, FEED GRAINS, FORAGE CROPS, AND PROTEIN SOURCES COMMITTEE

This report includes developments in certain crops and livestock in North Carolina since 1945. In addition to stating the present situation for the crops and livestock covered, a projection of our production potential through 1966 is included.

Also discussed are our clientele in the future as well as problems to be overcome.

I. Population changes in North Carolina

The growth and distribution of the population of a given region are important factors which influence the production and consumption of agricultural commodities. In 1960, North Carolina had a total population of just over 4,500,000, representing an increase of 12.2 per cent during the decade 1950-60.

This population, however, was not evenly distributed over the State nor was the increase equal within the various regions of the State. In fact, more than one-half of the total population was concentrated in the Piedmont region, one-third in the Coastal Plain region and approximately one-sixth in the Mountain region. Furthermore, during the 1950's, the population in the Piedmont increased by 17 per cent, which is considerably above the increase for the State as a whole. The remaining two regions accounted for a total of only 7.7 per cent of the increase during this 10-year period. The counties which comprise the Mountain region increased their population by only 1.7 per cent, and the Coastal Plain by approximately 10 per cent. This latter 10 per cent increase may in large part be attributed to increased military personnel stationed on bases located in four counties of this region.

As far as the population trends during the next five years are concerned, it is quite likely that the State's population will continue to grow at the rate of at least 1.2 per cent per year. There is every likelihood that this growth will be concentrated in the Piedmont region with very little growth occurring in the Mountain or Coastal Plain regions.

The trend toward urbanization will continue in all regions but will be particularly prevalent in the Piedmont region, which already accounts for two-thirds of the State's total urban population. The population of the Piedmont region, therefore, will comprise the bulk of the demand for agricultural goods.

II. Soil utilization

Livestock and cropping programs should be adapted to a sound program of utilization of the state's soil resources. Data obtained from the recent soil conservation needs inventory completed by the U. S. D. A. provide a basis for a more detailed and meaningful look at the state's soil resources and their use.

A summary of present and potential use of cropland in North Carolina is shown in Table 1. Use of land for row crops is excessive in each of the regions. The 1960 acreage of row crops could be accommodated only if the level of soil management could be raised to adequate on all cropland in each class. This is not, however, a very realistic or practical solution. The trend toward mechanization makes several management practices, such as terraces and contour tillage, less and less feasible on many fields. Consequently, the practical answer will be lessening intensity of use, coupled with the application of all feasible soil conserving practices.

Assuming that the rate of adoption of soil conserving practices is not likely to be greatly accelerated, a goal of reducing the acreage in row crops by 1/2 million acres is recommended. By regions, 8,000 acres in the Mountain, 236,000 acres in the Piedmont and 270,000 acres in the Coastal Plain should be taken out of row crops. The feed grains program resulted in 380,000 acres being taken out of row crops in 1961. With the assumption that the feed grains program will remain in effect at the same level of participation, an additional 120,000 acres will need to be removed from row crops. Many of these acres would be available for pasture and drilled forage crops.

III. Enterprise situation and goals

Forage Crops

Unimproved pasture acreage has decreased 414,389 acres or 31 per cent in the 1945-1959 period. Yield has remained constant at 1.1 tons hay equivalent per acre. By 1966, acreage will go down about 237,000 acres or 25 per cent of 1959 acreage. Most of this acreage plus some of the idle land will be absorbed by increase in improved pasture and alfalfa.

Improved pasture acreage has increased 857,228 acres or 429 per cent since 1945. Yield increased 0.3 tons/acre or 15 per cent. An increase above 1959 in acreage of about 148,000 acres or 14 per cent and in yield about 1.7 tons/ acre or 74 per cent is anticipated.

Alfalfa acreage has increased 50,531 acres or 459 per cent since 1945. Yield increased 0.3 tons/acre or 14 per cent. Anticipated increase above 1959 is about 14,000 acres or 23 per cent and in yield about 2.5 tons/acre or 100 per cent.

Table 1

Present and Potential use of Cropland - N. C.

	Mountains	Piedmont	C. Plains
Acres now in all crops	230,000	2,190,000	3,725,000
Acres now in Row crops	80,000	914,000	2,700,000
Max. allowable in Row crops - present mgt.	72,000	678,000	2,430,000
Excess - acres	8,000	236,000	270,000
%	10	25	10
Allowable row crops adequate mgt. - acres	80,700	954,000	2,715,000

Lespedeza, soybean and cowpea, and small grain hays (the lower-producing hay crops) probably will decrease further as has been the trend. Yield potential could be significant over the 1959 acreage. Other hay probably will remain about the same considering that Coastal Bermuda grass and other high-producing crops replace some of the lower-producers.

Silage acreage and yield should be increased in North Carolina. Many North Carolina dairymen are already feeding a substantial amount of silage, and there seems to be a potential for additional silage feeding to beef cattle. Dairymen and beef cattle producers with relatively small acreages will find that a heavy silage program offers an efficient way of increasing the total number of animals that the farm can support.

A goal of 248,000 acres of improved pastures--a 23 per cent increase--is suggested for 1966. This is realistic in that it merely extends the 1952-1959 trend in increase of improved pastures and since an extension of the 1952-1959 trend in decrease of unimproved pasture acreage would release more than 248,000 acres. Also, additional acres would be available from land taken out of row crops and from idle land. A real goal--and a real need--is to raise the productivity of existing improved pasture, as well as new, by 40 per cent through application of known and improved technology.

For alfalfa, a goal of 14,000 additional acres and a per acre yield increase of all alfalfa by 2.5 tons or 100 per cent is recommended.

Acreage in silage crops can readily be increased by 50 per cent. Table 2 shows the 1966 potential, for pasture and forage crops by the different regions in the state.

Feed Grains

The acreage of corn and oats has decreased during the period 1945-60. The greatest decrease in corn acreage has occurred since 1955 as a result of Agricultural Stabilization and Conservation acreage allotments. In 1959, corn acreage allotments were discontinued and a marked increase in harvested acres resulted.

Several problem diseases of oats-mosaic and yellow dwarf virus--have lowered yields and discouraged the planting of oats. The Coastal Plain showed the greatest reduction in oat acreage.

Barley acreage in 1961 was 76,000 acres. This represented an increase of 20,000 acres over the 1950-59 average.

Grain sorghum has increased from the 1950-59 average of 63,000 acres to a record high of 106,000 acres in 1959. The increase in acres planted was due principally to drought conditions, the development of hybrid varieties, and increased use as livestock and poultry feed. Its use as a second crop following small grain also influenced this increase in acreage.

Table 2.

Forage Crop	Mountains		Piedmont		Coastal Plains		State Total		
	1959 Acres	Potential for 1966 Acres	1959 Acres	Potential for 1966 Acres	1959 Acres	Potential for 1966 Acres	1959 Acres	Potential for 1966 Acres	% Change Acres
Pasture:									
Unimproved	495,784	480,000	356,305	200,000	85,380	20,000	937,469	700,000	-25.3
Improved 2/	181,108	185,000	623,749	775,000	252,371	345,000	1,057,228	1,305,000	+23.4
Alfalfa 3/	20,509	25,000	39,450	55,000	1,572	5,000	61,531	85,000	+39.3
Lespedeza	5,320		326,668		49,123		381,111	300,000	-21.3
Soybean & Cowpea Hay	1,731		30,426		35,697		183,301	60,000	-67.2
Small Grain Hay	6,991		49,930		16,758		117,858	100,000	-15.2
Other Hay	121,363		79,428		10,874		211,665	215,000	+ 1.2
Silage 4/									
Corn							65,000	100,000	+53.8
Sorghum							12,000	20,000	

1/ Hay equivalent per acre in tons.

2/ 1952 was first year in which improved pasture was reported by areas, 1945 estimate was 200,000 acres for state.

3/ 1950 was first year in which alfalfa was reported by areas, 1945 estimate was 11,000 acres for state (figures).

4/ Silage acreage not report by areas.

Assume that surplus small grain situation will continue, thus lespedeza will decrease as small grain decreases.

TABLE 1: Acreage of Feed Grain (in thousands).

	1950-1959	1959	1960	1961
Corn	1,939	1,908	1,750	1,400
Oats	383	390	237	277
Barley	54	78	62	74
Sorghum	65	106	84	55
TOTAL	2,439	2,482	2,133	1,806

The 1961 Feed Grain Act re-established acreage reduction as a requirement for qualifying for corn and grain sorghum price supports. The Act provides for feed grain conservation payments for the acres diverted from corn and sorghum production. To qualify under the Feed Grain Act, corn and sorghum acreage must be reduced by 20 per cent. Other feed grains do not have to be reduced to qualify for the higher support prices. The reduction in acreage of corn and sorghum in 1961 reflects the participation in the new grain program.

There has been an increase in the production of feed grain even though there was a general decrease in the acreage since 1950. This general increase in production is attributed principally to the increase in corn yield since corn makes up 80 to 90 per cent of the feed grain production.

The reduction in acreage of corn and sorghum in 1961 is reflected in the production.

TABLE 2: Production of Feed Grain(in thousands of bushels).

	1950-1959	1960	1961
Corn	64,235	84,000	67,200
Oats	12,963	8,176	11,218
Barley	1,735	2,108	3,034
Sorghum	1,783	3,192	2,035
TOTAL	70,716	97,476	83,487

Record yields of all feed grain were broken between 1959 and 1960. These records were equaled or new record yields were established during 1961.

TABLE 3: Feed Grain Yield (in bushels per acre)

		Record		
	1950-1959	Year	Bushels	1961
Corn	33.4	1960	48.0	48.0
Oats	33.6	1956	40.0	40.5
Barley	31.6	1956	37.0	41.0
Sorghum	28.2	1959	33.0	37.0

These record yields and increased production are directly related to greater application of recommended fertilization, weed control, cultural practices, improved seed, and the increased use of hybrid corn.

In 1945 only 3.2 per cent of the total corn acreage was in hybrids which yielded an average of 25.0 bushels per acre and production amounted to 55,000,000 bushels on 2,229,000 acres. This low yield, by present standards, represented a record for yield and production prior to 1945. By 1961 approximately 85 per cent of the 1,400,000 acres of corn planted was hybrid. The production was 67,200,000 bushels of corn. This represents an increase of 12,000,000 bushels in 1961 from 800,000 less acres.

Feed grain is raised principally in the Coastal Plain and Piedmont. Small grain is virtually absent in the Mountains. Commercial production of corn is confined to the Coastal Plain. Grain sorghum production is concentrated in the Northern Coastal Plain and Southern Piedmont. The Piedmont is the center of barley and oat production. Three-fourths of the corn production and 40 per cent of the oat production is found in the Coastal Plain.

Commercial grain storage facilities are concentrated in the areas of highest production with the highest capacity located in the Coastal Plain and the Southern and Central Piedmont.

Increased supplies of feed grain will have to come primarily from increased yield per acre. This assumes that the feed grains program will remain in effect with about the same degree of participation obtained in 1961. Increased yield per acre of approximately 25 per cent in corn and oats, and 35 per cent in barley and grain sorghums are possible by 1966. This would result in yields per acre as follows: corn 60 bushels, oats 50 bushels, and grain sorghums 45 bushels. The following figures show production of feed grains in tons for 1960 and 1961 with the goal for 1966:

	1960	1961	1966
Corn	2,352,000	1,881,600	2,240,000
Oats	130,816	179,448	160,000
Barley	50,592	72,816	72,000
Sorghum	95,760	61,050	67,500
Total	2,629,168	2,194,914	2,539,500

In addition to the increased yield per acre, the losses due to rodent and insect damage (approximately $11,000,000 annually) should be markedly reduced.

Grain storage facilities (on the farm and commercial) should be doubled to accommodate 80,000,000 bushels. A large volume of grain needed in the livestock and poultry operations leaves the State at harvest time and must be shipped back in at an increased price later in the year.

Dairy

While family cow milk production and deliveries direct to the manufacturing plants have fallen in recent years in North Carolina, production from Grade A herds has outstripped fluid milk consumption. Grade A production averaged 15 per cent above fluid sales in 1961.

TABLE 4: Milk Cows and Milk Production in North Carolina

Year	Milk Cows on Farms No.	Milk Cows in Grade A Herds	Milk Prod. Per Cow in Grade A Herds	Total Commercial Milk Prod. Mil. Lbs.	Grade A Producers No.	Grade A Herd Size
1956	330,000	117,000	6,500	890	4,500	24
1961	271,000	133,000	8,000	1,129	3,700	37

In 1945 grade A milk production in North Carolina was approximately 300,000,000 pounds. In 1961 Grade A production totaled 1,038,000,000 pounds. While this is sufficient to provide for fluid milk needs, it is estimated that North Carolina produces less than 50 per cent of its needs for cheese, ice cream, condensed milk, milk powder, etc. Part of the reason for this is the difference in price. Grade A milk in 1961 averaged $5.69 for 3.82 per cwt. However, our Grade A market is quite limited. Manufacturing grade prices were $3.29 per cwt. for the average 4.3 per cent test milk, or approximately $2.50 per hundredweight below the Grade A price.

Other recent changes that have come about in the dairy processing industry since 1945 are:

1. Conversion to paper containers in 1945 and plastic coatings in 1962.

2. Improved quality and increased shelf life of milk. Bulk farm holding tanks, better quality control in processing, and stricter farm requirements are responsible.

3. Enactment of North Carolina Milk Commission Law in 1952. The Milk Commission has had a stabilizing effect on the industry by requiring uniform producer prices and by regulating trade practices. Consumer prices are not fixed by the Commission. Regulation encourages competition in efficient processing and delivery techniques.

4. The cost of processing and delivering a quart of milk in North Carolina was about 12.9 cents in 1961 compared to 15.2 cents for the nation as a whole. This means that North Carolina processing efficiencies compare favorably with other areas.

Most production and processing of milk is located in the Piedmont. However, in the past five years Eastern North Carolina has grown. The number of dairy processing plants in the state are:

a. 19 combination milk and ice cream plants
b. 31 milk processing plants
c. 13 ice cream processing plants
d. 2 butter plants
e. 1 cheddar cheese plant
f. 1 milk, butter and powder processing plant
g. 29 producers' milk distributors
h. 325 soft-serve frozen dessert establishments

The North Carolina Dairy Industry ranks with the top level of applied technology and business management. A critical need exists for more trained young men in the processing and selling field.

Additional plants, alterations in present plants, or better use of facilities for manufacturing milk are necessary if any appreciable expansion in volume of milk production is projected. However, fewer milk and ice cream plants are needed so that market efficiencies in these plants can be increased.

Market goals include a 12 per cent increase in fluid consumption and the absorption of another 125 million pounds to be made into manufactured products. To meet these needs, and to improve the efficiency of the dairy herds, a 25 per cent increase in milk production per cow is a desirable goal. For Grade A herds, this would raise yield per cow to 10,000 lbs. annually. This will be about 250 million pounds more milk than 1961 production.

The returns to producers for this increased production will be approximately 11.5 million dollars. If all of this milk is processed in the state, it will add an additional 12 million dollars to the value of the finished products. In terms of regions, present production is approximately 32 per cent in the Mountain Region, 55 per cent in the Piedmont and 13 per cent in the Coastal Plains. The increase is expected to be distributed in about the same proportion as present production, with possibly a greater increase in the Coastal Plains area.

Additional efficiency in the dairy industry may be obtained by pooling fluid Grade A milk for more efficient distribution to meet Class I needs of dairy plants. This could aid in maintaining or, perhaps, increasing slightly the present blend price ($5.69/cwt) of milk for fluid milk purposes and could make possible greater return to farmers now producing milk for the fluid milk market.

Beef Cattle

Beef production is dependent on the production of grain and forage crops, and it should be noted that the state is divided into three general production areas. The western part of the state is the Mountain area covering about 16 per cent of the land area. The Piedmont occupies 39 per cent of the central section and the Coastal Plain covers the remaining 45 per cent of the State. In the year 1945, we had roughly 41,000 head of beef cows and 40,000 beef steers in the state.

Sixty-five per cent of the beef cows and 80 per cent of the steers were located in the smallest part of the state--the Mountain area. Twenty-five per cent of the cows and 10 per cent of the steers were in the Piedmont, and the remaining ten per cent were in the east.

In 1945, and continuing until 1952, the government farm program favored the planting of soil-conserving crops on diverted acreage. The farmers could obtain assistance in clearing, draining, seeding, fencing and maintaining pasture grasses on their farms. This program favored the expansion of cow herds. Since 1952, the farm programs have neither favored nor discouraged the expansion of beef cows. However, the per capita consumption of beef has increased slightly in the past decade, and beef prices have remained within the budget limitation of most American families.

Marketing has been one of the main factors in helping to expand beef numbers. The feeder calf sales were organized on a state-wide basis in 1951, and have provided a steady market for a small percentage of the calves produced. However, the influence of this market covered the majority of herds and served as a pricing basis for the calf crop. These sales have had a steadying influence on the market and encouraged the orderly expansion of cow herds. Organized marketing of yearling and stocker cattle started in 1955. Slaughter cattle were produced by only a very few feeders in 1945, and markets for choice cattle did not develop until the mid-1950's. The starting of graded fat cattle sales did much to develop this market.

The development of technology has favored the increase of both cow herds and cattle feeding. New pasture plants, weed and insect control methods, fertilizer practices, as well as production methods in feed grains, have aided the beef-cow increase. The use of new feeding methods, materials and equipment have assisted in the expansion of feeding cattle for slaughter.

Beef cows stayed about the same for the years 1945-1948. Numbers remained fairly constant at the 41,000 figure during these years. The most rapid increase in the history of beef cattle took place from 1948-1954. During these six years, cow numbers jumped from 41,000 to 167,000 head. Beef prices broke sharply in 1952 and by 1954 this had helped to slow the momentum of growth. The increase continued, however, and January 1, 1961 found us with 239,000 head of beef cows in the state. It is interesting to note the shift in location of cows: 27 per cent in the Mountains (-38%); 40 per cent in the Piedmont (+15%); and 33 per cent in the Coastal Plain (+23%).

Beef steers have increased from 40,000 in 1945 to 50,000 in 1960. The majority of the increase has taken place in the last five years--in the eastern part of the state and has been in slaughter steers. The majority of the steers on hand in 1945 were feeder or stocker steers grown in the mountains of the western part of the state and, generally, were shipped to northern feeder markets. There has been some slight increase in feeder steers through the years. This has been slow and the great majority are still produced in the mountains.

Since 1955 there has been a growing interest in feeding out slaughter cattle in the Coastal Plain section of the state and in wintering stocker cattle in the Piedmont counties.

The steer numbers in 1960 were 50,000 and 50 per cent of these are still in the Mountains with 20 per cent being wintered in the Piedmont and 30 per cent being wintered or fed in the Coastal Plain.

As a whole, level of applied technology presents an area in which a great deal of improvement is possible and desirable. The majority of cattle expansion has been in an area where knowledge of technological advancements in cattle production has been limited. However, acceptance of improved techniques in production has been greater in newly developed areas than in the older established areas.

Cow and calf herds in the Mountains and Upper Piedmont are primarily on small farms or, in many cases, on part-time farms. In the Lower Piedmont and Coastal Plain, the cow herds average larger than in the western portion of the state. Although there are still many small and intermediate sized herds in eastern North Carolina, it is possible to find herds with up to 1000 cows.

Steer feeding operations in the Mountains are very limited and those existing are small. In the Piedmont, the feeding operations are small, ranging from 10 to 50 with a few having as many as 100 head. In the Coastal Plain, there are many small feeders with a few head grown and fed out on the farm; several feeding from 50 to 200 head; and a limited number with permanent, year-round feed lots, feeding from 200 to 2,500 head.

The potential for increased beef production for the period 1961 to 1966 appears to be very great. With dairy cattle numbers showing some decrease, the bulk of the increased pasture in connection with the pasture goals will be available for beef cattle. A goal of 60 per cent increase in beef production (allowing for the decrease in beef coming from dairy cattle) is recommended. If the pasture goal is achieved, there will be ample feed for a beef cow population of 400,000 and the young stock that must be maintained in connection with this number of cows. This will be an increase of 160,000 cows from 1960. Cattle feeding should be increased in the state with a minimum of 100,000 head being finished for market (high good and choice). On the basis of areas where the feed will be produced, about 59 per cent of the increase in beef cattle should be in the Coastal Plains, 38 per cent in the Piedmont and 3 per cent in the Mountains.

Additional efficiencies should be achieved in the cattle industry by working toward the following goals:

(1) Increase the number of cattle marketed per 100 cows in the breeding herds from 65 to a minimum of 75 (top herds achieve 90 to 95 per cent).

(2) Improve the average quality of feeder calves by one grade.

(3) Increase the average weaning weight of calves by 25 pounds.

(4) If the above goals are attained, the increased production of beef cattle will make possible increased returns of approximately 25 million dollars.

Swine

In 1960, according to statistics compiled by the Federal-State Crop Reporting Service, there were 280,000 sows and gilts and a total of 1,564,000 hogs in North Carolina. These hogs were distributed as follows: 69 per cent in the Coastal Plain, 24 per cent in the Piedmont, and 7 per cent in the Mountain area. This distribution is very closely correlated to the grain producing areas. In other words, hogs are produced in almost direct ratio to the amount of grain that is grown. The total number of hogs is approximately 14 per cent above the 10-year average of 1,274,000 head.

The average number of sows farrowing per year has increased somewhat since 1945, although the number has varied with hog cycles. By 5-year periods the average number farrowing per year has been as follows:

1945 - 1949	232,000
1950 - 1954	267,000
1955 - 1959	306,000

The largest number of sows farrowing any one year for the period 1945-1960 was 337,000 in 1959.

The level of technology in the swine industry has changed markedly in the past 15 years. Although hog numbers have remained relatively constant, there has been a decrease in the number of farms producing hogs and an increase in the average number of sows per farm. In other words, there has been a trend toward larger, more efficient units which tend to lower production costs and make better use of labor and facilities. Ten years ago there was only one herd of 100 or more sows in the state. Today there are 25 such units and a great number of herds with 25 or more sows.

The improvement in farrowing facilities in the state has brought about a steady increase in the number of pigs saved per litter. The figures are as follows:

1945	6.3
1950	6.5
1955	6.7
1960	7.0

There is also a trend toward feeding hogs in confinement. An increase in land values, the increase in hogs fed per group, and the fact that confinement feeding lends itself to more mechanization, have all helped to accelerate the acceptance of this system of finishing hogs. There are approximately 1200 concrete feeding floors in North Carolina at the present time.

Swine nutrition is also better than in the past. More research on swine nutrition, new developments, and a concerted effort by the feed industry and educational groups such as the Extension Service have helped get practically all hog producers to feed a balanced ration. The larger swine units of today are handled in a more business-like way and better records are being kept.

Production testing has led to the development of breeding animals with a faster rate of gain, greater feed efficiency, and a more desirable carcass. The better swine producers of today are producing 100 pounds of pork with 320 pounds of feed. These hogs reach market weight in 150 days and produce carcasses which yield 50 per cent or more of the four lean cuts.

In 1960, there was more specialization of swine production than in 1945. There were farmers who specialized in the production of feeder pigs; others who bought feeder pigs and finished them to market weight; and still others produced their own pigs and fed them to market weight.

Feeder pig production is being stimulated in the Piedmont and lower Mountain areas by feeder pig contracts. These have proved successful in the counties of Rutherford, Iredell, Montgomery, and Lincoln. Organized feeder pig sales in the counties of Orange, Nash and Hertford have done much to stimulate feeder pig production in these areas. Still, 75 per cent of the market hogs are produced in the Coastal Plain area of the state.

A marked increase in returns from the swine enterprise can be obtained by a combination of improved efficiency, increased total production, improved quality of hogs, processing more of the finished hogs in the state, and expanding the production of country hams. Application of available technology will make possible an increase of 20 per cent in over-all efficiency of production.

This would come about by saving a higher percentage of the pigs born, using breeding stock that can improve performance and carcass quality, providing adequate nutrition and making use of available disease and parasite control procedures.

Goals for improved efficiency include a 15 per cent increase in feed efficiency, an increase from 7.2 to 7.6 in the number of pigs weaned per litter, and an improvement in carcass quality of market hogs by an average of one grade.

A 20 per cent increase in efficiency and a 20 per cent increase in the number of sows (28,000 sows) will make possible a 40 per cent increase in pork production by 1966 and is a total production of 2.5 million hogs. This is the goal for which we should strive and will make possible increased returns of approximately 26 million dollars to the swine industry. Approximately one-half of the increase in sows, or 14,000, would be expected to be in the Coastal Plains (principally, Wilson, Johnston, Wayne, Greene, Pitt, Lenoir, Duplin and Beaufort counties) and one-half in the Piedmont for feeder pig production. These pigs would be finished in the Coastal Plains region.

Poultry

In North Carolina, broiler production increased 773 per cent, and egg production increased 119 per cent from 1945 to 1960. The production of turkeys also increased, but not at the same phenomenal rate. Several factors contributed to this increase in the production of poultry and poultry products in North Carolina.

1. North Carolina farms in general are small in acreage, and the production of poultry requires little land.

2. Broiler production as a specialized industry was being born at this time, and it generally went to areas of the United States which had an abundance or surplus of farm labor.

3. With the advent of controls on the production of cotton and tobacco, North Carolina could not expand in two of its principal money crops; so it needed a new producer of income.

4. Poultry is an enterprise which demands a relatively small capital investment.

5. With little history as a commercial poultry producing state, the farmers of North Carolina were receptive to all the new technological advances which were occurring in the poultry field during this period.

The biggest single cost in the production of poultry meat and eggs is feed. This is primarily a manufactured feed and one which need not be produced on the same farm as the poultry itself. In the past, many of the ingredients for poultry rations, feed grains in particular, have been imported from other areas. However, our favorable geographic location in respect to the large metropolitan markets has enabled us to compete with other poultry producing areas.

Feed manufacturers and processing plants for both poultry meat and eggs have moved into the area as production has increased. On some occasions, the location of these facilities has stimulated further increases in production.

In 1945, most broilers and eggs were produced independently by the individual farmer. He owned the chickens, bought his feed, sold his product, and either made a profit or loss depending on his cost of production and the price he received. Beginning in the late forties, a trend toward contract production of broilers began. The farmer supplied labor, buildings, and equipment, and most other factors of production were supplied by either the feed company or the processor. The farmer received for his contribution a set price per pound. Today, all but a very small percentage of broilers in North Carolina are produced under contract. Contract production of eggs has been slower in development in North Carolina, but the trend is now on the increase.

Broiler production in North Carolina today is concentrated in three large, rather well-defined areas. They are: (1) the Wilkes area including Wilkes County and parts of Surry, Yadkin, Iredell, Alexander, Caldwell, Watauga, and Ashe counties; (2) the Chatham area which also includes Wake, Harnett, Lee, Moore, Hoke, Montgomery, Richmond, Anson, Stanly, Union, Davidson, Randolph, Forsyth, Guilford, Alamance and Orange counties; and (3) the Pender-Duplin area which also includes Wayne, Lenoir, Jones, Onslow, Columbus, Bladen and Sampson counties.

A large number of broilers are produced in three smaller areas. These are: (1) the Buncombe area which includes parts of McDowell, Henderson, Haywood and Madison counties; (2) an area including parts of Alamance, Orange, Durham, Granville, Person and Caswell counties; and (3) the Bertie-Martin County area.

Production of table eggs in North Carolina is concentrated in five areas. From west to east these are: (1) Cleveland County area which includes parts of Gaston, Lincoln, Burke and Rutherford counties; (2) Iredell County area including parts of Catawba, Alexander, Wilkes, Alleghany, Surry, Yadkin, and Davie counties; (3) Stanly County area including Union and Anson and parts of Mecklenburg, Cabarrus, Rowan, Davidson, Montgomery and Richmond counties; (4) Alamance, Durham, Orange, and Wake County area including parts of Caswell, Person, Franklin, Nash, Wilson, Johnston, Harnett, Lee, Chatham, Randolph and Guilford counties; and (5) Beaufort-Hyde County area including parts of Craven, Pitt, Martin, Washington and Tyrrell counties.

Turkey production is concentrated in: (1) the Union-Anson County area; (2) Scotland-Robeson County area, (3) the Wayne-Sampson-Duplin-Pender area; and (4) Beaufort County.

The level of applied technology is relatively high in all phases of poultry production throughout the state. Producers have been forced to adopt efficient methods of production as a result of low prices. Inefficient producers have been forced out of business. In cases where contract production is in effect, contracts are granted only to those who adopt latest technological practices. In fact, the farmer under contract has practices dictated to him by the business organization with which he has a contract. These business organizations have capable servicemen who supervise the farmers.

North Carolina producers compete in the local and national markets for broilers and eggs. Primary limitation to expansion of the poultry industry is a market which will absorb the additional volume at prices profitable for farmers and marketing firms. We need new products and increasing demand.

Present facilities for marketing broilers and eggs for the fresh market are continuously changing to meet competition in other states, but the present capacity is sufficient to handle an expanded output. Production authorities believe that there are some further opportunities for reducing costs of production but the returns for increasing efficiency will be rather small because of the present high rate at which now technology is being put into use.

The egg producers could be benefitted if a satisfactory process were available for converting cull hens to frozen deboned poultry products. Frozen storage capacity in North Carolina for broilers and turkeys could increase bargaining power in the pricing contracts and help reduce seasonal instability. Some areas are expanding outlets for poultry through a variety of products and convenience foods. Others are developing foreign sales.

The goals for poultry are based on the assumption that there will be no federal control program to limit production.

The poultry industry in North Carolina is expected to continue to grow. Greater efficiency in the production of eggs should be attained. A goal of 240 eggs per hen is considered feasible (up from 201 for 1960). This production, with an increase of approximately 3 per cent in laying hens, will make possible a goal of 2.5 billion eggs by 1966 (up 25 per cent from 1960) and will increase returns by 15 million dollars.

The goal for broilers in 1966 is 260,000 (up from 156,600,000 in 1960) for a total increase of 66 per cent. The added income from the increased production should be approximately 57 million dollars. Increases in production efficiency are not expected to be very great compared with the last five years. The goal for turkeys is 2,225,000 (up 25 per cent from 1960) with increased income of approximately 2 1/2 million dollars.

Some expansion in broiler and egg production will occur in all areas of the state but the greatest increase will be in the eastern part of the state. Contracting of broiler production will continue and this system of financing will increase in importance in the production of eggs and turkeys. Integrated operations are expected to expand.

Processing facilities for eggs and poultry are not expected to impede the expansion of output with the possible exception of the need for additional freezing capacity.

Sheep

In 1945 sheep numbers in North Carolina were estimated at 48,000. By 1949 numbers had declined to a low of 35,000. Since 1949 there has been a gradual rise to 73,000 head in 1960. During the 1945-1960 period, sheep numbers in the Mountain area of North Carolina were relatively stable. Numbers increased slightly in the Coastal Plain area from 1949 to 1955, but have decreased since 1955. Thus, most of the growth of the state's sheep industry has occurred in the Piedmont area.

The government price support program for wool has tended to encourage sheep production. However, the effect of this program has not been great since lambs are the major source of income from sheep. The sharp decline in market lamb prices experienced in 1960 and 1961 have discouraged the expansion of the sheep industry in North Carolina.

In general, sheep are a supplementary farm enterprise in this state; and the average flock size is only about 20 ewes. No major changes in technology occurred during the 1945-1960 period. Urbanization and industrialization have not reached the point where they affect the sheep industry in this State.

In 1960 approximately 50 per cent of North Carolina sheep were located in the Mountains, 30 per cent in the Piedmont, and 20 per cent in the Coastal Plain. The level of applied technology was low, and was directly related to the interest in sheep production shown by county agricultural agents and other agricultural leaders. Since sheep are a secondary or supplementary enterprise on most farms, and flock size is small, business organization and management left much to be desired.

Recent unfavorable prices on lamb, and the fact that they are a supplementary farm enterprise and maintained in small flocks, will tend to make any appreciable increase in sheep numbers very difficult in the next few years. A break-through in technology to permit increased efficiency and volume production will be necessary for a significant increase to occur. The goal for the next five years is to obtain increased production and efficiency with the existing numbers. A goal of one-third more returns per ewe in lamb and wool has been set. This would amount to approximately $5.00 per ewe and a total of $365,000 per year to the sheep industry.

IV. Meat processing

North Carolina slaughter plants are operating approximately 32 per cent under capacity on pork and 45 per cent on beef. Increases of the amounts projected for swine and cattle should make it possible for local plants to meet their needs with very little in-shipment. This would add 7.5 million dollars additional returns to the industry of the state. Slaughter plant facilities within the area would not be a limiting factor in marketing the increased production if a reasonable distribution on marketing is obtained.

Facilities for processing country hams have increased rapidly in the past five years. Opportunities for continued growth of the industry are good. An increase of production from 2 million to 3 million hams annually by 1966 is a reasonable goal. This will be an additional 10 million dollars return to the industry.

Country-Style Ham Production

North Carolina has the distinction of leading the Nation in the production of country-style cured hams. The value of the product on a wholesale basis exceeded 20 million dollars in 1961. Retail value was approximately 24 million. Ham production has increased tremendously during the period 1945-60 and especially during the last four years. This latter period has seen a 100 per cent increase in the production of this commodity.

The increase in ham production is expected to continue. It is estimated that the dollar value (wholesale) of country-style hams in North Carolina will approach 30 million in 1966.

The quality, palatability and appearance of country-style hams have been greatly improved due to extensive research efforts by the Animal Industry and Food Science departments at North Carolina State College. Hams are cured under refrigeration and aged under "controlled conditions" of temperature, relative humidity, and air movement.

The treatment prevents mold growth and reduces the time required for aging a ham from 8 months to 4 months. Therefore, twice as many hams can be aged with the same facility.

Packing Plants in North Carolina

During the period 1945-1961, there has been a trend toward decentralization of the packing industry. Terminal markets received a smaller percentage of the total livestock for slaughter. Parallel with this decentralization has come the hog buying stations and the location of branch packing plants by some of the nation's larger meat packers. The plant of Swift and Company at Wilson, North Carolina is an example.

North Carolina is a deficit meat producing state. In 1954 its meat production amounted to over 237 million pounds which represented 0.9 per cent of the national total. North Carolina's population was 2.6 per cent of the United States total.

In 1960, the estimated consumption of meat was 700 million pounds. Production has changed but little since 1954. Thus, our state must look to more productive livestock regions for almost two-thirds of its meat supply. Of the meat animals produced in North Carolina, a large percentage is sold to packers in other states.

The meat production capacity (slaughter capacity) in North Carolina based on 1956 to 1958 averages was: Cattle, 253,800 head; calves, 81,900 head; and hogs, 1,135,700 head. The (56-58) actual livestock slaughter was: Cattle 144,700; calves, 46,700 head; and hogs, 772,300 head. Thus, cattle and calf slaughter amounts to only 57 per cent of capacity and hog slaughter to only 68 per cent of capacity. There is, therefore, a considerable potential for increased meat production without increase in slaughter facilities.

Locker Plants in North Carolina

Since World War II, the number of locker plants in North Carolina has gradually decreased primarily due to the urban movement of farm families, increase in number of home freezers, refrigerators with large freezer compartments, and increased merchandising of frozen food through retail grocery store outlets. During the period 1945-1960, the locker plant industry lost most of custom frozen storage business. This has been partly replaced by commercial zero storage.

Locker plants currently depend on custom slaughter and processing of meat and meat products for a large part of their income. In addition, many have added facilities to cure and age rather large numbers of country-style hams. Technological changes in ham processing have made possible the increased supply of country-style cured hams. Thus, a new source of income has been made available to the locker plant operators during the past World War II period.

There are about 100 locker plants in the State of North Carolina, the majority of which are concentrated in the east and Piedmont sections. North Carolina ranks first among the southeastern states and 20th in the nation in number of locker plants. Investment in plants and equipment is about 10 million dollars; gross business per year about 5 million dollars. Each plant has an average of 7 employees.

"The slaughter capacity of the locker plants is rather insignificant when the capacity of all slaughter plants in the state is considered."

V. Grain and high protein feed needs

Concentrate requirements to meet the production goals for 1966, compared with the usage for 1960, are shown below together with production figures from the section of this report on Feed Grains:

	Grains (Tons)		High Protein Feed (46% Prot. Equiv) (Tons)	
	1960	1966	1960	1966
Poultry	968,500	1,301,800	303,700	442,400
Swine	848,000	985,000	65,000	125,000
Dairy cattle	320,000	379,000	40,000	45,000
Beef cattle	95,000	200,000	18,000	37,000
Sheep, Horses, Mules & Other	100,000	100,000	500	500
	2,331,500	2,965,800	427,200	649,900
Production (1960)	2,692,000	2,539,500		
Production (1961)	2,195,000		335,000 Soybean meal 52,000 Cottonseed meal 387,000	

This table shows that the total grain produced in the state in 1961, after the feed grains program went into effect, would not meet the needs for the poultry, swine and cattle being produced. With the goals proposed for 1966 the deficit is even greater. This amounts to 426,300 tons of grain or a 14.5 per cent deficit. Although figures have not been obtained for supplies of animal proteins, when these are added to the oil meals the supply of protein produced in the state would be adequate for the present number of animals but will be markedly deficient in 1966. If these goals are attained, a significant portion of the program must be based on in-shipments of grain and protein. Reductions in freight rates, if approved, would be very favorable to this program. Competition for grain and protein supplies is certain to influence progress toward the goals.

VI. Clientele

Since this is a program to generate income, the most rapid progress can be made by working with the larger and more progressive commercial farmers. However, much of the resources that must be utilized to realize the established goals will be associated with smaller farms having less experienced management. Programs that will appeal to this group must not be overlooked. More efficient use of resources on many of these farms can have a pronounced effect on farm receipts.

Workers in allied agricultural businesses (meat, milk, poultry, egg, banks, feed, fertilizer, equipment and supplies) must be tied into the programs.

VII. Problems to be overcome

Technical and Economic

Housing or shelters and facilities for caring for animals (including mechanization of feed and manure handling) should receive more attention if certain phases of the livestock industry are to expand. These must be economical and efficient and provide a favorable environment for optimum performance. More research is needed in this field, as well as greater effort in getting acceptable practices applied in the field. Low-cost hard surfaces (to aid in keeping animals under confinement and out of the mud) and fencing of suitable pasture lands and fields that can be gleaned by livestock, are major needs. Closely associated with housing requirements for animals is the need for additional grain storage facilities in the state to reduce the high costs of shipping grain out at harvest time and shipping it back later in the feeding year. Procedures for financing these facilities must receive attention.

Diseases and parasites of poultry and livestock are major obstacles to more rapid expansion of these industries and to efficiency of production. More vigorous and systematic health programs must be developed and put into effect. Greater research effort is needed on diseases and parasites and prevention programs.

Information must be obtained and disseminated to commercial producers on sources of seed stock for strains of animals and poultry of high performing ability and good carcass quality. Breeders must be encouraged to participate in programs that will make more of the desired seed stock available. Greater use should be made of proven seed stock, particularly sires in the case of meat animals.

The feeding of rations that do not permit efficient production continues to be a serious problem in cattle and swine operations. Failure to apply suitable management skills is also critical. Although new developments are being made and will continue to be made in these fields, more complete application by producers of known technology will permit marked improvement.

More effort is needed to help solve reproduction problems, particularly with cattle and sheep. Reproduction rate is one of the principle deterrents to greater returns from the sheep industry and markedly impairs the efficiency of the beef and dairy industries.

Financing for livestock operations must be made more readily available for qualified operators.

The goal of a significant increase in cattle production assumes that a considerable proportion of the additional feed required will come from pastures and forage crops. Higher and more efficient production from present acres, as well as the establishment of new acres of improved pastures and forages will be essential to the attainment of this goal. Research will be needed to provide better varieties and improved liming, fertilization, management, utilization, and pest control practices. A majority of the forage plants now in use were largely unknown in this state 15 years ago and much remains to be done in this field.

However, the low level of application of that which is known on such things as pasture fertilization and grazing management is a serious and costly problem. There has been a rather rapid expansion and considerable progress in this area during the past 15 years but it has not been nearly as profitable as it should. The present acreage of these crops in the state is producing far below its potential. The teaching of these skills to producers who, for the most part, have a long tradition of cash-crop farming behind them is a slow and tedious process. To speed this up will require considerable intensification of extension effort. The easier parts of this task have doubtless already been done..

Education and Motivation

It is the opinion of this committee that one of the major responsibilities of the Extension Service is to keep producers of agricultural products and personnel in related agri-business informed on advances in technology and that this should not be abandoned to "commercial interests". With the possible exception of the highly integrated segments of the poultry industry, sound, unbiased advice on all aspects of our farm enterprises is not generally available and is not likely to be in the near future, through commercial channels. Commercial interests will of necessity concentrate their efforts on the larger producers. This is brought to light by a recent statement from the Chairman of the Board of Directors of the National Agricultural Chemicals Association. He called the attention of the industry to the fact that they could contact 22 per cent of the farmers and reach 68 per cent of their market or contact 55 per cent of the farmers and reach 90 per cent of their total market. Any inclination on the part of Extension to abdicate its responsibility in production will inevitably result in a widening of the gap between the larger, more advanced producers and the large mass of our farmers. Extension workers should be prepared to work with all groups servicing agriculture, should be capable of interpreting new developments and advising on their application.

REPORT OF FORESTRY COMMITTEE

I. The size of the state's forest economy

In many respects, North Carolina is the most important forestry state east of the Rocky Mountains. As of 1953, total timber volume in all size classes exceeded that of any other state in this eastern two-thirds of the nation. Nationally, the state ranked second only to Pennsylvania in the number of forest owners and in the number of farm forest owners. As of 1960, North Carolina ranked first nationally in the manufacture of non-upholstered and upholstered wooden furniture and hardwood plywood and fourth (behind Washington, Oregon and California) in total lumber produced.

The 3200 wood products manufacturing plants represent 45 per cent of the total manufacturing establishments in the state and employ 90,000 persons--roughly 20 per cent of North Carolina's industrial work force. Annual value of output is now slightly in excess of $1,000,000,000--12 per cent of the state's total. Some 3000 logging operations carry out the harvesting and transportation of raw timber products to these consuming mills.

As of 1955, 62 per cent of the state's land was in forest cover, with 91.6 per cent of the total commercial forest area in private hands. The annual harvest of raw wood products from forest lands in recent years totals 2.1 billion board feet of logs of sawtimber size for all purposes and approximately 3,000,000 cords of pulpwood-size material for pulpwood, poles, piling, fuel, posts and miscellaneous uses. Gross farm-forest-owner income from sales value of home-use forest products has been reported at $42,000,000 annually and has been estimated at nearly twice this figure.

Many unpriced services and values are forest based. Watershed protection values may well exceed that of the annual timber harvest. In recreation, some 680,000 hunting and fishing licenses totalling $1,500,000 in license fees are sold annually. The scenic value of extensive forest areas, particularly in the mountain section, has much to do with attracting tourists to the state.

II. Recent trends

In the wood industry segment of the economy the period 1948 to 1960 witnessed a 100 per cent increase in pulpwood consumption, a 142 per cent increase in pulp manufacturing capacity, and an 88 per cent increase in delivered pine pulpwood price. These upward trends are expected to continue through 1967, with the possible exception of pulp manufacturing capacity, which may not change appreciably.

In other segments of the industry, excluding pulp and furniture, the number of manufacturing plants dropped from a peak of 4200 during the Korean War to about 2600 in 1960. Most of the decrease occurred in the lumber and veneer industry. It was due to sharper competition from non-wood products and wood products from other regions and the Orient, coupled

with rising raw material and labor costs and the development of waste utilization opportunities, which gave profit advantages to medium and larger mills. In spite of this shrinkage in plant numbers, annual value of products shipped, excluding pulp and paper only, rose nearly 50% and employment industry-wide rose 13% over the 1950-60 decade.

Continued expansion in value of output and employment is expected through 1967. Continued decrease in number of plants, particularly small-scale operations, is predicted.

Stumpage prices, which approximately doubled from 1948 to 1960 for saw-timber-size material, are not expected to advance appreciably except possibly for large, high-quality hardwoods.

Raw timber supply is expected to be adequate or more than adequate, and the recent trend away from a seller's market should continue due to the development of an annual surplus of growth over drain in both pine and hardwood.

In the forest land management sector of the forest economy the period 1945-1960 was the beginning of the "great awakening" of forest landowners to income possibilities from tree farming. During this period annual gross sales of timber products by farm owners increased 360%. Tree planting on private land rose from 7300 acres per year in 1950 to 70,000 acres in 1960. A beginning was made in clearing and replanting cutover land and brushland. Private and public services to landowners expanded greatly during this period, and by 1960 a much higher proportion of timber was harvested under the supervision of technical foresters than in 1945.

Over the 1938-1955 period, forest area increased 7%. Since then there is evidence that many small forest tracts are being consolidated into larger holdings.

As of 1955, annual pine growth exceeded drain by 1.7 million cords, and hardwood growth exceeded drain by an estimated 4.3 million cords, indicating an expanding raw material base for wood processing, particularly of low-to medium-grade material.

With the exception of tree planting, these trends are expected to continue through 1967. With the discontinuance of the Conservation Reserve phase of the Soil Bank program, tree planting is expected to level off at about 50,000 acres annually, with an increasing proportion of the effort devoted to restocking cutover rather than open land.

II. Major problem and/or opportunity areas to receive extension emphasis and expected dollar impact

A. The wood industry segment. Extension will concentrate its efforts on the logging, lumber, veneer and plywood and hardwood dimension sectors. These have been the hardest hit by the recent cost-price squeeze and have been the slowest to modernize manufacturing and business methods.

Although the market outlook for the products of these sectors through 1967 is good due to an anticipated steady rise in new home construction and a sharp rise in repair and remodelling of existing structures, many firms have been fighting to hold their ground in the market and in the processing picture. Extension intends to put its emphasis on helping existing firms to improve efficiency, reduce costs, expand productivity per dollar invested, improve product quality and utility, develop market promotion programs and recognize and take advantage of opportunities to expand existing lines and develop complementary ones.

Problem and/or opportunity areas to receive concentrated emphasis over the next 5 years and estimated dollar impact of the extension wood industry program are as follows:

1. Production efficiency - Improvement of plant layout, equipment, materials handling, product flow, work assignment, supervision and reduction of down time through systematic maintenance.

   Expected cost reduction, increase in value of products shipped, or both---------- $40,000,000 per year by 1967

2. Product improvement - Increase uniformity through statistical quality control and stress grading of construction lumber. Improve dimensional stability through better drying techniques. Improve utility through pre-priming of lumber. Prevent stain, decay and termite damage through preservative treatment.

   Expected increase in value of products shipped---------- $15,000,000 per year by 1967

3. Product development - Analyze opportunities for further utilization of waste, developing complementary product lines, secondary processing and processing of new products. Estimated impact is modest. It could be phenomenal if research develops major new product opportunities.

   Expected increase in value of products shipped---------- $ 2,000,000 per year by 1967

4. Consumer education and market promotion - Provide information on technical and economic advantages of wood products to public agencies purchasing for public use. Provide technical evidence to encourage lending agencies to raise specifications for lumber used in home construction. Provide technical and economic information to trade associations as a basis for consumer education and promotion program.

Expected increase in value of products shipped----------	$10,000,000 per year by 1967

5. Business methods - Promote adoption of process cost systems for efficient analysis and control, improved inventory and billing, attractive packaging and efficient routing of products to market. Provide information on sources and procedures for securing modernization and expansion capital.

Expected cost reduction, increase in value of products shipped, or both----------	$10,000,000 per year by 1967
Total expected dollar impact of extension wood industry program --------	$77,000,000 per year by 1967

The expected total dollar impact of extension amounts to 19% of value of products shipped by these four sectors of the industry in 1960.

B. The forest management segment. If industry modernization, improvement and expansion proceed as anticipated, North Carolina forest owners will experience some increase in market demand for standing timber and raw timber products. Although long-range forecasts of timber demand by the U. S. Forest Service indicate that industrial wood use may double by the year 2000 A. D., recent growth-drain figures for North Carolina indicate that this would barely exceed the annual surplus now existing from a total growing stock standpoint.

Although the possibilities for large-scale expansion in timber growing are not wide open at this time, certain opportunities exist. These include expansion in production of large, high-quality hardwoods, improvement of landowner knowledge of existing hardwood markets and marketing methods, the development of a large-scale Christmas tree enterprise in the mountain area, the development of a sound business approach to, and increased efficiency in, forest management and forest development, and reduction of losses caused by forest diseases, insects and storm damage.

With regard to forest disease and insect prevention and control, extension effectiveness will depend to a large extent on a major expansion in research. Knowledge of life cycles and effective controls for certain organisms capable of causing major economic losses to the state have yet to be worked out. At present, little is being done at North Carolina State College to develop information needed in these two areas.

In all major forest management areas to receive major extension attention over the next 5 years, more emphasis will be placed on reaching and influencing

the 35,300 owners of forest holdings 100 to 1000 acres in size. As a group they own 43% of the private commercial forest land, and many are in a favorable position to develop efficient timber-growing enterprises.

Problem and/or opportunity areas to receive extension forest management program emphasis over the next 5 years and expected dollar impact are:

1. A business approach to forest management - Train forest owners in tax provisions and advantages, efficient management of timber capital, land quality and forest development profitability analysis. Improve efficiency of professional and contractual services to forest owners.

   Expected increase in stumpage sales, value of timber growth, or both---------- $ 5,000,000 per year by 1967

2. Hardwood marketing - Provide information on existing markets for hardwoods, specifications, relative value of products. Improve marketing procedures.

   Expected increase in stumpage sales--------- $ 2,500,000 per year by 1967

3. Quality hardwood timber production - Train forest owners in opportunities and techniques for developing large, high-quality hardwood veneer and sawtimber crops on existing hardwood lands, with special emphasis on eastern river bottomlands.

   Expected increase in stumpage sales, value of timber growth or both---------- $ 1,000,000 per year by 1967

4. Christmas tree production and marketing in the mountain area - Promote development of private sources of Fraser fir planting stock, expansion of planting to 3,000,000 fir seedlings per year and the development of market information and marketing service on recognized grades through growers' association.

   Expected increase in gross sales by growers---------- $ 500,000 per year by 1967

5. A forest disaster salvage program - In cooperation with other public agencies and private industry develop a system for leasing additional water storage facilities and for rapid harvesting of timber damaged or killed by storms or insect and disease epidemics.

Total expected dollar impact of extension forest management program--------	$9,000,000 per year by 1967

This represents roughly 11% of estimated yearly gross cash sales of timber by landowners in 1959.

IV. Additional extension resources needed to conduct this program

A. In the wood industry segment - Two additional wood processing specialists and one wood processing economics specialist are required to conduct this phase of the program at a level where estimated-dollar impact can be realized.

B. In the forest management segment - One additional forest management specialist in hardwood marketing is needed to lead the development of a program in this opportunity area.

REPORT OF MARKETING COMMITTEE

The Extension Service first became involved in marketing work in the early 1920's. At that time, many of the marketing services were performed by farm people and the program was focused on helping farm people market their products more profitably. Producing higher quality products, assembling larger volumes of products of a more uniform quality, and working cooperatively were some of the phases given major emphasis. But ours is a dynamic economy, and our marketing system has changed drastically. Many new services have been added, and, most of the services involved in marketing are not now performed by farm people. Instead, they are performed by thousands of highly specialized marketing firms. Extension has constantly adjusted its emphasis both in terms of clientele and subject matter to meet these changes.

Marketing of farm products is the activities connected with moving goods from the producer to the consumer. Marketing is the largest segment of the modern agricultural industry. More than one million firms employing 10 million workers add $60 billion of services to American farm products before they reach the consumer. Some of the more common marketing services rendered by these firms are assembly of raw products, grading and standardizing, transporting, processing, packaging, storing, risk taking, exchange of ownership, pricing, credit and financing, distributing, and merchandising.

Many different types of firms are involved in the marketing of farm products. One important group performs the assembly function. This group includes local farmers, assembly markets, auction markets, country buyers, and elevators. Another important group performs processing functions. These firms change the form, preserve and package farm products. Many also perform other marketing functions from assembly through distribution.

Approximately 100,000 firms handle farm products after local assembly and shipping is completed. Thousands of elevators, warehouses, and cold storage plants perform storage functions. Railroads, shipping companies, trucking firms, and airlines transport farm products. The commodity exchanges, futures markets, speculators, banks, courts, and advertising agencies which never physically handle products are a major part of the marketing process.

The largest single group of marketing firms consists of the distributors of farm products. Retailing costs account for a larger portion of total marketing costs than do the costs of any other marketing function.

At the end of the line in the marketing process is the consumer. Although consumers are not thought of as performing a marketing function, they do provide the guides which determine what marketing services and farm products will be produced.

Even though they are performing fewer and fewer of the functions previously mentioned, all farmers are still involved in marketing firms. Farmers must continue to make the decisions of what, when, where, and how to market or make decisions on contracts which involve similar considerations.

Objectives of an Extension Program in Marketing

The major objectives of a Marketing Program in Extension are to increase farm income and levels of living through:

A. Expanding the market for farm products. This may be done by helping farmers and marketing firms produce new and improved products, encouraging shifts in consumption, and improving the position of our products in world trade.

B. Reducing costs of marketing farm products. This requires development of an improved marketing system with greater efficiency at each step, eliminating unnecessary services, improving products, providing better communications among segments of the marketing system, and encouraging more rapid adjustment to changing economic conditions.

Clientele

Our marketing clientele may be classified into five groups. They are (1) farm suppliers, (2) farmers, (3) local farm product assembly markets, (4) processors of farm products, and (5) distributors of farm products.

Historically, Extension has worked with all these groups. However, the extent and nature of the Extension program has varied among groups. The emphasis has been on work with the first three groups--with farmers and with those firms close to farmers. Our work with these three groups has been done by specialists in most of the departments. For example, in the case of farm suppliers, agricultural engineers have worked with implement manufacturers and dealers; cooperative marketing specialists with farm supply cooperatives; entomologists with pesticide manufacturers and dealers. Specialists from the production departments have used the farm supply firms to get research results into use more rapidly. Specialists from most departments have worked on the farmers' problems in marketing, ranging from production practices which affect marketing to decisions on what, how and when to market. The program with local farm product assembly marketing firms has been executed primarily by agricultural engineers, food technologists, and economists. Efforts have been directed to a variety of problems encountered by these firms.

While the emphasis in the marketing work done by the Extension Service has not been with processors and distributors, some exceptions are apparent. For example, food technologists have worked with processors on production problems in food processing plants. Economists have advised with these firms on plant efficiency, merchandising, and management problems. As our skills have developed we have increasingly been able to conduct suitable education programs for the management of the larger firms which characterize the processing and distribution fields. But our emphasis in marketing work has not been with processors and distributors. Some of the nonfood processors and distributors especially have been neglected and we should be alert in the future to extend our activities in the areas where we can be effective. We should in the future regard these two groups as equally important as other groups in our marketing clientele.

How Should We Work with Marketing Firms

There are several different avenues of approach to use when working on marketing problems. First, much productive marketing work can be done by county extension personnel. County personnel can assist producers by providing information on which they can base their marketing decisions. In addition, county personnel can do much of the educational work with local marketing businesses. This facet of our Extension program needs strengthening. County extension personnel can bring farmers and owners of marketing firms to see their mutual self interests, leading to better understandings of the problems of each. This will make local marketing work more effective. County personnel should become familiar with the problems of local marketing businesses. This first step will open the door for productive work on various technical and economic problems which local marketing businesses have. In addition, it will open the channels of communication between these smaller firms and more specialized services which are available from the state staff.

A second channel of communication for doing marketing work is between the state staff and management personnel of groups of marketing firms. This information might relate to any facet of the extension program in marketing. It might apply to operational efficiency of plants, efficient structure of the industry as a whole, price making, or demand expansion through potentials of new products.

Third, marketing personnel can do much effective work with individual firms. This work does not have to be of a purely service nature, although this might sometimes be the case. Usually, however, the experience gained in doing this work provides both a framework of ideas about method of procedure in the future, and it provides the extension worker with data and knowledge about plant operations which facilitate work with groups in the future. It must not be overlooked that sometimes education work in marketing can best and most effectively be done with individuals within a single firm. The purpose frequently can be to educate people about how to analyze problems and methods of procedure to follow in gathering and organizing data required for decision making.

A fourth line of communication in dealing with marketing problems is to work with statewide groups which work on policy matters. Extension personnel have both the current contacts and the fund of knowledge and know-how enabling them to make a real contribution to the deliberations of these groups. This is especially important, because the people who formulate the policies of these organizations usually represent a cross-section of the agricultural leadership in the state. The acceptance of an idea by a large segment of this leadership group has a significant influence upon acceptance by large numbers of people.

The expansions in farm output envisioned in the five-year plan will place strains on the marketing system of varying proportions depending upon the product, and hence, have varying effects upon our work in marketing. If the product is currently produced extensively we expect to find a well developed

marketing system in operation. If production is sparse then we can expect to find the marketing system to be rudimentary or nonexistent. Therefore, programs which expand output of farm products are confronted with different kinds of marketing problems. For example, if we increase the production of hogs in Eastern North Carolina, minor adjustments will be required in marketing. A substantial increase in hog production could be handled in the present plants. On the other hand, a program to produce string beans for canning in the northeastern counties will require a significant change in the market structure. New facilities must be constructed and perhaps a new firm organized to handle this product. Along with this will come the need for the Extension Service to provide leadership in training personnel in management, market development, and marketing technology.

Coordinating Marketing Work Within the Extension Service

The efficiency which we gain by specialization in academic disciplines is acknowledged to be a strong factor in our work. A person who has had extensive training in economics or in one of the specialized technical fields is better qualified to work on problems in that field than is a generalist. He has a depth of knowledge which is useful in identifying, understanding and solving problems. Specialization means that we frequently tackle only segments of problems when we work individually. This is frequently satisfactory when problems can be defined as purely economic or purely technical. However, such is frequently not the case. Many problems which confront the marketing sector of our economy cut across two or more of our subject matter fields. The economist might have need for biological or physical data in solving the economic questions involved. Or the economic considerations may limit the range of technical information which should be presented. In these cases, close coordination and planning is needed between people of various disciplines within the system.

Most frequently a combination of disciplines is required when the problems relate to establishment of a new marketing service or production and marketing of a new product. An example would be establishing a processing industry for a commodity which has been traditionally marketed in the fresh form. Another example would be the development of an extension program which would lead to the production and marketing of a new commodity not previously produced in the state. In these cases, careful planning should always precede extension efforts. Furthermore, during execution of plans, a continued flow of information about activities should occur.

It is important that coordinated activities be planned in advance. Too often one specialist has initiated a program of work when it occurs to him that he needs skills from another discipline. When he gets the required help, it may be at the expense of the regular planned program of some other specialist. Similar problems exist for cooperation of the specialist and county staffs. County personnel should bring to the attention of the specialist staff only those problems for which assistance is really needed. Casual inquiries should be screened from those in which people are seriously interested in assistance. The specialist staff should render complete assistance to the county personnel in these cases. Also, the specialist staff should keep county personnel informed of marketing changes which have an effect upon the county.

A good example of effective coordination by the state staff has been in the dairy production and marketing field. This coordination has been achieved through the State College Dairy Production and Marketing Committee. The committee is composed of representatives from dairy production, food science, farm management and marketing economics. It serves to provide a forum for discussing the program of work in the dairy field in all four areas. In addition, the committee has sponsored work requiring the skills of all the disciplines represented. During 1961-62, efforts were devoted to studies determining the feasibility of producing and marketing Class III milk in North Carolina. The results of these studies have, in turn, had an effect upon the program of work in each of the departments represented.

REPORT OF HOME ECONOMICS COMMITTEE

I. Some Relevant Changes in North Carolina, 1945-1960

The years since World War II have seen unprecedented changes in family living in North Carolina. As a result of these changes the families of the State are faced with both opportunities and problems which could not have been imagined 15 years ago.

Urbanization has proceeded at such a rapid rate that at present almost 40 per cent of all North Carolinians are city dwellers. The rural nonfarm population has also grown so rapidly that it is now the largest segment of population (42 per cent). On the other hand, the proportion of people living on farms has declined by more than one-half since 1940--from 40 per cent to 17.7 per cent. Electrification of rural areas, the remarkable improvement in roads and means of transportation, dramatic changes in communication, and other changes have erased many of the differences between rural and urban people and their way of living.

The incomes of North Carolinians have increased sharply. For example, per capita income has increased from $746 in 1947 to $1,249 in 1960. Similarly, the median family income in the State increased by 85 per cent from 1949 to 1959--from $2,141 to $3,948. (This is still substantially below the national median family income.) Table I shows there are still many low income families--more than 260,000 reported incomes of less than $2,000 in 1959. Also, the median family income varies widely by counties--from a low of $1,451 in one strictly rural county to a high of $5,632 in a highly urbanized county. Thus, while the Home Economics Extension program must recognize the rising levels of incomes, it must also recognize the fact that many families still have very little money to spend.

Related to this rising level of family income is the rapid rise in the proportion of homemakers working outside the home. Presently, 37.5 per cent of all women over 14 years of age are in the labor force. The increase, as may be seen in Table II, has been especially great among women over 35 years of age. In several counties more than half the married women are in the labor force; however, in others less than 20 per cent are employed outside the home.

During these fast-moving years since World War II, the marriage age has steadily declined, until today in more than half the marriages the bride is no more than 20 years of age. This means that most women will bear their children in their late teens or early twenties; and by the time the mother is in her mid-forties, the children will have formed families of their own. When the increase in life expectancy is taken into account, it is obvious that in most cases the original couple will have many productive years ahead of them as a two-person household.

These changes in the family life cycle must be taken into account in programming.

On the one hand there is a large group of very young married couples with small children who have hardly become adults before they are faced with the responsibilities and work required of parents, homemakers, and breadwinners. This is probably the most exacting stage during the family cycle for many parents--and especially for the mother. Partly because household duties and homemaking requirements are so great at this stage, these are the families it is most difficult to reach. However, Home Economics Extension will continue to concentrate effort on reaching these families who need assistance so much.

On the other hand, there is a growing group of families who have completed child rearing and who have reverted to two-person families. These families obviously have very different needs and interests from those young families mentioned above.

Other challenges which must not be ignored stem from the lengthening life span. The most rapidly growing segment of the population is that of the oldest. This must be taken into account, along with the fact that a large number of women will face many years of widowhood because their life span is longer than that of men.

TABLE I. MEDIAN FAMILY INCOME IN 1959 BY COLOR AND PLACE OF RESIDENCE, NORTH CAROLINA*

Residence	Color		
	Total	White	Nonwhite
Total	$3956	$4588	$1992
Urban	$4843	$5568	$2599
Rural Nonfarm	$3828	$4310	$1817
Farm	$2247	$2796	$1213

TABLE II. PER CENT OF WOMEN OF DIFFERENT AGES WHO WERE IN THE LABOR FORCE 1960, 1950, AND 1940, IN NORTH CAROLINA*

Age	1960	1950	1940
Total 14 and over	37.5	30.9	27.7
14 to 17 years	9.7	10.0	9.2
18 to 24 years	43.9	38.8	38.4
25 to 34 years	45.4	36.8	37.4
35 to 44 years	49.4	40.0	31.2
45 to 64 years	41.9	29.4	20.5
65 years and over	9.2	6.8	6.4

*SOURCE OF INFORMATION: U. S. Bureau of Census, U. S. Census of Population, General Social & Economic Characteristics, North Carolina Final Report PC (1) 35 C.

The technological developments in home economics and related fields during the last 15 years have been phenomenal. A multitude of new materials and services undreamed of in 1945 are now an accepted part of our way of life. These new developments cut across all fields from foods to housing; from clothing to recreation. While they have brought great promise, they have also posed new problems in the form of almost unlimited alternatives. These numerous choices, while opening new horizons in family living, at the same time have created new needs and put a premium upon decision-making. The family must have the knowledge and the skills required to make intelligent decisions, or it cannot realize the opportunities made possible by these remarkable technological developments. Indeed, to the families who have not clarified their family and personal goals, these alternatives may even offer dangers, rather than promises.

Along with this flood of new products and services have come tremendous advertising campaigns which vary greatly in their intent and procedures. In nutrition, for example, these may vary from an aggressive hard-hitting advertising campaign promoting a "food fad" to the balanced educational program of an insurance company on the relation of nutrition to chronic disease. This impact of advertising must be taken into account in programming. Where there is desirable information, programs should be coordinated; but where the information is strictly commercial and includes or implies misinformation, programs should be used to combat it.

One other change especially important to Home Economics Extension programming is the dramatic growth of consumer credit during the last few years. Not only is consumer credit widely used for major purchases, but increasingly it is being used by all segments of the population for all types of purchases-- from clothing to housing, from fuel to vacation. Home Economics Extension must give increased attention to education in this area.

These are, of course, only a few of the changes that have affected family living in North Carolina; but even these give some direction for Home Economics Extension programs for the next few years.

II. Some Problems and Opportunities

The purpose of this section is to examine some of the problems of people and some of the opportunities facing Home Economics Extension in the light of the changes discussed above.

For example these changes imply a serious need and a great opportunity for service in the area of foods and nutrition. Numerous studies have shown that regardless of age level, place of residence, or income, foods containing calcium, Vitamin A, Vitamin C, and riboflavin are frequently deficient in American diets. These deficiencies are especially true in the diet of teen-age girls. This poor nutrition for several years preceding marriage and childbearing increases the health hazards for both the young mother and her child. Extension has both an obligation and an opportunity to find ways of more effectively reaching these teen-age girls and mothers with a foods and nutrition program.

Another and entirely different group that requires particular attention, especially in the industrial areas of our state, is composed of the working homemaker. One of her basic problems is how to prepare and serve satisfying and nutritious meals in the minimum amount of time. Fortunately, with the recent technological developments in food processing and marketing, this can be done. Here the job in working with the homemaker is manifold. She needs information that will help her evaluate the food products available. She also needs help in planning and skills required for quick meal preparation. Emphasis is needed on informing her of nutritive requirements, buying food wisely, and methods of motivating her to maintain a high level of nutrition. She needs to know the cost of convenience foods in relation to time and energy as well as to money.

Throughout the foods and nutrition work Extension must constantly be aware of the fact that the income of many families is low and that this makes skillful planning and management essential if families are to be well fed. All Extension disciplines must recognize the fact that home food production and conservation is a realistic alternative for thousands of families. With this recognition, it must continue to help these families to evaluate the place of food production and conservation in their specific situations, and to teach them methods of efficient production and conservation.

In housing and house furnishings work, too, this low level of income poses some acute problems. This is reflected in the poor housing of many families-- in the lack of running water in 40 per cent of the rural homes, for example. Families need guidance in selecting and adapting house plans to meet their needs. Information is needed so they get the most for their limited housing dollars. They need to know the amount they can spend on housing in relation to their net worth and their ability to earn. Even more important in working with some families is to make them aware of the alternative financing plans available. Similarly, for house furnishings, an aggressive information program on the wise selection of furniture, equipment, and furnishings should be carried. In this program it is important to not only develop understanding that will enable the family to buy more wisely, but to include information on the use of credit. The life of these furnishings may be prolonged by teaching proper techniques for caring for furniture, equipment, walls, and floors. Information must be provided for those who are interested in saving money by making draperies and slipcovers, and refinishing and upholstering furniture. They, too, will need help to master the techniques required for such work.

These changes of the last few years also present some challenges for the clothing program. Here, too, the influx of women into the labor force poses some special problems. For example, clothing requirements go up for working homemakers while time available for construction and care go down. For this group special attention must be given to "buymanship" and care.

For many young families the emphasis must be on saving time and money in the buying of clothing and in their subsequent care. In families with very young children both time and money are usually at a premium.

There are still many homemakers who find clothing construction a valuable and satisfying use of their time. For this group Home Economics Extension must provide them with the understanding and skills that will enable them to (1) evaluate the place of clothing construction in their personal and family situations, (2) make wise selections from the many fabrics now available, and (3) do an effective job of actual construction.

Certain threads have been running through this discussion thus far. One of these is the need for developing in families the understanding necessary for the evaluation of the many alternatives now available to them. This emphasizes a basic need and opportunity. That is, the need for families to clarify their personal and family goals--not only in the relatively restricted areas so far discussed, but also in the total range of family living. There is considerable evidence that most families have not explicitly thought through their goals. In past years it was much less essential that these goals be made explicit in a society that was changing slowly and in which the alternatives were very limited. In today's fast-moving society, however, with its vast range of alternatives, such clarification is essential if wise choices are to be made. This will receive major attention in family relations and home management work.

Another real opportunity and challenge is the development of an effective marriage education program for the flood of young people approaching the age of marriage. The high birth rate of the late 1940's will begin to be reflected in very high marriage rates during the next few years.

Many homemakers reach a critical point in life when the husband dies and they are faced with responsibilities totally unfamiliar to them. Since men are usually older at marriage than women and their life span is generally shorter, there is a great opportunity to work with the homemaker on preparing for this adjustment.

The home marketing program offers an opportunity for many families in view of the (1) low income and (2) large rural population. Potential producers need to realize the opportunities available in marketing fresh fruits, vegetables, conserved and baked products, craft articles and others. They also need to be taught the "know-how" required to market a quality product.

Operating a home is big business--it involves all family members. It is a recognized fact that while Home Economics Extension deals with both, its greatest emphasis is with utilizing income rather than with generating income. In addition to this it has the more important opportunity and challenge of working with people (in addition to things) on some of the intangibles that make for happy and successful homes.

III. Major Emphasis and Goals--Clientele

The effects of poor nutrition are often slow moving. It is therefore difficult at some levels to motivate people to set goals in good eating patterns that are actually long range and continuing. In the foods and nutrition program emphasis will be given to problems of the homemaker employed outside the home-- wise selection and use of available convenience foods, up-to-date food preparation methods, and equipment to conserve time and energy. An effort will be made to motivate families, especially teenagers, to consume NRC (National Research Council) recommended amounts of calcium, Vitamin A, Vitamin C, and riboflavin and to appreciate their relationship to physical fitness. Wise use of the food dollar can mean better nutrition for family members as well as a saving in money. Emphasis will be put on how to buy foods wisely - information needed by farm and nonfarm families. This need is quite pronounced in low income groups. Emphasis will be placed on producing and conserving a family food supply as a means toward better nutrition and stretching the food dollar. Work will be concentrated on the rural population (60 per cent); however, urban families will be given assistance.

The increasing number of family units in North Carolina requires more new houses. Information will be given both farm and nonfarm families on the selection and adaptation of house plans and building materials, and on safe wiring and adequate water systems, furnishings and equipment. Alternatives to these as well as methods of financing must be included in order for the family to make wise decisions.

Many families are seeking information on remodeling houses to meet their present needs. Better storage, installation of water systems, addition of rooms and remodeling kitchens are among the many remodeling requests. Adjustments in housing have to be made to meet the needs of expanding families, and to care for the older members of the family unit.

Information will be available for the family on (1) selection and care of furniture, furnishings, and equipment; (2) developing skills in construction of draperies, upholstery, slip covers, and refinishing furniture; and (3) understanding and applying art principles.

Credit is used extensively in housing, furnishings and equipment. Alternatives must be analyzed if the family is to spend the housing dollar wisely.

Each age level has its own wants and needs in clothing. Occupation and place of residence also play an important part in clothing needs and wants. More homemakers working outside the home means that more ready-made clothes are bought. New technological developments in the field of textiles will continue to play an important role in clothing. This situation necessitates increased efforts toward education of the people in the selection and care of modern fabrics, both for home sewing and the buying of ready-made garments. This information is needed for all ages and for all economic levels.

Since 30 per cent of the women make most of their clothes, information will be provided on correct techniques of sewing with special emphasis on speedier and easier methods and skills. This will be done principally in workshop groups.

Emphasis will be given to clothing the pre-teens and teenagers. Clothing should be designed with their growth cycles in mind. Work will also be done with special groups on clothing for the physically handicapped.

The home marketing program provides an opportunity for many homemakers, such as those rearing a family and those who are not employed outside the home, to supplement the family income. Homemakers must be made aware of this opportunity and given the know-how. By weighing alternatives and wise use of time and other resources, she may make quality craft articles, prepare food items, make clothing, or house furnishings such as draperies, for sale. Effort will be directed toward families with time and other resources and those with a need for additional income. Work will also be directed toward certain outlets through which these products can be marketed. It is sometimes difficult to interest potential producers until a market is available.

In the Home Economics Extension program methods such as organized Home Demonstration Clubs (with a membership of about 40,000) presently being used effectively will be expanded and strengthened. The following other methods will be employed:

1. Through community and/or area development educational programs on Home Economics and related subjects based on immediate needs of the community.

2. More emphasis will be placed on workshops open to any woman seeking a skill or information in Home Economics.

3. Series of consecutive demonstrations on a particular phase of work--this may be on television or radio, or on a community basis--or a series of news articles, publications, or lectures.

4. Institutes and/or seminars in various areas of work and in various geographic areas.

5. Effort will be made to further strengthen and expand the leadership program.

6. It is important to reach all levels of people with information they need--a redirection to do this may be by more personal contact.

7. Cooperation and coordinating many disciplines (Extension and other agencies).

8. Television will be used more effectively. A possibility is to plan demonstrations for use in an area and presented especially for organized groups--such as Home Demonstration Club meetings.

Other Considerations

It is hoped that consideration will be given to revamping the organization of county personnel to:

1. Provide qualified area specialists in some Home Economics subject matter areas.

2. Meet the changing needs of the people, adjust the work schedule of personnel to provide "shifts" where needed.

3. Provide sabbatical leave for professional study.

4. Provide clearer division of work within counties.

5. Consider merit of transferring agent with duplicate interest and skill in a county to some geographic area of need.

IV. Some Problems To Be Overcome

If Extension is to provide effective educational leadership in the areas outlined, it must face up to a number of problems. The purpose in this section is to outline some of these most pressing problems.

1. The Problem of Motivation

While motivation is a problem in all phases of educational programs, it is especially acute in foods and nutrition education. Food habits are deep-seated while the effects of poor nutrition are cumulative and take a long time to become evident in clinical signs of malnutrition. Similarly, many families place more importance upon the social status of foods than upon its nutritive value. Thus, despite the relationship between good health and good nutrition, this is apparently not a very effective motivating force in bringing about changes in food patterns. Therefore, Extension must capitalize upon other means of motivations.

2. The Problem of Coordination of Effort

Most problems of families cannot be effectively solved by an educational program of a single department. For example, if very much progress is to be made in assisting the working homemaker to adjust her job as homemaker with her job outside the home, not only must every department in home economics give some attention to her needs, but the educational efforts of the various departments must be coordinated.

The job of coordination with other agencies and groups is even more difficult; here, too, if efforts are to be most effective, Extension must seek ways to attain a greater degree of coordination in areas which have common objectives.

3. The Problems Posed By Modern Advertising

Extension recognizes that modern advertising has played an important part in improving family living. On the other hand, it must also recognize that it has created new problems. Much of it is designed to circumvent rational decision making--some, such as that promoting certain food fads, is especially misleading and dangerous. These problems not only emphasize the need for "consumer competence"--a theme that has run throughout this report and the Committee's discussion--but it also makes the consumer education job quite difficult.

4. The Problem of Inadequately Trained Personnel

It, of course, is unrealistic to expect local agents to be experts in all phases of home economics. Thus it seems unrealistic to expect from one to three local agents to be trained well enough to carry out effective programs in everything from nutrition to clothing and from family relations to housing. Nevertheless, under our present structure this is expected.

5. Inadequate Knowledge

While there are many areas in which Home Economics Extension needs additional knowledge, the need is especially great for additional information on the comparative cost of producing and conserving food at home and of buying food, and on the nutritive value of processed food--both home and commercially processed.

V. Summary

There will be some major shifts in emphasis on Home Economics Extension during the next few years. While there is no point in recapitulating the main body of this report, it would perhaps be well to reemphasize one or two major points.

First, consumer education will receive increased attention. Rather than treating this as a separate "program" in this report, it has been discussed under such traditional lines of work as foods and nutrition, clothing, etc. For example, in family relations and management major educational effort will be made in assisting families to clarify family and personal goals. (While this is much broader than the traditional concept of consumer education, it is a crucial first step in a consumer educational program.) In foods and nutrition emphasis will be on teaching the homemaker to feed her family well. She needs help to see the many alternatives available in terms of her own situation--that is, whether her primary concern is minimizing cost, time, or energy. In clothing, too, "buymanship" has been discussed. The same holds true in housing and house furnishings. Similarly, education in consumer credit is accepted as a responsibility of all Home Economics Extension.

This increased emphasis upon consumer education means less attention will be given to certain other areas. For example, the teaching skills will receive less emphasis, though it will not by any means be abandoned.

Another major thread running through the Committee discussion and this report is the uniqueness of the problems and needs of different clientele groups--for example, the young homemaker, the working homemaker, the family for whom home marketing is a realistic alternative, etc. Increased attention will be given to identifying more specifically such clientele groups and tailoring educational programs to their specific needs. While Extension has always done some of this, it appears essential that the move must be rapid to this type of programming.

REPORT OF 4-H CLUB AND YOUTH COMMITTEE

Background

With the possible exception of one state, North Carolina leads all other states with the number of farms and the number of rural boys and girls of 4-H Club age. The 1960 United States Census of Population shows North Carolina to have a grand total of 900,763 boys and girls eligible for 4-H membership-- 171,059 urban, 213,293 rural non-farm and 103,900 rural farm young people 10-14 years of age and 144,257 urban, 178,841 rural non-farm and 89,413 rural farm young people 15-19 years of age or a total of 315,316 urban, 392,134 rural non-farm, and 193,313 rural farm young people 10-19 years of age.

There are many factors that should have a direct influence on the course and the direction of 4-H Club work. 4-H Club work in North Carolina is now becoming an integral part of the community and is being conducted by trained volunteer leadership through organized community 4-H Clubs. The organization of 4-H Club work on a community basis will require at least 9,000 local community 4-H Clubs and 50,000 adult 4-H leaders to serve the new existing 4-H enrollment.

Other factors are: (1) the shift in the farm population, due in part to farm mechanization; (2) the increasing consolidation of small farms into larger and larger farm operations; and ever increasing number of young people who are finding it necessary to find a means of livelihood other than on a farm; and (3) the alarming decrease in the enrollment of students in the School of Agriculture and the subsequent decrease in the number training for specific fields in Agriculture. Added to this is the lack of enthusiasm in these fields due in part to competition with so-called more lucrative and challenging positions in other fields. Still another, the increasing number of urban and city young people, their parents and sponsors, demanding the services and opportunities provided in the 4-H program.

These and many other factors and problems confronting young people makes more acute the need for the Agricultural Extension Service to broaden and strengthen the size, scope, and total concept of 4-H in pursuing a program to more adequately serve the needs of all young people eligible for membership.

I. Goals

Learn by Doing. Four-H is a natural and practical program of education for young people. It emphasizes learning by doing. The term 4-H refers to Head, Heart, Hands and Health. Around these four words, symbolized in the emblem, are the education objectives of the 4-H program:

HEAD - To learn the values of science and the results of research through applying the latest scientific knowledge to farming and homemaking projects;

- To instill in the minds of young people an intelligent understanding of natural phenomena and the environment in which they live;

- To develop habits of thought and reasoning and help young people become capable individuals and useful members of society.

HEART - To develop wholesome character and personality qualities of good citizenship, high ideals, and a sense of responsibility;

- To arouse worthy ambitions and a desire to continue to learn.

HANDS - To acquire useful skills in farming, homemaking, crafts, mechanics, and vocational trades;

- To provide opportunities to "learn by doing" through 4-H projects and demonstrations for others.

HEALTH - To cultivate good health habits and intelligent use of leisure which will lead to satisfying, happy living, and long lives.

4-H Objectives - Objectives have been adopted nationally for use by extension workers and leaders to help 4-H members analyze their situations, needs, and interests. They point the way toward building programs that will prepare the young for better living-physically, mentally, and economically and spiritually;

(1) Acquire knowledge, skills, and attitudes for a satisfying home and family life.

(2) Enjoy a useful work experience, together with the responsibility and satisfaction of personal accomplishment.

(3) Develop leadership talents and abilities to reach optimum citizenship potentials.

(4) Appreciate the values of research and learn scientific methods of making decisions and solving problems.

(5) Develop an appreciation of the importance of scientific agriculture and home economics and their relationships to our total economy.

(6) Explore careers and recognize need for a continuing education.

(7) Appreciate nature, understand conservation, and make wise use of natural resources.

(8) Develop traits of healthful living, purposeful recreation, and intelligent use of leisure time.

(9) Strengthen personal standards and philosophy of life based on lasting and satisfying values.

(10) Develop attitudes, abilities, and understandings for working cooperatively with others.

III. Program for 4-H

A. Concentrate 4-H Club work through community 4-H Club leadership.

B. Continue but re-evaluate and adjust present basic projects in 4-H Club and inject the physical and biological science phases to conform with the overall extension program and needs of 4-H members.

C. Adjust 4-H activities, 4-H events and 4-H awards to best serve the educational needs of 4-H Club Members.

IV. Clientele

Every future citizen within the age group (with major emphasis on rural youth) and prospective leaders.

V. NEEDS

A. Continuous training of professional workers on county and state levels.

B. Total extension program and teamwork effort of state, district and county extension workers.

C. Continuous program for establishing and training more adult and junior 4-H Club leaders.

D. Stronger public relations program to acquaint the public with the 4-H Club program, its needs and its opportunities for providing experience helpful to boys and girls; to acquaint boys and girls with what agriculture and home economics is, what it does and what the problems and opportunities are.

E. Tools (adequate budget, literature, visuals) to do the job.

REPORT OF INFORMATION COMMITTEE

I. Background

There have been a considerable number of changes in information methods used in North Carolina since the end of World War II. Some of these changes, and the situation today, are as follows:

A. Role of information in extension programs.

One of the primary means by which the Agricultural Extension Service carries out its educational function is the dissemination of various types of information on agricultural and homemaking subjects. Responsibility for the dissemination of information is vested in all extension workers.

Today these types of information can be roughly categorized in three broad areas:

1. How-to-do-it information, including recommendations, or general and specific details on how to perform certain activities or tasks.

2. News pertaining to agriculture and home economics, such as new developments, coming events, and reports on some types of activities.

3. Publicity or public relations activities, such as reporting on extension activities, or achievements of extension clientele by individuals or groups.

Some 20 or more techniques are used by the Extension Service in information dissemination. These can be roughly grouped into three categories.

1. Person-to-person: home visits, office calls, telephone calls, personal letter, and photographs and drawings.

2. Group: circular letters, meetings, slides, film strips, flip charts, flannelboards, tours, method demonstrations, result demonstrations and movies.

3. Mass media: publications, magazines, bulletin boards, posters, exhibits, newspapers, radio and television.

B. Role of mass media in information programs.

Both changes in clientele and changes in mass media have changed the role of mass media in information programs. As extension moves into servicing urban groups and individuals, there is strong belief

that mass media must carry the major share of the burden. On the other hand, mass media programming has been turned more in the direction of broad or urban audiences, meaning radio, television and newspapers will be used less as a means of going directly to the farmer. Some of this slack has been taken up by direct mail pieces and newsletters, and publications are now written to more specific audiences, with a number of handbooks for county extension workers being prepared by specialists. As farm families become more urbanized, materials prepared by extension must reflect qualities of sophistication and must meet competition of commercial output in terms of appearance, readability, availability, etc.

C. Role of subject matter specialist and communications specialist.

To be most effective there are certain programs or areas that must be developed by the subject matter specialist; other areas that must be developed by the communications specialist; and still other areas where a joint and cooperative approach must be used. In all cases, mass media must be considered as a teaching technique, along with group and personal contacts, and treated accordingly.

D. Familiarity of subject matter specialist and communications specialist with each other's field.

Because of the many facets of modern agriculture, and the rapid developments in all fields, the subject matter specialist in one area must make a conscious effort to keep the specialist in the other area appraised of new activities and developments in his own particular area, just as a subject matter specialist in one area keeps in touch with a subject matter specialist in a closely related area.

E. Changes in audiences since World War II.

There have been big increases in urban and rural non-farm populations, part-time farmers, working wives, and farm owners. There have been decreases in the number of full-time farmers and tenants. Farmers as a group have become better educated, and more receptive to change.

F. Changes in objectives of information department during this period.

The primary objectives have shifted from the production of bulletins, news stories, radio programs, etc. to training county workers and specialists in communications skills, advising with fellow extension workers and other agricultural workers in program techniques, campaign approaches, and evaluation of effectiveness of mass media techniques.

G. Review of present organization structure.

The Department of Agricultural Information is organized as a department within the School of Agriculture with extension, research and teaching responsibilities. The head of the department also serves as the specialist in charge. The department is divided into four sections--publications, news, radio-television, visual aids--with an associate editor in charge of each section and assistant editors serving under him.

II. Goals

A. To keep all people informed (special emphasis to farmers and related segment of agricultural business).

1. To help make the agricultural economy of North Carolina more efficient and reach its full potential.

2. To provide all people with specific information applicable to their homemaking activities and to businesses associated with agriculture.

3. To stimulate an understanding and help develop attitudes and knowledge of importance of the role of agriculture in the economy of North Carolina and the nation.

III. Clientele

Every citizen in North Carolina; in addition, brokers, handlers, and those who consume our products, supply our requirements, regulate our relations to other states and countries and those who develop legislation involving agriculture and associated industries.

IV. Problems to overcome

A. To present agricultural information in such a manner as to create interest, hold attention, and promote appropriate action by reader, listener and observer.

B. Growth of information and public relations activities in recent years has been phenomenal. Nearly every organization --both public and private--is putting increased emphasis on this type of activity. Most information or public relations people must compete at one time or another for the same time and space.

C. Extension and the School of Agriculture have far more information suitable for mass media dissemination than time and resources now permit using. Should priorities be established on the basis of readership? economic importance? what? Some stories may have wide readership and application, but from sheer economics, other stories

may make bigger contributions to North Carolina's agricultural progress.

D. In preparing information for broad audiences, details of prime importance to segments of that audience are often compromised. It is difficult (or impossible), for example, to prepare articles containing both technical information for the producer and general information for the consumer.

E. Essentially, Extension relies on three mass media levels to disseminate information:

1. The public media -- newspapers, radio and television stations, and some magazines.

2. The general agricultural publications.

3. The specialized agricultural publications devoted to particular commodities or segments of the agricultural economy. Each can serve a useful function. Yet, each is exacting in its editorial requirements.

F. Production schedules are often such that insufficient time is left for over-all program planning between subject matter specialists and communications specialists. This often results in a spotty, rather than concentrated effort.

G. It is generally recognized that a good program contains the proper balance between individual, group, and mass techniques. But it is quite difficult to evaluate the precise contribution each will make or has made in a particular situation.

REPORT OF COMMUNITY AND AREA DEVELOPMENT COMMITTEE

I. Some relevant changes since World War II

We in the Extension Service have been constantly aware of the tremendous rate of change in agricultural technology and in technology affecting family living. We have also been aware that this technological revolution has demanded rapid adjustment in the whole range of our social and economic life if all people are to capitalize upon the opportunities presented by these technological advances.

The purpose in this section is to point out some of the trends that especially affect the community and area development phase of the extension program.

A. Changes at the Community Level.

There have been a number of changes at the community level that should be ignored. One of these is the growing heterogeneity of the population within rural communities. Too often, we still tend to picture our rural communities as made up predominantly of farm families with similar situations, interests, and goals. However, it is a rare community in North Carolina today in which most families are primarily dependent upon agriculture for a livelihood. Instead, in most rural communities many occupations are represented.

Table 1 shows the dramatic shift in our rural population from primarily a farm population in 1940 to an even more predominantly rural-nonfarm population in 1960. For example, almost two-thirds of the rural population lived on farms in 1940 but by 1960 this proportion had dropped to well under one-third. This distribution of the rural population among farm and nonfarm residents varies widely by county. For example, in such counties as Transylvania, Montgomery, and Gaston less than 15 per cent of the rural population lives on farms. Even in such important agricultural counties as Duplin, Wayne, and Halifax less than half of the rural population are farm residents.

Even many of the families who live on farms depend heavily upon nonfarm occupations for their income. The percentage distribution of the rural-nonfarm and rural-farm male population by occupation is shown in Table 2.

Thus, it is evident that in many of our rural communities we now have many occupational interests -- with farm families as a very small minority.

Related to this is the growing specialization in agriculture, which means that -- especially outside of the tobacco areas of the state -- the few farmers left in the community may specialize in quite different commodities.

Thus, in most of our rural communities we have a wide variety of situations, interests, problems, and goals.

Another change that must be taken into account is the rapid change in population within communities as people move in their attempt to adjust to the changing

TABLE 1. DISTRIBUTION OF THE NORTH CAROLINA RURAL POPULATION BY PLACES OF RESIDENCE AND BY YEAR

	1940		1950		1960	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Total rural population	2,597,448	100.0	2,693,828	100.0	2,745,520	100.0
Rural-nonfarm	940,947	36.2	1,317,268	48.9	1,937,824	70.6
Rural-farm	1,656,501	63.8	1,371,510	51.1	807,696	29.4

Source: United States Census of Population, 1950 and 1960.

TABLE 2. PER CENT DISTRIBUTION OF MALES BY OCCUPATION AND RESIDENCE, RURAL POPULATION OF NORTH CAROLINA, 1960

Occupation group	Rural nonfarm	Rural farm
Total employed	100.0	100.0
Professional, technical, and kindred workers	5.0	1.3
Farmers and farm managers	4.3	48.7
Managers, officials, and proprietors; excluding farm	8.0	2.7
Clerical and kindred workers	4.3	1.8
Sales workers	5.6	2.2
Craftsmen, foremen, and kindred workers	21.4	7.5
Operatives and kindred workers	28.8	11.5
Private household workers	.2	.1
Service workers, except private household	4.2	1.4
Farm laborers and farm foremen	4.7	16.3
Laborers, except farm and mine	8.9	4.2
Occupation not reported	4.6	2.3

Source: United States Bureau of the Census, United States Census of Population, 1960: General Social and Economic Characteristics of North Carolina, Final Report PC (1) -35C, Table 57.

demands of our extremely dynamic society. The publicity given to population changes in recent years has made many people aware that tremendous shifts of population have been, and continue to be, underway. However, most data are presented for larger cities, for states, or for counties. Data at this level tend to obscure what are often even more dramatic changes within small communities. Data are not available for such communities, but an examination of changes within townships illustrates what is obviously taking place at the community level.

Table 3 shows the population of two counties by township for 1940 to 1960. Both of these counties are in the Piedmont Area Development Association. A glance at the last column illustrates how great the population change has been in small areas--and how different the direction of change has been. For example, while Union County's population increased by 14 per cent in the 20-year period, the population of one rural township (Lanes Creek) decreased by 27 per cent while the population of another rural township (Vance) increased by 75 per cent. (It should be noted perhaps that Vance Township is the township most accessible to Charlotte while Lanes Creek is least accessible.)

While it should be reemphasized that these are not community data, it does seem apparent that in our rural community development work we are concerned both with communities that are faced with rapid depopulation and with those that must deal with the problems of a population explosion. This is a fact that we cannot ignore in developing programs.

The social structure of most rural communities has also been undergoing change. This is an aspect of change that we know far too little about, but we are aware that increasing heterogeneity, rapid population change, improved transportation, and many other factors have also affected such elements of social structure as leadership and power, stratification, informal communication networks ("gossip" chains and the like), and norms governing relationships among neighbors. Extension workers and others concerned with community development must be alert to such elements of social structure, but unfortunately the research to guide us is very limited.

There are other somewhat different aspects of community structure that also must be considered. One of these is the geographic base of the community. Here, too, we know there have been many changes in recent years. Many small communities and neighborhoods have lost their identity and have been absorbed by other communities. The modern community is expanding in size but we know far too little about this rate of expansion and its impact upon local residents.

The level of living within rural communities (as well as in urban centers) has risen rapidly in recent years. Rural people have made great strides in obtaining the facilities and conveniences that were once primarily characteristic of urban homes. While there is still a gap between the level of living of rural and urban families, this gap is being closed.

TABLE 3. POPULATION OF ANSON AND UNION COUNTIES BY TOWNSHIPS, 1940 to 1960

County and township	1940	1950	1960	Percent change 1940 to 1960
Anson County	28,443	26,781	24,962	-12
Ansonville Township	2,478	2,138	1,940	-22
Burnsville Township	1,666	1,569	1,398	-16
Gulledge Township	3,467	2,955	2,527	-27
Lanesboro Township	3,228	3,105	3,069	- 5
Lilesville Township	4,056	4,042	3,853	- 5
Morven Township	3,083	2,689	2,280	-26
Wadesboro Township	9,274	9,428	9,269	*
White Store Township	1,191	855	626	-47
Union County	39,097	42,034	44,670	+14
Buford Township	4,213	4,329	3,690	-12
Goose Creek Township	4,096	4,195	4,577	+12
Jackson Township	2,581	2,761	2,358	+ 9
Lanes Creek Township	2,055	1,649	1,495	-27
Marshville Township	4,442	5,785	5,232	+18
Monroe Township	14,127	15,203	18,334	+30
New Salem Township	2,522	2,340	2,176	-14
Sandy Ridge Township	2,860	3,048	2,953	+ 3
Vance Township	2,201	2,024	3,855	+75

*Change of less than .5 percent.

Source: United States Bureau of the Census, United States Census of Population, 1960: Number of Inhabitants, North Carolina, Final Report PC(1)-35A, Table 7.

Perhaps even more important from the standpoint of community and area development is the rising level of aspiration and expectation within rural communities. No longer do many rural residents take it for granted that the facilities and conveniences available to urban residents cannot be expected in rural areas. One indication of this has been the strong drive for the extension of telephone service into rural areas during the last few years.

While this rising level of aspiration and expectation is often a strong motivational force for organized community effort, it also poses some dangers to which we must be alert. These dangers arise from the fact that the aspirations and expectations of all residents do not rise at the same rate. Thus, conflict may arise when one group demands new services and facilities which others do not yet consider necessary or desirable. For example, the proposed extension of certain public services (such as garbage collection, public water systems, etc.) has caused serious conflict in some rural communities around the nation.

In this state we have seen communities split over such issues as rural zoning and school consolidation. The community development organization should offer a means for the rational study of such questions and for a way of arriving at consensus on such community problems. (However, we should also recognize that this consensus might be in opposition to a change that we or other agencies feel is desirable.)

There also appears to be a growing recognition by residents of rural communities that they can attain these aspirations more rapidly by planned and organized community effort. This is a most encouraging trend. Apparently, instead of feeling overwhelmed by the growing centralization of economic as well as political power, many individuals are recognizing that they can to some extent control their own destiny by organized local action as well as by individual action.

(Many leaders apparently see the Community Development movement as a means by which local people can retain some control over their own destiny, while at the same time retaining or rebuilding a "sense of community and of neighborliness.")

B. Changes at the Area Level.

In addition to these changes at the community level, there have been some very important changes at the area level that are especially relevant to the community and area development phase of our extension program.

The first of these is the growing dominance of the larger urban centers of the state. Increasingly such urban centers as Asheville, Charlotte, Winston-Salem, Raleigh, and others are becoming the economic heart of a large surrounding area. Many decisions made at such large trade centers have a profound effect not only upon the lives of the residents of these cities but also upon

the lives of many thousands of residents of surrounding counties and communities. Whether these decisions are in banking and finance, transportation, industrial development, or in many other phases of economic life, families and communities over a large area are affected. (A reexamination of Table 3 suggests the extent to which the population growth of local communities may be dependent upon their relationship to the large urban center. Those rural townships most accessible to Charlotte grew most.)

While this growing dominance if especially apparent in the economic sphere, similar developments are undoubtedly taking place in other areas of life. For example, the recent development of recreational and cultural centers in Charlotte and Greensboro have offered new advantages to residents of surrounding communities as well as to residents of these cities. Also, such community colleges as those at Asheville, Charlotte, and Wilmington provide new higher educational opportunities to youth beyond the local cities. Similarly, the development of such cities as centers for specialized medical care is also well known.

However, paradoxically, while these urban centers have been becoming more dominant, they have also been becoming more dependent upon the surrounding communities. Thus, there is a growing interdependence between rural and urban communities. Not only are rural communities looking to urban centers for more and more services and job opportunities, the urban centers are increasingly dependent upon surrounding rural communities for a labor supply and for customers and clients. For example, such rural communities as Unionville and New Salem in Union County have a large stake in the economic growth and development of such cities as Monroe and Charlotte. At the same time, Charlotte and Monroe have much to gain from the economic growth and development of such outlying communities as New Salem and Unionville.

Observers of community life have reacted to this growing interdependence in different ways. Some feel that as residents of rural communities depend more and more upon urban centers for services and employment their loyalties become more and more divided. They fear that these divided loyalties will increasingly weaken and destroy local communities, leaving the individual as an isolated atom in a mass society. Others have observed the continuing strength of the ties of individuals to their local communities (and counties) and have seen these ties as a major barrier to rapid and rational economic growth and development.

Many leaders in the North Carolina community and area development movement have taken an even different point of view. They see community spirit and pride as good and as something to be encouraged. At the same time they see a need for local commitment to a program of community development to solve problems of a local origin and to a development program on an area basis to solve problems that local communities cannot solve alone.

(The organizational structure of the area development associations recognizes the importance of the local loyalties to the extent that the least populous county has equal representation with the largest counties on area committees.)

C. Changes in the Conception of the Action Needed for Problem Solving and Development.

A change of a somewhat different type -- but a very important one -- is the growing recognition that both voluntary group action and governmental action is necessary for the most rapid rate of development and for the most rational development.

There have been stepped up activities at all levels of government in the attempt to speed up economic development since World War II. This has been reflected at the federal level by a wide variety of legislation and activities from the Full Employment Act of 1946 to the RAD and ARA programs of the last two years and to the recent Manpower Training and Development Act. At the state level we have seen the stepped up programs of the Department of Conservation and Development; the active involvement of the Governor in industrial development and in other economic development activities; the recent legislation allowing counties to join together to form planning commissions, as well as the commitment of the Agricultural Extension Service to an expanded educational program in community and area development.

At the county level, a number of counties have employed at least one individual whose primary responsibility is to promote industrial development within the county.

Private and voluntary action has expanded from the traditional chamber of commerce and utility company activities to include also the broad developmental program of the area development associations and the active participation of many of the state's top business and industrial leaders in "industry hunting" in cooperation with the Governor and the Department of Conservation and Development.

Despite the fact that there is not complete agreement on what the role of government and what the role of private voluntary groups should be, there is widespread agreement that action at all levels is needed.

A related trend is the growing recognition that the specialist or "expert" has an important contribution to make to both voluntary and governmental development programs. Such "experts" as city planners, agricultural specialists, specialists in organization and group process, economists, and others are being increasingly called in for consultation by planning commissions, area development association committees, and various county committees.

These are, of course, only a few of the relevant changes in recent years, but these perhaps will give us a better basis for understanding the Community and Area Development program and will give us a better basis for planning our work over the next five years.

II. The present status of community and area development in North Carolina

A. The Growth and Spread Since 1950.

The present community and area development movement had its beginning in western North Carolina. Under the leadership of the Asheville Chamber of Commerce, the Asheville area was organized. (This area eventually included all of the 17 westernmost counties of the state.)

Thus, the first impetus for the present movement came from the business and industrial leaders of western North Carolina. However, the Extension Service soon became involved, and the growth and spread of the movement since then has been the result of joint efforts of area and local leaders, the Agricultural Extension Service, and other agencies. (Our emphasis throughout this report is upon the Agricultural Extension Service. This does not mean, however, that we are not deeply aware of the vital role played by many other agencies in community and area development.)

The growth in the last 12 years has been phenomenal as may be seen in Figures 1 and 2. The number of organized communities has grown from 29 to 942 in the 12-year period; and at this time, all counties except Cumberland and Sampson are participating in an organized area development association.

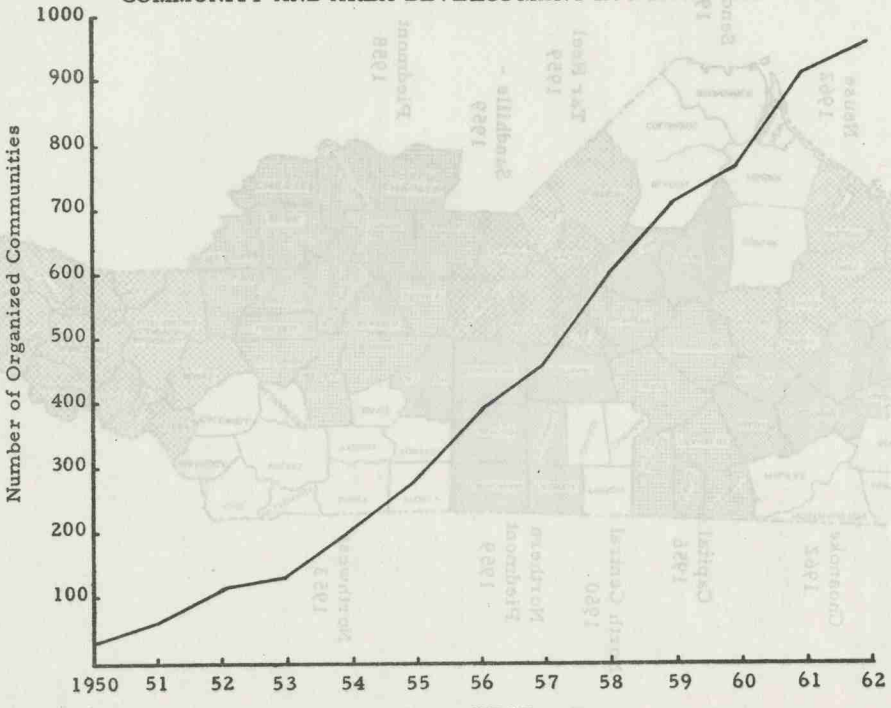
Thus, we as an Extension Service have been deeply involved in community and area development work for several years. There has also been a growing concern at the federal level about the problems of economic development. This concern culminated in the Rural Area Development program and the Area Redevelopment Act. In North Carolina the community and area development program, the Rural Area Development Program, and the Area Redevelopment Act are all viewed as one Extension program -- namely, the Community and Area Development Program. The Rural Area Development program is a program of the Department of Agriculture that has similar objectives to the Community and Area Development program. The Area Redevelopment Act is an added tool to provide money for development efforts in qualifying counties.

B. The Organizational Structure.

The organizational structure of the area development association is illustrated in Figure 3. As may be seen in this figure, these associations have been organized with four basic divisions with the following responsibilities:

Industrial Development. To plan and direct the type of industrial program needed and suited to the area through the cooperation of people working together--more specifically, chambers of commerce, utility companies, industrial leaders, county and city governments, farm and business people--from a total area standpoint rather than one community or one county working independently of their neighboring communities or counties.

Figure 1. NUMBER OF ORGANIZED COMMUNITIES PARTICIPATING IN COMMUNITY AND AREA DEVELOPMENT IN NORTH CAROLINA 1950 -1962



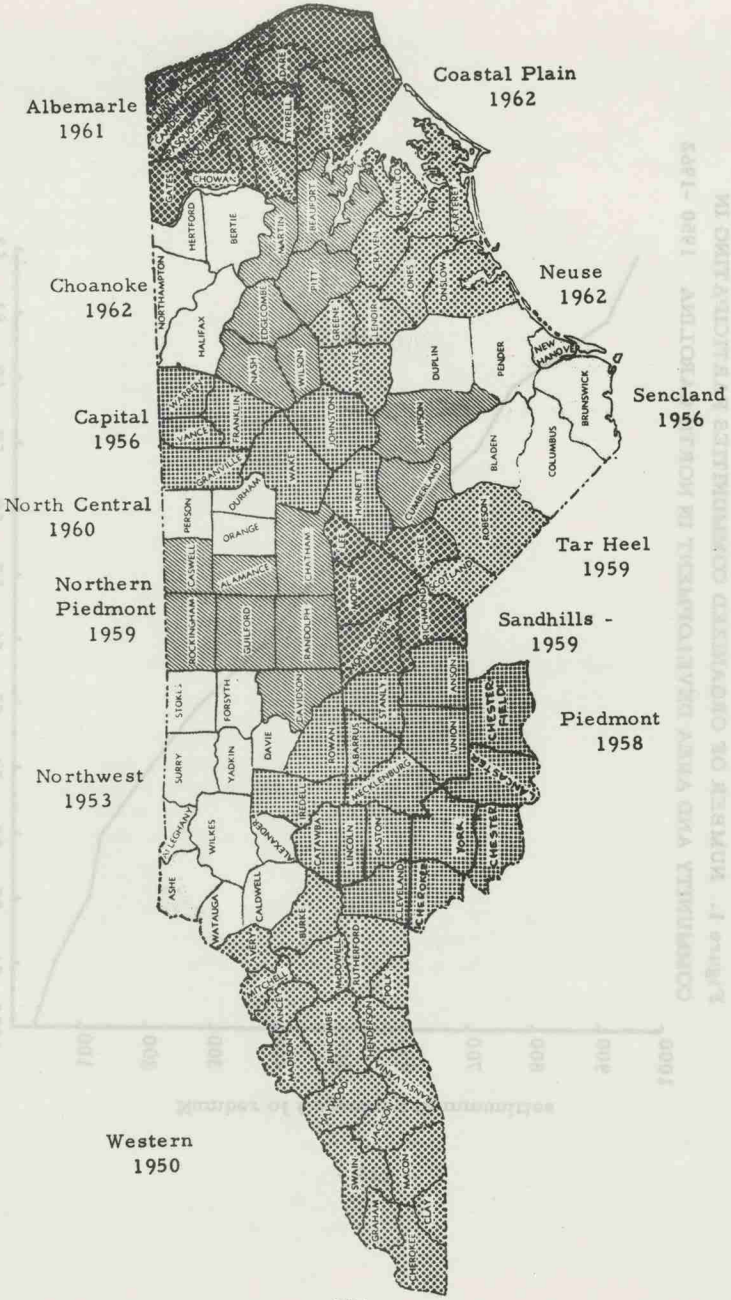


FIGURE 2. AREA DEVELOPMENT ASSOCIATIONS
(with date of organization)

FIGURE 3. TYPICAL ORGANIZATIONAL PLAN

Of

AREA DEVELOPMENT ASSOCIATIONS

Officers: President, 1st Vice-President, 2nd Vice-President, Secretary and Treasurer

****

EXECUTIVE COMMITTEE
Association Officers
Area Division Chairmen
County Area Development Chairmen

BOARD OF DIRECTORS
Association Officers
Area Division Chairmen
County Area Development Chairmen
Directors From Each County

AREA ASSOCIATION DIVISIONS

INDUSTRIAL DEVELOPMENT DIVISION	AGRICULTURAL DEVELOPMENT DIVISION	TRAVEL AND RECREATION DEVELOPMENT DIVISION	COMMUNITY DEVELOPMENT DIVISION
Member(s) From Each County	Member(s) From Each County	Member(s) From Each County	Member(s) From Each County

COUNTY ORGANIZATION
of the
AREA DEVELOPMENT ASSOCIATION

County Area Development Chairman
Directors From County
Representatives on Area Development Divisions
Representatives From Each Agricultural Agency in County
Other: Members Needed For Complete Representation of County

(Prepared by Community Development Extension Staff, N. C. State College, Raleigh, N. C., April 1962.)

Agricultural Development. To plan and direct a program in agriculture involving both production (practices and enterprises) and marketing as needed in the area; again trying to develop a program suitable to the area rather than each county trying to develop a separate program without regard to adjoining or neighboring counties.

Travel and Recreation. Plan for and promote facilities (lodging, eating, and recreational) that will bring as many people as possible from outside the area into the area as well as facilities for the convenience and needs of people within the area.

Community Development. This is a group action process or method for coordinating activities of government agencies (federal, state, and local) with local people (individuals, groups, and organizations) to motivate and assist them in developing their resources for their own improvement.

Basically, the objectives and the accomplishments of the three divisions -- industrial development, agricultural development, travel and recreation -- are directed toward the economic and social well-being of the area. Even though area development is new to many of the areas, many accomplishments are already being pointed out by the leadership in these areas dealing with these three divisions, such as new industrial plants, the development of small businesses by local people, the wholesale adoption of certain farm practices, the development or addition of new enterprises, and the development of facilities and accommodations and recreational areas for the people in the organized areas as well as for those who travel through the areas.

In many respects, community development is the "heart" of the total program. The community development division is different from the other divisions in that it is the nucleus of the area development program and involves people in the things that they are working for--not only in economic development, but also in social, spiritual, educational, and cultural development. In many cases, the further development of these desires and needs of the people through community development does establish the climate necessary for the effective work of the other divisions.

At the community level one of two basic types of structure is used. One is a new "straight-line" organization of community residents. The other is a community council made up of representatives of existing organizations.

The straight-line organization is usually found in very small communities where there are very few existing organizations. The councils are found in larger communities in which there are usually a number of existing community-oriented organizations. The purpose of the council is to coordinate the activities of these organizations into a total community development program.

The North Carolina Council of Community and Area Development was formed in 1961. This includes the heads of a number of public and private agencies and one representative of each of the area development associations. The purpose of this council is to coordinate the work of state agencies in Community and Area Development and to serve as a clearinghouse of ideas for the Area Development Associations. This council also serves as the state RAD committee.

C. The Rationale for Extension Involvement

As noted earlier, we have been deeply involved in community and area development for several years. However, it still appears to be appropriate to set forth a rationale for Extension's involvement. In order to do this, we need to reexamine the basic philosophy and objectives of both community and area development and the Agricultural Extension Service.

The basic philosophical assumption underlying community and area development might be summarized as follows.

It is both possible and desirable for local people to understand and to attack their problems on a voluntarily organized basis. The rapid technological progress of the last few years offers great promise to local communities and areas in solving problems, but at the same time it creates new problems. During this time of extremely rapid change, people can and should participate in making, adjusting, and controlling the major changes in their communities and areas.

Not only can people solve problems and develop and capitalize upon opportunities by this organized effort, but by working together they can retain and rebuild the sense of community pride and of neighborliness that is threatened by an increasingly mobile and standardized mass society.

Thus local people and, especially, lay leaders apparently see community and area development as both a program of social and economic development and particularly at the community level as a movement to help retain or to recapture the values of community spirit and neighborliness that are threatened by present day trends.

The basic assumption underlying agricultural extension work is that by using the best knowledge available, people can do much to solve their own problems and to attain their aspirations. Thus Extension's basic charge is to "help people help themselves" through education. Our responsibility is to bring to people the best knowledge available and to help them apply this knowledge to their own situation and problems.

The Scope Report summarizes the basic educational objectives of Extension Service as follows:

". . . The Extension Service has always held high those objectives which help people attain:

. Greater ability in maintaining more efficient farms and better homes.

. Greater ability in acquiring higher incomes and levels of living on a continuing basis.

. Increased competency and willingness, by both adults and youth, to assume leadership and citizenship responsibilities.

. Increased ability and willingness to undertake organized group action when such will contribute effectively to improving their welfare."

Thus, the objectives of community and area development are basically consistent with the objectives of the Extension Service. Their basic objective is social and economic development while our basic objective is to develop the abilities of people through a system of informal education. Some would argue that our objectives are identical in that we too are concerned with social and economic development. However, it seems well to remind ourselves that as an educational agency we make our contribution to such goals as social and economic development only to the extent that we succeed in developing in people the knowledge and understanding, the attitudes, and the skills required for such development.

There has been a growing recognition within the Extension Service that community and area development offers a real opportunity for more effectively attaining many of our basic objectives.

What then do we specifically hope to accomplish through this phase of our Extension program?

The first of these objectives is leadership development. Community and area development offers an opportunity for leadership development that is unparalleled in any of the other phases of our adult programs with the possible exception of home demonstration work. By developing leadership ability we mean developing the ability of each individual to contribute effectively to problem-solving in a group situation.

The individual with a high level of leadership ability usually has some basic understanding of group functioning and organization, an appreciation and respect for other group members and their contributions, and skill in working with other group members and in helping them make their maximum contribution to the group. In addition, if the knowledge and understanding needed to solve the problem is not present in the group, he has some knowledge of how to locate the appropriate knowledge or expert.

Obviously each individual's potential ability to contribute to a group's problem-solving activities varies tremendously, but one of our objectives is to develop this potential to its maximum insofar as possible.

Problem-solving and action oriented groups of neighbors provide an excellent setting for the development of these abilities. On the one hand, they provide an excellent climate for the teaching of the subject matter necessary for problem solving and for teaching basic organizational principles and group processes. On the other hand, they provide many individuals with the experience necessary for the fuller development of the human relation skills needed for effective participation and leadership.

In one sense this concept of leadership development is so broad that all other objectives could be considered subparts of this objective. However, we do feel that these other objectives are important enough to stand alone.

One of these objectives is to significantly improve the ability of area, county, and community leaders to plan programs. In order to accomplish this objective we must be prepared to play at least two interrelated roles -- that of the educator and that of the expert consultant. That is, as educators we must devise and conduct programs that will increase their understanding of the planning process (or the problem-solving process), increase their ability or organize effectively for planning, and develop their ability to move effectively through the steps of the planning process. This educational role is unique to Extension (except perhaps at the community level, where other agencies may share this responsibility).

However, this educational role is not sufficient. We must also play the related role of expert consultant. The assistance we may provide as consultants is varied. It may involve providing (or assisting in the collection of) and interpreting basic data needed for either problem identification or for the evaluation of proposed alternative solutions. (Even here our role may be quite varied -- for example, from the agent who assists local leaders with a community needs survey to the resource economist who works with area association leaders in designing and carrying out economic base studies.) Similarly, this role may involve suggesting alternative solutions to the problem on the basis of our professional judgement where specific appropriate data are neither available nor easily obtained.

We (and other consultants) have the important responsibility of making both local and area leaders aware of the alternatives that may be beyond their immediate experience. (In other words one of our responsibilities as consultants should be to help local leaders "think big.") Another responsibility of a consultant is to help those who have the responsibility for planning to think through the probable consequences of proposed alternative courses of action.

(Perhaps it would be well to remind ourselves at this point that we have neither the responsibility nor the right to attempt to play the role of the expert consultant outside our own area of professional competence.)

This role of consultant is an important and growing role. Not only are agents deeply involved in consultation with community, county and area people, but increasingly specialists are being called in for consultation by area planning committes. However, as an organization we must remember that we (and others) can only play this role most effectively as these leaders themselves grow in their ability to plan. Thus we cannot afford to forget our educational role in this area, if we are to be most effective as consultants.

Another objective of the Extension Service in community and area development work is to teach subject matter in agriculture, home economics, and related subjects. Not only do these organized groups provide a ready "method" for direct teaching, but perhaps even more important is their role in developing a climate that is favorable for learning. Common sense tells us (and research

has confirmed it) that members of groups who are systematically searching for solutions to problems are far more receptive to new information and practices--whether this information is given through mass media, demonstrations, meetings, personal visits, or by other methods.

A part of this objective that is especially pertinent is that of providing such information to nonfarm families. The growing demands of such families for extension assistance has created real problems as well as great opportunities. This phase of our extension program offers one of the best means of serving this clientele.

(This second objective should not be interpreted to mean that we see community organizations primarily as "tools" to be manipulated. As we succeed in developing leadership, these local organizations and area associations will lean much less heavily upon us for organizational assistance and for program suggestions. However, as long as their goals continue to be problem-solving in nature, they will need not only what information and assistance we have to offer; but also the assistance of many other governmental educational and action agencies.)

A third objective is the development of fuller understanding of public issues and public affairs. Much of our public affairs education will be conducted through community development organizations.

At the area level we have another objective: that of developing a fuller understanding and appreciation of rural life problems on the part of the top leadership within the state.

Now that we have attempted to spell out our basic objectives, perhaps it would be helpful to summarize some of the ways we have tried to function as an organization in attempting to attain these objectives.

The basic purpose of community and area development is to encourage economic and social development. To facilitate the development process and to further leadership development, the Extension Service has engaged in activities directed toward:

(1) Assisting in the organization of lay groups into cohesive units. We have done this by: (a) helping lay leaders understand how organizations at the area, county, and community level can contribute to the solution of problems and to social and economic development; and (b) helping leaders to develop the understanding of organizational structure needed for effective organizational functioning.

(2) Assisting these groups to develop more understanding of the planning process and to develop more skill in using various planning techniques.

(3) Providing information that these groups need in order to plan and carry out development programs. In the areas of agricultural production and marketing and family living we have provided this information directly. For information in other areas we have tried to refer them to the appropriate sources.

The extent to which we have succeeded in providing these three types of assistance has, of course, varied widely -- from area to area, from county to county, and from year to year.

III. Goals and emphases for the next five years

In this section we will attempt to set forth what we as a committee feel should be the major emphases during the next five years, rather than suggesting specific quantitative goals.

We should continue to encourage and assist in the organization of those local communities in which a development organization can make a significant contribution to the welfare of its residents. There are an estimated 2600 communities in North Carolina and our experience with the 942 organized to date indicates that most North Carolina communities can probably gain from such an organization.

As the number of organizations increases, we must develop a systematic and aggressive leader training program directed toward developing understanding of organizational structure and functioning--including understanding of such areas as duties and responsibilities of various officers and committees, the appropriate use and composition of committees, appropriate leadership styles (especially democratic versus authoritarian leadership), techniques for increasing participation and involvement, the roles to be performed in the organization, and the basic group processes. Such training would do much to give the leaders the understanding, skill, and confidence required for the leadership of effective organizations.

We realize that a few counties have provided a systematic leader-training program in at least some of these areas; however, in many counties such training has been provided on a casual, informal basis. With a growing number of organized communities (and thus of leaders to be trained), we may need to rethink this part of our educational program. An aggressive systematic leader training program will probably be needed in many, if not most, counties if the Extension Service is to do the most effective and efficient job in this phase of leader training.

Planning must receive even greater emphasis in the future than it has in the past. The community or area association that cannot plan and carry out an effective development program has no reason for existence. Developing such programs is no easy task. It is urgent, therefore, that we systematically devise and carry out educational and consultation programs designed to enhance the ability of these organizations to plan effectively.

We should continue to try to develop in members of local organizations (and especially in officers and planning committee members) a better understanding of the role of planning and the planning process. We should also help them to develop skills in the use of the various techniques useful at different stages of the planning process. Similarly, we should be willing to serve as

consultants where appropriate and to refer local leaders to other resource people when necessary.

(At times we have encountered some difficulties in systematically providing the training and information needed for effective local planning. This is a phase of our community and area development work that may deserve some further hard study by the Extension Service.)

At the area level we should play an even more vital role than we have in the past in assisting leaders to do a more effective job of planning. This, too, involves not only increasing their understanding of the planning process but also providing the specialized assistance that we are capable of providing as consultants. Both agents and specialists have an important role to play in providing such assistance to area planning groups. (These groups could prove to be a valuable ally as we strive for our goal of "1.6 in '66.")

A type of assistance at this level that warrants additional attention in this report is that aid which can be provided by resource economists. Each area development association should be encouraged to make detailed area studies in order to more accurately identify the problems and in order to arrive at the most rational course of action. Such studies require not only the willing and deep involvement of local people but also the expert assistance and counsel of a well qualified specialist.

Our limited experience to date with such studies indicates that these studies not only provide data essential for the best planning; they also result in a very effective learning situation for the many people involved. That is, by actively participating in such a study, lay leaders learn far more about their community and area than they do by listening to or reading any number of reports.

We are aware that such studies are valuable only to the extent that they help to make possible the development of positive plans of action. We are also aware that if many of the plans developed are to be carried out effectively they must be understood and accepted not only at the area level but also at the county and community levels. Thus, we also have the responsibility for helping each county and community group to understand such plans and to encourage them to carefully think through their proper part in these plans.

We should continue to make full use of community and area organizations as a "method" for Extension teaching of agriculture, home economics, and related subjects. These organizations can be one of our most valuable "tools" for reaching "1.6 in '66" and we should take full advantage of the opportunities they afford. However, we must remember that they are not primarily "methods" or "tools" to be controlled and manipulated for our own ends. Any efforts on our part to maintain tight control over these organizations is likely to destroy their effectiveness, if not to wreck them completely.

IV. Some problems to be overcome

A. Educational and Organizational Problems.

One of the problems that we face in a number of communities is the difficulty in locating leaders who can bring local people together into a functioning organization. To some extent we are faced with the following dilemma: On the one hand, little leadership development can take place without organized group activity. On the other hand, at least a minimum level of leadership is required if people are to be organized into a group that functions long enough for there to be any real growth in leadership ability.

At times we make a mistake in that we fail to locate and involve the most effective leaders. However, in a number of communities the present level of leadership development is very low. Thus, we are faced with two problems: (1) the problem of improving our means of identifying leaders and (2) the problem of determining how much and what kind of assistance are required to form an organization and to keep it functioning until the people involved have the opportunity to develop the required leadership ability.

The residents of many local communities have difficulty in seeing the importance of and their relationship to a total area development program. Many people can readily see the possibilities of local community action in solving problems, but find it more difficult to comprehend and to identify with a larger area development program. This provincialism has a number of consequences. The local group may push for a course of action that is unrealistic and thus unattainable on a small community basis. And, if communities are totally preoccupied with the solution of all problems at the local level, they are likely to pass up the opportunity for solving many problems which could be solved only by cooperation with other communities. The basic assumption underlying community and area development is that some problems can best be solved at the community level, some by cooperative effort of a few communities, some on a county level, and some on an area level. Communities must be able to see beyond the strictly local level if this concept is to fulfill its promise.

Some of the area development associations have not yet succeeded in building an integrated, smoothly functioning organization. In some areas the top level officers and committees have been successfully organized and many local communities are functioning smoothly. However, the organizational structure needed to integrate the two levels is still quite weak. Other area development associations are smoothly functioning with well integrated organizations. The Extension Service as well as the lay leadership must be alert for ways to help each of the area development associations to develop into well integrated, smoothly functioning units.

In a few parts of the state the concept of total social and economic development is still foreign and is resisted by some leaders. This is particularly true in a few of our best agricultural counties. Apparently the goal of anything other than further agricultural development is still considered as either unrealistic or as undesirable. Apparently these leaders do not understand that rapid agricultural development, if it is not accompanied by development in other phases of the

economy, can perhaps cause as many problems as it solves. For example, in some agricultural areas of this country the rate of depopulation resulting from rapid agricultural progress without comparable progress in other areas has led to serious curtailment of such facilities and services as schools, churches, and recreational facilities.

A problem that is becoming acute (especially for some departments) is our indecision as an organization as to how deeply we should commit ourselves to nonteaching roles in community and area development work. It has been suggested that it is appropriate for a university to become involved in actually servicing operational structure -- especially in the early stages of the development of an organization. A number of lay leaders have also made a strong appeal for deep involvement of the Extension Service not only in teaching but in other roles as well.

At the county and community level, many agents have been deeply involved in not only the original organization of local units but also in servicing these units. Their rationale for this degree of involvement has been that it was necessary if these were to become effective educational organizations. Other agents have strongly resisted involvement in other than teaching activities -- arguing that in their situations and with their limited extension resources they could not justify such intensive organizational efforts.

This committee has recognized that extension does have some legitimate organizational responsibilities, though we feel that our primary role should be educational. However, we have not attempted to draw sharp lines as to when this responsibility begins and ends.

In addition to this question of what our responsibilities are for establishing and maintaining organizations, we are also faced with the question of how far we should go in providing certain other services. For example, we recognize as a committee that we do have a legitimate role to play as expert consultants. However, this, too, is a type of role that can be interpreted many ways.

For example, we specifically recommend that each association should be encouraged to make economic base studies. We have provided intensive assistance to two or three associations in making either economic base studies or other studies designed to help gauge economic development possibilities. These are quasi-research studies which require highly trained personnel. While the lay leadership has been deeply involved in planning and carrying out the studies, the basic leadership for such studies has come from either Extension Service or Experiment Station staff members. We are beginning to set some precedents and to build some expectations. Unless the Extension Service -- or perhaps more appropriately the School of Agriculture--soon thinks through just what its role should be, and how many resources we should commit to such activities, we may be in some real difficulties within a short time.

B. Some Problems on Which We Need More Research.

We urgently need research that will give us a more accurate picture of the structure of rural communities. We not only need to know more about such factors

as community size and services but we also need more knowledge of leadership and power, stratification, informal communication networks ("gossip" chains, and the like), and norms governing relationship among neighbors. The more we know about community structure, the easier it is to design meaningful and effective educational and action programs.

We need to learn much more about the social action process. Despite the rather rapid increase in research based knowledge in this area in recent years, we still know far too little about the process by which successful action programs are initiated, legitimized, agreed upon, and carried out. Many of the development programs carried out through community and area development require the consent and action of large groups of people. The problems of legitimation, communication, and coordination are very complex; and we badly need further research help on such problems.

We need studies specifically designed to learn more about the effectiveness of various techniques and means used by area associations to gain legitimation and to involve people in action programs. We need to know more about the communication process -- both within various levels of the organization and the flow up and down among the various levels. In short, we need to carefully study each organization and to systematically evaluate the various techniques used in trying to make the organization function.

We, also, need a systematic and detailed analysis summary of much of the vast amount of secondary data available from census publications and from other sources. These could be very valuable to both professional and lay leaders as they plan programs.

REPORT OF HUMAN RESOURCES COMMITTEE

The phrase "developing our human resources" within the extension context embraces two significant ideas: bringing about change on the one hand and goal orientation on the other. Extension education is directed toward bringing about change in actual behavior as well as change in skills, knowledge, and attitudes. These guided changes must be channeled in the direction of striving toward desirable individual and group goals. Such goals are expressions of several of the major value complexes of American society.

The work of this committee was given direction after the acceptance of three basic objectives which encompass the twin ideas of change and goals. We believe that extension education should be channeled so as to achieve these changes and goals if we are to develop our human resources: (1) changing aspirations both in terms of level and direction; (2) developing satisfactions through increasing the level of living; and (3) fuller citizenship participation including the opportunity for leadership development.

At no time did the committee lose sight of the fact that other changes and goals are important also. Certainly extension education will be directed toward developing economic resources of the state and the utilization of natural resources will be given appropriate attention. The Extension Service will continue to encourage the adoption of approved practices in production, marketing and processing. These are the direct responsibility, however, of several other committees in this total task force.

1. Changing aspirations both in terms of level and direction

One of the major value orientations of American society is that great effort will be expended toward achieving an ever higher socioeconomic position. This orientation must be translated in operational terms into a sense of dissatisfaction with existing conditions, on the one hand, and an image of potentiality, on the other. Parents must be motivated to strive toward higher goals for themselves and their children. Such goals must be very basic and lasting as contrasted with the more transitory and immediate.

One important example should suffice here. Parents and young people, and the whole community, too, must develop a sense of urgency about keeping our young people in school and in providing them with the educational tools and skills which will be satisfying and useful on a long-term basis. Through extension education we are obligated to create new needs and desires.

2. Developing satisfactions through increasing the level of living

Creating new needs and desires is not enough, however. Equally important is providing the means or avenues through which these new ambitions are achieved. Again, in operational terms, this means: More and better formal and informal education, higher family incomes, and a higher level of living.

In many instances, a low level of living is socially inherited. That is, children grow up in homes where goals are immediate and transitory--where the sense of striving is low--where ambitions for the future are on a low level. Under these conditions, many young people tend to accept these standards. Extension education should be directed toward creating dissatisfactions but also it must be directed toward developing a more satisfying way of life through increasing the level of living of all our people.

3. Fuller citizenship participation including the opportunity for leadership development

Studies show repeatedly that few citizens participate actively and regularly in the major policy decisions which affect their total lives. In many communities, significant decisions are made by a mere handful of the citizens. Both direct and representative democracy function, in reality, only through an informed and actively participating citizenry. Participation levels are quite low in many of our rural communities. Yet, there is a high association between the level of participation in voluntary organizations and the adoption of approved farm practices.

The concept of leader or leadership has no meaning outside of a group context. Every normal person has leadership potential under some condition, but this potential can be realized only as each individual participates in group situations. It is through such group efforts that leaders are trained. There is now and there always will be a need for leaders -- people who have a sense of service and the human relationship skills required to move a group toward achieving some desired goal.

(The committee compiled a series of tables showing in some detail some of the changes that have taken place in our population and some of the characteristics of our population. These tables are to be published separately and thus are not included here.)

In developing either a long-term plan or a day-to-day schedule, extension workers face important questions. With whom shall Extension work? As the previous section shows, the rural-farm population is declining, but the nonfarm population, which represents consumers of agricultural products is increasing. What subject-matter will be placed in its educational program? How can subject-matter be presented to particular groups in a vital and interesting manner? For example, the manner in which subject-matter is meaningful to individuals depends upon their educational level. These questions bear on: "Who should be Extension's clientele?" and "How can Extension best allocate its educational resources to meet the needs of people in their widely varying circumstances?"

The Extension Service, since its inception, has been charged with the responsibility of disseminating information pertaining to agriculture and homemaking. However, with trends toward increasing specialization on fewer and larger farms and new ties between farm and nonfarm sectors, the relevant subject-matter and groups of people to be served are ever-widening. Also, this increasing specialization on larger farms, and a rapidly growing body of technology, requires that

we go into much greater depth in much of our agricultural teaching. Therefore, it becomes increasingly important for Extension to establish priorities on clientele-groups and subject-matter and to design methods to disseminate this information in a meaningful manner.

Obviously, such priorities will differ for extension workers with differing assignments and for those working in areas with different economic and social conditions. Furthermore, extension priorities must be flexible to account for changing needs. Nevertheless, in planning a total extension program, some guiding principles are needed to determine those to whom Extension directs its efforts and the methods to be employed.

The following table is an attempt to classify such priorities. At most, this table should be considered only as offering a tentative framework for establishing priorities at a county, district, state, or national level.

Extension clientele may be considered in three broad classifications: (1) farm residents; (2) groups related to agriculture; and (3) nonfarm residents (or any person in the role of a consumer or citizen).

The second column of the table adapts the broad areas of subject-matter, as identified in the SCOPE report, to the appropriate clientele. Special features of a particular body of subject-matter which are to be emphasized to a specified clientele-group are often noted in parenthesis. This list of subject-matter emphasis is not complete or is not intended to be identified with particular specialist activities in the Extension Service.

The final column indicates, in a qualitative manner, the Extension method which might be employed to disseminate given subject-matter to specified clientele-groups. An "intensive method" implies a substantial reliance on contacts with the individual, attention to detail, and/or a substantial investment of Extension resources. While it does not mean that lesser significance is placed in an activity, an "extensive method" implies more reliance on working with groups than individuals, and use of mass media. Regardless of whether the methods shown in this table are fully accurate, distinctions must be made in the intensity of effort to be devoted to various clientele-groups. Such priorities may at times represent a compromise between expressed needs and the number and training of Extension personnel. Yet, without priorities, extension efforts may be dissipated over a large, anonymous population.

Extension Clientele	Subject-Matter Emphasis	Extension Method
I. Farm Residents		
Farm Operators	Production technology:	Intensive
	Crops	Intensive
	Livestock and poultry (varieties, disease and pests, resource requirements, and other production practices)	Intensive

Extension Clientele	Subject-Matter Emphasis	Extension Method
	Conservation and resource development	Intensive
	Management (including planning and business aspects of farming)	Intensive
	Marketing (market requirements and preparing products for market)	Intensive
	Public affairs (public programs affecting farm operation)	Extensive
	Leadership development	Intensive
	Community improvement	Extensive
Farm Homemakers	Homemaking (technology)	Intensive
	Family living	Intensive
	Home management	Intensive
	Leadership development	Intensive
	Public affairs	Extensive
	Community improvement	Extensive
Farm Youth	Agricultural production and marketing	Intensive
	Homemaking	Intensive
	Management	Extensive
	Conservation	Extensive
	Public affairs	Extensive
	Leadership development	Intensive
	Community improvement	Extensive
II. Groups Related to Agriculture		
Farm, Commodity, Development, and Related Organizations	General information in broad technological areas as mentioned above	Extensive
	Public affairs (public issues affecting the particular group and needed adjustments in agriculture)	Intensive
	Leadership development	Intensive
	Community improvement	Intensive
	Conservation and resource development	Intensive
Farm Suppliers	Production technology	Intensive
	Marketing (efficiency in management and technical lay-out of supply facilities	Intensive
	Leadership development	Extensive
	Community improvement	Extensive
	Public affairs	Extensive

Extension Cleintele	Subject-Matter Emphasis	Extension Method
Marketers of Farm Products	Marketing (efficiency in management and technical lay-out of marketing facilities)	Intensive
	Production technology	Extensive
	Leadership development	Extensive
	Community improvement	Extensive
	Public affairs	Extensive
	Family living (especially as its trends relate to demand for products)	Extensive
III. Nonfarm Residents		
(As consumers and citizens)	Production technology (as applicable to maintenance of homestead)	Extensive
	Family living	Extensive
	Home management	Extensive
	Marketing (especially information on utilization of farm products)	Extensive
	Youth development	Extensive
	Conservation	Extensive
	Community improvement	Extensive
	Leadership development	Extensive
	Public affairs (especially on interrelation of agriculture and the total economy, and general public issues)	Extensive

INFORMATION FROM COUNTY REPORTS

The information included in this section was taken directly from the reports sent in by the various counties. There were many possible ways in which the county data might have been summarized. The type of summary selected was chosen in the hope that it would be most useful to most people.

The first table simply shows the projected increase in sales from 1961 to 1966 and the percentage increase projected. This table is followed by tables for each county showing the gross increase in sales projected and showing the percentage of the gross increase that is anticipated from each commodity. The data were summarized in this manner with the hope of providing some guides as to which commodities should receive major emphasis if the "1.6 in '66" goals are to be attained. However, these obviously can be general guides only. For example, it is entirely conceivable that the commodity that is expected to contribute most to the gross increase will require much less Extension effort than those commodities contributing less.

The total gross increases in these tables vary slightly from the 1966 goals less the 1961 sales shown in Table 1. The gross increases do not take into account those commodities for which a decrease in sales from 1961 to 1966 was anticipated. Also, for a few counties the total 1966 goals were changed after the original data were sent in. However, these changes were not shown by individual commodities. Rather than eliminate these counties, it was decided to show the commodity data on the bases of the original reports.

The last two sections of this report (Problems to be Overcome, and Family Living Goals) are quite brief and do not do justice to the county reports. However, the nature of the original question makes it very difficult to present detailed data that are meaningful.

COUNTY 1966 GROSS FARM INCOME GOALS AND PERCENTAGE INCREASE FROM 1961 TO 1966

Counties	Gross income 1961	Gross income 1966	Percent increase 1961 to 1966
Alamance	$ 9,309,462	$11,596,482	24.6
Alexander	7,240,670	9,127,283	26.1
Alleghany	2,937,709	4,032,638	37.3
Anson	6,707,508	9,118,500	35.9
Ashe	9,389,535	11,370,771	21.1
Avery	2,145,177	2,682,177	25.0
Beaufort	19,515,600	33,902,200	73.7
Bertie	16,464,328	19,382,300	17.7
Bladen	14,439,882	17,400,000	20.5
Brunswick	6,538,171	8,977,852	37.3
Buncombe	10,094,903	11,382,000	12.7
Burke	2,139,198	2,709,192	26.6
Cabarrus	4,182,666	4,617,521	10.4
Caldwell	6,398,695	7,840,870	22.5
Camden	3,299,850	4,800,822	45.5
Carteret	4,847,004	6,009,043	24.0
Caswell	10,394,124	12,144,287	16.8
Catawba	5,108,938	5,648,442	10.6
Chatham	22,448,163	24,485,580	9.1
Cherokee	5,062,145	7,549,722	49.1
Chowan	5,285,045	6,532,542	23.6
Clay	3,293,425	3,692,371	12.1
Cleveland	11,709,100	14,032,642	19.8
Columbus	36,397,025	43,295,650	19.0
Craven	11,638,364	14,412,956	23.8
Cumberland	13,089,625	16,197,531	23.7
Currituck	6,400,381	6,993,722	9.3
Dare	80,225	108,300	35.0
Davidson	7,796,532	12,462,253	59.8
Davie	7,610,440	9,825,440	29.1
Duplin	46,036,750	54,156,750	17.6
Durham	4,829,548	5,877,873	21.7
Edgecombe	25,250,560	29,605,905	17.2
Forsyth	12,695,748	18,595,110	46.5
Franklin	16,220,241	20,479,650	26.3

Table continued

Counties	Gross income		Percent increase 1961 to 1966
	1961	1966	
Gaston	$ 2,939,518	$ 3,422,660	16.4
Gates	5,115,140	7,365,337	44.0
Graham	1,656,847	2,125,355	28.3
Granville	20,332,631	24,668,802	21.3
Greene	21,648,272	27,529,196	27.2
Guilford	16,280,190	18,397,514	13.0
Halifax	22,312,850	29,505,000	32.2
Harnett	28,773,499	35,311,037	22.7
Haywood	6,266,552	8,924,440	42.4
Henderson	9,268,735	15,000,000	61.8
Hertford	9,087,514	12,220,737	34.5
Hoke	7,611,570	10,025,000	31.7
Hyde	3,349,564	6,066,432	81.1
Iredell	17,280,986	19,200,550	11.1
Jackson	2,111,832	2,779,000	31.6
Johnston	46,912,321	55,210,000	17.7
Jones	8,431,062	12,357,640	46.6
Lee	7,252,462	8,824,911	21.7
Lenoir	20,007,069	27,733,608	38.6
Lincoln	7,268,900	9,118,750	25.4
McDowell	1,690,896	2,133,500	26.2
Macon	3,384,977	3,927,098	16.0
Madison	6,621,054	7,895,000	19.2
Martin	20,430,150	22,909,560	11.1
Mecklenburg	5,119,750	6,436,350	25.7
Mitchell	3,535,002	5,539,008	56.7
Montgomery	8,698,676	9,965,350	14.6
Moore	25,031,355	33,469,898	33.7
Nash	32,954,995	41,769,521	26.7
New Hanover	5,011,424	5,949,075	18.7
Northampton	20,134,402	28,737,136	42.7
Onslow	10,849,626	14,860,910	37.0
Orange	7,493,972	9,693,200	29.3
Pamlico	4,218,975	6,156,000	45.9
Pasquotank	7,075,677	8,841,856	25.0

Table continued

Counties	Gross income		Percent increase 1961 to 1966
	1961	1966	
Pender	$14,663,194	$22,151,850	51.1
Perquimans	7,339,812	9,437,092	28.6
Person	13,038,381	15,257,900	17.0
Pitt	43,535,989	55,585,375	27.7
Polk	1,950,274	2,730,400	40.0
Randolph	14,602,267	18,940,506	29.7
Richmond	9,396,771	12,307,994	31.0
Robeson	46,284,697	67,344,515	45.5
Rockingham	17,151,717	18,879,770	10.1
Rowan	5,687,406	7,500,120	31.9
Rutherford	4,650,065	5,934,900	27.6
Sampson	41,728,935	45,607,597	9.3
Scotland	7,078,612	10,216,380	44.3
Stanly	12,030,050	15,184,750	26.2
Stokes	13,029,784	14,569,000	11.8
Surry	18,825,656	22,164,718	17.7
Swain	1,280,545	1,560,620	21.9
Transylvania	3,704,460	5,024,310	35.6
Tyrrell	1,741,798	2,071,680	18.9
Union	15,682,515	23,306,000	48.6
Vance	9,437,304	11,454,125	21.4
Wake	31,446,752	38,804,219	23.4
Warren	10,622,144	12,850,274	21.0
Washington	4,119,002	6,211,625	50.8
Watauga	3,052,754	3,555,475	16.5
Wayne	32,530,644	40,085,963	23.2
Wilkes	15,051,220	18,527,500	23.1
Wilson	29,582,867	35,664,625	20.6
Yadkin	11,036,644	11,553,500	4.7
Yancey	3,494,340	5,482,200	56.9

MAPS COMPILED FROM COUNTY REPORTS

These maps starting with "Forestry" on page 193 show the counties in which five per cent or more of the gross increase in sales is expected to come from selected commodities. Most of these commodities are grouped into broad categories. This is necessary because of the lack of consistency in the classification systems used by counties. For example, some counties reported "swine" as a single commodity while others reported "feeder pigs" and "hogs" separately. Thus, it was necessary to use the broader category "swine" and to combine any subclassifications in order to attain comparability.

NORTHEASTERN DISTRICT

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Bertie County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,931,472	100.0
1. Hogs	960,000	32.8
2. Corn	500,000	17.1
3. Sweet Potatoes	300,000	10.2
4. Soybeans	275,000	9.4
5. Peanuts	270,704	9.2
6. Tobacco	210,105	7.2
7. Beef Cattle	115,000	3.9
8. Eggs	80,000	2.7
9. Watermelons	70,000	2.4
10. Cotton	61,863	2.1
All Others	88,800	3.0

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Edgecombe County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	4,573,795	100.0
1. Tobacco	1,624,280	35.5
2. Peanuts	1,300,240	28.4
3. Cotton	554,650	12.1
4. Corn	262,500	5.7
5. Cattle	184,000	4.1
6. Hogs	180,000	3.9
7. Forestry	142,000	3.1
8. Soybeans	142,000	3.1
All Others	184,125	4.1

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Franklin County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	4,385,759	100.0
1. Tobacco	2,806,403	64.1
2. Cotton	451,506	10.3
3. Hogs	310,000	7.1
4. Beef Cattle	160,000	3.6
5. Corn	150,000	3.4
6. Soybeans	146,250	3.3
7. Sweet Potatoes	120,000	2.7
8. Layers	100,000	2.3
All Others	141,600	3.2

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Granville County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,804,359	100.0
1. Cattle	594,000	32.9
2. Eggs	440,000	24.4
3. Forestry	328,000	18.2
4. Milk	182,991	10.1
5. Swine	85,000	4.7
6. Soybeans	66,000	3.7
7. Sweet Potatoes	45,000	2.5
All Others	63,368	3.5

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Greene County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	6,150,677	100.0
1. Tobacco	2,453,079	39.9
2. Corn	2,043,000	33.2
3. Swine	755,328	12.3
4. Cotton	383,430	6.2
5. Forestry	273,000	4.5
All Others	242,840	3.9

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Halifax County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	7,269,970	100.0
1. Cotton	3,012,000	41.5
2. Peanuts	1,488,000	20.5
3. Forestry	785,000	10.7
4. Tobacco	733,750	10.1
5. Eggs	363,470	5.0
6. Beef Cattle	281,250	3.9
7. Corn	275,000	3.8
8. Hogs and Meat	256,000	3.5
All Others	75,500	1.0

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Hertford County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	3,493,342	100.0
1. Peanuts	899,496	25.7
2. Tobacco	803,721	23.0
3. Swine	444,000	12.7
4. Corn	326,724	9.4
5. Cotton	311,482	8.9
6. Cattle	286,250	8.3
7. Soybeans	156,400	4.5
8. Sweet Potatoes	99,000	2.8
9. Broilers and Hens	83,000	2.4
All Others	83,269	2.3

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Halifax County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	7,269,970	100.0
1. Cotton	3,012,000	41.5
2. Peanuts	1,488,000	20.5
3. Forestry	785,000	10.7
4. Tobacco	733,750	10.1
5. Eggs	363,470	5.0
6. Beef Cattle	281,250	3.9
7. Corn	275,000	3.8
8. Hogs and Meat	256,000	3.5
All Others	75,500	1.0

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Hertford County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	3,493,342	100.0
1. Peanuts	899,496	25.7
2. Tobacco	803,721	23.0
3. Swine	444,000	12.7
4. Corn	326,724	9.4
5. Cotton	311,482	8.9
6. Cattle	286,250	8.3
7. Soybeans	156,400	4.5
8. Sweet Potatoes	99,000	2.8
9. Broilers and Hens	83,000	2.4
All Others	83,269	2.3

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Nash County

	Enterprise	Gross Increase in Sales	
		Amount	% Gross Increase
	All Enterprises	9,407,230	100.0
1.	Poultry	3,487,000	37.0
2.	Tobacco	2,305,812	24.5
3.	Corn	1,121,000	11.9
4.	Hogs	1,070,000	11.4
5.	Cotton	608,668	6.5
6.	Sweet Potatoes	247,500	2.6
7.	Peanuts	215,050	2.3
	All Others	352,200	3.8

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Northampton County

	Enterprise	Gross Increase in Sales	
		Amount	% Gross Increase
	All Enterprises	7,981,974	100.0
1.	Cotton	2,285,092	28.6
2.	Corn	1,899,291	23.7
3.	Peanuts	1,055,732	13.2
4.	Hogs	750,000	9.4
5.	Sweet Potatoes	587,500	7.4
6.	Forestry	400,000	5.1
7.	Soybeans	400,750	5.1
8.	Watermelons	232,250	2.9
	All Others	371,359	4.6

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Pitt County

	Enterprise	Gross Increase in Sales	
		Amount	% Gross Increase
	All Enterprises	12,290,299	100.0
1.	Tobacco	5,124,662	41.7
2.	Hogs	4,250,000	34.6
3.	Eggs	900,000	7.3
4.	All Cattle	556,000	4.5
5.	Peanuts	385,000	3.1
6.	Cotton	334,350	2.7
	All Others	740,287	6.1

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Vance County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,104,021	100.0
1. Tobacco	1,152,721	54.7
2. Corn	253,000	12.0
3. Hogs	180,000	8.6
4. Hens and Eggs	172,000	8.2
5. Cotton	112,200	5.3
6. Fescue Seed	45,000	2.1
7. Sweet Potatoes	42,000	2.0
All Others	147,100	7.1

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Wake County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	7,987,877	100.0
1. Tobacco	4,624,567	58.0
2. Dairy	1,554,000	19.6
3. Hogs	325,000	4.1
4. Forestry	315,000	3.9
5. Sweet Potatoes	262,000	3.3
6. Cotton	216,300	2.7
7. Soybeans	199,200	2.5
All Others	491,810	6.3

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Warren County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,108,865	100.0
1. Tobacco	1,361,265	64.5
2. Milk	267,500	12.6
3. Cattle	213,000	10.1
4. Pulpwood	103,125	4.9
All Others	163,975	7.9

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Wayne County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	8,696,825	100.0
1. Tobacco	4,829,500	55.6
2. Corn	1,848,000	21.3
3. Soybeans	465,750	5.4
4. Cotton	334,740	3.8
5. Turkeys	294,000	3.4
6. Hogs	290,000	3.3
All Others	634,835	7.2

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise Wilson County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	6,153,858	100.0
1. Tobacco	3,176,733	51.5
2. Corn	1,049,400	17.1
3. Sweet Potatoes	767,000	12.5
4. Cotton	484,200	7.9
5. Hogs	283,000	4.6
6. Oats	191,525	3.1
All Others	202,000	3.3

NORTHWESTERN DISTRICT

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Alamance County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	5,131,107	100.0
1. Layers, Eggs, Hens, All Eggs	2,857,170	55.7
2. Tobacco	1,261,430	24.6
3. Beef and Other Cattle	364,200	7.1
4. Milk	185,000	3.6
All Others	463,307	9.0

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise,
Alleghany County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,171,159	100.0
1. Dairying	630,000	53.9
2. Beef and Other Cattle	175,200	15.0
3. Tobacco	118,499	10.1
4. Cabbage	103,000	8.8
5. Snap Beans	80,000	6.8
6. Raspberries	25,000	2.1
All Others	39,460	3.3

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Ashe County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,246,771	100.0
1. Poultry	558,000	24.7
2. Tobacco	458,396	20.4
3. Cattle	318,000	14.2
4. Forestry and Christmas Trees	230,800	10.3
5. Dairying	161,000	7.2
6. Irish Potatoes	144,625	6.4
7. Tomatoes	125,100	5.6
8. Apples	91,000	4.1
9. Cabbage	90,000	4.0
10. Shrubbery	50,000	2.2
All Others	19,850	.9

Projected Gross Increase In Sales, 1961 - 1966, By Enterprise, Caswell County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,781,987	100.0
1. Tobacco	1,519,787	85.4
2. Eggs	40,000	2.2
3. Poultry	36,500	2.0
4. Wheat	35,000	2.0
All Others	150,700	8.4

Projected Gross Increase In Sales, 1961 - 1966, By Enterprise, Chatham County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,691,145	100.0
1. Broilers, hens and eggs	1,054,500	39.1
2. Forestry	775,000	28.8
3. Livestock, meat and wool	255,280	9.5
4. Dairy Products	245,000	9.1
5. Tobacco	157,760	5.9
6. Corn	120,000	4.4
All Others	83,605	3.2

Projected Gross Increase In Sales, 1961 - 1966, By Enterprise, Davidson County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	5,317,020	100.0
1. Hay, alfalfa contracts	1,028,000	19.2
2. Tobacco	1,029,620	19.2
3. Mixed grain, Barley, rye, oats and wheat	975,760	18.2
4. Corn	965,000	18.0
5. Dairying	224,250	4.2
6. Shrubbery and flowers	200,000	3.7
7. Hogs	193,000	3.6
8. Soybeans	154,100	2.9
9. Sorghum	125,000	2.3
10. Poultry	125,500	2.3
All Others	296,790	6.4

Projected Gross Increase In Sales, 1961 - 1966, By Enterprise, Durham County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,200,965	100.0
1. Tobacco	863,908	72.0
2. Feeder Pigs	108,000	9.0
3. Wheat, Oats and Barley	73,008	6.1
4. Ornamental Horticulture	40,000	3.3
5. All Hay	30,450	2.5
6. Corn	27,250	2.3
7. Beef Cattle	25,000	2.1
All Others	33,349	2.7

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Forsyth County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	6,002,026	100.0
1. Hay Crops	1,620,500	27.1
2. Vegetables	1,109,349	18.6
3. Tobacco	1,081,200	18.0
4. Corn	446,551	7.4
5. Oats, Barley, Soybeans	382,745	6.4
6. Poultry and Eggs	368,450	6.1
7. Forestry	276,000	4.5
8. Sorghum	236,850	3.9
9. Sweet Potatoes	150,000	2.5
All Others	330,375	5.5

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Guilford County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	3,004,183	100.0
1. Tobacco	1,217,369	40.6
2. All Livestock	1,034,450	34.5
3. Milk	402,042	13.4
4. All Hay	63,120	2.1
All Others	287,202	9.4

Projected Groas Increase in Sales, 1961 - 1966, By Enterprise, Orange County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,227,748	100.0
1. Milk	656,932	29.6
2. Tobacco	557,466	25.0
3. Eggs	525,000	23.6
4. Beef Cattle	112,000	5.0
5. Vegetables	73,500	3.3
6. Corn	62,500	2.8
7. Pulpwood	60,000	2.7
8. Other Cattle	50,000	2.2
9. Hogs	50,000	2.2
All Others	80,350	3.6

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Person County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,261,685	100.0
1. Tobacco	1,622,600	71.8
2. Forestry	136,000	6.0
3. Eggs	112,500	5.0
4. Hogs	109,000	4.8
5. Broilers	87,500	3.9
6. Corn	80,000	3.5
All Others	114,085	5.0

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Randolph County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	4,338,239	100.0
1. Broilers	1,512,000	34.7
2. Eggs	1,312,500	30.3
3. Hogs	1,105,000	25.5
4. Tobacco	288,959	6.7
All Others	119,780	2.8

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Rockingham County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,470,405	100.0
1. Tobacco	1,825,425	73.9
2. Beef Cattle	135,000	5.5
3. Broilers	120,000	4.8
4. Pulpwood	109,500	4.4
5. Hogs	78,000	3.2
All Others	202,480	8.5

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise Stokes County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,716,060	100.0
1. Tobacco	1,440,330	84.0
2. Hogs and Feeder Pigs	140,000	8.2
3. Beef Cattle	69,000	4.0
All Others	66,730	3.8

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Surry County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	3,860,338	100.0
1. Tobacco	1,892,118	49.0
2. Poultry and Products	1,390,051	36.0
3. Beef Cattle	225,000	5.8
4. Corn	111,398	2.9
5. Hogs	105,000	2.7
6. Rye	77,798	2.0
All Others	58,973	1.8

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Wilkes County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	3,941,350	100.0
1. Broilers	2,500,000	63.2
2. Hens (commercial) Eggs	700,000	17.9
3. Apples	200,000	5.1
4. Forestry	145,000	3.7
5. Hay	125,000	3.2
All Others	271,350	7.0

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Yadkin County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	954,126	100.0
1. Squash and Other Vegetables	352,175	37.0
2. Milk	300,000	31.4
3. Eggs	68,500	7.2
4. Tobacco	64,326	6.7
5. Feeder Pigs	58,000	6.1
6. Soybeans	41,000	4.3
7. Milo	23,750	2.5
All Others	46,375	4.8

EASTERN DISTRICT

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Beaufort County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	14,375,475	100.0
1. Tobacco	5,295,150	36.7
2. Corn	2,057,500	14.3
3. Hogs	1,220,000	8.5
4. Turkeys	1,140,000	7.9
5. Soybeans	814,200	5.7
6. Beef Cattle	750,000	5.2
7. Forestry	740,000	5.2
8. Eggs	570,000	4.0
9. Strawberries	300,000	2.1
All Others	1,488,625	10.4

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Camden County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,582,692	100.0
1. Corn	495,000	31.0
2. Irish Potatoes	367,500	23.2
3. Cattle	195,900	12.4
4. Hogs	187,200	11.8
5. Soybeans	157,500	10.0
6. Sweet Potatoes	89,250	5.6
7. Cabbage	52,800	3.3
All Others	37,542	2.3

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Carteret County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,296,039	100.0
1. Home Gardens	500,000	38.6
2. Hogs	230,000	17.7
3. Forestry	218,000	16.8
4. Corn	91,000	7.0
5. Beef Cattle	88,000	6.8
6. Strawberries	75,000	5.8
7. Soybeans	60,000	4.6
All Others	34,039	2.7

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Chowan County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,256,270	100.0
1. Watermelons	234,000	18.6
2. Sweet Potatoes	200,750	16.0
3. Corn (grain)	201,300	16.0
4. Peanuts and Hay	199,580	15.9
5. Hogs	145,500	11.6
6. Soybeans	128,800	10.3
7. Cotton	64,990	5.2
8. All Cattle	54,600	4.3
9. Lima and Snap Beans	26,750	2.1
All Others	0	0

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Craven County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,811,209	100.0
1. Corn	1,241,000	44.2
2. Tobacco	1,099,921	39.1
3. Soybeans	175,000	6.2
4. Hogs	153,102	5.4
5. Milk	79,057	2.8
All Others	63,129	2.3

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Currituck County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,538,109	100.0
1. Corn	565,600	22.3
2. Irish Potatoes	521,400	20.5
3. Lumber	310,000	12.2
4. Soybeans	414,000	16.3
5. Hogs	285,000	11.2
6. Beef Cattle	108,000	4.3
7. Sweet Potatoes	95,725	3.8
8. Wheat	60,800	2.4
9. Broilers	52.500	2.1
All Others	125,084	4.9

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Dare County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	316,625	100.0
1. Pulpwood	10,000	31.6
2. Hogs	6,000	19.0
3. Lumber	5,000	15.8
4. Soybeans	3,000	9.5
5. Figs	2,400	7.6
6. Eggs	2,000	6.3
7. Strawberries	1,500	4.7
All Others	1,725	5.5

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Gates County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,255,397	100.0
1. Peanuts	724,552	32.2
2. Hogs	385,000	17.1
3. Beef Cattle	285,000	12.6
4. Cotton	251,416	11.1
5. Corn	240,000	10.6
6. Soybeans	166,750	7.4
7. Broilers	82,500	3.7
8. Sweet Potatoes	73,875	3.3
All Others	46,304	2.0

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Hyde County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,859,368	100.0
1. Corn	1,384,915	48.3
2. Hogs	464,000	16.2
3. Soybeans	328,500	11.5
4. Oats	139,750	4.9
5. Poultry	116,100	4.1
6. Forestry	116,000	4.1
7. Beef Cattle Feeding	115,000	4.0
8. Milk	56,700	2.0
All Others	138,403	4.9

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Jones County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	3,987,478	100.0
1. Tobacco	1,641,898	41.1
2. Swine	986,000	24.7
3. Corn	327,500	8.2
4. Sweet Potatoes	294,400	7.4
5. Beef Cattle	271,000	6.8
6. Forestry	157,500	4.0
7. Soybeans	143,500	3.6
All Others	165,680	4.2

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Onslow County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	4,241,240	100.0
1. Tobacco	1,518,680	35.8
2. Hogs	1,300,000	30.7
3. Eggs	450,000	10.6
4. Corn	362,000	8.5
5. Forestry	280,000	6.6
6. Soybeans	158,000	3.7
All Others	172,560	4.1

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Pamlico County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,037,840	100.0
1. Soybeans	1,074,240	52.7
2. Tobacco	280,000	13.7
3. Corn	278,600	13.7
4. Beef Cattle	76,800	3.8
5. Hogs	67,000	3.3
6. Milk	65,000	3.2
7. Irish Potatoes	56,000	2.7
All Others	140,200	6.9

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Pasquotank County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,790,679	100.0
1. Fat Beef Cattle and Feeder Calves	437,000	24.3
2. Irish Potatoes	371,250	20.7
3. Hogs and Feeder Pigs	367,000	20.5
4. Soybeans	141,900	7.9
5. Corn	114,934	6.4
6. Sweet Potatoes	111,250	6.2
7. Wheat	91,088	5.1
8. Sorghum	71,118	4.0
9. Carrots	50,675	2.9
All Others	34,464	3.0

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Perquimans County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,103,780	100.0
1. Beef Cattle	775,000	36.8
2. Hogs	480,000	22.8
3. Soybeans	240,000	11.4
4. Lumber	180,000	8.6
5. Watermelons	125,000	5.9
6. Cotton	87,600	4.2
7. Peanuts	76,200	3.6
8. Corn	71,680	3.4
9. Sweet Potatoes	42,000	2.0
All Others	26,300	1.3

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Tyrrell County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	312,197	100.0
1. Soybeans	91,020	29.1
2. Hogs	80,375	25.8
3. Sweet Potatoes	37,014	11.9
4. Cucumbers	31,220	10.0
5. Cotton (lint and seed)	26,564	8.5
6. Corn	17,600	5.6
7. Peanuts	12,138	3.9
8. Watermelons	8,196	2.6
All Others	8,070	2.6

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Washington County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,102,848	100.0
1. Soybeans	809,400	38.5
2. Corn	654,000	31.1
3. Hogs	240,200	11.4
4. Tobacco	182,040	8.7
5. Peanuts	84,375	4.0
All Others	132,833	6.3

SOUTHWESTERN DISTRICT

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Alexander County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,104,660	100.0
1. Eggs	805,000	38.2
2. Broilers	520,000	24.7
3. Dairy	300,000	14.3
4. Tobacco	266,332	12.7
5. Hogs	117,778	5.6
All Others	95,550	4.5

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Burke County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	568,998	100.0
1. Tomatoes	126,000	22.0
2. Beef	112,500	19.8
3. Broilers	76,100	13.4
4. Eggs	55,000	9.7
5. Soybeans	51,000	9.0
6. Milk	41,382	7.3
7. Hogs	22,000	3.9
8. Hay	19,400	3.4
9. Forestry	16,638	3.0
All Others	48,978	8.5

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Cabarrus County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	492,471	100.0
1. Livestock	137,182	27.9
2. Livestock Products	113,204	23.0
3. Lespedeza Seed	95,125	19.3
4. Tomatoes	54,000	11.0
5. Soybeans	39,600	8.0
6. Strawberries	18,875	3.8
All Others	34,485	7.0

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Caldwell County

	Enterprise	Gross Increase in Sales	
		Amount	% Gross Increase
	All Enterprises	1,651,525	100.0
1.	Forestry	650,000	39.4
2.	Eggs and Hens	366,244	22.2
3.	Broilers	293,750	17.8
4.	Hogs	81,000	4.9
5.	Beef Cattle	50,000	3.0
6.	Tomatoes	47,500	2.9
7.	Tourist	40,000	2.4
	All Others	123,031	7.4

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Catawba County

	Enterprise	Gross Increase in Sales	
		Amount	% Gross Increase
	All Enterprises	715,403	100.0
1.	Wheat	221,760	30.9
2.	Hay	105,000	14.7
3.	Beef	96,400	13.5
4.	Soybeans	63,788	8.9
5.	Hens and Eggs	61,500	8.6
6.	Feeder Pigs	60,000	8.4
7.	Corn	28,800	4.0
8.	Green House Vegetables	20,000	2.8
9.	Sorghum	17,920	2.5
10.	Irish and Sweet Potatoes	16,485	2.3
	All Others	23,750	3.4

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Cleveland County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,340,692	100.0
1. Cotton (lint and seed)	1,353,750	57.8
2. Eggs	410,000	17.6
3. Milk	161,000	6.9
4. Beef Cattle	94,500	4.0
5. Wheat	76,000	3.2
6. Corn	57,500	2.5
7. Peaches	47,250	2.0
All Others	140,692	6.0

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Davie County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enteprises	2,792,000	100.0
1. Dairy Products	1,000,000	35.7
2. Feeder Pigs	557,000	20.0
3. Tobacco	364,000	13.0
4. Beef Cattle	312,500	11.2
5. Hay Crops	200,000	7.2
6. Fruits and Vegetables	99,500	3.6
7. Corn	80,000	2.9
8. Soybeans	75,000	2.7
All Others	104,000	3.7

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Gaston County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	542,482	100.0
1. Cotton (lint and seed)	160,722	29.5
2. Beef (all)	75,250	13.9
3. Hogs	67,200	12.4
4. Forestry	50,000	9.2
5. Poultry and Eggs	47,832	8.8
6. Small Grain	45,500	8.4
7. Hay (all)	43,000	7.9
8. Dairying and Milk	24,000	4.4
9. Sweet Potatoes	14,000	2.6
All Others	14,978	2.9

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Iredell County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	3,854,876	100.0
1. Dairy and Milk	1,904,960	49.5
2. Poultry and Eggs	1,214,716	31.5
3. Pigs, Hogs and Meat	325,000	8.4
4. Beef Cattle	250,000	6.5
5. Soybeans	132,000	3.4
All Others	28,200	.7

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Lincoln County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,981,850	100.0
1. Milk	450,000	22.8
2. Cotton	373,100	18.8
3. Forestry	320,000	16.1
4. Broilers	225,000	11.4
5. Minnows, Flowers and Shrubs	130,000	6.6
6. Soybeans	120,000	6.1
7. Hogs and Swine	64,000	3.2
8. Lespedeza for seed	52,500	2.6
9. Apples	40,000	2.0
10. Tomatoes	40,000	2.0
All Others	167,250	8.4

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, McDowell County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	446,180	100.0
1. All Cattle and Products	110,000	24.8
2. Hens and Eggs	92,500	20.7
3. Hogs and Meat	85,000	19.1
4. Corn	60,000	13.4
5. Apples	30,000	6.7
6. Forestry	25,000	5.6
7. Soybeans	13,400	3.0
8. Broilers	10,000	2.2
All Others	20,280	4.5

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Mecklenburg County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,507,500	100.0
1. Beef and Veal	582,500	38.7
2. Ornamentals	300,000	19.9
3. Eggs	210,000	13.9
4. Milk	200,000	13.3
5. Truck Crops	98,000	6.5
6. Hogs and Feeder Pigs	60,000	3.9
All Others	57,000	3.8

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Polk County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	798,066	100.0
1. Dairy and Milk	250,000	31.3
2. Cotton and Seed	159,957	20.0
3. Poultry and Eggs	79,309	9.9
4. Hay (all)	73,500	9.2
5. Beef	47,600	6.0
6. Corn	40,000	5.0
7. Lumber	40,000	5.0
8. Peaches	34,000	4.3
9. Soybeans	17,100	2.1
All Others	56,600	7.2

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Rowan County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,977,114	100.0
1. Milk	500,000	25.2
2. Hogs	324,000	16.4
3. Cotton and Seed	262,744	13.3
4. Beef and Other Cattle	140,000	7.1
5. Tomatoes	120,000	6.1
6. Soybeans	116,000	5.9
7. Sorghum	115,000	5.8
8. Sweet Potatoes	108,750	5.5
9. Wheat	100,120	5.1
10. Eggs	50,000	2.5
11. Lespedeza Seed	40,000	2.0
All Others	100,500	5.1

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Rutherford County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,439,200	100.0
1. Milk	360,000	25.1
2. Cattle	300,000	20.8
3. Poultry	156,500	10.9
4. Corn	135,000	9.4
5. Eggs	110,000	7.6
6. Hogs	100,000	6.9
7. Oats	87,500	6.1
8. Other Fruits and Vegetables	82,700	5.7
9. Hay	50,000	3.5
All Others	57,500	4.0

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Stanly County

	Enterprise	Gross Increase in Sales	
		Amount	% Gross Increase
	All Enterprises	3,679,675	100.0
1.	Poultry and Eggs	1,293,750	35.2
2.	Swine	600,000	16.3
3.	Beef Cattle	440,000	12.0
4.	Soybeans	360,000	9.8
5.	Other Livestock	296,800	8.1
6.	Dairying	200,000	5.4
7.	Corn	200,000	5.4
8.	Hot House Vegetables	95,000	2.6
9.	Pulpwood	95,000	2.6
	All Others	99,125	2.6

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Union County

	Enterprise	Gross Increase in Sales	
		Amount	% Gross Increase
	All Enterprises	7,663,485	100.0
1.	Swine	1,379,000	17.9
2.	Cotton	1,254,600	16.4
3.	Eggs and Hens	1,130,500	14.7
4.	Broilers	450,000	5.9
5.	Wheat	402,500	5.3
6.	Turkeys	400,000	5.2
7.	Milk	364,000	4.7
8.	Small Fruits	300,000	3.9
9.	Fruits and Truck Crops	250,000	3.3
10.	Beef Cattle	250,000	3.3
11.	Lespedeza Seed	230,000	3.0
12.	Nursery and Flowers	200,000	2.6
	All Others	1,052,885	13.8

SOUTHEASTERN DISTRICT

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Anson County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,409,552	100.0
1. Eggs	504,500	20.9
2. Lespedeza	199,000	8.1
3. Soybeans	189,000	7.9
4. Broilers	150,000	6.2
5. Hogs and Meat	148,200	6.2
6. Peaches	146,250	6.1
7. Cotton	144,550	6.0
8. Dairying	132,500	5.5
9. Beef Cattle	129,000	5.4
10. Forestry	92,000	3.8
11. Grain Sorghum	90,000	3.7
12. Turkeys	89,000	3.5
13. Vegetables and Fruits	72,600	3.0
14. Sweet Potatoes	53,700	2.2
15. Oats	47,000	2.0
All Others	230,252	9.5

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Bladen County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,573,749	100.0
1. Tobacco	743,072	47.2
2. Hogs	179,550	11.4
3. Soybeans	174,115	11.1
4. Peanuts	163,125	10.4
5. Blueberries	139,590	8.9
6. Forestry	54,400	3.5
7. Corn	42,150	2.7
8. Sweet Potatoes	40,000	2.5
All Others	37,747	2.3

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Brunswick County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,525,474	100.0
1. Hogs	649,000	25.7
2. Snap Beans	468,000	18.5
3. Tobacco	359,439	14.2
4. Forestry	338,795	13.4
5. Potatoes (White and Sweet)	129,030	5.1
6. Soybeans	117,000	4.7
7. Beef Cattle	116,200	4.6
8. Blueberries	81,000	3.2
9. Corn	72,000	2.9
All Others	195,010	7.7

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Columbus County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	9,183,902	100.0
1. Tobacco	3,869,651	42.1
2. Eggs	1,586,250	17.3
3. Hogs	840,000	9.1
4. Corn	681,521	7.4
5. Vegetables	500,000	5.4
6. Grapes	500,000	5.4
7. Strawberries	295,800	3.2
8. Soybeans	197,500	2.2
9. Peanuts	196,000	2.1
All Others	516,929	5.8

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Cumberland County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	3,107,906	100.0
1. Cotton	728,267	23.4
2. Soybeans	666,700	21,5
3. Poultry and Eggs	498,200	16.0
4. Tobacco	496,339	16.0
5. Corn	120,000	3.9
6. Milk	118,000	3.8
7. All Cattle	113,500	3.7
8. Sweet Potatoes	107,900	3.5
9. Truck Crops	67,500	2.2
10. Oats	63,000	2.0
All Others	128,500	4.0

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Duplin County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	8,120,500	100.0
1. Tobacco	3,003,000	37.0
2. Corn	2,020,000	24.9
3. Poultry	1,235,000	15.2
4. Hogs	722,000	8.9
5. Soybeans	632,000	7.8
6. Blueberries	315,000	3.9
All Others	193,500	2.3

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Harnett County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	7,889,688	100.0
1. Tobacco	4,188,379	53.1
2. Hogs and Feeder Pigs	1,676,610	21.2
3. Sweet Potatoes	473,000	6.0
4. Cotton	441,339	5.6
5. Beef Cattle	345,500	4.4
6. Poultry and Eggs	273,987	3.5
7. Soybeans	167,200	2.1
All Others	323,673	4.1

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Hoke County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,814,450	100.0
1. Tobacco	1,000,634	35.8
2. Cotton	733,076	26.0
3. Soybeans	270,000	9.6
4. Watermelons	210,000	7.5
5. Sweet Potatoes	200,000	7.1
6. Poultry and Eggs	92,000	3.4
7. Corn	60,000	2.1
8. Oats	55,000	2.0
All Others	183,740	6.5

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Lee County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,543,427	100.0
1. Tobacco	699,192	45.3
2. Poultry and Eggs	251,000	16.2
3. Beef Cattle	210,000	13.6
4. Hogs	210,000	13.6
5. Forestry	89,450	5.8
6. Soybeans	38,000	2.5
All Others	45,785	3.0

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, Montgomery County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,281,674	100.0
1. Swine	498,000	38.9
2. Cotton	246,908	19.3
3. Tobacco	200,466	15.6
4. Broilers	172,000	13.4
5. Dairying	88,300	6.9
6. All Cattle	36,000	2.8
All Others	40,000	3.1

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise Moore County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	8,569,868	100.0
1. Broilers	4,506,877	52.5
2. Forestry	1,677,400	19.6
3. Tobacco	1,257,822	14.7
4. All Cattle	381,000	4.4
5. Peaches	271,181	3.2
All Others	475,588	5.6

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise, New Hanover County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,469,651	100.0
1. Flowers	500,000	34.0
2. Nursery Crops	500,000	34.0
3. Cucumbers	220,000	15.0
4. Blueberries	100,000	6.8
5. Cultivated Oyster Beds	50,000	3.4
All Others	99,651	6.8

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Pender County

Enterprise	Gross Increase in Sales	
	Amount	%Gross Increase
All Enterprises	7,556,406	100.0
1. Blueberries	1,750,000	23.1
2. Strawberries	1,567,500	20.8
3. Tobacco	1,496,474	19.8
4. Eggs	1,298,000	17.2
5. Hogs	948,000	12.6
6. Dairy	192,000	2.5
7. Soybeans	180,000	2.4
All Others	124,432	1.6

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Richmond County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	4,037,768	100.0
1. Eggs and Hens	1,292,000	32.0
2. Broilers	840,000	20.8
3. Cotton	478,897	11.9
4. Turkeys	448,000	11.1
5. Tobacco	412,114	10.2
6. Hogs	245,000	6.1
7. All Cattle	133,000	3.3
All Others	188,757	4.6

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise,
Robeson County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	21,086,800	100.0
1. Tobacco	9,176,937	43.6
2. Cotton	3,969,825	18.8
3. Turkeys	3,006,000	14.3
4. Beef Cattle	1,610,000	7.6
5. Soybeans	971,300	4.6
6. Forestry	671,600	3.2
7. Corn	553,280	2.6
8. Fruits, Nuts, and Vegetables	473,704	2.2
All Others	654,094	3.1

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Sampson County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	4,310,662	100.0
1. Tobacco	967,237	22.4
2. All Cattle	752,000	17.4
3. Hogs	639,000	14.8
4. Poultry and Eggs	613,800	14.2
5. Irish and Sweet Potatoes	351,200	8.1
6. Vegetables	228,788	5.3
7. Cotton	264,452	6.1
8. Corn	172,150	4.0
9. Soybeans	170,500	4.0
All Others	151,535	3.5

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise,
Scotland County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	3,217,993	100.0
1. Cotton	1,498,710	46.5
2. Soybeans	407,500	12.7
3. Hay and Forages	340,000	10.6
4. All Cattle	316,400	9.8
5. Swine and Meats	290,000	9.0
6. Poultry and Eggs	205,000	6.4
7. Tobacco	79,113	2.3
All Others	81,270	2.5

WESTERN DISTRICT

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Avery County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	812,000	100.0
1. Shrubbery and evergreens	275,000	33.9
2. Christmas Trees	220,000	27.1
3. Apples	208,000	25.6
4. Cattle	54,000	6.6
5. Blueberries	30,000	3.7
6. Vine-ripe tomatoes and strawberries	25,000	3.1
All Others	0	0

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Buncombe County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprise	1,464,972	100.0
1. Broilers	850,000	58.0
2. Fruits and Vegetables (all kinds)	175,400	12.0
3. Tobacco	171,600	11.7
4. Milk	100,000	6.8
5. Beef Cattle	73,000	5.0
6. Horticulture specials	50,000	3.4
All Others	44,972	3.1

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Cherokee County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,660,527	100.0
1. Livestock and livestock products	2,000,000	75.3
2. Pulpwood, lumber, other and Charcoal	321,100	12.1
3. Hay	115,000	4.3
4. Celery and tomatoes	100,000	3.8
5. Corn	59,404	2.2
All Others	65,023	2.3

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Clay County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	409,996	100.0
1. Poultry	250,225	61.0
2. Dairying	47,386	11.6
3. Tobacco	33,600	8.2
4. Pulpwood, Lumber and Christmas Trees	29,480	7.2
5. Beef	13,200	3.2
6. Peppers	9,955	2.4
7. Swine	9,713	2.4
8. Irish Potatoes	8,400	2.0
All Others	8,037	2.0

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Graham County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	492,008	100.0
1. Forestry Products	175,813	35.7
2. Vine-ripe Tomatoes	90,000	18.3
3. Tobacco	69,345	14.1
4. Sweet Potatoes	45,000	9.1
5. Nursery and Christmas Trees	30,000	6.1
6. Beef Cattle	30,000	6.1
7. Sorghum Molasses	18,000	3.7
8. Hay	10,500	2.1
9. Strawberries	10,000	2.0
All Others	13,350	2.8

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Haywood County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,803,998	100.0
1. Apples	475,000	17.0
2. Hens, Corn and hatch eggs sale of hens	436,000	15.6
3. Tomatoes	402,000	14.4
4. Broilers	351,000	12.5
5. Vegetables	334,650	11.9
6. Beef Cattle	200,000	7.1
7. Tobacco	168,768	6.0
8. Small fruit and strawberries	162,000	5.8
9. Forestry Products	108,800	3.8
10. Dairying	97,500	3.5
All Others	68,280	2.4

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Henderson County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	6,222,015	100.0
1. Apples	2,400,000	38.6
2. Pole Beans	810,000	13.0
3. Irish Potatoes	640,000	10.3
4. Snap Beans	625,000	10.0
5. Other vegetables	613,750	10.0
6. Gladiolus and Ornamentals	275,000	4.4
7. Dairy Products	250,000	4.0
8. All Types of Livestock	174,055	2.8
9. Poultry and Poultry Products	168,000	2.7
All Others	266,210	4.2

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Jackson County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	767,818	100.0
1. Pulpwood	210,000	27.3
2. Cabbage	148,550	19.3
3. Other Vegetables	99,550	13.0
4. Tomatoes	84,000	10.9
5. Other Forestry	69,440	9.1
6. Beef and Other Cattle	56,000	7.3
7. Ornamental Plants	40,000	5.2
8. Dairy Products	20,000	2.6
9. Hay	15,000	2.0
All Others	25,278	3.3

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Macon County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	710,285	100.0
1. Milk and Dairy Cattle	230,328	32.5
2. Eggs	130,000	18.4
3. Hens and Broilers	127,000	17.9
4. Beef Cattle and Calves	87,000	12.2
5. Vegetables	59,825	8.4
6. Swine	18,000	2.5
7. Strawberries	16,000	2.3
All Others	42,132	5.8

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Madison County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,359,946	100.0
1. Cattle	438,289	32.3
2. Tobacco	383,657	28.2
3. Tomatoes	185,000	13.6
4. Forestry	124,000	9.1
5. Broilers	72,400	5.3
6. Milk	62,460	4.6
7. Silage feeding and spring sale	36,000	2.6
All Others	58,140	4.3

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Mitchell County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,326,746	100.0
1. Broilers	1,008,000	43.3
2. Specialties (grapes, beans, lettuce, etc.)	240,000	10.3
3. Tomatoes	220,000	9.5
4. Apples	137,500	5.9
5. Forestry	135,680	5.8
6. Tobacco	113,321	4.9
7. Nurseries	90,000	3.9
8. Eggs	84,000	3.6
9. Other Horticulture	60,000	2.6
10. Irish Potatoes	50,000	2.1
All Others	188,245	8.1

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Swain County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	402,675	100.0
1. Poultry	192,100	47.7
2. Beef Cattle and Hogs	78,000	19.4
3. Trout Ponds	40,000	9.9
4. Native Shrubbery	20,000	5.0
5. Tomatoes	12,600	3.1
6. Christmas Trees	10,000	2.5
All Others	49,975	12.4

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Transylvania County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	1,393,525	100.0
1. Eggs	450,000	32.2
2. Gladiolus	380,000	27.3
3. Milk	146,250	10.5
4. Hogs	145,600	10.4
5. Corn	135,000	9.7
6. Beef Cattle Spring Sale	60,000	4.3
7. Strawberries	28,800	2.1
All Others	47,875	3.5

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Watauga County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	536,271	100.0
1. Vegetables	155,650	28.9
2. Apples	120,000	22.4
3. Small Fruits	100,000	18.6
4. Cattle	85,000	15.9
5. Dairy Products	33,125	6.2
6. Other Crops	25,000	4.7
All Others	17,496	3.3

Projected Gross Increase in Sales, 1961 - 1966, By Enterprise
Yancey County

Enterprise	Gross Increase in Sales	
	Amount	% Gross Increase
All Enterprises	2,267,086	100.0
1. Tomatoes	977,500	43.1
2. Lumber and other Forest Products	314,878	13.9
3. Tobacco	202,400	8.9
4. Dairy	200,000	8.8
5. Beef	163,000	7.2
6. Tourist	100,000	4.4
7. Apples	95,000	4.2
8. Broilers	50,000	2.2
All Others	164,308	7.3

MAJOR PROBLEMS TO BE OVERCOME IN REACHING THE 1967 AGRICULTURAL INCOME GOALS

The responses to this question were extremely difficult to summarize. However, several types of problems were emphasized by many counties. Among these were:

1. The failure of farmers to adopt approved known practices. This problem was mentioned in more than half the county reports. Many reports emphasized that the failure of many farmers to follow such practices is a major barrier to overcome. This is true even though many of these farmers have some knowledge of the approved practices.[1]

2. Related to the first problem is the frequently mentioned problem of "attitudes." Included here were such problems as "resistance to change," "complacency," "fear of change," and "defeatism" or "low morale." The emphasis in this category is upon the way families feel about change rather than upon their knowledge of new practices or techniques. These feelings ranged from active resistance to change because of fear or antagonism to indifference because of "complacency" or a feeling of "defeatism" -- that is, a feeling that decisions and actions on the part of the individual do not really make much difference anyway.

3. Another problem that was frequently mentioned was poor management. Included here was not only the problem of wide-spread ignorance of management principles and techniques, but also the lack of what might be called a "management orientation" on the part of farmers -- that is, their failure to view farming as a business. Also, a number of reports emphasized inadequate knowledge of and poor use of credit.

4. Another problem area causing wide-spread concern was that of marketing and distribution. Included here were inadequate marketing facilities as well as poor marketing practices by farmers. More than one-third of the counties listed some phase of marketing as a major problem to be overcome.

A variety of other problems were listed by a few counties. These ranged from specific technical problems requiring additional research to the problem of cooperative purchase and use of expensive equipment.

The educational approaches and methods suggested for meeting these problems cover the full range of traditional Extension methods. However, the method mentioned by far the most frequently was demonstrations. Most seemed to imply that far more use should be made of demonstrations than in the recent past, with some specifying that they should be carried out in cooperation with Community Development groups, commodity groups, or agri-business concerns.

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1 This emphasis by county reports on practices is in sharp contrast to the emphasis by the speakers at the seminar on Extension Programs on January 5, 1962. See, Summary Report: Extension Program Development Seminar, North Carolina State College, January 5, 1962. A number of speakers at this seminar urged that the Extension Service place less emphasis upon production practices.

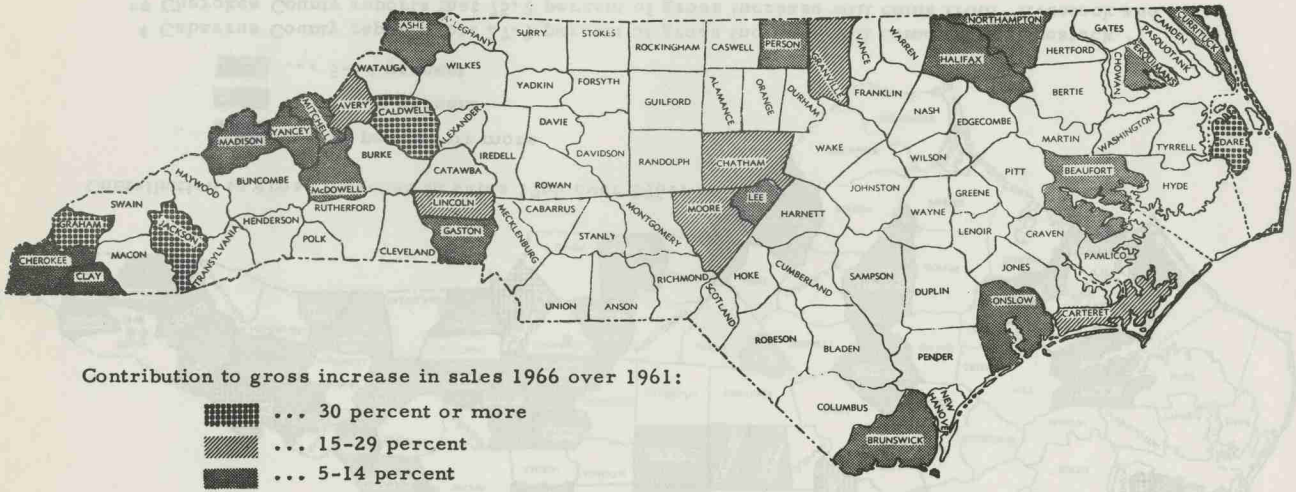
Better use of mass media was also mentioned frequently, as were personal visits to farms.

A number of counties went beyond listing specific methods and suggested that educational programs should be developed and carried out in cooperation with Community Development groups, business and civic groups, and other special interest groups. Others emphasized that there should be closer working relationships with leaders without specifying which groups the leaders were associated with. There seemed to be a widespread feeling that we should establish closer working relationships with other groups.

Family Living Goals for 1967

Here, too, the responses were extremely varied and very difficult to summarize. However, a number of general goals did stand out. By far the most frequently mentioned goal was better housing and facilities (including furnishings). This goal was mentioned in 85 of the 100 reports. Better nutrition was mentioned by more than half the counties, and improved management by almost half. Well over one-third suggested that better community relations was an attainable goal and one-third emphasized the goal of better recreational facilities for both youth and adults.

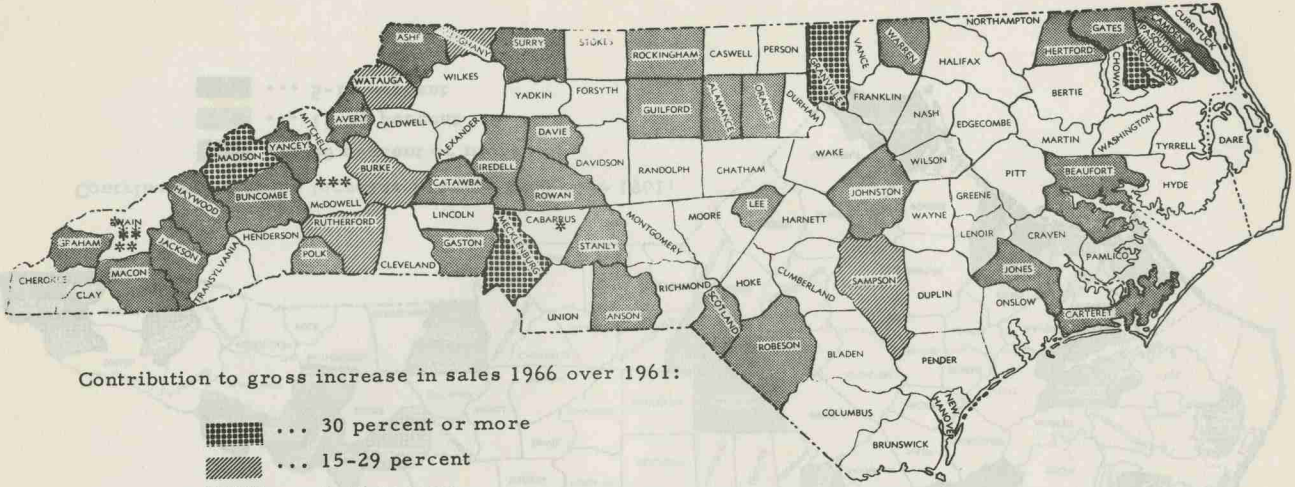
FORESTRY



Contribution to gross increase in sales 1966 over 1961:

- ... 30 percent or more
- ... 15-29 percent
- ... 5-14 percent

CATTLE



Contribution to gross increase in sales 1966 over 1961:

... 30 percent or more

... 15-29 percent

... 5-14 percent

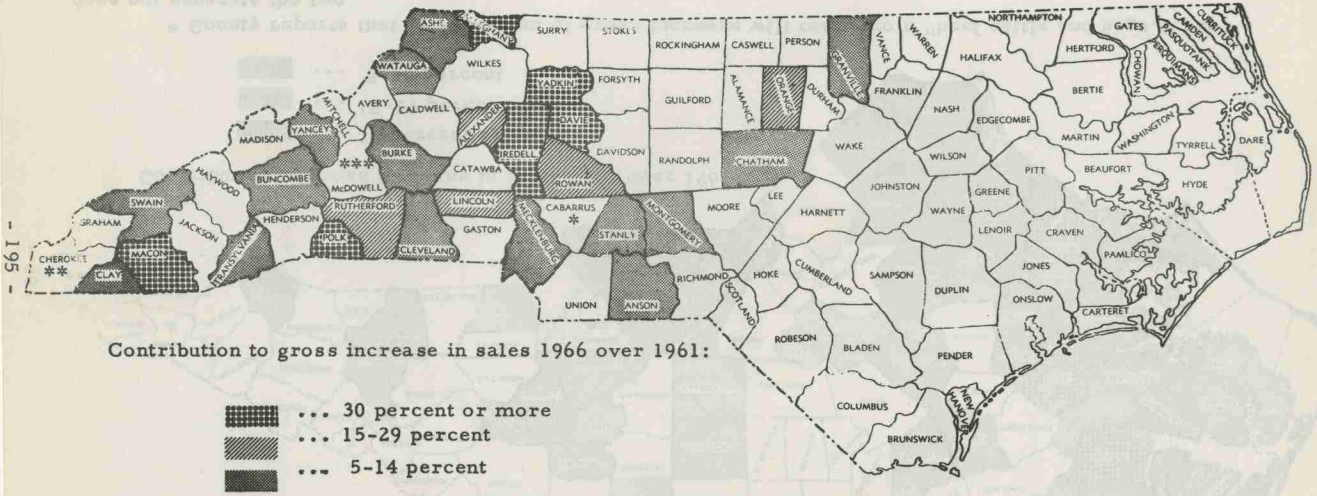
* Cabarrus County reports that 27.9 percent of gross increase will come from "livestock."

** Cherokee County reports that 75.2 percent of gross increase will come from "livestock and livestock products."

*** McDowell County reports that 24.8 percent of gross increase will come from "all cattle and products."

**** Swain County reports that 19.4 percent of gross increase will come from "beef and hogs."

DAIRY



Contribution to gross increase in sales 1966 over 1961:

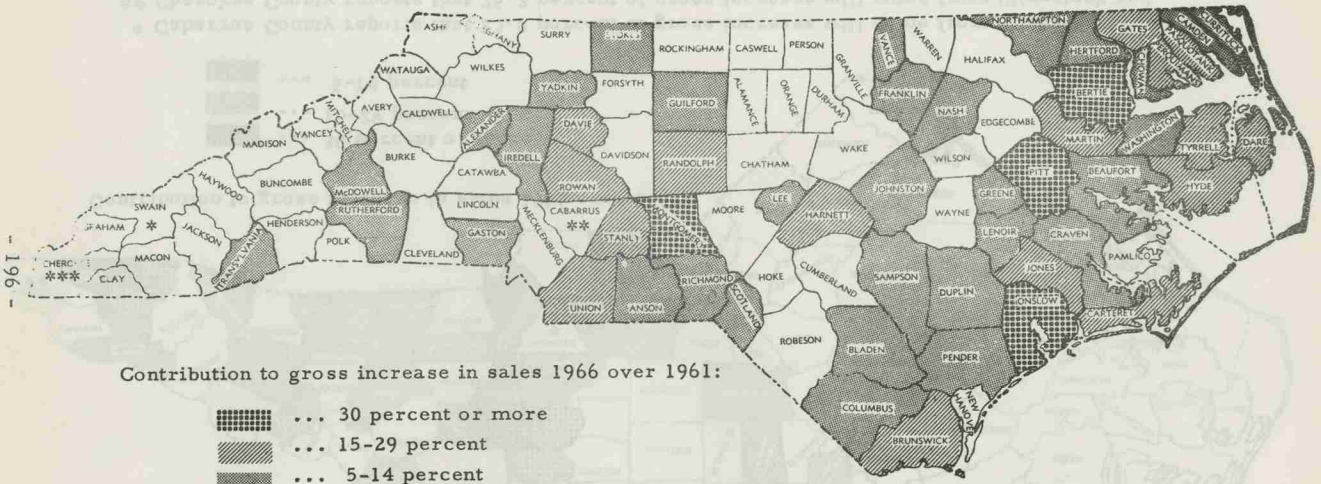
... 30 percent or more
... 15-29 percent
... 5-14 percent

* Cabarrus County reports that 23.0 percent of gross increase will come from "livestock products."

** Cherokee County reports that 75.2 percent of gross increase will come from "livestock and livestock products."

*** McDowell County reports that 24.8 percent of gross increase will come from "all cattle and products."

SWINE



Contribution to gross increase in sales 1966 over 1961:

... 30 percent or more

... 15-29 percent

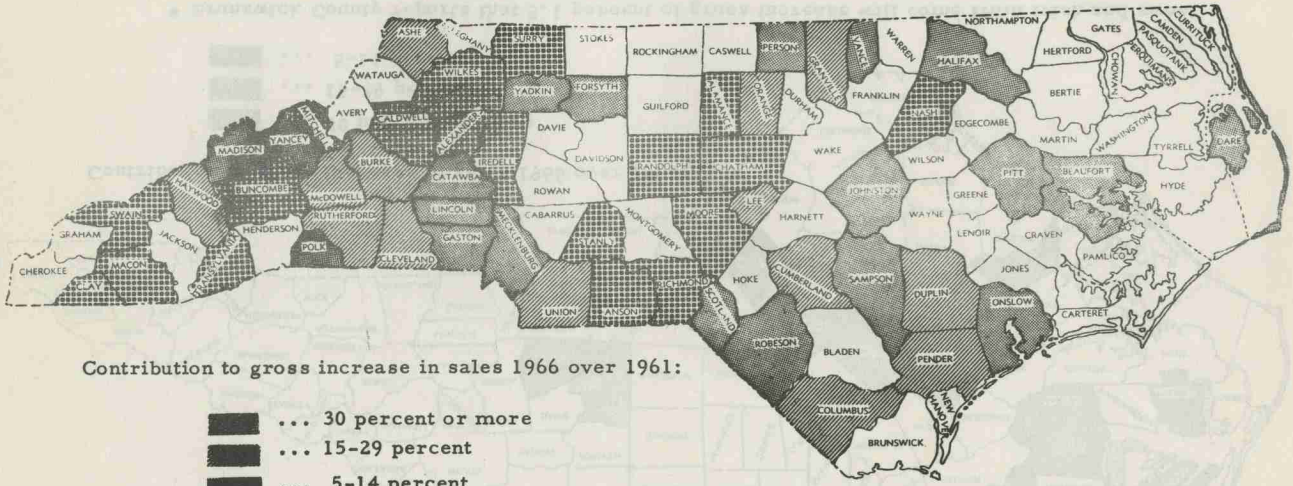
... 5-14 percent

* County reports that 19.4 percent of gross increase will come from "beef cattle and hogs," but does not separate the two.

** Cabarrus County reports that 27.9 of gross increase will come from "livestock."

*** Cherokee County reports that 75.2 percent of gross increase will come from "livestock and livestock products."

POULTRY



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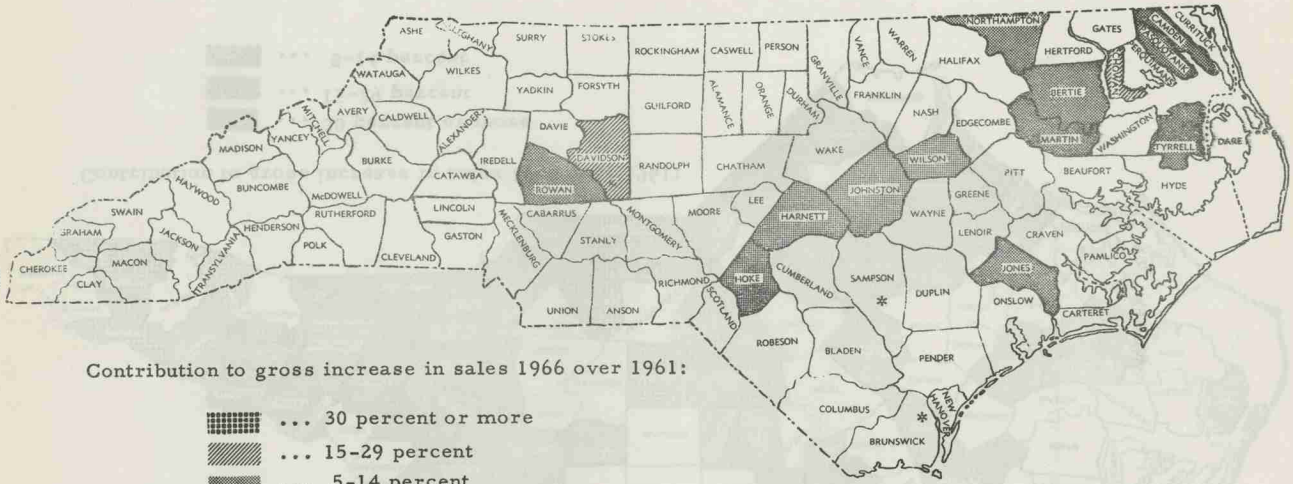
... 5-14 percent

SWEET POTATOES



Contribution to gross increase in sales 1966 over 1961:

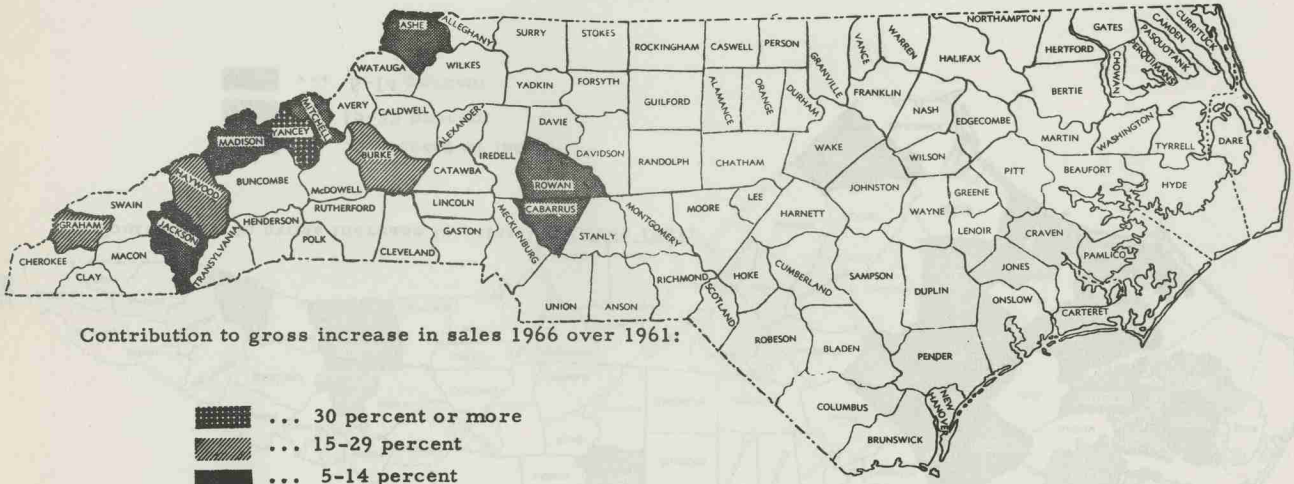
... 30 percent or more

... 15-29 percent

... 5-14 percent

* Brunswick County reports that 5.1 percent of gross increase will come from Irish and sweet potatoes, and Sampson County reports that 8.1 percent of gross increase will come from Irish and sweet potatoes. The counties do not separate Irish and sweet potatoes.

TOMATOES



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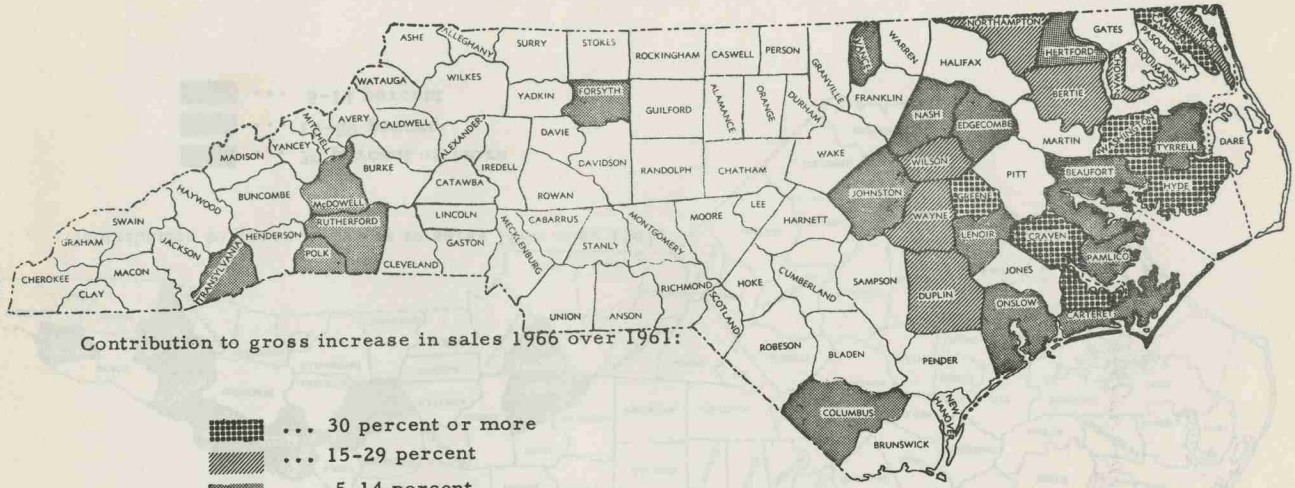
... 5-14 percent

CORN



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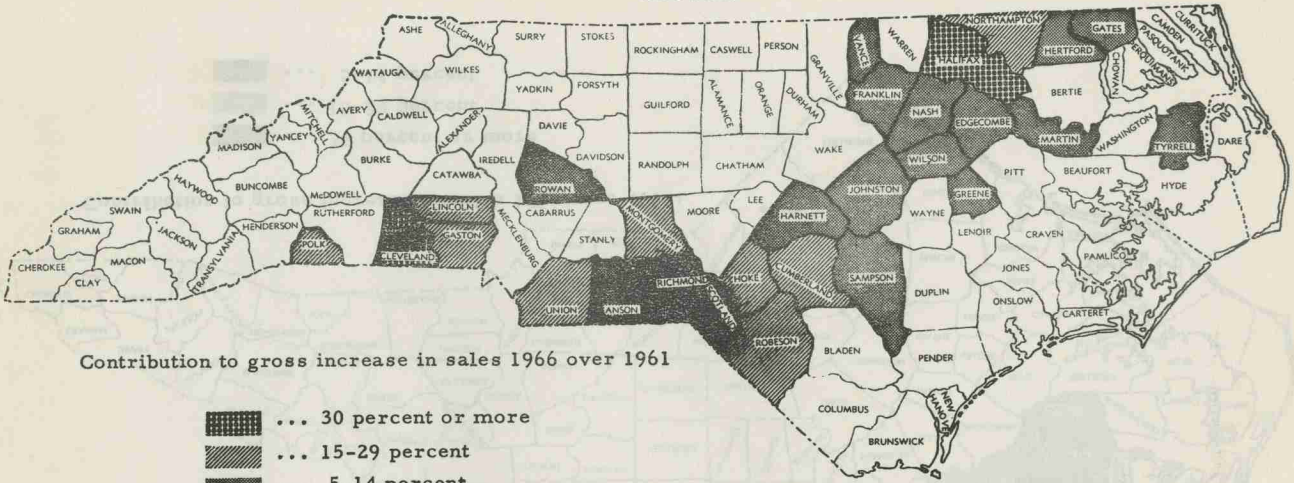
... 15-29 percent

... 5-14 percent

COTTON



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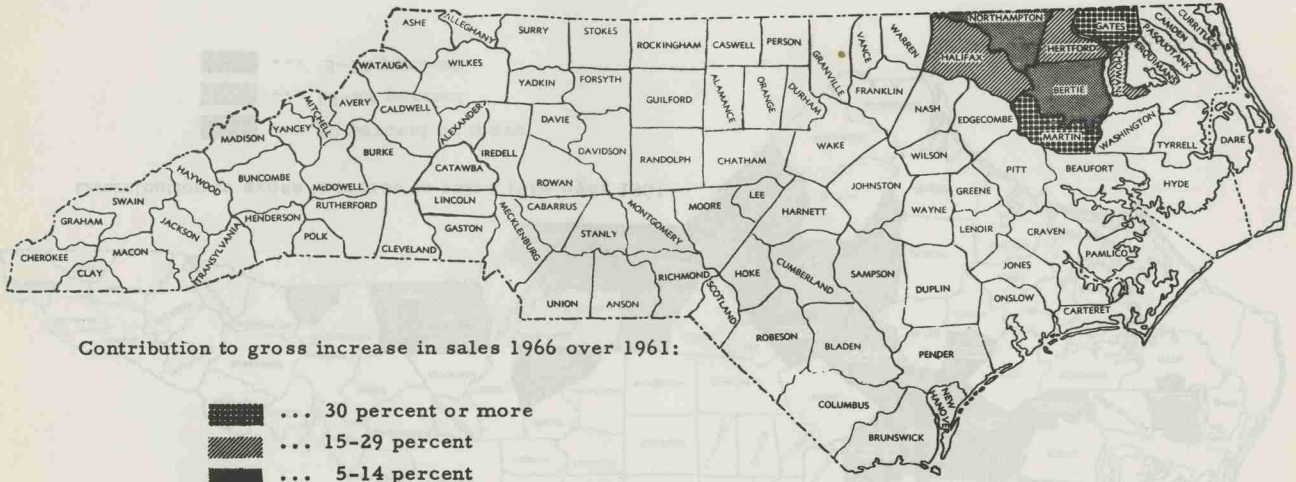
... 15-29 percent

... 5-14 percent

PEANUTS



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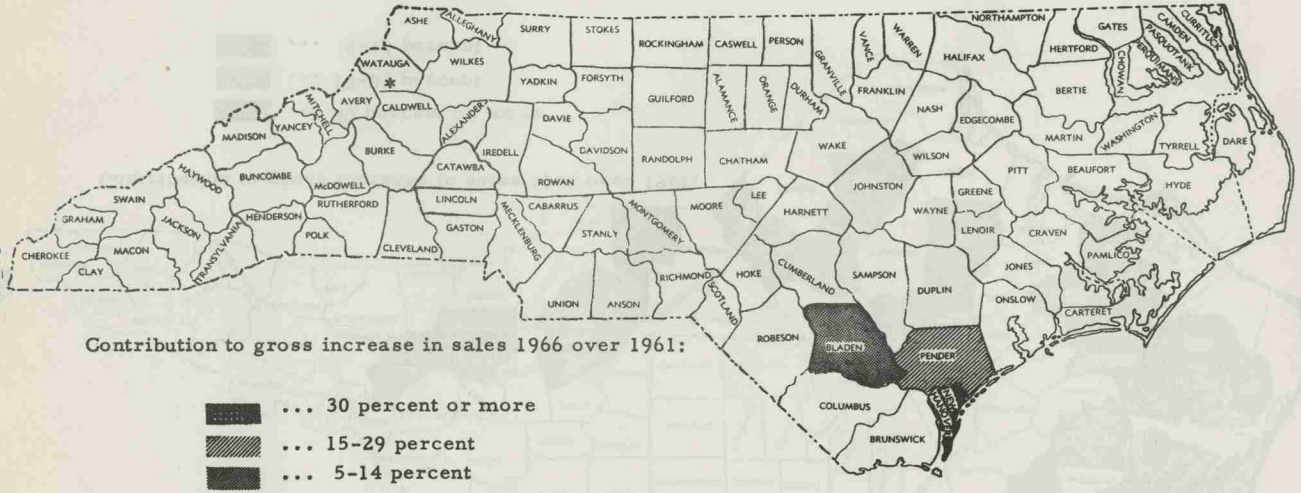
... 5-14 percent

BLUEBERRIES



Contribution to gross increase in sales 1966 over 1961:

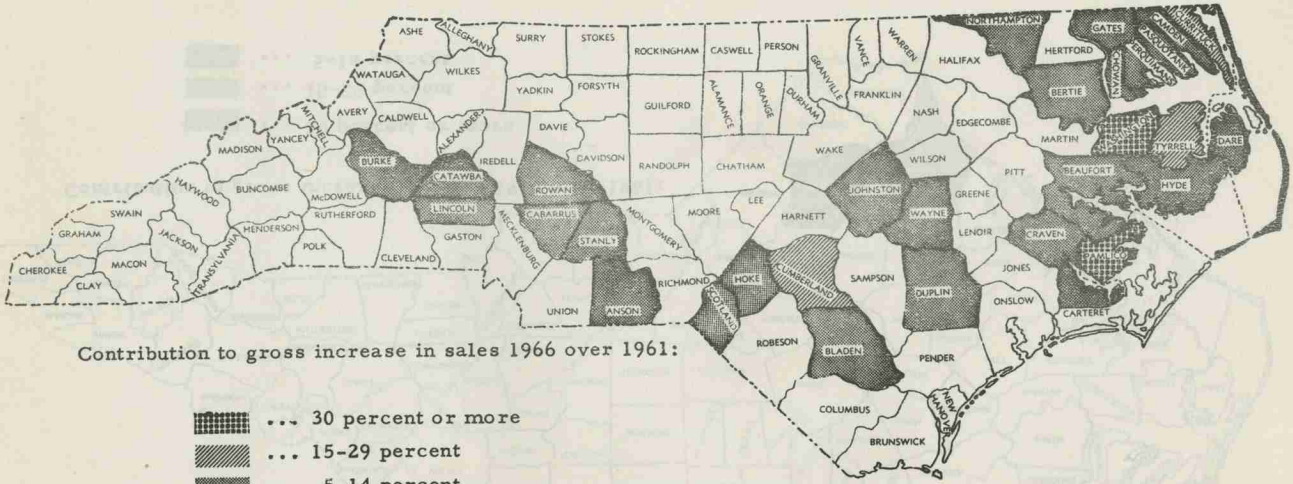
... 30 percent or more

... 15-29 percent

... 5-14 percent

*Watauga County reports that 18.6 percent of gross increase will come from "small fruit."

SOYBEANS



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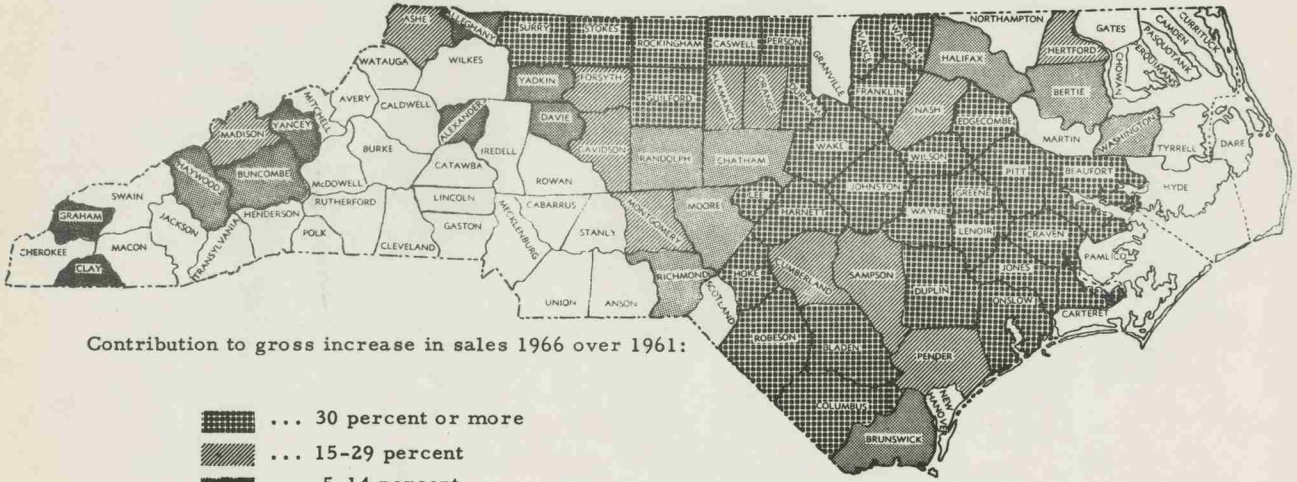
TOBACCO



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