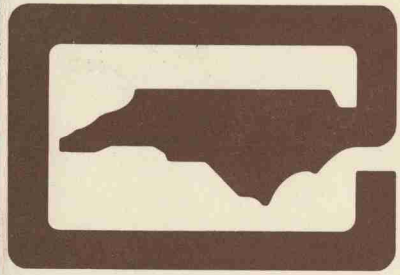
Plan of Work

October 1, 1982 – September 30, 1983



north carolina

AGRICULTURAL EXTENSION SERVICE

a&t and n.c. state universities

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TABLE I. PLANNED ALLOCATION OF EXTENSION PROFESSIONAL STAFF YEARS
BY PROGRAM AREAS AND PROGRAM COMPONENTS 1/
1862 INSTITUTIONS
FY 83

PROGRAM COMPONENTS (See definitions in Section III)	PROGRAM AREAS 2/									
	ANR		CRD		HE		4-H		TOTAL	
	83 No.	88	83 No.	88	83 No.	88	83 No.	88	83 No.	88
1. Crop production	188.0	190.0					2.0	2.0	190.0	
2. Livestock production	101.9	104.0					7.5	8.0	109.4	
3. Bus. mgt. & economics	36.9	30.0							36.9	
4. Agr. mkg. & farm supplies	15.0	17.0					1.0	1.0	16.0	
5. Natural resources	37.3	39.0	3.8	4.0					41.1	
6. Mech. sc., tech. & engnr.	5.4	4.8							5.4	
7. Safety							1.3	1.0	1.3	
8. EFNEP-Fed. funded 3/					17.7	17.0	6.0	6.0	23.7	
EFNEP-Non-fed. funded										
9. Food and nutrition					45.1	45.0	1.0	1.0	46.1	
10. Pers. & fmly. res. mgt.					26.1	27.0	1.0	1.0	27.1	
11. Family life, etc					32.5	32.0	1.2	1.0	33.7	
12. Textiles and clothing					30.4	30.0	1.3	1.5	31.7	
13. Human health					2.2	3.0			2.2	
14. Housing & home environment					44.8	43.0			44.8	
15. Leadership development			5.1	7.0	7.9	7.0	61.5	60.0	74.5	
16. Org. devel. & maintenance			1.6	1.0	7.1	6.0	59.0	59.0	67.7	
17. Comp. comm. planning			9.9	12.0					9.9	
18. Comm. ser. & facilities			8.3	10.0					8.3	
19. Ec., dev., mpwr. & careers			1.6	2.0					1.6	
20. Govt. oper. & finance										
21. Leisure & cult. education			.6						.6	
TOTAL BY PROGRAM AREA	384.5	384.5	30.9	36.0	213.8	210.0	142.8	141.5	772.0	772.0
GRAND TOTAL										

1/ Staff year allocations account for total available FTE's. Calculate to one decimal place. Staff resources allocated to administration, management, staff development, etc., are to be allocated to relevant program components and program areas. This table should account for all staff years available in 1862 Institutions.

2/ Include planned allocations for 1983 and an estimation of allocations for 1988. 1988 allocations should be based on the long range plans developed within the State.

3/ Staff time allocated to EFNEP should be consistent with the EFNEP budget guidelines.

TABLE III. PLANNED ALLOCATION OF PARAPROFESSIONAL STAFF YEARS BY PROGRAM AREA 1/
1862 INSTITUTIONS
FY 83 STATE North Carolina

PROGRAM AREA		PARAPROFESSIONAL STAFF 2/	
		1862	
		Number in 1983	Number in 1988
ANR			
CRD			
HE	EFNEP--Federally funded	115.5	116.0
	EFNEP--Non-federally funded		
	OTHER		
4-H	EFNEP-Federally funded	49.5	49.0
	EFNEP--Non-federally funded		
	Other	42.0	40.0
TOTAL		207.0	205.0

1/ Staff year allocations are to account for total available FTE's. Calculations should be carried to one decimal place. Staff resources allocated to administration, management, staff development, etc., are to be allocated to relevant program areas. This table should account for all available staff years.

2/ Include planned allocations for 1983 and an estimation of 1988 allocations based on the long range plans developed within the State.

PLAN OF WORK
FY 83
NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

General

During FY 83 employees of the North Carolina Agricultural Extension Service will be working with the Advisory Leadership System (State Advisory Council and the advisory leadership structure in each county) to develop a new long-range plan. Already the State Steering Committee and the respective program committees have been appointed and charged with their missions.

Concurrently, the N. C. Agricultural Extension Service will be undergoing a process of self-examination, evaluating options for redirection for more effective program delivery. In recent years, the state's Extension programs have been scrutinized by various outside review groups (study committees, commodity organizations, departmental comprehensive reviews, etc.), but the people working within the organization have not had the opportunity to make formal input into the evaluation process. Four committees (Extension Delivery Systems, Mission, Leadership System and Programming Process, and Personnel Development and Management) and two task forces (Affirmative Action and Accountability) have been established. These study units will feed recommendations through the State Steering Committee to the Director's Office.

During FY 82 testimony was completed in the Civil Action in Federal Court against the N. C. Agricultural Extension Service alleging discriminatory practices in employment. At the time of this writing (August 9, 1982) a finding has not been rendered by the judge. When such action is taken by the court, it is likely that substantial commitment of time will be required at all levels within the N. C. Agricultural Extension Service to ensure that compliance with any directives of the court is achieved.

One significant shift in methods is occurring throughout the N.C. Agricultural Extension Service. Specialists and agents are making use of data processing hardware and software, both in interactive problem solving and in information delivery. Various office functions are now being performed by microcomputers also. Using largely grant and carryover funds, microcomputers have been placed in 17 county offices and 10 Extension departments. During FY 83, it is anticipated that more counties will receive microcomputers and these will be linked to a mini-computer. Within three years all county offices should have access to such equipment, and additional inventory, word processing and other functions will be computerized.

NARRATIVE STATEMENT
AGRICULTURE AND NATURAL RESOURCES

Crop Production

Corn

1. Needs Assessment

   a. Despite sizable acreage reductions in other southeastern states, North Carolina corn acreage remains around 1,800,000 acres.

   b. Producers fail to integrate a series of critical practices into a total production package.

   c. Conservation tillage and irrigation technology is changing so rapidly that it is difficult for agents and producers to stay abreast of developments.

   d. Farmers lack information on double-cropping small grains and corn for silage, and on corn versus grain sorghum to cope with barren stalk and cyst nematodes in the Blacklands.

   e. Fewer than 10 percent of producers in the Piedmont and mountains understand the integrated pest management concept well enough to implement it on their farms.

   f. Farmers are harvesting corn earlier, and this puts a strain on the capacity of the grain dryer.

   g. Gray leafspot is of major concern to producers in the mountains.

2. Objectives

   a. Emphasize timeliness and uniformity in the development of a systems approach to corn production.

   b. Collect, develop and transfer to agents information on conservation tillage and irrigation practices in an on-farm test format.

   c. To use the on-farm test to characterize the potential for grain sorghum in the Blacklands and double-cropping of small grains and corn for silage in western North Carolina.

   d. To implement sound insect management principles.

   e. To develop better techniques for no-till corn seedling insect control.

   f. Improve the corn billbug management program.

g. In cooperation with the N. C. Association of Corn Growers, to determine if Extension storage and drying recommendations are adequate to prevent development of aflatoxin.

h. To evaluate cultural practices to reduce losses due to gray leaf spot.

i. To increase corn yields through improved variety selection and choice of cultural practices.

j. To provide Blackland farmers with an alternate crop through development of grain sorghum practices for highly organic soils.

3. Methods

a. Applied studies will be directed toward maximum yields, improved nitrogen utilization on no-till corn planted into rye, overseeding and utilization of legumes as nitrogen sources, effects of varietal selection and variable management levels on irrigated corn yields, grain sorghum systems for soils high in organic matter, and varieties for double-cropping.

b. The on-farm test approach will be highly effective as a demonstration tool.

c. Agent training and producer meetings.

d. Continue the study on 11 farms of aflatoxin development under various drying and storage conditions.

e. Conduct demonstrations on virus diseases of field corn.

Cotton

1. Needs Assessment

a. Cotton continues to be an attractive crop on lighter land and in peanut rotations, but growers are seeking information on optimizing inputs, increasing yields and reducing costs.

b. Many clientele problems are routine, but the most commonly cited problem by both growers and agents is effective weed management.

c. Cotton is the state's most sophisticated crop in terms of insect management.

d. Cotton diseases caused a $2.9 million loss in 1981.

2. Objectives

   a. To evaluate products, practices and management systems through on-farm tests.

   b. To monitor the population of major yield-reducing insects.

   c. To emphasize new registered products and combinations in insecticide screening tests.

   d. To conduct large-scale testing of Extension's recommended versus a biological approach to bollworm management.

   e. To field test a potentially bollworm-resistant cotton variety.

3. Methods

   a. Continue five-six regional cotton scouting schools.

   b. Continue the Cotton Insect Newsletter.

   c. Maintain present level of 18-20 black light traps.

   d. Continue cooperative pheromone trapping with USDA.

   e. Results and interpretations from on-farm tests will be extended to agents and growers via newsletters, production guides, meetings and personal contacts.

Forage Crops

1. Needs Assessment

   a. There are over 2,000,000 acres of land in North Carolina devoted to forages.

   b. Much of the land of the state should be in forages at least 50 percent of the time to avoid significant soil losses.

   c. Feed demands, for at least part of the year, exceed the supply because of poor species selection, low fertility soils, and lack of adequate fertilization.

   d. Growers are not making enough use of the high quality legumes.

2. Objectives

   a. To help producers select adapted varieties through the Official Variety Testing Program.

   b. To keep agents trained and farmers informed through the on-farm test and demonstration programs.

c. To illustrate the benefits of adopting Extension recommendations through a comprehensive forage-beef cattle demonstration.

d. To achieve significant reductions in energy consumption and improved soil and water conservation and quality.

3. Methods

a. Several official tests on farms and research stations to evaluate varieties.

b. Develop tours and field days around on-farm tests.

c. An interdisciplinary team will cooperate in maintaining the comprehensive forage-beef demonstration.

4. Evaluation

a. Measure benefits and effectiveness of methodology by monitoring:

(1) Acreage changes for alfalfa and other forage crops.

(2) Changes in forage testing results

(3) Changes in soil testing results

(4) Seed sales of legumes or specific varieties

(5) Attendance at field days; questions at meetings

(6) Income over feed cost for dairymen as recorded by DHIA

Peanuts

1. Need Assessment

a. Because of changes in peanut legislation, peanut growers are operating in a two-price market system that requires considerable marketing skills to make a profit.

b. The rapidly rising cost of pesticides has created an interest and awareness among growers in better management of pests.

c. Fuel costs for drying and processing continue to increase.

d. Because of the short harvest period for peanuts, there is a tendency to dry them too fast--reducing quality.

e. Peanut diseases caused an estimated loss of 18% in 1981 ($33.2 million).

2. Objectives

a. To help growers produce peanuts as economically as possible.

b. To reduce over use of chemicals in peanut production.

c. To encourage growers to adopt Integrated Pest Management principles; expand use of scouting programs.

d. To develop information on the most profitable mix of production inputs.

e. As a result, growers will produce peanuts as economically as possible and market them at a profit.

f. To change agricultural agent, grower and agribusiness attitudes on use of insecticides from present "no damage tolerance" to acceptance of economic thresholds and spray-as-needed concept.

g. The adoption of an insect management program for insects and mites could result in a savings of 10-25 percent of the total cost of insect control on peanuts.

h. To develop a technique for recirculation of the drying air to conserve energy in peanut curing.

i. To develop pesticide application thresholds for all the major diseases.

3. Methods

a. Traditional Extension efforts such as demonstrations, meetings, tours, field days and personal contact will continue to stress fertility, pest control, variety evaluations, management practices and marketing alternatives.

b. Use on-farm tests to develop information on the most profitable mix of production inputs.

c. An interdepartmental demonstration will illustrate the value of insect resistance, interactions of pesticides and their effect on production.

d. A one-day workshop on the principles of crop drying and storage is planned.

e. Test newly developed "controlled droplet application" equipment.

f. Develop a peanut leafspot forecasting system.

4. Evaluation

A joint project in cooperation with the IPM coordinator will be undertaken to evaluate the effectiveness of different sampling methods in scouting peanuts for insect pests.

Small Grain

1. Needs Assessment

   a. Small grain production has increased substantially for the fifth consecutive year and remains at its highest level in several years in spite of weather, disease and marketing problems.

   b. Growers have problems with inadequate fertility levels, poor weed control, poor disease control, lack of an overall IPM program, and inadequate marketing.

   c. Increasing amounts of grain are being stored on North Carolina farms and severe storage shortages are envisioned.

   d. Many farmers who store grain are not properly protecting this grain as it enters storage.

2. Objectives

   a. Ninety percent of the growers are expected to choose the best varieties available for their specific needs and execute the best management practices by following recommendations and making better use of market strategies and alternatives.

   b. As a result of grower and Extension efforts, millions of dollars will be saved, and growers will improve water quality, save time and energy, and realize an increase in profits.

   c. With less than a $100 effort for labor and materials, a farmer will protect a 3,000-bushel bin valued at $10,000 or more against virtually all pests.

   d. Added emphasis on IPM will increase participation by commercial Piedmont farmers from the present 15 percent to 25 percent.

3. Methods

   a. Communication activities include mass media; development, revision and updating of educational materials; and conducting production meetings, field days and on-farm tests.

   b. A wheat yield test will be continued.

   c. Packaged programs on protecting stored grain products will be developed for agents' use.

Soybeans

1. Needs Assessment

   a. Many existing growers are interested in increasing yield levels to cover production costs, given unfavorable price prospects.

   b. Many growers are just starting to consider soybeans as a cash crop and demand help with basic production decisions.

   c. Emphasis in the educational program is most needed on liming and fertility, pest management, varieties, and refinement in precision of execution of decisions.

   d. Income loss due to insect pest yield reduction and control cost (including feed grains) exceeds $10 million annually.

   e. Soybean diseases caused by nematodes, especially the soybean cyst nematode, reduce yields more than any other group of pathogens.

2. Objectives

   a. To raise yield levels and reduce impact of unfavorable growing seasons as a means of increasing grower profits.

   b. To increase percentage of soybean fields soil tested as a means of improving efficiency of lime and fertilizer use.

   c. To increase effectiveness and efficiency of pest control, as integrated for all pests on the total farm (or group of farms) as well as dealing with specific pests such as morningglories, broadleaf signalgrass, sicklepod, johnsongrass, and corn earworm.

   d. To help growers and agents keep abreast of new varieties, and to encourage adoption of those varieties considered likely to improve long- and short-range profits.

   e. To help growers and agents keep abreast of new and useful information on marketing, water management, irrigation, row width, seed quality, population, soil conservation, inoculation, tillage, no-till, nematodes, harvesting, storage and double-cropping.

   f. Expected results:

      (1) An increased yield level of 1 bushel/acre above that level that can be attributed to weather influences.

      (2) An increase of 150 soil samples analyzed for soybeans in 1982.

      (3) A maintenance of the record high tonnage of lime applied last year in North Carolina.

(4) A decrease of 3 percent in the number of pest problems reported or observed which were aggravated by management decisions for other pests.

(5) An increase of 2 percent in the number of reports and observations of substantially improved control of previously troublesome pest problems.

(6) A decrease of 3 percent in the percentage of acreage using the three most popular varieties.

(7) A noticeable increase in the level of knowledge and understanding expressed by growers in questions raised by marketing, water management, irrigation, row width, seed quality, population, soil conservation, inoculation, tillage, no-till, nematodes, harvesting, storage and double-cropping.

g. Evaluate and demonstrate methods of soybean cyst nematode control in no-till systems and under conventional tillage.

3. Methods

a. At least 250 on-farm tests and demonstrations to help train agents, specialists, agribusiness personnel and growers.

b. Pest management scout training sessions to upgrade competence of both private and Extension-hired scouts.

c. Numerous county, several multi-county and at least one regional tour of on-farm tests and demonstrations to capitalize on educational opportunities they represent.

d. A field day to educationally utilize a location with 20-30 acres of pest management plots, showing both innovative opportunities and common mismanagements.

e. A series of pesticide dealer schools to help educate pesticide dealers.

f. Seventeen county-managed IPM programs involving soybeans to help learn what is required to conduct such a program effectively and efficiently.

g. A regional crops specialist to collect information and train agents and ultimately growers about cropping systems, including soybeans.

h. Pest management for new agents and soybean production training sessions for agents at the State Extension Staff Conference.

i. Timely memos, bulletins and charts to agents on topics of interest to soybean producers.

j. Support with personnel and visuals of county soybean production meetings.

k. Continue a long-term study to assign soybean fields to insect risk categories based upon key parameters (such as variety, planting date, canopy development, and phenology of local crops).

l. Demonstration plots, producer and agent training, publications and mass media releases on nematode problems in soybeans.

4. Evaluation

a. Estimates of state yields will be made by the Extension Soybean Coordinating Committee in consultation with the N. C. Crop Reporting Service.

b. Number of soil samples tested will be obtained from the N. C. Department of Agriculture Soil Testing Lab records.

c. Lime usage data will be obtained from NCDA Fertilizer Division records.

d. The Extension Soybean Coordinating Committee will establish magnitude of changes in percentage of pest problems aggravated by management decisions and in level of understanding and knowledge expressed by growers.

Seed

1. Needs Assessment

a. North Carolina seedsmen are major suppliers of soybean and small grain seed throughout the Southeast, yet 80 percent of their contract growers lack adequate training in seed production technology.

b. Operators of seed harvesting and handling equipment lack the knowledge or motivation to make needed and frequent adjustments to avoid mechanical injury to seeds.

c. Many growers experience marginal plant stands because they are not careful in choosing and planting crop seeds.

2. Objectives

a. To provide training to contract growers on the details of producing, harvesting, handling, and storing high quality seed.

b. To provide training and educational materials to Extension agents on seed selection and use.

c. To establish on-farm tests in seed production and seed use.

d. A 10 percent improvement in quality of seed produced in North Carolina in 1983 is expected.

e. A $5-$10 million savings to N.C. farmers is expected to result from optimum selection and use of seed supplies.

Tobacco (Burley)

1. Needs Assessment

a. Underproduction of quotas, increased production costs, and scarcity of labor are the major problems facing burley growers.

b. Growers and their agribusiness advisors often make inappropriate insecticide choices or use inappropriate methods of application.

c. Burley is economically important to western North Carolina, but is subject to annual disease losses amounting to an average of 8 percent.

2. Objectives

a. The Extension Service will encourage full production of quotas, advocate accepted production methods to reduce costs, and promote labor-saving methods to reduce man-days of labor required.

b. Full production of quotas would result in a consistent income in excess of $40 million for the burley area.

c. To encourage grower acceptance of loose leaf marketing.

d. To teach growers why things happen as they do in relation to disease.

3. Methods

a. The educational program will include on-farm tests, producer meetings, an agent training meeting, field tours, and farm visits.

b. Special emphasis will continue on publicizing the lease and transfer provision of the current quota program.

c. On-farm tests and publications will supplement agents' efforts in acquainting growers with burley disease control measures.

Tobacco (Flue-Cured)

1. Needs Assessment

a. The major problem facing producers in 1983 is that of producing quality leaf efficiently for sale at prices more competitive in world markets as compared to recent years.

b. Flue-cured growers must reduce nitrogen rates and maleic hydrazide residues.

c. An improved topping and sucker control program is needed to increase net profit and improve leaf quality.

d. Leadership at the grower level is lacking.

e. Remedial chemical insect controls are often poorly timed by farmers.

f. Beneficial insect controls are not utilized or are underutilized, partly because of misidentification of beneficials and limited knowledge of their biology.

g. About half of the state's crop production energy is used in curing tobacco.

h. More automatic processing controls are appearing on the market.

i. During 1981, N.C. flue-cured growers lost an estimated $61,044,000 to diseases.

2. Objectives

a. The educational program will emphasize more reliance upon use of contact sucker control chemicals and less use of maleic hydrazide.

b. To teach growers to examine the "plant food" cost of fertilizer rather than the price per ton.

c. To demonstrate the effects of cultural practices on pest numbers.

d. To provide assistance in organizing young farmer groups.

e. Tobacco quality and demand are expected to improve as a result of reduced MH residues, and fertilization costs are likely to be reduced.

f. To speed and improve the flow of pest information from the field to specialists and researchers, improve prediction and alert capabilities, and speed the flow of prediction and alerts to the county and farm level.

g. At least one-third of the 126 million gallons of fuel used annually in curing tobacco could be saved. In FY 83, 30 million gallons are expected to be saved, with 24 farmers using no fossil fuel at all for curing--an approximate $200 per acre expense reduction.

h. To save $3500 per year in curing costs for 10 bulk barns by stopping energy leaks.

3. Methods

a. Agent training sessions, on-farm tests, meetings, tours and mass media will be used to educate the clientele. Short courses and executive seminars will be used with selected clientele.

b. A four-day short course for 50 young tobacco farmers will be conducted through a grant provided by Philip Morris, USA.

c. Effort will be focused on the green peach aphid and the tobacco flea beetle in on-farm demonstrations.

d. A do-it-yourself approach will be stressed in counties where small acreages make formal IPM programs impractical.

e. A computer-based information gathering, prediction and alert system will be developed.

f. A bulletin will be prepared to explain the function and operation of automatic controls in tobacco curing.

g. On-farm energy audits will be conducted to show tobacco farmers how to cut curing costs by 15 percent by low-cost or no-cost measures.

h. Conduct 40 large on-farm tests involving all major diseases and varietal, chemical, and cultural approaches to management.

Turf

1. Needs Assessment

a. Many homeowners and turf managers do not know which turfgrasses are best adapted to the climatic regions of North Carolina, or which turfgrasses perform best for the particular purpose peculiar to a specific turf installation.

b. The regional turfgrass associations and the Turfgrass Council offer opportunities to reach more turf managers and others with information.

c. The annual maintenance cost for the state's 375,000 acres of commercial turf is over $50,000,000 and for home lawns is $1,000,000.

d. The annual losses from diseases in the state on turf exceed $30 million per year.

2. Objectives

a. To acquaint homeowners and turf managers with the technology of turf establishment.

b. A major effort will be made to improve the skills and understanding of commercial turf managers and selected agents on identification, management and control of insect problems.

c. To identify diseases of turfgrasses, suggest appropriate control methods, provide information to county agents, homeowners, and turf managers on diseases and nematodes, and to evaluate chemicals for disease and nematode control.

3. Methods

a. On-site tests and demonstration plots will be established and presently-established sites will be upgraded.

b. Publications and slide sets will be updated and/or revised.

c. County Extension agents will be invited to attend an in-depth workshop on turf insect identification and management.

d. Turf managers will have an opportunity to attend a statewide turf conference, meetings with five regional turfgrass associations or in-depth workshops on pest management.

e. Prepare information for distribution to agents and growers on disease resistance and disease diagnostic services.

Weed Management

1. Needs Assessment

a. Crabgrass and other annual weedy grasses limiting alfalfa production.

b. Dairy and beef producers fail to realize the detrimental effects of johnsongrass upon corn silage quality.

c. Weeds in farm ponds and other impoundments reduce the quantity and quality of water for irrigation, livestock watering, recreation and human consumption.

d. Hydrilla has become established in North Carolina.

e. Noncrop weeds such as kudzu, multiflora rose, honeysuckle, and Japanese knotweed are creating serious problems in fence rows, around buildings, and in field borders and pastures.

2. Objectives

a. As a result of the educational program, growers should be able to select economical programs to reduce weed competition which will maximize yield potential.

b. To examine, in on-farm tests, the efficacy of new postemergence applied herbicides. Consequently, no-till soybean production may be extended into areas where currently the weed problems limit expansion.

c. To provide more adequate training to Extension agents in aquatic and non-cropland weed management.

3. Methods

a. On-farm tests will emphasize integrated weed management programs for specific weeds in each crop.

b. A regional demonstration on proper herbicide application will be held.

c. A nozzle demonstration will be constructed for recertification training of dealers and applicators.

d. Dye studies will be used to investigate lower spray volumes.

e. Conduct agent training at annual conference and several on-site locations.

f. Brochures dealing with weed identification and herbicide selection for use in aquatic habitats will be developed for distribution to county Extension offices.

g. Mass media will continue to be used to inform the public of special weed problems such as hydrilla.

Apiculture

1. Needs Assessment

a. Beekeeping in North Carolina has a direct value of over $6 million in honey sales and an indirect value of $30-$35 million from the pollination function in crop production.

b. The beekeeping clientele consists of both commercial beekeepers and hobby beekeepers.

2. Objectives

a. Primary emphasis this year will be devoted to the needs of hobby and small-scale beekeepers.

b. Through the "Master Beekeeper Program" to train a cadre of competent individuals who can aid in instruction of new beekeepers.

3. Methods

a. Demonstration tests on the value of bee pollination.

b. Produce television programs and videotapes on the value of pollination.

c. Novice beekeepers will be trained through short courses, newsletters, and subject matter meetings.

d. Co-sponsor with N. C. State Beekeepers Association a Master Beekeeper Program with certified, journeyman, master and master craftsman beekeeper levels.

Vegetable Crops

1. Needs Assessment

a. North Carolina's vegetable crops were valued at over $225 million in 1981.

b. An increasing number of growers are looking to new vegetable crops as a way of increasing income, especially asparagus and broccoli which are becoming established as commercial enterprises.

c. Growers of some transplanted crops may invest $2,000 per acre before harvest begins, making losses due to crop failures difficult to recover.

d. Information for sound pest control decisions is often lacking or not readily available.

e. Early blight causes annual losses of near 10 percent to the $10 million trellised tomato crop.

2. Objectives

a. Efforts will continue in evaluation of new and old vegetable varieties.

b. Continue work on seed stock improvement in sweet potato through Yam Alert and grow-out plots to evaluate certified plant growers' stocks.

c. Continue demonstrations with trickle irrigation on melons, cucumbers and other crops as a way of increasing earliness, quality and yield.

d. Give special attention to asparagus and broccoli to develop these two crops into important commercial agriculture enterprises.

e. Special emphasis will be placed on agent training by assisting them in the conduct of on-farm tests. This effort will largely be done on small farms.

f. Continue testing gensing and establishment of on-farm test in western North Carolina.

g. An increase in value of vegetable production of at least 12 percent is expected.

h. Broccoli production will become established as an important commercial vegetable with an annual value of over $1 million.

i. North Carolina will become a larger shipper and packer of quality cantaloupes.

j. The efforts in post-harvest handling will result in greater acceptance in the marketplace for N.C. produce.

k. Master Gardener will be set up in 10 new counties with supporting volunteers.

l. Value of roadside and pick-your-own sales will continue to rise.

m. To reduce the losses attributable to insects and/or the cost of their control.

n. To provide vegetable growers with improved and new integrated disease control protocols.

3. Methods

a. Conduct on-farm demonstrations on drip irrigation, plastic and early production practices, varieties, insect and weed control, fungicide use, spacing and fertility.

b. Provide current information to growers and agents through bulletins, newsletters, radio, television and on-farm visits.

c. Assist N.C. Vegetable Growers Association, N. C. Roadside Market and Pick-Your-Own Association, N. C. Greenhouse Vegetable Growers Association, and N. C. Yam Commission.

d. Coordinate Master Gardener Program.

e. Conduct workshops, grower/shipper meetings and demonstrations on post-harvest handling.

f. Conduct agent training at terminal markets.

g. Conduct cooperative insect monitoring, assessment and daily reporting through use of blacklight traps, sex pheromone traps, trap crops and field sampling.

h. Pest diagnostic clinic services, publications, slide sets, weekly pest alert tapes, newsletters and insect/damage specimens will be made available.

i. A vegetable pest manual will be available in the spring of 1983.

j. Conduct early blight control tests on trellised tomatoes and provide pest situation updates.

Tree Fruits

1. Needs Assessment

a. In 1981 tree fruits were valued by county agents at $57.9 million, an increase of 17 percent over the previous year.

b. Although North Carolina has 43 apple packing houses and 3 million bushels of common cold storage, there are no controlled atmosphere storage facilities in the state.

c. North Carolina does not have a reputation of producing quality apples.

d. North Carolina apple producers have lost their competitive advantage to Washington State producers who, with controlled storage, can market quality apples during North Carolina's early harvest period.

e. Peach producers are plagued by low yields, cold injury, and short life of trees.

f. The need to recognize insects, assess their damage, and take corrective action often demands an immediate response.

g. Ten to fifteen percent of the fruit remaining in peach orchards after spring freezes was lost to brown rot.

2. Objectives

a. Reduce harvest of immature apples.

b. Develop techniques for chemical thinning of apples.

c. Encourage greater reliance upon weather advisories for frost prevention.

d. Encourage peach production in Piedmont where yields are greater and tree loss is less of a problem.

e. Improve quality through better cooling and handling.

f. A 50 percent increase in small orchards for local sales is expected.

g. To demonstrate insect treatment thresholds using insect traps and field monitoring under field conditions.

h. Train growers and agents on use of Nemacur 3 if EPA grants Section 18 specific exemption.

3. Methods

a. Grower meetings (six) on pruning and training.

b. Assistance to agents with the Apple Management Advisory Service (IPM).

c. Prepare Apple Production Manual.

d. Assistance to N. C. Farm Bureau Export Council, American Agricultural Marketing Association, Agribusiness Council, N. C. Apple Growers Association, and N. C. Peach Growers Association.

e. Prepare slide-tape set on peaches, apples, and pears.

f. Prepare publication on growth regulators in apples.

g. On-farm demonstrations on growth regulators and tree training and pruning.

Small Fruits

1. Needs Assessment

a. The value of small fruits in North Carolina in 1981 was $22.5 million.

b. Low yields and inconsistent quality are problems.

c. Less than 10 percent of N.C. acreage is irrigated.

d. Diseases continue to be a major limiting factor in the production of small fruit crops.

2. Objectives

a. Continue efforts to increase yield and quality of blueberries through better pruning, fertilization, pest control and increased use of irrigation.

b. Continue development of post-harvest handling techniques and evaluate consumer acceptance and shelf life of cooled versus non-cooled packages.

c. Continue efforts to expand production of rabbiteye blueberries by investigating environmental requirements.

d. Continue providing information to agents and growers on strawberries through publications. Variety evaluation and development of new cultural systems.

e. Providing adequate visuals and production information to growers and agents on grapes.

f. Seek out cultural information on blackberries and continue to monitor established plantings to learn more about their performance.

g. Greater demand for N.C. blueberries will result from proper grading and cooling.

h. A significant increase in pick-your-own small fruit plantings will result (especially thornless blackberries).

i. Develop disease control strategies and work toward having these strategies adopted on the farm.

3. Methods

a. Continue highbush and rabbiteye blueberry pruning and spacing studies (mechanical harvest potential).

b. Test growth regulators for capacity to reduce frost damage.

c. Complete a blueberry pruning slide set.

d. Assist Southeastern Blueberry Council.

e. Organize a blueberry field day.

f. Prepare at least three newsletters for agents and growers.

g. Provide current strawberry information to agents and growers through bulletins, newsletters, workshops, tours, meetings, slide sets and direct communication.

h. Update materials dealing with pick-your-own and roadside markets.

i. Evaluate four new muscadine pruning systems.

j. Prepare a bunch grape bulletin.

k. Provide information on brambles (from other states) to agents and growers through bulletins and newsletters.

l. Evaluate consumer acceptance and shelf life of refrigerated and non-refrigerated blueberries in three packaging systems.

m. Ridomil will be tested for control of Red Stele disease on strawberries.

Ornamentals and Landscaping

1. Needs Assessment

   a. Total income from ornamentals in 1981 was estimated to be $29 million, a 3.6 percent increase over 1980.

   b. Because of the newness of the ornamentals industry, there is a vast need for educational programs that span the entire spectrum of nursery production.

   c. There is a recently-established parallel landscape installation and maintenance industry.

   d. Some agents lack skills in identification and control of insect pests on ornamental plants.

   e. Numerous diseases attack and reduce the quality or quantity of ornamental plants produced in the state.

2. Objectives

   a. Efforts will be continued in assisting various nursery and landscape organizations.

   b. Emphasis will be given to new and proper propagation techniques.

   c. Quality of nursery stock will be improved by stressing proper methods in fertilization and protection against environmental stress.

   d. To introduce new plant species to the nursery industry, especially in western North Carolina.

   e. An increase of 5-7 percent annually in ornamentals income is expected.

   f. To reduce the losses from soil-borne diseases on ornamental crops produced by nurserymen, greenhouse floral growers, garden center operators, Christmas tree growers, landscape maintenance contractors, and homeowners.

3. Methods

   a. Complete the North Carolina Nursery Crops Production Manual.

   b. Organize and conduct two training sessions for agents on nursery crop management.

   c. Organize in cooperation with N. C. Association of Nurserymen workshops on propagation and nursery management.

   d. Conduct three landscape maintenance workshops.

e. Develop a new newsletter on ornamentals, landscaping and turf management for agents.

f. Continue media efforts with TV Almanac, Accents on Agriculture, and Garden Clinics.

g. Prepare two slide sets on Plant Identification and Landscape Construction Material.

h. Serve as advisor to N. C. Landscape Contractors Association, N.C. Chapter of American Society of Landscape Architects and the N.C. Turfgrass Council.

i. Further develop the publication series, Insects and Related Pests.

j. Applied research related to the mealybug survey, control, and phytotoxicity will be continued.

k. Training packages on insect control for the Master Gardener Program will be developed.

l. Preparation of materials on chemicals for disease control and disease problems confused with fertilizer injury.

Floriculture

1. Needs Assessment

   a. While gross sales of floricultural crops continues to increase ($66.5 million in 1981), the net profit has decreased steadily.

   b. Increases in labor and fuel costs will continue during FY 83.

2. Objectives

   a. Special emphasis will be given to reducing cost of labor and energy. Individual firms will be surveyed for opportunities to cut cost and these will be reviewed with growers.

   b. Continuation of applied research will be conducted to evaluate new plant species for greenhouse production.

   c. An increase in greenhouse sales of 12 percent or more is expected.

   d. Some greenhouses will achieve a 10 percent reduction in costs of production by a planned approach to reducing excessive energy and labor items.

3. Methods

   a. Coordinate (1) Annual North Carolina Flower Growers Short Course, (2) Holiday Plant Day, (3) Bedding Plant Field Day.

b. Conduct two grower workshops.

c. "Back to College" program for greenhouse workers.

d. Assist agents with multi-county meetings (systems, labor saving devices, fuel conservation).

e. Investigate new cultural practices for the African violet.

f. Evaluate dahlia cultivars and media for potted plants.

g. Initiate a floricultural newsletter for commercial flower growers.

Agricultural Weather

1. Needs Assessment

a. Nearly one-third of the commercial radio stations in North Carolina broadcast at least one agricultural weather advisory each day.

b. There is a need to educate growers to understand and utilize advisories.

2. Objectives

a. Educational programs in agricultural weather will put major emphasis on educating growers in the utilization of weather advisories in production and marketing decision making.

b. Of necessity, the touch-tone/volunteer observer network will continue to be refined to increase its effectiveness.

c. A special effort will be made to expand the use of agricultural weather advisories by the broadcast medium.

d. Increased awareness by growers and agents of agricultural weather information should result.

e. Use of weather information will reduce growers' crop and livestock losses.

3. Methods

a. Prepare and disseminate agricultural weather advisories twice daily.

b. Prepare monthly newsletter (Raindrops) and mail to observers, agents and others.

c. Maintain and upgrade the statewide touch-tone network.

d. Develop a working computer program for soil moisture, growing degree-day drought severity and other critical parameters.

e. Develop documentation of agricultural weather information with specialists.

f. Develop an educational program for users of agricultural weather information.

Pesticide Education

1. Needs Assessment

a. N. C. Agricultural Extension Service is charged with providing education for persons who will apply for certification and/or licensing.

b. Growers, dealers and applicators must be recertified by 1986.

2. Objectives

a. Continue to develop and present educational programs for the re-certification of commercial pesticide applicators, public operators, dealers and consultants.

b. Special emphasis will be given to training of proper application equipment.

3. Methods

a. Coordinate re-certification programs.

b. Train new county pesticide coordinators.

c. Conduct 15 regional two-day schools for dealers and applicators.

d. Edit Pesticide Notes and Dealer Pesticide News.

e. Assist Pesticide Board, Pesticide Advisory Committee, Agricultural Chemicals Policy Advisory Committee, 1983 Agricultural Chemicals School, and Agricultural Chemicals Manual Committee.

Soils

1. Needs Assessment

a. Urban-suburban land use is increasing throughout the state.

b. Utilization of the soil reflects a lack of understanding of its properties.

2. Objectives

   a. Assist farmers, foresters and other publics with implementation of wise land use practices.

   b. Stress the importance of soil tests and plant analysis information.

   c. Emphasize lime use on soybeans.

   d. Evaluate and demonstrate various land preparation approaches.

   e. Provide technical and educational support for an accelerated soil survey program.

   f. Provide technical and educational support for legislative programs in sedimentation-pollution control.

   g. Develop guidelines for soil application and treatment of waste products.

3. Methods

   a. Demonstrate tillage methods (including no-till) in corn and soybeans.

   b. In teaching sound soil use practices, on-farm and on-site tests, in-service training, study tours and mass media techniques will be used.

   c. "Lime strip" demonstrations will be continued for soybeans.

   d. Printed material on tillage choices will be prepared.

   e. On-farm trials on sound production practices for burley, ornamentals, Christmas trees, fruits and vegetables in western North Carolina will be conducted where 50 percent of total land is unsuited for agriculture.

Water Management

1. Needs Assessment

   a. Rainfall is not distributed uniformly across the state, geographically or chronologically.

   b. Thirty-six percent of the state's cropland requires artificial drainage.

   c. Growers are concerned about investment in water management techniques during this period of low prices received and high costs of production.

2. Objectives

   a. To place major emphasis on installation and utilization of well-designed, properly operated and energy efficient irrigation systems.

   b. To develop materials on drip irrigation for specialized operations.

   c. A savings in water consumption for irrigation of 10 percent or more, and a reduction in fuel consumption per acre for irrigation of 15 percent should be realized.

3. Methods

   a. A series of six one-day in-service training sessions on irrigation for Extension agents is planned.

   b. A two-day irrigation conference for dealers, farmers, agents and others is scheduled.

   c. Additions will be made to the irrigation handbook.

   d. A computer program on irrigation design will be developed for the microcomputer.

4. Evaluation

   a. Contact with growers, dealers, SCS personnel, and other specialists and requests for information and meetings will indicate acceptance of these recommendations.

   b. An irrigation survey will show the growth of irrigation, the crops being irrigated, types of systems being used, and water sources.

Integrated Pest Management

1. Needs Assessment

   a. The cost-price squeeze requires the producer to ascertain that all production inputs are necessary.

   b. There is lack of producer knowledge about preventive and remedial measures for pests.

   c. Agents need training in the fundamentals of IPM and in organizational procedures.

2. Objectives

   a. Establish new IPM programs and analyze on-going programs (both traditional and nontraditional crops).

b. Interact with growers to explain the objectives and principles of IPM and encourage adoption of these principles.

c. Minimize the impact upon the environment of pesticides.

d. To convey to growers a better understanding of the interrelationship of pest problems and cultural practices and an appreciation of pest monitoring and timely pesticide application.

3. Methods

a. Develop newsletters, videotapes and slide-cassette programs to make more specific IPM information available to agents.

b. Develop a better system for training agents to train scouts.

c. Demonstrate some uses of microcomputers in IPM and the new documentation system.

d. Present news releases and radio and television programs to convey to the general public and to producers the rationale of IPM, how a program is established and the results expected.

Livestock Production

Dairy

1. Needs Assessment

   a. Grade A milk purchases from producers by N.C. distributors during 1981 increased by 1.5 percent over 1980.

   b. The number of producers continued to decline throughout 1981.

   c. A reduction in total milk production will be necessary to bring production and commercial sales into balance.

   d. Because of high interest rates, dairymen are having cash flow problems.

   e. About 40 percent of all grade A herds in the state have no organized system of herd management records.

   f. Unwise breeding decisions, calf losses, slow growth and delayed breeding continue to be problems.

   g. Confined handling of dairy cattle and more rigid waste control regulations have created problems with manure handling and disposal.

2. Objectives

   a. Educational programs in dairy production will have major emphasis on herd management practices that will eliminate losses for dairy farmers.

   b. Promote the "North Carolina Farm Feed Testing Service" which is a cooperative program involving the N. C. Agricultural Extension Service and the N. C. Department of Agriculture.

   c. Use and promote the "DHIA Feed Formulation Program."

   d. With the increasing availability of micro-processors, Extension will develop software to fill the gap between producer needs and commercially available programs.

   e. Increase profit per cow by $50 through ration balancing based on feed analysis.

   f. Increase participation in the DHI program and increase use of DHI information by dairymen already enrolled.

   g. Teach large herd owners the advantages and disadvantages of the DART system.

   h. Develop a comprehensive replacement heifer management program.

i. Teach dairymen how to reduce the cost of purchasing AI semen without significantly reducing their rate of genetic improvement.

j. Because of the current cash flow squeeze, the milking equipment educational program will be directed at updating and maintenance of the existing milking system.

k. To reduce labor cost by $12-$18,000 per year per herd by adopting the free-stall housing system.

l. To save a 100-cow dairy farmer $20-$25,000 in construction costs by choosing an earthen liquid manure storage pit rather than alternative liquid manure systems.

m. By reducing average age at calving by one month, annual cost savings of $850,000 will be realized by N.C. dairymen.

n. By reducing average days open by 10 days, a conservatively estimated savings of $2,000 annually would result for the average size herd.

3. Methods

a. Two regional seminars for eastern North Carolina dairymen will feature topics on nutrition with emphasis on efficiency.

b. A 1½ hour in-service-training module entitled "Managing Dairy Wastes" will be offered to Extension Agents.

c. A series of dairy management seminars will be conducted for agents and dairymen in cooperation between dairy and economics specialists.

d. Educational materials will be developed for use in agent in-service training, Fieldmen and Sanitarians' Conference, and in the Dairy Extension Newsletter.

e. Greater use will be made of the multi-day milking school approach to train dairy labor and dairy farm operators.

f. Packages that agents can use in advising dairymen on mastitis prevention will be developed (DHI somatic cell counts, steps to proper milking).

g. Expand teleprocessing capabilities of the Dairy Records Processing Center.

h. Implement a new DHI herd sire cross reference system.

i. A new newsletter will be targeted at practicing professionals who work in nutrition.

Beef

1. Needs Assessment

   a. Improvements in management, nutrition, breeding and marketing are needed to offset high interest rates, inflated production costs, and low animal sale prices.

   b. Many bulls being used come from herds not enrolled in performance testing programs.

   c. Many stocker or backgrounding operations do not generate maximum profits because of low weight gains and high death losses.

2. Objectives

   a. To increase the weaned calving percentage by 5 percent over the next five years, which will add $1.1 million to beef income each year.

   b. To increase the average weaning weight by five pounds per head which should add another $1.1 million to the state's beef income.

   c. Increase by 10 percent the number of feeder cattle marketed through special sales over the next five years, capturing a 5 cents per pound advantage over local weekly auctions.

   d. Achieve herd goals of a 90 percent calf crop weaned with 70 percent of the calves born during the first 21 days of the calving period.

   e. Increase number of bulls enrolled in on-farm tests to 1,000.

   f. Increase sale weights of steers to 750 pounds and heifers to 650 pounds--the added gain amounting to an extra $1.5 million to producers.

3. Methods

   a. Agent training in potential and utilization of forage crops and crop residues.

   b. Demonstration herds will be established in 22 counties emphasizing reproductive management.

   c. Educational material will be developed on controlled breeding.

   d. Two in-service agent training sessions on controlled breeding will be organized.

   e. Two reproductive management clinics will be conducted.

f. Implement the use of calving sequence analysis into the state BCIP.

g. Assist county livestock agents in conducting six demonstrations and three field trials.

h. Enroll 15 new herds in the on-farm testing program. There should be an increase of 1500 calves weighed.

i. Furnish producers revised versions of the MPPA (cow summary) immediately after calves are weighed.

j. Revise the BCIP Manual.

k. Conduct two on-farm demonstrations on feeding low quality roughages to beef cattle.

l. Present information on nutrition at 15 Beef Cattle Association meetings and 5 area beef conferences.

m. Six feeder cattle sales will use the tele-auction option and four will use the computer option.

n. County demonstrations will be held on growth stimulants (4), systemic grub control (3), fly control (3), internal parasite control (3), complete record systems (2), pregnancy testing (3), control of weeds in pasture, effective use of portable handling equipment (2), and management practices (6).

Sheep

1. Needs Assessment

   a. Sheep numbers continue to increase in North Carolina.

   b. Real potential exists for adding a sheep enterprise on many farming operations.

2. Objectives

   a. Organize a State Sheep Commodity Association.

3. Methods

   a. Conduct sheep production meetings in 10 counties.

   b. Organize four sheep shearing schools.

   c. Schedule at least one sheep field day.

   d. Assist with five wool pools and three lamb pools (computer market option).

   e. Establish result demonstrations on grazing sheep combined with fruit production, grazing sheep combined with Christmas tree production, feeding lambs, and high tensile electric fence.

Horses

1. Needs Assessment

   a. Horse numbers in North Carolina have steadily increased to 200,000 head on 53,000 farms.

   b. Pleasure horse owners have limited management skills, resulting in nutritional, health and reproductive problems.

   c. Horsemen do not realize the economic and health importance of parasite control.

   d. Nutrition-related health problems plague horse owners.

2. Objectives

   a. To provide to both youth and adults practical and technical information on horse production.

3. Methods

   a. Present information at 50 horse management conferences in 15 counties.

   b. Release a bi-monthly newsletter called Horse Scribble.

   c. Arrange a two-day statewide horse conference.

   d. Conduct a statewide draft horse field day.

   e. Newsletters, bulletins, news releases and lectures will deal with health measures for horses.

Swine (The Extension Program at A&T State University contributes to the total program for swine.)

1. Needs Assessment

   a. Potential profit returned to the swine industry in the spring of 1982.

   b. Total inventory of swine in North Carolina is 20 percent below 1980.

   c. There are 20,000 swine producers in the state.

   d. Genetic improvement has a low priority on most N.C. swine farms.

   e. Many swine producers do not keep adequate or accurate records.

   f. Mycotoxins cause heavy mortality and reproductive losses in swine.

g. Internal and external parasites plague the industry.

h. Improperly ventilated farrowing houses cause disease problems and poor feed efficiency.

2. Objectives

a. Improve net income in swine production by improving reproductive performance of the breeding herd.

b. Encourage use of on-farm testing.

c. Improve knowledge and use of microcomputers in keeping records.

d. Adequately define a least-cost ration.

e. Emphasize proper post-harvest grain management (aflatoxin).

f. Promote pseudorabies eradication for the state.

g. Emphasize the N.C. Parasite Control Program.

h. Attempt to correlate proper ventilation and pig performance.

i. Net profit should be increased through measures designed to increase pigs produced per year per sow, produce leaner pork, reduce cost of pork produced, reduce the incidence of disease and parasites, and improve pig performance.

j. Studies show improved growth rate and faster gains in houses where waste is not allowed to accumulate for long periods of time.

k. A 5 percent improvement in manure land application practices could mean $1.25 million in fertilizer savings to N.C. farmers.

3. Methods

a. Delivery mechanisms will include news articles, meetings and conferences, farm visits, agent training, field demonstrations, newsletters, and fact sheets.

b. Artificial insemination schools will be scheduled upon request.

c. The work at the Swine Evaluation Station and in the On-Farm Testing Program will be continued.

d. Work in the Feed Analysis Program and at the Swine Development Center will reinforce the nutrition education program.

e. Several installations of waste removal systems will be evaluated and correlated with pig performance and worker comfort.

f. At least three new plans for swine housing with emphasis on frequent waste removal and energy conservation will be added to the Plan Service.

g. An in-service training session will update agents on techniques of better using animal wastes as crop fertilizer supplements.

4. Evaluation

a. The following measures of results will be monitored:

(1) Number of complaints of anestrus and hot weather problems.

(2) Carcass contest results - genetic improvement.

(3) Increase in number of producers keeping good records.

(4) Diagnostic lab and federal veterinary reports.

(5) Number of new swine associations.

b. Surveys will be made of producers regarding swine dysentary, internal and external parasites, management and sanitation practices, and weaning weights of pigs.

Poultry

1. Needs Assessment

a. North Carolina poultry income in 1981 amounted to $834 million, a 15 percent increase over 1980.

b. At least six poultry firms in the state have changed ownership during the past year.

c. A trend in the broiler industry is toward separate rearing for males and females.

d. N.C. leghorn pullet and layer producers are experiencing problems with calcium and phosphorus imbalance.

e. The poultry industry is having problems with feed ingredient quality.

f. Potential losses due to drug or pesticide residues in poultry meat exist.

g. Old and emerging poultry diseases require continuing surveillance--determine presence and devise methods of prevention.

h. Spring hatched broiler breeders are maturing late, have poor egg production, and gain weight excessively.

i. Inappropriate choices of layer strains, housing facility and management practices can remove the possibility of profit.

j. Both the cost and source of bedding materials have become significant problems for broiler and turkey producers.

k. Poor reproductive performance continues to be a problem for the turkey industry--50 percent production, 85 percent fertility and 74 percent hatchability.

l. Energy costs for brooding during winter months have almost become prohibitive.

m. Losses due to ectoparasites and pests of poultry/livestock in North Carolina are substantial, although in many cases difficult to accurately determine.

2. Objectives

a. To determine best feeding schedule for turkeys (fewer rations).

b. Develop and disseminate information on the effectiveness of mold inhibitors in poultry feeds under field conditions.

c. Initiate an educational program on residue avoidance.

d. Initiate two new poultry disease educational efforts (model disease control and MG control).

e. Design equipment and delineate requirements for energy-efficient blacking-out of poultry houses.

f. Provide biological and economic data on commercial layer strains and management systems.

g. Fitting layer strains and management to market needs will increase marketable eggs from 1 to 2 eggs per bird per year--an increase of up to $6.6 million at-farm value of eggs in North Carolina.

h. Provide information to help the poultry industry obtain adequate, moderately priced bedding material.

i. Encourage producers to install slow speed ceiling fans to evenly distribute heated air throughout brooding houses and save 20 percent on brooding energy costs.

j. To expand the pilot poultry/livestock IPM program into a statewide program.

k. Under grants from the N. C. Energy Extension Service and the N.C. Alternative Energy Corporation, work will be conducted to stress both the technological and economical aspects of energy use and alternative energies.

l. A farmer with a $2,000 per month summer electric bill may be able to reduce it $300-$500 per month by an inexpensive chore of cleaning dusty, wet or stuck ventilation fan louvers.

3. Methods

a. Conduct field trials on applied research on nutrition of sex-separated broilers.

b. Specifications for calcium and phosphorus nutrition will be shared with the poultry industry.

c. Conduct systematic survey of soybean meal mycotoxin contamination in N.C. poultry feeds.

d. Organize a workshop on microscopic techniques for feed manufacturers.

e. Collect and collate existing residue data and develop a model program for residue avoidance.

f. Use newsletters and popular press to encourage producers to follow guidelines for disease management.

g. Present results of an economic analysis of demonstration flocks in light control programs at a broiler breeder conference and other events.

h. Distribute results of layer trials to county Extension offices and requesting poultrymen as five printed reports.

i. Conduct field studies of alternate types of bedding material.

j. Conduct a two-day symposium on turkey breeder reproductive management.

k. Use the computerized poultry energy audit to encourage producers to upgrade insulation and brooding equipment.

l. To conduct integrator serviceman training sessions to incorporate the IPM program into current production practices.

m. Establish demonstrations to implement new ectoparasite control strategies and recommendations.

n. Agent training will include data taking procedures and computer routines for performing energy audits.

o. A commercial methane digestion-electrical cogeneration system will be installed and monitored on a Wayne County poultry farm to evaluate the performance of this system.

4. Evaluation

a. Computerized data analysis will be used to document actual losses due to ectoparasites, benefits from control, and cost effectiveness of control.

b. Requests for plans for wood-fired, hot water heating systems for turkey and broiler houses will help evaluate effectiveness of energy emphases.

Business Management and Economics

1. Needs Assessment

   a. Developments within the general economy and the agricultural sector during the past two years have intensified the public's interest in and desire for more economic information.

   b. Many farm investments are not currently generating sufficient cash returns to meet loan rates of 13-17 percent per annum being charged.

   c. North Carolina farmers will experience sharply lower net cash flow and lower farm incomes in 1982-83.

2. Objectives

   a. To help farmers improve their management skills in order to share in future agricultural prosperity.

   b. To help the public understand the issues and alternatives together with the costs and benefits associated with economic policies.

   c. To impart to youth a basic understanding and appreciation of the free enterprise system.

   d. Major emphasis will be placed on financial and business management to improve net returns and cash flow positions of farms and agribusiness firms during the coming year.

3. Methods

   a. Workshops will be held for farmers, lenders and agents to help them cope with cash flow and financing alternative problems.

   b. Educational programs will emphasize the use of microcomputers in helping analyze data and improve decision making.

   c. Software will be developed and modified for agent and farmer use in making management decisions.

   d. A new manual record system will be introduced.

   e. Research data will be used in analyzing the monetary benefits and cost of economic growth in various counties.

   f. Regional conferences are planned for county commissioners, agents and others to discuss taxation, value and appraisal of agricultural land, and land-use planning.

   g. Area and statewide seminars will be conducted with emphasis on economic outlook, hedging, tax management, estate planning, credit, etc.

h. In-service training with 50 teaching modules on 24 economics topics will be conducted for agents at annual conference.

i. The "Economics in Action" (4-H and Youth) program will be continued.

j. The Tarheel Economist will be continued.

4. Evaluation

a. Individuals and firms applying the economic principles taught will have lower unit production costs and/or higher product prices.

b. Gains in the production sector will pass to consumers and result in lower consumer prices, improved quality, and greater product availability.

c. The effort in economic development is expected to result in increased income and employment, better community services and more orderly community growth.

Agricultural Marketing and Farm Supplies

1. Needs Assessment

   a. Marketing and transportation system operators must be able to constantly adjust to the requirements of new technologies, changing demands and increasing government rules and regulations.

   b. Farmers' assistance in developing a marketing plan to determine how, when and in what form to market products.

   c. Risk-shifting mechanisms are used in varying degrees by a small number of N.C. farmers in an attempt to minimize price risks.

   d. There are over 23,500 food processing, distribution, and service firms in North Carolina employing over 150,000 workers.

   e. The food industry of North Carolina is composed mainly of a large number of firms which are too small to employ a diversity of highly trained personnel.

   f. Needs of small processing firms include:

      (1) employee training programs

      (2) interpretation of key regulations

      (3) explanation of techniques for safe, quality processing, packaging, storing and marketing

      (4) interpretation of laboratory results

2. Objectives

   a. To improve the economic efficiency of the marketing system.

   b. To improve the net returns and cash flow positions of agribusiness firms.

   c. To assist farmers who are highly leveraged in using futures markets, insurance and forward contracts as marketing tools.

   d. To communicate research findings and new technologies to the food industry.

   e. To assist the food industry in adopting new processing procedures and/or equipment that are energy efficient. This effort should save 10-25 percent of current energy costs--a savings per plant of $100,000.

   f. To teach sanitation and food safety to food handlers.

g. To help minimize water use and assure adequate handling of waste and wastewaters at food processing plants. A savings of 50 percent in water and waste bills will amount to more than $100,000 per plant annually.

h. Assist food plants in effecting changes to achieve compliance with regulations.

i. Prepare materials to advise consumers in North Carolina on the safety and use of food products.

j. To achieve fewer regulatory plant shut-downs due to pollution.

k. To help food plants realize longer product shelf life and improved yields.

3. Methods

a. Emphasis will be placed on marketing alternatives and post-harvest handling in commodity meetings.

b. Special workshops will be organized to help producers and agribusiness firms in:

(1) evaluating new technology

(2) using enterprise budgets

(3) analyzing risks of various practices

(4) evaluating credit sources and needs

(5) improving distribution

c. Educational marketing programs will include meetings, consultation services and newly prepared written materials.

d. The Market Pointer will continue to be published.

e. Cooperative membership and board educational meetings will be held.

f. Regional Transportation Planning Workshops will be held.

g. A program packet for day care personnel will be developed.

h. Consultation to the vending industry on processing, storage and transportation of machine-vended products.

i. Pamphlets, leaflets, video and audio tapes, and slides will be developed in the area of product utilization.

4. Evaluation

a. Handlers and other agribusiness firms will improve their competitive position in domestic and world markets.

b. Workshops will be evaluated at the conclusion of the presentation by a short evaluation form.

c. Changes in process and product technology will be evaluated by percent change in product form and number of employees.

d. Improved yields, longer shelf life, consumer acceptance and per capita consumption will be evaluated using economic data.

Natural Resources and Environment
(Some work in this area
is joint with the N.C. A&T Extension Program)

1. Needs Assessment

   a. Eighty percent of N.C. commercial forest land is owned by nonindustrial landowners (240,000).

   b. Non-industry forestry land is producing timber at less than half the rate for comparable industrial land.

   c. Only one in four acres of forest land is being deliberately regenerated after harvest.

   d. The acreage of good quality wildlife habitat is diminishing while the demand for hunting, fishing and other recreational uses of the wildlife resource continues to grow.

   e. Many landowners are unaware of the value of their woodland and its potential multiple uses.

   f. Interactions between man and wildlife continue to increase in the state because of increased urban growth, expansion of agricultural operations, and a growing population.

   g. Most of the wildlife habitat in North Carolina is in private ownership, but concepts of wildlife management are generally not well understood by our citizens.

   h. The increasing use of irrigation in the state is leading to an intensification of the competition between landowners and aquatic weeds for water stored in irrigation channels and farm ponds.

   i. Coordination is needed in preparation of educational publications on wildlife management between agencies.

2. Objectives

   a. Increase number of active county interagency small woodlot committees from 50 to 98 and the number of viable landowner county forestry associations from 42 to 65.

   b. Increase number of landowners reforesting, adopting forest, and/or wildlife management plans, or joining the Tree Farm Program.

   c. Increase markets for currently unmarketable timber through use of wood for fuel and yellow poplar lumber for house framing.

   d. Improve yields of lumber through better quality control, machining and drying procedures at secondary wood products manufacturers.

e. Improve quality of Christmas trees through demonstration of best cultural practices.

f. Improve water quality after timber harvesting through educational programs for loggers, landowners, forest products industry and agency representatives.

g. Inform builders, homeowners and others of safety aspects of wood stove installation and use.

h. Continue to develop with N.C. Wildlife Resources Commission the "Carolina Notebook" insert for children and educators.

i. Seek funds for the development of an animal damage management handbook (U.S. Fish & Wildlife Service and N.C. Wildlife Resources Commission).

j. Assist N.C. Wildlife Federation in the conservation educational program.

k. Work with SCS and NCWRC to improve level of understanding of farm pond problems by public and agents.

3. Methods

a. Expansion of education offerings for professionals in forestry, wildlife, taxation and forest products.

b. Develop a series of publications on forest management for low income landowners and agricultural technicians.

c. Disseminate regular departmental newsletters on forest resources, wood products, timber harvesting, wildlife, and outdoor recreation.

d. Send to agents a monthly media package on various aspects of forest, wildlife, and recreation management.

e. A technician will be hired to establish and document demonstrations of good forest and wildlife management practices.

f. Increased development and use of videotapes and microcomputers will be incorporated into activities.

g. Specialized meetings for female and absentee woodland owners.

h. Development of a total teaching package on federal and state forest income tax laws.

i. Establishment of a model wildlife program in one county in each district.

j. Prepare simple pictorial bulletins for low income woodland owners.

k. Develop a media package on Forest Retirement Accounts vs IRAs and other alternate investments.

l. Continue to coordinate with NCDA, NRCD, SCS and NCWRC to prevent the spread of hydrilla.

m. Set up pilot programs in cooperation with NCWRC for wildlife management on farm and forest lands.

n. Develop a program to educate farm and forest landowners about the incentives for managing the hunting and fishing privileges on their land.

o. Use posters, radio and TV spots to alert the public to the dangers of hydrilla.

p. Institute a wildlife conservation essay contest for 7th grade youth.

4. Evaluation

a. Increased site preparation and planting on private woodland.

b. Several companies will switch from fossil fuels to use of whole-tree chips for energy.

c. Number of fires associated with wood stoves will decrease and damage from fungi and insects will be reduced.

d. Agents will be able to answer a larger percentage of animal damage management questions at the county level.

e. More farm and forest landowners will consciously manipulate their landholdings for the benefits of wildlife.

Mechanical Science, Technology and Engineering

1. Needs Assessment

   a. The average age of equipment in use has increased substantially in the past three years.

   b. Because of postponement of replacement equipment purchases, increased emphasis is needed on maintenance, repair and operational management of existing machinery to extend its useful life and preserve its effectiveness.

   c. Minimum or no-tillage could result in fuel savings of one to four gallons per acre, less soil compaction, and lessened wear and tear on equipment.

   d. The high price of petroleum fuel has sparked an interest in alternate motor fuels.

   e. Interest in the applications of microcomputer technology in agricultural production and family management is increasing rapidly.

2. Objectives

   a. Informational programs will be developed and delivered to agents and farmers on maintenance and servicing to extend the life and increase the reliability of aging farm machinery.

   b. Fuel saving aspects of reduced tillage will be stressed.

   c. Provide information on request to persons desiring information on alcohol and vegetable oils for motor fuels.

   d. To provide clientele with educational programs that will make them aware of the potential benefits of utilizing microcomputer technology.

3. Methods

   a. News articles, publications, meetings and demonstrations will feature equipment and methods for reduced-tillage and no-tillage.

   b. A reduced-tillage and planting equipment field day will be held.

   c. Assistance will be given to equipment manufacturers in developing more suitable equipment for optimum tillage of specific soil types.

   d. Publications and computer programs on cost analysis and selection/matching procedures for farm machinery will be updated and revised.

   e. A few demonstration farms will incorporate one or more energy related engineering practices.

f. Develop software, including documentation, for use on computers in county Extension offices, and to provide training for Extension personnel who have access to microcomputer systems.

4. Evaluation

a. County personnel will be much better prepared to advise clientele on the purchase and utilization of microcomputers.

b. Effectiveness will be measured by number of Extension employees using microcomputers.

Safety

The North Carolina Agricultural Extension Service currently has no safety specialist employed; however, a safety specialist has been recruited and will begin work on September 1, 1982. County Extension staffs have already developed their components of the safety program as reflected in the planned allocation of staff time.

Although the new safety specialist will develop his plan of work after he is appointed, it has already been determined that his safety program will include two priority areas: (1) farm safety and (2) 4-H safety. The joint 4-H safety aspect will feature fire safety, home safety, first aid, and pesticide safety.

IPM

Summary of 1982 Accomplishments

Counties participating in IPM projects increased in 1982 with a total of 33 counties with active programs. This represents an 18 percent increase (five new counties) from 1981. Commodities represented by these projects are cotton, peanuts, soybeans, corn, apples, tomatoes, Irish potatoes, small grain and poultry (See Appendix 1 and 2 for acreage). A new emphasis of working with integrator servicemen in the Poultry IPM Program increased the number of producers cooperating in this program to 75 this year. Additionally, two area livestock IPM agents have been appointed. These agents are specifically assigned responsibility for working with the IPM programs.

Increased participation by growers in the IPM program has been gratifying because it has been a particularly difficult year to expand programs. Growers have had poor crops, economic difficulties and uncertainties about the future of supported crops (tobacco and peanuts). Many farmers did not have the money to pay for IPM services in the spring. Some still regard the fee for IPM services as an extra cost of production. However, grower support has been strong enough to withstand these difficulties. For example, the apple IPM programs survived despite a virtual 100 percent loss of the crop due to weather. Growers realized that the program would not survive without their support, so they kept enough acreage in the program to retain the full-time scouts.

A new area of emphasis has been in developing IPM software for use in counties with microcomputers. The N. C. Agricultural Extension Service plans to equip all 100 counties with microcomputers within the next three years. A minicomputer will be purchased to serve as the focal point of networking the counties with N. C. State. Sixteen counties now have TRS-80 II; none of those have IPM programs. The development of microcomputer software for IPM has been considered a priority. Programs have been developed for apples, peanuts, soybeans and tobacco which accept, summarize, and store field observations. The programs will display the raw or summarized data on video or print by grower, field or pest. Plans for future development include linking field observations with a library of recommendations and designing data collection devices for use by scouts so that information can be directly entered into the computer, thus eliminating time consuming and costly manual entry. This will permit rapid analysis and display of field observations, eliminating the need for the agent to look through a stack of scouting forms for problem fields. But more importantly, it will start us down the road to being able to collect and analyze large volumes of information which can be used by specialists to track pest problems and develop agroecosystem-based pest management programs.

Scout training is an important part of the IPM effort. Training sessions were held throughout the state. An emphasis was made on weed identification this year. In the past weed training was a part of the regular training held in late spring, but this was too late for some crops (e.g., cotton) and the training was not intense enough. Four regional

weed identification training sessions were held in April and May which focused on seedling weed identification and scouting procedures. Weeds were grown in the greenhouse for the training. Scouts and agents were taught sight recognition as well as how to use available weed identification literature. Thus, scouts were equipped to identify weeds as soon as they began work.

Specific accomplishments are as follows:

1. Held four regional weed identification training sessions for agents and scouts.

2. Held regional and county scout training schools for peanuts, soybeans and cotton (total of 15).

3. Number of self-supporting counties increased from 6 to 13.

4. Counties with multi-crop programs increased from 15 to 19.

5. Developed a prototype microprocessor for forecasting leafspot on peanuts.

6. Developed a videotape on scouting procedures in tobacco.

7. An IPM manual has been completed and distributed to the counties.

8. Growers continued to support IPM programs by contributing $5.00 for each dollar spent for county grants. Total contributions by growers totaled $143,752. Grants to counties equaled $28,690. Grants to counties will continue in 1983 as a means of encouraging IPM program development.

9. Held intensive in-service training session for agents on IPM. This training gives the agent the information necessary to implement an IPM program.

10. Developed microcomputer software so agents can enter IPM field observations and analyze data.

Areas of Emphasis and Changes for FY 1982-83

New crops will receive added emphasis this year. For example, a blueberry IPM project will be started as a cooperative effort in two counties. One county began a tomato IPM project in cooperation with a local processor which proved very successful. Effort will be focused on expanding this program and other vegetable crops.

The Urban IPM Master Gardener Program has been very successful in training volunteer aides to solve pest problems in the urban community. Special projects will begin this year to use these aides to implement a pilot Urban IPM effort which incorporates regular pest monitoring as a part of the system. This pilot effort will aggressively seek to improve the culture and pest protection of gardens, lawns and landscape plantings.

The advent of microcomputers in the counties adds great potential to what can be accomplished in IPM. There are four areas where the microcomputers can aid a county level program. They are:

1. Storage, summarization and display of field observations.

2. Storage and retrieval of information necessary to making IPM decisions.

3. Rapid transfer and reception of data and information to a central location.

4. Stand alone computation power which allows the use of predictive models.

Microcomputers will begin to be phased in as a part of the apple, peanut, soybean and tobacco IPM programs. In tobacco, peanuts and apples, the microcomputer will be used to summarize and store field observations. Soybean IPM information will also be processed on a microcomputer. However, on a test basis scouting activities will be directed by a microcomputer program designed to assign soybean fields into corn earworm attack risk categories. These categories are assigned to fields weekly according to soybean phenological stage, crop canopy development, phenological stage of surrounding crops and corn earworm light trap catches. The program will analyze these inputs and indicate high risk fields. From this information scouts can be directed to check some fields more often than others. Thus, scouts will spend more of their time in fields with problems.

In North Carolina agents have been schooled in IPM through intensive in-service-training sessions. This will continue with training in the basic philosophy of IPM. The objective of this session will be to cover the basics of IPM for new agents or agents who have not attended previous sessions so they will better understand the philosophical underpinnings of IPM.

A new approach to training crop scouts will be initiated this year. Agents will be encouraged to train their own scouts. There are several reasons for this approach. Many of the scouts have little or no knowledge of crops or pests and may have little agricultural experience (e.g., school teachers, housewives). Therefore, there are large differences in the experience level and training needed for each scout. Timing of training also presents difficulties because training classes must be scheduled early enough in the spring to monitor early season pests, but some scouts are not available until late in the day. So planning training sessions at a time convenient to everyone involved is difficult. To overcome these problems, agents can provide personalized training at their own pace. The scouts can be trained in short sessions if needed (vs. one long session) which can be accomplished at a time that fits everyone's schedule. Specialists will be involved in training agents to train scouts rather than training scouts directly. To help the agents, the specialists will develop slide-tapes, videotapes, and training guides. Agents who feel uncomfortable with training or are unable to train scouts will be able to request training from specialists on campus. The objective of this approach is to get away from large, regionalized training sessions where large amounts of information is given to the scout in a short period of time. The training will be more personalized, slower and more timely.

In summary, the N.C. IPM effort in 1982-83 will be concentrated in these areas:

1. Maintenance and improvement of existing programs.

2. Increased participation by counties.

3. Implementing programs in new crops.

4. Phasing microcomputers into the county level programs.

5. Continued IPM training for agents.

Appendix 1 (IPM) - North Carolina Summary Data
Crop Acreage - 1981

County	No. acres	Grower fee	IPM grant	No. scouts
Anson	1,750	$ 5,050	$ 3,250	2
Bertie	1,900	7,600	2,120	2
Bladen	1,275	5,500	0	3
Brunswick	3,060	10,485	500	4
Cabarrus	813	2,532	3,300	1
Central Piedmont Caswell Orange Person	523	3,269	2,805	2
Chowan Gates Pasquotank Perquimans Camden Currituck	8,401	30,303	0	4
Cleveland/Lincoln	2,476	13,252	4,477	4
Edgecombe	2,152	10,940	1,125	3
Granville	535	2,809	0	1
Haywood	178	2,670	2,000	1
Johnston	1,098	3,917	1,754	2
Jones	649	2,734	0	1
Lenoir	3,900	10,250	0	3
Martin	715	1,688	0	1
Northampton	6,200	24,800	2,350	9
Sampson	250	688	819	1
Vance	420	2,100	1,980	1
Warren	100	550	1,550	2
Wilkes/Alexander	60	0	660	1
Wilson	600	2,100	0	1
Yadkin	74	514	0	1
TOTALS	37,129	$143,752	$28,690	50

Appendix 2 (IPM) - North Carolina Summary Data
Crop Acreage by Crop - 1982

Crop	Acres	Avg. fee/acre
Apples	764	$15.00
Corn	1,526	1.44
Cotton	4,112	4.46
Irish potatoes	401	4.50
Peanuts	10,507	4.09
Small Grains	1,437	2.50
Soybeans	11,501	4.00
Tobacco	6,631	4.74
Tomatoes	250	2.75

National Agricultural Pesticide Impact Assessment Program (NAPIAP)

1. Need

There is a special need for better data on pest populations in various crop and noncrop situations in the state to assist specialists in obtaining maximum benefit from pest management programs at the farm level. A critical and continuous need also exists for information on the current status of registration of pesticides.

2. Objectives

Provide (a) pest survey and detection information on insects, plant diseases, weeds, and nematodes to specialists in the state and to the National Program, and (b) current information on pesticide registrations and labels to county and statewide specialists.

3. Methods

A full-time Extension specialist will (a) develop and operate a computer-based statewide interagency pest survey and detection system for insects, plant diseases, weeds, and nematodes and will coordinate input into the National Pest Survey and Detection Program and (b) supervise a statewide computer-based pesticide information retrieval system in conjunction with the National Pestitice Information Retrieval System. The specialist will work with faculty and staff in the Departments of Animal Science, Crop Science, Entomology, Horticultural Science, and Plant Pathology and coordinate the collection and recording of data and the distribution of information from the pesticide information retrieval system.

4. Evaluation

This program will provide much-needed information on pest populations in the state. Such information will provide the commodity specialists and county Extension agents with data that will assist them in making recommendations on pest management decisions. The Pesticide Information Retrieval System will provide background information on registration status of pesticides and related information.

Pesticide Applicator Training Program

North Carolina certifies commercial and private restricted use pesticide applicators according to standards established by FIFRA. In addition, the North Carolina Pesticide Law provides for licensing of all commercial pesticide applicators, public operators and consultants applying or giving advice on any pesticide. Dealers in restricted use pesticides are also licensed. The governing body of the N. C. Pesticide Law of 1971 is the Pesticide Board.

Licensing of commercial applicators, dealers and consultants involves passing appropriate core and specialty tests administered by the N. C. Department of Agriculture. The N. C. Agricultural Extension Service provides literature and offers 15-20 two-day schools for new licensees annually. Federal certification standards are incorporated into state licensing requirements.

Four hours of training is conducted on the county level (101 units) for private applicators needing certification to use restricted use pesticides. Extension has trained over 54,000 private applicators during the past six years. The program received a favorable evaluation from ETS (Educational Testing Service) under a contract with EPA.

As of January 1, 1981, all ground commercial applicators, public operators and consultants must be re-certified in the next five years. Required hours of training (or passing a written test) range from three hours for seed treatment applicators to ten hours/five years for agricultural pest-plant and ornamentals-turf applicators. Aerial applicators must be certified every two years by completing four hours of training or passing appropriate tests.

The N. C. Agricultural Extension Service will develop re-certification training programs but re-certification credits can also be obtained by participating in other approved programs. All recertification programs must meet standards as outlined in the "Commercial Pesticide Applicator Recertification Prospectus." All recertification programs must be approved and assigned appropriate credits by the N. C. Pesticide Recertification Credit Committee and receive final approval of the N. C. Pesticide Board.

Dealer recertification (for restricted use pesticides dealers) was approved by the Pesticide Board in 1981. It consists of a re-test or five hours of approved training during a five-year period ending June 30, 1987.

During 1981-82 over 300 recertification classes were conducted for commercial applicators, public operators, consultants and dealers. Over 3000 persons participated in these training sessions.

Primary emphasis in 1982-83 will be centered on conducting recertification training for commercial pesticide applicators and training some 800 new applicators in two-day schools; EPA funds will be used primarily to develop and update training materials for pesticide applicators.

Pesticide Applicator Training Requirements, FY 83

Description	Numbers to be trained: For initial certification: Commercial - yes Private - No	For recertification
Private applicators	1800	17,500
Commercial applicators	680	6,530
1. Agriculture pest control		
a. Plant	80	4,250
b. Animal	25	50
2. Forest pest control	30	150
3. Ornamental and turf pest control	135	600
4. Seed treatment	15	50
5. Aquatic pest control	30	100
6. Right-of-way pest control	40	200
7. Industrial, institutional, structural and health-related pest control	170	700
8. Public health pest control	35	150
9. Regulatory pest control	20	30
10. Demonstration and research	100	250
11. Dealer (not included C. Appl.)	150	850

Pesticide Applicator Training
Budget for Fiscal Year Ending September 30, 1983

Item	Private applicators	Commercial applicators	Total
	(figures in dollar units)		
1. Salaries			
a. Professional			
State	10,000 (.3 MYE)*	88,000 (2.2 MYE)	98,000 (2.5 MYE)
County	75,000 (3.7 MYE)	34,000 (1.4 MYE)	109,000 (5.1 MYE)
b. Paraprofessional and technical	5,000	35,000	40,000
c. Clerical and secretarial	12,000	30,000	42,000
2. Publications and training aids	12,000	22,000	34,000
Travel	10,000	39,350	49,350
Equipment			
a. Purchase	3,000	12,000	15,000
b. Lease	--	--	--
3. Supplies	6,000	8,000	14,000
4. Other (specify)	--	--	--
Total Program Costs	133,000	268,350	401,350

Partitioning of FY 83

A. CES funds allocated to the program	200,675
B. New FY FPA funds needed from Extension Service	200,675
C. Total program cost	401,350

*MYE = Man Year Equivalence

Tentative Budget for Fiscal Year 84, Pesticide Applicator Training

(Estimation for FY 84)

A.	CES fund allocated to the program	$225,000
B.	New FY EPA funds needed from Extension Service	225,000
C.	Total program cost	$450,000

Expanded Food and Nutrition Education Program

Situation

Some 330,000 or 17% of all households in North Carolina reported incomes below the poverty level in 1981.[1] Poverty is defined as a non-farm family of four with an annual family income of $8,050. Among the heads of households living in poverty, the incidence of poverty is higher for female heads (58%) than for male heads (42%). The distribution of poverty by residence shows that urban households represent 53% of all poverty households, while rural households represent 47%. One-half of all poverty households have heads aged 60 years or older.

Low-income homemakers are very likely to have low levels of education. Many are functionally illiterate--they cannot read recipes, and they do not have computational skills. Many are ignorant of simple nutrition concepts, and their diets are most likely to be meat, bread, and soft drinks. Many do not know of available resources for which they are eligible, such as food stamps, well-baby clinics, WIC, Medicaid, etc.

Some low-income families have food, but do not know how to prepare it in a variety of ways. Others do not have money or food stamps to buy food. Some low-income families know about food stamps but refuse to apply for them.

Low incomes carry with them poor diets, high risks of illness, transportation problems, limited access to education, information and training. It has been well documented that economically deprived people generally have low levels of participation in voluntary associations and programs. For many program homemakers, the Expanded Food and Nutrition Education Program is the only educational experience they are involved in.

An important aspect of poverty is the presence of children under 18 in the households. Forty-three percent of the North Carolina households below the poverty level have children under 18 years old.

Low-income families cannot afford to give their children the opportunities for better health and education needed to improve their lot. For many poor families, 4-H EFNEP is the only educational extracurricular non-school activity participated in by their children.

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1 The North Carolina People 1981. A Report from the North Carolina Department of Human Resources, Title XX Branch; Center for Urban Affairs and Community Services, North Carolina State University, Raleigh, North Carolina, Publication No. 81-002-61, January 1981.

Born into poverty, many youth in low-income families lack motivation, incentive and hope. Frequently, they lack self-confidence and self-esteem. Many subsist on poor diets and are undernourished. The School Breakfast Program and/or the National School Lunch Program, in numerous cases, is (are) the only balanced meal(s) some of these children get during the course of a day. The average monthly income of families enrolled in EFNEP was $395. Of this amount, $129 or 33% was spent for food.

Since EFNEP was initiated in North Carolina, around 15% of the low-income families have been involved in the program on a one-to-one basis. Therefore, a large segment of the target population remains unreached by this program.

Problems to be Addressed

1. Insufficient caseloads of program aides

   - There is widespread difference in the ratio of families per aide among counties as well as with the state and national averages. There is also considerable difference among program aides from the standpoint of tenure, age and education. Then, too, there are geographical differences between counties, such as open country communities versus densely populated urban ones. Some aides are very skillful in recruiting new families, while others are not.

2. Ineffective teaching and limited methods

   - During the 1981 EFNEP Program Review, it was indicated that some of the program aides were not targeting their teaching to the homemakers' needs. It was also noted that:

     a. Very limited teaching methods were being used.

     b. There was inadequate use of existing teaching materials--those provided by the state and national offices.

     c. Aides were not using hand-outs effectively and too many outdated commerical materials were being used.

3. Non-functioning advisory groups

   - Many counties do not have functioning EFNEP Advisory Committees. Such groups should include EFNEP participants, both youth and adults. The primary purpose of this informal structure is that of performing a coordinating structured function relevant to the program, making decisions and taking actions on major issues having priority in the program.

4. Limited educational roles performed by volunteers

   - All counties have volunteers assisting with EFNEP. However, the role of volunteers has generally been that of service, such as providing transportation, making arrangements for meetings, offering financial support of special youth activities, collecting and distributing food, clothing, furniture, etc., to program families. Volunteers come from all income strata. They are White, Black and Indian; and they come from all age groups. Ninety percent of the volunteers are female.

5. Lack of detailed EFNEP County Program Reviews

   - While EFNEP has always been included in the periodic County Extension Program Reviews, there have been few, if any, detailed exclusive Program Reviews of EFNEP involving all appropriate professional staff, program aides, client participants, volunteers, and other suitable publics.

6. Ineligible program clients

   - Some aides countinue to re-enroll graduated homemakers in the program; while others work regularly with non-program and community groups (senior citizens) who do not qualify for the target audience, nor do they have any intentions of enrolling in the program.

7. Low levels of White participation

   - Several counties with large numbers of poor White families have persistently had low levels of White participation in the program. Oddly enough, most of thes counties have White and Black aides. Yet, there continues to be a problem of getting Whites (youth and adults) enrolled in the program. In consequence, it is the thinking of many that the program has become identified as a Black one. If White aides cannot recruit Whites, is it fair to expect Black aides to recruit Whites? It has often been said, when dealing with racial matters, that "people prefer their kind." Obviously, this is not the case in EFNEP. While deep rooted local customs and practices have some influence on the problem, this phenomenon goes beyond the county level.

Objectives

1. To increase the caseloads of those program aides whose current averages are below the state and national averages.

2. To identify those factors which may be inhibiting some aides from carrying larger caseloads, and to establish goals for increased family participation.

3. To help program aides target their teaching to the individual needs of homemakers through full implementation of the Progression Model.

4. To improve the teaching effectiveness of program aides through training in utilization of a wider variety of teaching methods and techniques.

5. To monitor more closely the teaching materials used by program aides.

6. To have all counties implement, as a part of the county advisory leadership system, a functioning, informal, specialized EFNEP committee made up of EFNEP program participants, both youth and adult, and appropriate others.

7. To encourage each EFNEP unit to develop a plan for the utilization of volunteers in educational roles.

8. To provide regular training in technical subject matter and teaching methods for volunteers assisting EFNEP youth and adults.

9. To conduct detailed County EFNEP Program Reviews in a random sampling of counties.

10. To re-emphasize the need for aides to follow the EFNEP guidelines in enrolling eligible program families.

11. To increase program participation consistent with the ratio of the racial mix of the low-income population in the county.

Expected Results

1. Each aide increase homemaker caseloads to a minimum range of 40-45.

2. Each aide increase the proportion of group contacts with families from the present level of 11% to that of 25%.

3. To graduate 40% (around 4,000) of the currently enrolled homemakers through use of the Progression Model, and encourage them to move into ongoing Home Economics Extension programs.

4. For at least 4,000 new program homemakers to acquire knowledge of basic nutrition principles.

5. For each EFNEP unit (95) to implement a functioning EFNEP Specialized Committee within the advisory leadership system.

6. For each EFNEP unit (95) to develop a workable plan for the utilization of volunteers in educational roles in both the youth and adult component.

7. For County EFNEP Program Reviews to be conducted by state and district staffs in at least 18 counties.

8. For at least one-half (47) of all EFNEP units to enroll program participants consistent with the ratio of the racial mix of the low-income population in the county.

Food, Nutrition and Health

Situational Statement

The same problems confronting families in 1981-82 are the ones of most concern today. Although inflation is the underlying cause of many of them, a lack of knowledge and/or indifference cannot be discounted.

The general public is becoming more aware of the relationship of preventive nutrition to health. In spite of this, mortality rates for several diet related diseases remain higher for North Carolina than for the United States as a whole. Statistics published by the N. C. Division of Health Services in February 1982 showed the mortality rate for heart disease in North Carolina was 15.1% higher than the United States; cerebrovascular disease, 29.4% higher; arteriosclerosis, 5.3% higher; diabetes mellitus, 14.1% higher. The rate for cancer mortality is rapidly approaching the national average although it is still 1% below. Many individuals look to Extension Home Economists for assistance with modified diets.

North Carolina continues to rank high among states in infant mortality although the rate for whites dropped from 15.2 in 1979 to 14.4 in 1980; for non-whites the death rate dropped from 23.3 to 19.4. Teen-age pregnancies are responsible in large measure for these high rates.

The family meal is becoming less and less important to dietary patterns of adolescents, especially older teenagers. The household survey phase of the 1977-78 Nationwide Food Consumption Survey indicated that teenagers between 15-18 years had about 22% of their meals away from home. Many of these meals are consumed at fast food establishments. The adolescent's nutrient intake depends on the specific foods selected. Because a large proportion of meals (and snacks) are eaten away from home, it is mandatory that adolescents acquire sound nutrition knowledge upon which to base wise food choices.

The elderly in North Carolina continue to grow in numbers. Their health problems require frequent medications. These, in turn, affect the metabolism of certain food nutrients. In addition, many of the elderly are in the low income bracket and find it difficult to purchase adequate diets.

Retail food prices rose 8% in 1981 and are expected to rise by 7% at the close of 1982. Less time is spent in preparation because of changing life styles and because of women joining the labor force. More men and youth are shopping for the family food supply. A recent supermarket survey showed that 64% of the thousand teenagers queried did some of the family food shopping.

Preserving food, if done correctly, is one way families can maximize their food budgets. Research conducted in 1980 indicated 60% of North Carolina residents in the Western region, 34% in the Piedmont, and 26% in the Coastal Plains do home canning. Forty-five percent of those studied used one or more incorrect methods. Pressure canning uses less energy and homemakers are concerned with energy costs. For this reason, energy may become a force in converting families to use pressure canning rather than unsafe procedures.

Proper handling of food can benefit families by maintaining health and minimizing spoilage of foods. Statistics show that between two and ten million cases of food borne disease occur each year, most of which result from home consumpiton of food.

Interest in health foods and fear of processed foods is surfacing again. Health foods usually are expensive and represent an unnecessary expenditure of funds. Emphasis on dispelling myths and countering false claims about benefits/hazards of food need to be intensified.

Objectives

1. Assist individuals with special dietary needs by providing self-study materials. (New)

2. Continue to promote county educational efforts in the areas of maternal and infant nutrition. (Continuing & Redirection)

3. Develop an understanding of diet-drug interactions especially among the elderly. (New)

4. Teach food buying principles and maximization of food dollars through the media and educational programs. (Continuing)

5. Teach good nutrition and food preparation through the media. (Continuing)

6. Promote a vigorous program to improve the safety of home preserved food. (Continuing)

7. Promote a vigorous program on safe handling of food in the home. (New)

8. Promote better utilization and new methods of preparation for North Carolina seafoods. (New)

9. Promote fitness for youth emphasizing physical fitness, nutrition and weight control. (Redirection)

10. Dispel myths and counter false claims about hazards of processed foods. (Redirection)

Expected Results

1. 200 people with dietary restrictions will make appropriate changes in eating patterns as a result of using self-instructional audiotapes and study guides.

2. 25 counties will distribute a series of newsletters/study guides to pregnant women. Infant death rates in North Carolina will continue to go down.

3. 300 elderly North Carolina citizens will practice safety in relation to their intake of food and drugs.

4. 30,000 people will change at least one food buying practice as a result of improved knowledge.

5. Through Almanac (television) and Teletip, 100,000 North Carolina citizens will learn new methods of food preparation incorporating the Dietary Guidelines.

6. 5,000 new home canners will practice safe food preservation procedures.

7. 500 families will have a good knowledge of food borne diseases and take steps to prevent them in their homes.

8. 1,000 North Carolina citizens will utilize more seafood and will prepare said seafood in a variety of ways.

9. 30 counties will hold 4-H leader training lessons related to youth fitness.

10. 500 North Carolina citizens will continue using processed foods without fear.

Family Resource Management

Narrative Statement

A. Clientele Problems: "Family Economic Stability and Security"

Meeting day to day expenses and providing for a financially secure future are the major concerns of both adults and teenagers as revealed by national research (1). North Carolina Experimental Station research that assessed the educational needs of individuals and families, 20 to 40 years of age, in three counties found money or financial management to be the major educational need (2). These data are further supported by the conclusion of the county Extension Program Planning Groups who identified "coping with financial difficulties" as the major problem for individuals and families.

Recent years of spiraling inflation with slower growth in income and increasing unemployment have weakened individuals/families financial reserves and have resulted in increased indebtedness and depleted financial assets. This has heightened the concern for future security as well as for coping today. Our current period of "disinflation" is not remedying the situation.

Extension's direction for long-range programming relative to enhancing "family economic stability and security" and "family strengths and social environment" is compatible with the needs identified. In 80 County Plans of Work, requests are made for programs on financial management and coping with inflation. Other requests relate to women and the law and improving shopping skills.

B. Objective

The continuing objective for the Family Resource Management educational program will be to provide opportunities for individuals/families to increase their problem-solving ability and skills in the procurement, allocation and use of resources for strengthening family relationships and building financial stability and security through:

(1) systematically budgeting financial resources.
(2) profitable home production to provide for needs and wants.
(3) increased savings and investment activities.
(4) participation in activities on learning about money.

C. Expected Results

Participants in Family Resource Management education programs are expected to learn and apply managerial skills for increasing returns on their economic resources and thereby strengthen their overall financial position and family relationships. Results expected this year and continued over

the next five years include:

- 20,000 individuals/families conscientiously adopt simplier life styles and reduce financial demands and stress.
- 15,000 individuals/families follow a structured budget and increase savings for future.
- 5,000 individuals/families provide for some of their needs and wants through home production.
- 15,000 individuals/families increase savings and investments for financial security.
- 5,000 youth improve financial management skills.

References

1. "Young American: Serious? Conservative? Ambitious?" Senior Scholastic. April 16, 1982. and The General Mills American Family Report 1974-75: A Study of the American Family and Money. Minneapolis, Minn. 1975.

2. Oral report presented by Dr. Sarah Schoffner, Research leader for the cooperative Experiment Station and Extension research and demonstration project on "Needs Assessment". 1981-82.

Human Development

Narrative Statement

Family Strengths and Social Environment

In spite of a long-range trend toward strength in American families there are indicators of stress that comes from internal problems and social forces.

A. FAMILY STRESS.

1. Clientele Problem.
Some indicators that stress is a real problem for families are:
- Admissions to public mental health programs more than doubled during the 1970's partly because of the trend toward outpatient care and less institutionalization. Families now bear the load. (N. C. Health Statistics Pocket Guide, 1982.)
- Single parent families rose 80 percent between 1970 and 1979 while the number of two-parent familes rose only 7 percent. (N.C. Health Statistics Pocket Guide, 1982.)
- During 1980-81 there were 11,421 cases of child abuse and neglect confirmed in N.C., including 12 deaths. (New Initiatives, ref. 13).

2. Overall Extension Objectives related to Family Stress.
10,000 family members change expectations and lower stress levels within their families by adopting coping skills that help family members cope with stress.

3. Expected Results.
10,000 family members can be expected to lower the stress level within their families.

B. MARRIAGE AND FAMILY COMMUNICATION.

1. Clientele Problem or Situation.
There is a breakdown in communication among many married couples and household members. The divorce rate in North Carolina has risen 13 consecutive years to 418 per 1,000 population in 1980. For every 100 marriages in N. C. in 1980 there were 60 divorces compared with 28 in 1970. (N.C. Health Statistics Pocket Guide, February, 1982.)

2. Annual Objectives.
2,500 newlywed couples, 40 other couples, and 3,000 individuals use recommended family communication skills in the family or household.

3. Expected Results.
   a. Annually 2,500 newlywed couples, 40 other couples, and 3,000 individuals can be expected to use recommended communication skills within the family.
   b. Over a period of years more people can be expected to develop families that meet basic human needs of security, identity, achievement, and fulfillment.

C. YOUTH, ESPECIALLY ADOLESCENT PREGNANCY AND PREPARATION FOR MARRIAGE.

1. Clientele Problem.
Adolescent pregnancy and a lack of services to meet the needs of these youth is a problem in North Carolina. Among girls 15-19 years old, 96 of each 1,000 had a legal abortion, still birth or live birth during 1980. There were 810 pregnancies reported among girls under the age of 15. Teenage mothers still pay a great price in the form of less education, less money for a female-headed family, few choices for work, and more possibility of poor health. Social costs include disturbed family members, costs of AFDC payments, more handicapped children, and more health problems.

2. Extension Objectives.
   a. The improvement of services to pregnant adolescents and teenage mothers in at least 10 counties.
   b. At least 1,000 youth in 10 counties making wise decisions about future parenthood.

3. Expected Results.
Services to teenage mothers can be expected to improve, and at least 1,000 young people can be expected to make wise decisions about future parenthood.

4. Innovative Work.
This department will continue to work with the N. C. Coalition on Early Adolescent Pregnancy and the Governor's Advocacy Council on Children and Youth to help make a difference on the state leve.

D. ADULT DEVELOPMENT.

1. Clientele Problem.
A growing problem in North Carolina is the lack of social and emotional preparation for the middle years and retirement. North Carolina is moving rapidly with the nation to become a place of middle-aged people. According to the 1980 census there were in North Carolina 1,234,043 people between the ages of 40 and 60, approximately 22.4 percent.

2. Extension Objective.
At least 1,500 citizens deal with emotional, physical and economic problems related to the middle years and retirement.

3. Expected Results.
1,500 or more adults will move with confidence into the years of retirement.

E. THE MONEY CRUNCH AND VALUES.

1. Clientele Problem.
The money crunch is real for many Americans and North Carolinians. During the spring and summer of 1982 the unemployment rate for N. C. stood between 9 and 10 percent. In 1980, non-farm family incomes dropped 5.3 percent (median of $21,150). Farm family incomes dropped 14.8 percent (median of $15,760). North Carolina ranked 42nd in the nation in per capita income in 1980; $7,819 as compared with $9,521 nationally. A Yankelovich study of 1981 said, "Americans face a massive economic drain on our standard of living that we are not psychologically prepared to assimilate. The public is still mixed in unrealistic expectations and still entranced by the seductions of duty-to-self.... We are forced to live more practical lives and to pay more attention to gritty economic realities - job, homes, food bills, personal safety." ("New Rules in American Life: Searching for Self-Fulfillment in A World Turned Upside Down." Psychology Today, April, 1981.)

2. Extension Objectives.
4,000 adults and/or young people adjust their values and behavior to fit the touch economic times of the 1980's.

3. Expected Results.
At least 4,000 adults and/or youth can be expected to change their expectations and spending from non-essential items to essentials.

F. WORK AND FAMILY POLICY.

1. Clientele Problem.
The failure of family members, government, business and industry representatives to deal effectively with work-related family problems has placed unnecessary pressure on families.

2. Extension Objectives.
   a. By the end of 1983 ten industry or business groups to adopt family oriented policies.
   b. An increase in the number and quality of day care homes.

3. Expected Results.
   a. Ten industry or business groups can be expected to adopt family-oriented policies.
   b. An increase in the number of day care homes in three counties.
   c. Day care home operators in 90 counties receive minimal training in child growth and development and care through a quarterly newsletter.

G. ALCOHOL EDUCATION.

1. Clientele Problem.
Alcohol abuse among young people and adults is a problem in North Carolina. During the past 10 years 250,000 people have been killed in alcohol-related highway accidents. That is more than were killed in Vietnam. ("Tougher Drunk Driving Laws Save Lives." The Leader, p. 6, June 3, 1982.) In 1980, 18 to 20-year-old drivers accounted for 25 percent of the fatal night-time highway crashes. In North Carolina, year in, year out, alcohol figures in about 50% of all highway deaths. ("Teens Drinking Gets A Hard Look," The News and Observer, March 28, 1982.)

For N. C. in 1980 there were:

- 48,270 arrests for driving under the influence.
- More than 3,000 alcohol-related deaths. (N. C. State Plan for Alcohol and Drug Abuse, FY 1871, N. C. Dept. of Human Resources, Division of Mental Health, Mental Retardation and Substance Abuse.)

2. Extension Objectives.
At least 1,500 young people and adults make responsible decisions about alcohol as a result of Extension-related educational programs.

3. Expected Results.
The number and rate of people involved in driving under the influence and in alcohol-related accidents should begin to go down.

H. PARENTING.

1. Clientele Problem.
Although the proportion of children in relation to the rest of the population is declining, 84,543 babies were born in North Carolina in 1980. (N.C. Health Statistics Guide. State Center for Health Statistics, Dept. of Human Resources, April, 1981.)
Research has shown that parenting education improves skills and reduces such problems as educational failure and child abuse. (Yaharaes, Herbert, "Improving Parenting Skills," Families Today, Vol. 1, Science Monographs No. II, NIMH, U. S. Dept. of H.E.W., 1979: N. C. Dept. of Human Resources, Division of Protective Services). In North Carolina the need for parenting education is indicated by a failure rate in school competency tests and 11,484 confirmed cases of child abuse and neglect with 12 deaths reported in 1981.
Forty-nine Extension County program planning committees indicated parenting education a top priority in 1982.

2. Annual Objectives.
   a. 1,200 youth enrolled in 4-H Child Care and Babysitting projects.
   b. 100 expectant parents enrolled in prenatal classes.
   c. 60 parents of infants in 3 counties enrolled in parenting education classes.
   d. 2,000 parents of infants enrolled in home study courses.
   e. 2,000 parents of preschoolers receiving parenting education newsletters.
   f. 100 parents with school-aged and adolescent children participate in family project activities.

3. Expected Results.
   a. 1,200 youth develop knowledge, skills, and practice changes in child care, growth and development.
   b. 100 expectant parents develop knowledge, skills, and practice changes in child care, growth, development and parenting.
   c. 2,060 parents of infants and 2,000 parents of preschoolers develop knowledge, skills and practice changes in child care, growth, development and parenting.

I. NON-NUCLEAR FAMILIES.

1. Clientele Problem.
   Although three of every four households in the United States were family households last year, non-family households (maintained by persons living alone or other unrelated persons) increased by 85 percent since 1970; single-parent families with own children under 18 increased more than 95 percent (Family Economics Review, No. 3, 1982, p. 37). Since approximately 80 percent of divorced persons marry again an estimated 12.5 percent of children living with two parents have a stepparent.

2. Annual Objective.
   a. Professional and lay people in 10 counties attend conferences on the differences and special needs of non-nuclear families.
   b. Extension agents in 5 counties assist in developing community support networks for non-nuclear family members.

3. Expected Results.
   a. Professional and lay people in 10 counties become aware of the differences and special needs of non-nuclear families.
   b. Non-nuclear family members receive assistance through community support network.

Gerontology

Narrative Statement

A. Clientele Problems to be addressed by N. C. Extension Gerontology Program:

1. Extension Home Economists and their advisory committees in 31 counties state that families lack understanding of normal aging and have negative attitudes toward own aging as well as toward old.

   This problem is documented by the November 1981 White House Conference on Aging; by Louis Harris National Survey and the Trent and Glass study as reported in New Initiatives in Home Economics Extension, p. 59.

   Some elders are neglected and others physically or psychologically abused due to lack of family understanding, patience and complicated social and economic factors according to (Institute of Gerontology research at Wayne State University in Michigan) 2429 cases of adult abuse processed in N. C. courts in a nine months period of 1981.

2. According to Extension Home Economists in 41 counties, many older adults must adjust to a succession of losses in later years: loss of work, meaningful role in life; loss of spouse, parents, friends, family surroundings; reduced income; lessened physical energy, mobility and coordination; and sensory changes.

   Some older adults must cope with illness and disease due to loss of immunity as an age-related change. These problems are documented by Institute of Gerontology, University of Michigan, also by Kivett's studies in N. C. (New Initiatives, p. 58-60.)

3. In the early retirement years (age 65 to 74) over 70% of the men are still married living in their own homes with their wives. But by age 65-69 only 48% of women are still married and by age 69-74, only 36% are married.

   Sixty-one percent of men between 75-79 years old are still married, but only 25% of women are (Troll). Widowhood often brings about reduced income, health problems, loneliness, change in living arrangements.

   Twenty-three percent of all elderly live alone or with unrelated persons. (Troll, L.E., The Family of Later Life)

   Kivett (UNC-G) found that 11% of the elders in study (73 years average age) lived with adult child, but that the percent increased to 25% for adults 75 years and older. Sixty-eight

percent of elders lived within 30 minutes of an adult child. It was also found that elders gained support from adult children if relationships were good. The implication is that a need exists for communication, decision-making, and social interaction skills, between members of multi-generation families, between lone elders, handicapped elders, widowed and their adult children.

4. Twelve County Extension Home Economist report that middle years families lack planning for retirement. Robert Atchley, gerontologist, finds that the mid-years group resist retirement planning due to sensitivity over age, the great desire to work; and the low status of leisure. (New Initiatives, p. 60.)

   According to Kivett's Caswell County, N.C., study, one-half of the retired rural people were dissatisfied with retirement for a variety of reasons, including no purpose in life. Good health and satisfactory social interaction with family and friends were the most important factors in a satisfactory adjustment.

   The majority of the million adults in North Carolina between 40 and 60 years are not planning and preparing for their older years to prevent some future problems; financially; health-wise; socially and emotionally.

5. Extension Home Economists and gerontology study committees in 14 counties state that retired people and elders lack stimulation and opportunity to maintain self-esteem and mental balance.

   The older population is increasing, due to more elders living closer to full life span of a 100 years. The continued social and psychological development of the aging depends upon continued mental stimulation in the family, continued involvement in the community and educational opportunities; according to Robert Atcheley. Stimulation, involvement and opportunities are not always available in families nor in communities of N.C. (New Initiatives, p. 58)

Family Management and Health

6. Health and income are quite interrelated with family dynamics, and lack of housing options, living arrangements, choices and lack of community support services, at any age, but the complex interrelationships intensify in the older years with daily aging changes and losses complicating the situations, along with varying customs and cultures of the old mixed with the changing habits and life styles of the young made necessary by development of technology. (Documented by Atchley, Social Forces in Later Life. Note page 58 in New Initiatives in Home Economics).

Extension Home Economists in 36 counties state plans to work on integrated health problems of the elderly and 37 county plans also include educational assistance to older persons on interrelated management skills in the older years.

Why Extension's Concern About Education in Aging?

1. Knowledge about aging improves attitudes toward aging. Due to process of social consequence, education influences development of health services which results in healthy, alert, independent elders involved in the community. Involved senior adults result in more funds for research and extension education.

2. Aging is the concern of the younger adults since it is the younger (than 60) who determine the status and position of the older in the social order. The young then become old and reap the benefits of their own efforts or suffer the consequences.

3. The physical and mental health of the old affect the health of the young and entire society. The state of N.C. cannot afford to have any situation less than healthy, alert, active, well informed elders, contributing to the community.

4. Integrated Home Economics Extension Program has a terrific challenge and opportunity: (1) to disseminate information to the younger about aging for improved attitudes and acceptance of own aging; (2) provide information to mid-years to plan for retirement; and (3) to the elders, information to adjust satisfactorily to age related changes and losses as well as to social changes.

B. Objectives (Continued focus with redirected strategy, also focus in different counties.

Management

1. 83,000 Older adults use recommended management skills adapted to age related changes, diminished physical energy and reduced income due to increased cost of living.

Health

2. 10,000 Older adults learn and practice preventive health care skills.

Family Strengths

3. 10,500 Families and their elders develop understanding about normal aging and make positive attitude adjustment to aging.

4. 3,000 Youth develop positive attitudes toward aging as they acquire knowledge, exchange skills, and develop philosophy from older community members.

5. 12,300 Older persons make satisfactory adjustment to physical and psychological changes and losses and families of elders make appropriate adaptations.

6. 2,000 Families to gain knowledge about aging and improved attitudes to develop more support networks for elders and community support services.

7. 800 Mid-years and senior adults in 12 counties gain knowledge about, make plans and preparation for retirement time, roles, living arrangements and purpose in live.

8. 5,600 Senior adults continue developing to their own full potential through greater involvement in the community.

C. Expected Results:

1. 55,000 Senior adults (60-74 years of age) carry out self-sufficiency skills to save themselves $169 million (home repairs and business management skills estimated at four one-half days a week at $4.00 per hour for 48 weeks - save $3,072 each person.)

2. 28,000 Elderly persons (75+) develop more self-maintenance skills to remain independent, saving own bank account or the county tax funds for group care, about $5,400 annually for each person or a total of $151 million over the state. (Only about 3% would likely qualify for county assistance. This figure amounts to four and one-half million dollars for 3%.)

3. 10,000 Older persons remain healthy, save money, following educational programs in these ways:

   1500 Senior adults participate in exercise therapy groups.
   1500 Senior adults follow up on early detection screening for glaucoma
   Senior adults follow perscribed nutritional diets reported elsewhere.
   20,000 Senior adults follow up hypertension screening.

4. 10,500 Families and their elders to show by the activities and support services listed below, positive attitudes toward aging after having educational programs on understanding aging.

   1500 Senior adults involved in 50 newly organized social development groups for stimulation and loneliness therapy.

320 More widowed persons make healthy adjustment in bereavement having participated in support group or educational program about widowhood adjustment. (Adjustment measured by range of involvement.)

10 Counties to secure a need service for elders (example: homemaker home health aide service or chore service).

500 Elderly adults hearing helps for better communications.

800 Older adults with community leaders activity plan for cooperative transportation - pooling for necessary trips.

100 Older persons to make changes in lighting, stair railings and bathroom grab bars to prevent accidental falls in the home.

3000 Youth and 4-H adult leaders exchange time, conversation, skills and talents with senior adults, community members, following planned study of aging.

800 Middle years and early retirees report developing own plans for retirement and make preparation for retirement time, roles, living arrangements, friendships, activities following workshop on retirement. (Financial planning should be done much earlier, but those plans might be revised.)

5600 Older persons to report attaining a higher degree in developing their potential through greater involvement in the community through educational and cultural pursuits as well as personal relationships.

200 Senior adults to participate in senior camping.

5000 Senior adults to participate in special Senior Citizen event.

2500 Senior adults continue development of gardening and homemaking and craft skills to satisfy expressive needs.

500 More senior adults to contribute volunteer service to community projects.

Clothing and Textiles

Narrative Statement

A. Problems To Be Addressed

1. Family Economics Stability

North Carolina families are continuously experiencing economic pressures on their family incomes. Clothing, as a nonfixed discretionary item, has seen its percentage of the family budget contract to 6 percent in 1981. To provide adequate family clothing, North Carolinians are using more credit for purchasing clothing items, substituting fewer and less quality goods for those of high quality, and engaging in more personal production activities. Evidence of financial pressures being exerted on the clothing allowance is exemplified by the 25 percent drop in apparel buying during the first two quarters of 1982 (North Carolina Retail Merchants Association).

Major clothing problems confronting North Carolinians involve:

1) Acquiring and developing personal production skills to maintain an adequate clothing wardrobe, including accessories for the family members.
   Specifically, this concern will be directed to the special interest audiences of seamstresses, young families with infant and preschool children, and preteens and teens.

2) Extending clothing money by repairing and updating garments.
   Special audiences targeted to respond to refurbishing problems are homemaker extension club women, parents of teenagers, and low income parents.

3) Stretching economic resources through the use of appropiate clothing alternatives.
   Special audiences identified to focus on this problem are senior citizens, families with preschool and school age children, low middle income families.

2. Energy, Water, and The Living Environment

The escalating cost of energy calls for the reduction in consumption of energy. With respect to appliances, the hot water heater is a major user of energy. For this reason energy saving laundry practices that result in optimum cleaning of clothing need to be addressed. The employment of prescribed laundry procedures will assist the family in using less energy in addition to less water while maintaining acceptable cleaning standards.

Another area where clothing can contribute to lowering energy cost is in the selection of fibers and fabric weaves that can assist the body in maintaining adequate body heat in hot and cold weather. Since clothing protects the body from the elements, knowing which textiles provide maximum thermal comfort for different age family members and how to combine articles of clothing for optimal thermal comfort can reduce energy consumption in heating and cooling the home.

High construction and shrinking energy sources have decreased the average American home size. This smaller living space requires better utilization of storage space. In the area of clothing this means better planning of the available spaces for clothing storage, laundering, and home sewing.

Specific concerns relating to Energy, Water, and The Living Environment for North Carolinians are:

1) Acquiring the necessary laundering procedure information that will reduce energy and water consumption that results in clean clothes.

   Special audiences identified to deal with this problem are families with home laundry units, newly wed couples, and families using pesticides in home gardening and farming.

2) Learning adequate textile information that will help in the selection of apparel that gives optimum seasonal thermal protection.

   Audiences targeted for this problem are senior citizens, handicapped, and persons suffering from hypertension and heart disease.

3) Acquiring the necessary information to better utilize available storage space on clothes closets. laundry areas and home sewing centers.

   Special audiences include young families and apartment residences.

B. Clothing Objectives

1. Economic Stability

- North Carolina family members will utilize wardrobe planning and investment skills to stretch available clothing resources.

- Seamstresses, young adults and grandmothers of preschoolers and infants will gain/improve home sewing skills thereby extending family income through home production.

- 4-H leaders and youth will gain/improve home sewing and fitting skills.
- North Carolina family members will acquire/increase mending, updating and alteration skills to extend wear life of clothing.

2. Energy/Water and The Living Environment

- Families will make wise decisions in laundering.
- Family member will acquire knowledge and skills in proper care and storage of clothing.
- Families will gain and apply information in the selection of textile products to maintain adequate body temperatures.

C. Expected Results

1. Family Economic Stability

- 15,000 family members (specifically senior citizens, families with preschool and school age children, and low middle income families) will have utilized wardrobe planning and investment dressing techniques/skills to stretch the discretionary clothing allowance by 10%.
- 50,000 adults will have gained/improved home sewing and fitting skills resulting in potential saving of $17,500.
- 15,000 4-H leaders and youth will have gained improved home sewing and fitting skills resulting in potential savings of $150,000.
- 40,000 family members (homemaker, extension club women, parents of teenagers, and low income parents) will have acquired/increased mending, updating and alteration skills to extend the wear of clothing by one year per garment.

2. Energy, Water and The Living Environment

- 23,000 families with home laundering units (specifically newly wed couples, families using pesticides in home gardening and farming) will utilize prescribed laundering procedures that will reduce energy and water consumption while maintaining acceptable cleaning standards.
- 10,000 special interest audiences such as senior citizens, handicapped, and persons suffering from hypertension and heart disease will select clothing that will give optimal seasonal thermal protection to maintain even body temperature.
- 8,000 families (specifically young families and apartment dwellers will have acquired knowledge in the better utilization of space for clothes storage, home laundering space and home sewing space.

Housing, House Furnishings and Crafts

Narrative Statement

A. Problems To Be Addressed

1. Energy, Water and the Living Environment

For the residential consumer, the 1970's brought as much as a 65 percent rise in home heating bills. The Consumer Price Index reported a ten percent increase for fuel and other utilities, May 1981-1982 alone. North Carolinians have been forced to seek ways to reduce energy consumption and to explore alternative energy sources. New energy legislation passed at the 1981 North Carolina General Assembly includes additional solar tax credits, and is designed to encourage home energy consumption and promote the development of alternative energy resources.

Shrinking energy supplies also helped to push down the size of the average American house from a high in 1978 of 1,750 square feet to 1,550 square feet in 1981. This trend is expected to continue forcing consumers to evaluate the use of their living environment.

Water is projected to become a scarce resource in the near future. The average North Carolinian uses between 50 and 70 gallons of water per day. As a result of rising water costs associated with both the water supply and waste treatment systems, wasteful water consumption should be discouraged. Consumers need help in practical, easy-to-do ways to control water usage.

The major problems facing North Carolina households in energy, water and the living environment are:

1. Acquiring and developing energy and water management practices to reduce demand and energy and water costs.

   Specifically this concern will be directed to young families, working women and the elderly.

2. Evaluating and maximizing space use in the home.

   Audiences targeted for this problem are youth, young families with children and general public.

2. Family Economic Stability and Security

Affordable housing in a suitable living environment is a major problem facing individuals and families in North Carolina. All costs related to acquiring and maintaining a housing unit have increased greatly. The 1980 Census revealed that monthly housing costs for homeowners in mortgaged units increased by 112 percent 1970 to 1980. According to the Consumer Price Index, housing costs increased by ten percent, home furnishings by six percent and utility expenditures by ten percent in the period May 1981 to May 1982.

As monthly mortgage, rent payments and operating costs increase, young families, as well as older adults find themselves with less money to spend for furnishing and maintaining a home.

Design and production of crafts provide an additional source of income for North Carolina families. In spite of market potential, a number of problems make it difficult for craftsmen to earn a livelihood: excessive cost of production; inadequate training; lack of management and marketing skills and knowledge of standards.

The major economic problems facing North Carolina families as related to housing, furnishings and crafts are:

1. Stretching economic resources through the careful evaluation of housing options when buying, building or remodeling.

   Special audiences targeted to respond to this problem will be prospective home buyers and homeowners in the young and middle age groups.

2. Acquiring and developing skills to operate, repair and maintain housing.

   Specifically, this concern will be directed to women homeowners and renters, both young and old.

3. Extending furnishings dollars through the wise use of economic options including refurbishing and do-it-yourself skills.

   Special audiences identified to focus on this problem are working women and young families.

4. Acquiring and developing management and production skills to market quality crafts.

   This concern will be specifically directed to North Carolina craftsmen.

B. Housing, House Furnishings and Crafts Objectives

1. Energy, Water and the Living Environment

   - North Carolina family members (including youth) will utilize energy conservation and retrofit strategies to reduce residential energy demands and costs.

   - Young families will acquire knowledge to make suitable residential alternative energy choices.

   - North Carolina family members will incorporate water-saving practices and devices in their homes.

- Young families and youth will acquire knowledge and skills to effectively maximize storage space.

- Young families will develop techniques for making limited interior spaces more attractive and usable.

2. Economic Stability

- Prospective home buyers will make wise housing choices when buying or building

- North Carolina homeowners will gain and apply information on remodeling of existing structures as a housing option.

- Women homeowners, renters and elderly adults will acquire skills to make simple repairs in the home.

- North Carolina family members will acquire skills in refurbishing furniture.

- Young families and working women will utilize money saving techniques in decorating their home.

- North Carolina craftsmen will increase their economic potential.

C. Expected Results

1. Energy, Water and the Living Environment

- 25,000 family members including youth will utilize energy conservation and retrofit strategies (exterior and interior window management, weatherization and insulation) to reduce energy demands and costs by ten percent.

- 10,000 young families will acquire knowledge to choose between such energy alternatives as passive and active solar and earth sheltering to maximize potential energy savings.

- 10,000 young families and youth will acquire knowledge and skills to maximize storage space in kitchens, bedrooms, and living areas.

- 5,000 young families will utilize one or more techniques to make small spaces appear larger and be more attractive.

2. Economic Stability

- 9,000 prospective home buyers will acquire skills to make the most appropriate housing choice when buying or building.

- 25,000 North Carolina homeowners will utilize remodeling techniques to improve existing housing resulting in savings of $5,000,000.

- 5,000 women homeowners, renters and elderly adults will make one or more simple home repairs resulting in a savings of $250,000.

- 15,000 family members will refurbish furniture resulting in a savings of $750,000.

- 10,000 young families and working women will utilize one or more do-it-yourself decorating ideas resulting in a savings of $500,000.

- 25,000 North Carolina craftsmen including youth will add $500,000 to their income through the improved crafts marketing and production skills.

Leadership Development

Narrative Statement

A. Problems to be Addressed

Home Economics program delivery has emphasized information dissemination to client groups who volunteer to diffuse the knowledge and assist in helping a wider circle of interested clients develop skills and abilities in the areas of new knowledge. In North Carolina, organized Extension Homemaker clubs have been the primary clientele and source of volunteer diffusion for home economics related subject matter. One of the objectives of the N. C. home economics program is to develop leadership. The volunteer leader approach has helped Extension home economists to maximize the number of individuals and families receiving their educational materials.

There are areas of each county in North Carolina where Extension Homemaker groups do not exist. There are young homemakers who have not been reached by either the home economics agent or a volunteer. To help reach these areas and individuals, the Extension Homemakers' Board of Directors must determine new types of local groups of individuals who can become a part of this volunteer educational association to receive knowledge and skills to improve the lives and situation of their families and communities.

Extension Homemaker members who volunteer their services to teach classes for their local groups and special interest clientele expect to learn and grow as a result of the training received from the county home economics agents and other staff members. The leader expects to have access to the same type of teaching materials (bulletins, slide sets, audio visual aids, etc.) to present their lesson as the agents use in the training sessions or the month the agent meets the local association.

Many new agents and experienced agents have never provided leadership for the Extension Homemaker groups in the counties. These staff members need training in recruitment, training, retention and support of Extension Homemaker volunteers and an understanding of the association levels of operation.

B. Leadership Objectives

1. Agents and volunteers in the Extension Homemakers program to increase their state membership by 3,000.

2. Identify new audiences to include men and ethnic groups.

3. Increase the number of counties with integrated groups.

4. Reach young homemakers and areas of counties not presently benefiting from participation in the volunteer Extension Homemakers Association program.

5. Develop mass media to publicize Extension Homemaker benefits.

6. Develop programs with target audience appeal.

7. Establish a state advisory committee for the Extension Homemakers Association made up of Extension Homemaker County Liaison Home Economics Agents, Extension Homemaker Leaders, State Staff, and County Advisory Board members who are non-Extension Homemakers.

8. Explore use of paraprofessionals to recruit, organize and maintain Extension Homemakers Associations at county level to work with hard to reach clientele and working homemakers.

9. Develop a policy for rotating EHA Liaison Home Economics Agents.

10. Extension Liaison Agents possess job related knowledge and skills necessary to fulfill their role with the Extension Homemakers Association.

11. Extension Homemakers Association lesson leader volunteers be provided needed training and materials to implement training received.

12. Develop a time management system to enable agents to move volunteer leaders into leadership roles in a systematic way.

13. Establish a uniform framework for continuous training of Extension Homemakers Liaison Home Economics Agents to work with volunteer leaders including midde management volunteer concept.

14. Incorporate agent training in organizational development, maintenance and support of the Extension Homemakers Association in on-going orientation, and in-service training programs, including a procedure for agents to incorporate Extension Homemakers program of work into the annual county Home Economics program of work to gain greater impact for a total Home Economics program.

15. Preparation of a resource book for use by Extension Homemakers Association Liaison Agent(s) and Extension Homemakers Association County Council President be completed and used in training.

16. Develop and publish the study of N. C. Extension Homemakers.

17. Share results of Extension Homemakers Study for long range program planning, implementation and evaluation.

18. Establish procedures through semis to report volunteer's time and efforts.

19. Establish a system for additional recognition of volunteer leaders.

20. Program of Work Consultants be supported by Assistant State Leader of Home Economics, and Program of Work Resource Persons in their efforts to serve in their new role.

C. Leadership Expected Results

1. Extension Homemakers Association membership to exceed 30,000.

2. Develop new types of member possibilities for N. C. Extension Homemaker members to aid in exceeding the 30,000 membership goal.

3. Reach five unorganized areas in counties where individuals are not involved in Extension Homemakers Association program.

4. Increase number of men and ethnic individuals by 25 per county in the county Extension Homemakers Association program in integrated groups.

5. Increase by 10% the number of Extension Homemakers Association groups among the hard to reach clientele and working young homemakers. (Use of paraprofessionals if possible)

6. Each county liaison agent be provided Extension Homemakers Association orientation training.

7. Each county liaison agent receive training in leadership and time management skills for working with volunteer leaders.

8. Each Extension Homemakers Association lesson leader be provided an opportunity for training needed in subject matter content, methodology, and an opportunity for personal development.

9. Assist the nine program of work consultants to become more proficient in their consulting role.

10. Each Liaison Home Economics Agent to use Extension Homemakers Association Resource Book and Handbook for guidelines in executing their responsibilities.

D. Pilot Efforts

1. Train 101 Home Economics Liaison Extension Homemakers Association Agents in Extension Homemakers Association leadership skills and methodology.

2. Conduct district training sessions to involve Extension Homemakers Association Liaison Agents in the middle management concept for leadership development.

3. Complete Extension Homemakers Association Resource Book for agents' use and use this resource in the training of home economics Liaison agents in Extension Homemakers Association procedures and policies.

COMMUNITY AND RURAL DEVELOPMENT

Narrative Statement

The primary mission of the Extension CRD Program is to provide an educational program designed to improve the knowledge, understanding and ability of community leaders to identify and resolve critical community needs and issues. Extension professionals working with community leaders, groups and organizations are challenged by the complex problems of maintaining a strong and stable economic base, providing the facilities and services to support the economic base to meet important social needs and foster a process of community decision-making that affords the opportunity for citizen participation.

The overall planned program for FY 83 will concentrate on problem areas identified in 4-Sight, Extension's Long Range Plan and Departmental and County Plans of Work. More specifically, the program will concentrate on organization, leadership, citizen participation and technology transfer as they relate to the following broad problems. These problem areas include leadership and organizational development; environmental quality to include water quality, soil conservation, water management and community beautification; economic development; community services and facilities; energy; crime prevention and land-use planning.

Business Management and Economics

1. Needs Assessment

The public continues to be deeply concerned about problems related to land use, economic growth, trade, transportation, labor, taxes, energy, housing and other issues. If the public is to more effectively participate in the formulation of sound economic policy, they must have a better understanding of the issues and alternatives along with the cost and benefits that come from the various tradeoffs. Evaluating the alternatives to maximize society's benefits commensurate with environmental concerns will be very difficult.

2. Objectives

To increase the efficiency of resource use through community planning to provide adequate facilities and services.

3. Methods

a. Data will be provided to representative counties in the state and will be used in other areas to analyze the monetary benefits and cost of economic growth in various sectors.

b. Conduct regional conferences for county commissioners, county extension agents and others to discuss taxation, value and appraisal of agricultural land and land-use planning. Work in this area will be closely coordinated with the Assistant Director for Community and Rural Development.

4. Expected Results

a. The education effort in economic development is expected to improve knowledge of the essentials for economic growth and result in increased income and employment, better community services and more orderly community growth.

b. Increase the economic literacy of county extension personnnel through a comprehensive in-service training.

Natural Resources and Environment

1. Needs Assessment

North Carolina possesses a wide range of natural resources which are invaluable both to the economy of the state, and contributes to its esthetic value as well. These resources contribute immeasurably to our present economy, and enhances the outlook for future economic development. Presently, we are blessed with an abundant water supply of reasonably good quality and distribution. But, in certain areas of the state, particularly on the Chowan River, North Carolina is beginning to experience water quality problems. These water quality problems have been identified with a wide range of soil conditions across the state. Many of these areas are unsuitable for conventional septic tank operations.

The state is also blessed with a wide range of soils capable of producing most temperate zone crops produced in the United States. Long range sustained productivity of these soils is being compromised by erosion and inadequate water management. Currently, we are losing on the average of 7½ tons of soil per acre per year for all of our cultivated land with the more rolling areas having even higher rates of erosion than the state average. The eastern portion of the state requires extensive water management for optimal agriculture and forestry production, as well as providing a suitable habitat for our communities. The development of these resources must be conducted in a way not to compromise the water quality of our streams and estuaries.

Approximately two-thirds of the state of North Carolina is forest land of which about 80 percent is owned by small private land owners. With future demands projected for our timber resources utilized for pulp, saw logs, and as a source of energy, puts real stress on the development of sound woodland management policies for this area.

More recently interest in the western part of the state for mining and prospects for oil and gas have created needs for strong educational programs for land holders in these areas.

The coastal area of North Carolina also supports a strong and viable fishery industry. North Carolina's coastal area features an abundant and diverse natural resource consisting of about 2.3 million acres of estuarine resources. This comprises approximately 50 percent of the Mid-Atlantic estuary. The area supports both the commercial fishery which landed over 432 million pounds of fish and shellfish during the 1981 season, as well as a sports fishery industry that is estimated to produce over 60 million dollars annually.

All of these resources are extremely valuable to the state's economic development, but if they are exploited without the proper environmental concerns they can create critical community problems.

2. Objectives

To create an increased awareness, knowledge, and understanding of these natural resources and environmental problems and to appraise the community leaders and decision-makers of the technology, educational resources, and policy information available to them through both the Cooperative Extension Service and other private and public resources. Assist the leadership in exploring options for solving their community problems.

3. Methods

A variety of techniques will be used to deliver the program. The state and county staff will conduct educational meetings, conferences, workshops, seminars to carry the program to our clientele in the field. These will range from county meetings with key leaders to develop awareness of specific programs for land application of waste material to improve water quality, solid waste management programs to improve the environment for health as well as esthetic reasons. In addition, the use of mass media techniques including extension publications will be continued. Finally, applied research and demonstrations will be included in the kit of tools used to generate new information and to disseminate it as well as current information to our very diverse clientele group.

4. Expected Results

It is expected that educational programs, demonstrations, etc., relating to natural resources and environment will be conducted in more than 80 counties in North Carolina. These meetings will be conducted by both county and state specialists for the benefit of citizens, community leaders, decision-makers, and resource managers in these counties. It estimated that more than 18,000 leaders and approximately 250 to 300 thousand citizens in North Carolina will be reached. The

broad efforts in water quality, soil erosion, energy from wood burning, exploration for minerals and leasing, as well as the fishery programs are positive tools in solving community problems.

Leadership Development

1. Needs Assessment

The decade of the 80's will bring major changes for North Carolina and its communities and their organizations. Some of these are demographic changes which began in prior decades. Between 1970 and 1980 North Carolina's population increased about 15 percent to 5,881,766 inhabitants. North Carolina is the tenth most populace state in the nation. As population increased other changes have occurred. Agricultural employment continues to decline in respect to non-agricultural employment and demands increase for a more highly skilled labor force. Additional pressures for community facilities and services continue and these changes and trends have caused public problems or issues to arise. With more complex problems there is an increasing need for educational programs that help rural citizens become aware of the issues and problems and to develop the leadership and organizational skills to deal with them. Leadership must acquire up-to-date information and technology that will allow more effective and efficient decisions.

Extension cooperates with a wide variety of citizens at various levels. Hundreds of leaders are active at the county level on various special committees and ongoing committees concerning community and rural development problems or issues. Extension staff continually provide information and training to these leaders on individual and group basis in the context of problem solution.

2. Objectives

a. To increase the leadership - organizational skill and knowledge of the relevant extension clientele through the development of additional training materials.

b. To adapt or develop computerized decision-making models for use by local decision-making officals.

c. To improve the competency of the leadership of which extension works through problem solving.

d. To improve the process and progress made within the Extension Leadership Advisory System, particularly in the Community and Rural Development program committee.

3. Methods

a. Educational materials and programs from basic to advanced leadership skills will be developed by specialists and delivered by extension staff to the appropriate relevant clientele.

b. Applicable models will be programmed for the county microcomputer system. Publications and other supporting material will be developed for in-service training for Extension Agents and relevant local officials.

c. A computerized, social and demographic data base will be established for use by extension staff and community leaders. Publications and other supporting materials will be developed along with appropriate in-service training for Extension Agents and other relevant clientele groups in order that they can solve their community problems.

d. Provide systematic training in groups on specific tasks and individual assistance to cooperating leaders.

4. Expected Results

a. Educational materials and programs will be delivered to the appropriate extension personnel and their relevant clientele.

b. Local government officials in pilot counties will have information available to them on which to make an effective and efficient decision.

c. Effective program evaluation techniques will be used to measure the quality of the program, developed under Method 3 and the utilization of these programs.

d. To provide group and individual leadership training to 35,000 cooperators.

Organization Development and Maintenance

1. Needs Assessment

a. There are a number of obstacles as individuals and groups attempt to deal with community problems and opportunities. These include the limited ability of individuals and groups to respond to opportunities or deal with issues in an organized manner.

b. A limited knowledge of individuals and groups on how to establish, develop and maintain organizational structures which can address community concerns.

c. How to obtain adequate citizen input in the problem solving process, particularly as it relates to the group process.

As part of the Extension Community and Rural Development program, North Carolina will give emphasis to the development of leadership and organizations through which issues can be approached on a community basis and will improve the leadership's ability to cope with the challenges and make decisions necessary to function effectively in solving today's problems.

2. Objectives

Extension will assist in the establishment and maintenance of a variety of organizations at the local and state level to improve citizen's input in the group process and to enhance the group's decision. Specifically, emphasis will be placed on improving individual leadership skills, as well as the groups' ability to deal effectively with community issues.

3. Methods

The primary method used will be consultation with the key leaders, advisory groups and community decision-making groups. Training will occur to assist this group in problem solving and to improve and adjust the organization to fit the current needs. Training and consultation will be provided to these organized community groups to insure their maintenance, as well as to the Extension advisory groups in the counties.

4. Expected Results

a. Approximately 2400 members of the Extension advisory leadership system will receive assistance in extension programming.

b. A series of in-depth training session will be provided on a variety of leadership skills to approximately 2500 to 3000 leaders.

c. Ad hoc committees will be organized for assisting a variety of group purposes on many short-ranged projects. Programs in over 30 counties will be assisted in developing additional organizations to deal with a variety of content areas important to the local citizenry.

Comprehensive Community Planning

1. Needs Assessment

North Carolina shares in the national problem of loss of its prime forest and farmlands. These lands are critical to North Carolina's economy, our heritage and to our future. If present trends continue, we will lose between 700,000 and 1,000,000 acres of prime farmland

between now and the year 2000 as our state continues to grow. The last five years alone we have attracted almost 9 billion dollars in new industrial development and almost 150,000 new jobs in the state. With continued economic growth this will put tremendous stress on our land resources, as well as create a high demand for additional community services and facilities.

North Carolina, being the tenth most populous state, continues to experience growth pressures in its rural areas, particularly close to cities and towns. This pressure for development primarily of residences and some business and industry has caused increased need for land use allocation. There is still resistance throughout the state to government control over land use. In order to provide quality community services and facilities, it is necessary for local governments to exercise some control over land use. The need for people to be involved in this process continues and will be a big issue in the decade of the 80's as competition for scarce resources increase.

2. Objectives

a. To develop comprehensive land use programs that will insure the preservation of prime and important agricultural and forestry lands and at the same time provide needed land for continued economic development in the state.

b. To provide citizens and community leaders information on which to make choices about the use of land and increase the community leadership's awareness of the different opportunities for exercising land use control.

3. Methods

a. To work with the appropriate state agencies, USDA Soil Conservation Service, planning boards and other organized groups within the county to acquaint them with the problems of the losses of this land and educate them to the alternatives that are available to the community leadership to solve these problems.

b. Provide material and visuals for use in civic clubs meetings and for general community access on land use issues and alternatives.

4. Expected Results

a. Expect a statewide policy to further implement the Secretary of Agriculture's Memorandum concerning the preservation of prime and important agriculture and forestry lands.

b. A means of evaluating public's understanding of the land use issue will be the number of people who have attended or participated in seminars or educational meetings on land use.

Community Services and Facilities

1. Needs Assessment

With the population growth and the population shift from agriculture to rural non-farm and continued development and growth of rural areas, adequate community services and facilities is a primary concern for many of our communities. The most visable problem identified by counties is the availability of water for residential, business and industrial growth and development. Sewage disposal is also a problem due to the fact that many of our soils are not suitable for adequate on-site waste disposal and the municipal facilities are limited in our rural areas. Therefore, as a result of the increasing demand for community, water and sewer systems, a strong educational program is needed. Many counties in North Carolina have solid waste disposal systems that have been approved by the Board of Health. This normally includes the landfill and a collection system. However, many of these systems are improperly utilized throughout the state due to the lack of the citizen's understanding and attitudes of citizens towards the disposal of these waste materials. Other services that have been identified as needed by local governments and communities include pest control; i.e., mosquitoes, etc., rural transportation, crime prevention, extended care nursing home facilities, day care facilities and recreation.

2. Objectives

a. To conduct educational programs on community facilities and services through appropriate citizen groups and informing them of the situation and alternatives available.

b. To develop educational materials and conduct programs that would improve the utilization of solid waste disposal systems in the counties that have approved solid waste disposal systems.

c. To provide technical information to public officals and employees concerning proper waste treatment and disposal.

d. To improve interagency cooperation throughout the state as it relates to solving community problems dealing with facilities and services.

3. Methods

a. Public meetings will be held in counties aimed at solving the problems that they have identified.

b. Cooperative efforts will be fostered of public and private agencies that can bring resources to bear in solving these problems.

c. Private consultation of the specialist staff to train county agents and other county leaders will be initiated in the 42 counties.

4. Expected Results

The benefits of the program will be measured through the accomplishments reported through the counties' annual progress reports. The effectivenss of the methodology can be measured by new development of the community services.

Economic Development, Manpower and Careers

1. Needs Assessment

North Carolina is a growing and vibrant sunbelt state. During the last five years almost $9,000,000,000 of new industrial development creating 150,000 new jobs has occurred. This development has taken place with tighter federal and state budgets causing small communities and rural areas to experience rapid and complex changes in structure and responsibilities. The continued population growth and shift from the agricultural sector to the non-agricultural sector has placed importance on skilled training, vocational counseling and job placement. Currently, two counties are undergoing a pilot impact assessment program to more clearly define the community needs in adjusting to economic impacts.

2. Objectives

a. To develop educational counseling and development programs that will increase economic activities and strengthen the local economy. These programs will emphasize small business management and development, manpower analysis and development, as well as education towards developing economic and industrial development policies and strategies.

b. Citizens will be made aware of opportunities to upgrade their skill levels and means of improving their educational levels.

3. Methods

The methods to be used will involve working with small community groups, industrial development groups, vocational educational programs through seminars, consultations and a variety of group meetings.

4. Expected Results

   a. About 100 more small communities to be certified as "Communities of Excellence" which signifies that they have met criteria necessary for new or expanding industry.

   b. Economic development programs will be enhanced in at least 23 counties during the year.

PLAN OF WORK

1982-83

THE 4-H MISSION IN NORTH CAROLINA

1. The goal of 4-H is to assist youth in meeting the basic needs, developmental tasks, and essential life skills through planned "learning by doing" experiences. A necessary corollary of the youth development goal is the development of volunteers as individuals and leaders in the 4-H program.

2. 4-H is one of four educational programs of the North Carolina Agricultural Extension Service involving youth and adults. 4-H is:

   a. informal and out of school,
   b. community based and locally determined,
   c. primarily group focused and family oriented,
   d. volunteer operated, and
   e. supervised by professional staff.

3. 4-H uses knowledge as a means of meeting basic and developmental needs and acquiring essential life skills.

   a. 4-H emphasizes subject matter related projects and activities using extension and land-grant university resources.
   b. 4-H structures the learning environment using knowledge from the social and behavioral sciences and the humanities to promote the acquisition of life skills.
   c. The mix of subject matter and educational methods in a democratic environment provides for the personal development process.

4. 4-H is operated by volunteers under the supervision of a professional extension staff.

   a. Some volunteers use subject matter as their orientation to interacting with youth and adults in 4-H.
   b. Other volunteers structure groups and learning experiences for youth using the social and behavioral sciences.
   c. And, other volunteers render services in support of individual 4-H'ers and the 4-H Program in general.
   d. Professional extension staff members teach volunteers to use subject matter, educational methods, and the democratic process to achieve human development objectives.

5. 4-H is publicly supported by county, state, and federal governments. Private resources, both human and material, are used to enrich the learning experience of youth and adults.

NEEDS ASSESSMENT IN 4-H

The needs addressed in 4-H in North Carolina spring forth from three basic sources -- youth, society and subject matter. The subject matter source is reflected in the twenty-one (21) components used as a basis for the plan of work. These components are necessary but not sufficient to portray the dynamics of 4-H. Outlined below are the two other basic sources of 4-H programs -- the needs of youth and those of society.

Youth Needs

Basic Needs:

1. Food, water, sex and shelter
2. Safety
3. Love and belong
4. Esteem
5. Self-actualization

Developmental Needs:

1. Getting along with age mates
2. Learning an appropriate male and female role
3. Developing basic intellectual skills
4. Choosing and preparing for an occupation
5. Developing attitudes toward societal groups and institutions
6. Becoming independent of parents and other adults
7. Developing conscience and moral judgment
8. Forming a system of ethics and a scale of values

Societal Needs

Social Needs:

1. Citizen participation
2. Economic productivity
3. Cultural transmission
4. Orderly change

Social Trends:

1. Post-affluence trends
   a. decline of myth that "more is better"
   b. redefining of needs and wants
   c. decline in real disposable income
   d. rise in consumer debt
   e. increasing social tension over income distribution

2. Post-industrial trends
   a. from goods-producing to service economy
   b. dominance of professional and technical jobs
   c. primary use of theoretical knowledge in creating "newness"
   d. creation and use of new kinds of computer-based systems

3. Post-macho trends
   a. more women in workplace
   b. deemphasis on physical strengths
   c. new patterns of sexual permissiveness and romantic love
   d. new patterns of assertiveness and independence for women
   e. decline of military style of organizational leadership and structure
   f. growth of matrix style of management
   g. a release of creativity as the new male emerges and achieves acceptability

OBJECTIVES

Young people need to develop a set of skills for living in a modern dynamic society. The idea of "skills for living" give rise to the concept of LIFE-SKILLS as the objectives for youth development through 4-H. The following list of LIFE SKILLS is suggestive of those local 4-H groups focus on in their programming.

Life Skills

Relating

1. Meeting others
2. Communicating with others
3. Depending on others
4. Portraying oneself
5. Finding and following a personal code
6. Trusting self and others
7. Empathizing with another
8. Giving and receiving help
9. Building a team
10. Deciding democratically
11. Using community agencies

Recording

1. Applying knowledge
2. Using symbols (words and numbers)
3. Coding and classifying data and information

4. Finding, storing and retrieving data and information
5. Interacting with electronic machines

Renewing

1. Using information (traditional 3 R's)
2. Assessing oneself
3. Relating knowledge to life and work
4. Getting retrained and retooled
5. Finding meaning and satisfaction in work
6. Accepting responsibility for personal development
7. Learning how to learn

LIFE SKILLS are acquired and basic and developmental needs are met through planned educational experiences for youth. A planned educational experience is defined; for purposes of this plan of work, to be an individual written plan for a 4-H member. The Plan-Do-Review process is the foundation of the 4-H educational experience and development and completion of a plan for 4-H is evidence of experiential education.

1. 4-H youth to undertake 175,000 projects

2. Seventy-five percent of the expected 100,000 4-H youth to complete a basic 4-H plan.

METHODS

1. Emphasize subject matter related projects as a means of meeting the basic and developmental needs of youth and developing essential life skills.

2. Organize and/or service 3,400 learning groups of youth.

3. Utilize 17,000 4-H volunteers as developers of youth and managers and participants in the 4-H system.

4. Organize and assist in the functioning of 100 4-H and youth committees, volunteer leader associations and 4-H youth councils who identify specific local needs and plan and implement programs.

5. Organize a series of 4-H events and activities for 4-H participants -- youth and volunteers.

6. Secure 1.25 million dollars to support educational programs in 4-H.

7. Cooperate with other youth organizations; public utilities; state, county and local governments; private donors and others who are willing to work with 4-H and have a contribution to benefit 4-H education.

EVALUATION

1. Number of 4-H'ers who participate
2. Percentage of 4-H'ers who complete "My 4-H Plan"
3. Number of 4-H projects undertaken
4. Ratio of volunteers to 4-H'ers

PROGRAM COMPONENTS

CROP PRODUCTION

Entomology

A. Needs Assessment

Insects play both beneficial and harmful roles in North Carolina croplands, forests and backyards. There is increased need for control of certain insect pests such as: balsam wooly aphids and gypsy moths in our forests, Japanese beetles in our backyards and a host of others in our crops.

Controls must be applied according to the most current acceptable methods. Misapplication of controls is a growing concern as is disposal of pesticide containers and residues. Education is the key to practices that are both environmentally and financially sound. Landowners, farmers, gardeners, foresters must be informed.

While treating problems we must also give high profile to the beneficial species like honeybees and aestheticlly pleasing species like the monarch butterfly. Youth and adults should be given opportunities to understand the various niches filled by insects in our world.

B. Objectives

1. Increase by 10 percent the participation in entomology related projects and demonstrations.

2. Increase by 33 percent the number of adult volunteers giving leadership to entomology related projects.

3. Establish working and observation beehives at resident 4-H camps.

4. Increased awareness by youth and adults of the insect world and its role in crop production.

5. Exposure of youth to career opportunities related to entomology and crop production.

6. Greater efficiency and more effective control of insect pests through proper use of application techniques.

7. Heightened environmental awareness.

C. Methods

1. Contact North Carolina Beekeepers' Association to encourage and assist with youth work.

2. In-service training for both 4-H and subject matter agents with crops responsibility in 4-H entomology project materials.

3. Revision of 4-H entomology project materials.

4. Emphasize 4-H entomology projects in the NC 4-H camp curriculum.

D. Evaluation

1. Assessment of benefits can be determined by:
   a. recording the number of 4-H entomology projects initiated.
   b. recording the number of 4-H entomology cumulative records.
   c. recording the number of 4-H entomology projects submitted.
   d. recording the number of 4-H entomology demonstrations given.

2. Effectiveness of methods can be determined by:
   a. the number of volunteer leaders recruited to assist youth in 4-H entomology projects.
   b. the number of subject matter agents involved in the 4-H entomology program.
   c. requests for revised materials.

Crop Science

A. Needs Assessment

The world demand for food will continue to be a problem of magnitude throughout the remainder of the century. While new technologies are being developed the transfer to practice should be accelerated. Maximum yields coupled with stewardship of the land are essential. Loss of prime agricultural land to development and conversion of marginal tracts to cropland are major concerns. There is a need to provide youth with an understanding and awareness of modern agricultural practices.

B. Objectives

1. Increase by 15 percent the participation in crop science related projects and demonstrations.

2. Increase by 33 percent the number of adult volunteers giving leadership to 4-H crop science projects.

3. Implement 4-H gardening projects.

4. Increase awareness of understanding by youth and adults of agri-business and crop science technologies.

5. Expose youth to career opportunities in crop science.

6. Stress economic value to families from productive gardens.

C. Methods

1. Contact 4-H and subject matter agents involved in 1981-82 in-service training.

2. Promote 4-H gardening.

3. Develop city/farm tours and programs.

4. Develop new publications.

D. Evaluation

1. Assessment of benefits can be determined by:
   a. recording the number of 4-H crop science projects initiated.

b. recording the number of 4-H crop science cumulative records submitted.
c. recording the number and quality of 4-H crop science demonstrations.

Soil Science

A. Needs Assessment

Conversion of marginal land to agricultural purposes, development of both marginal land and prime agricultural land, poor farming practices, and waste disposal are among the more serious problems facing soil scientists. Maximum yield of crops from both agricultural and forest lands requires knowledge of soil qualities. Soil is one of our most valuable natural resources but continues to be little valued by the general public. Citizens, especially youth, must gain a greater appreciation for the soils of North Carolina.

B. Objectives

1. Increase by 10 percent the participation in soil science related projects and demonstrations.
2. Increase by 20 percent the number of volunteers giving leadership to youth in related projects.
3. Review and revise project literature.
4. Nine hundred 4-H and other youth participate in soil science projects and demonstrations.
5. Increase involvement of youth in erosion control activities.
6. Expose youth to career opportunities in the field of soil science.
7. Conserve tons of North Carolina soil through educational efforts.

C. Methods

1. Contact local soil conservationists and community leaders to determine local needs and potential activities for youth involvement.

2. Develop resource list of materials and aids for soil science projects.

3. Emphasize soil science in the North Carolina 4-H camp curriculum.

D. Evaluation

1. Assessment of benefits can be determined by:
   a. recording the number of 4-H soil science related projects, demonstrations and cumulative records.
   b. assessing the quantity and quality of 4-H soil science related demonstrations.
   c. estimating the tons of soil saved by 4-H erosion control activities.

Livestock Production

A. Needs Assessment

Livestock production projects (including poultry and fish) do more for youth than merely teach knowledge and skills related to efficient production and utilization practices. Caring for animals also teaches many life skills and contributes to the satisfaction of certain basic needs. Therefore, youth who own livestock need to enhance their experience through participation in 4-H livestock events and activities.

Seventy percent of N.C. youth live in the city or in rural non-farm areas where it is difficult to own production animals. Livestock projects that can be accomplished without owning live animals is a great need.

The rising costs of protein sources increases the need for all youth to have skills in production, purchase and utilization of poultry and fish products.

B. Objectives

1. 4-H members to learn production and management practices through actual participation in 4-H animal, poultry and fish projects.

2. Adult volunteer leaders to learn knowledge and skills relative to livestock project areas.

3. 4-H members to learn proper show procedures and training techniques used with project animals.

4. 4-H members and volunteers to learn how to appraise animals and to state their reasons for ranking animals.

C. Methods

1. New projects on rabbits and red meats will be introduced to 4-H'ers for the first time.

2. Efforts to involve youth in trout production in Western North Carolina will be initiated.

3. Coordination with UNC-SEA Grant College Program to initiate a backyard fish culture program.

4. Revise dairy leader/member publications

5. Revise poultry project materials.

6. Provide activities and events for 4-H youth such as market shows and sales, fitting and showing clinics, camps, bowl games, demonstrations and public speaking.

7. Conduct training for 4-H volunteer leaders.

D. Evaluation

1. At least 37,400 youth will participate in 4-H livestock (poultry and fish included) production projects.

2. An increase of 10 percent in the number of volunteer adult leaders participating in the livestock program.

3. Subject matter agents in 50 percent of North Carolina counties will be involved with leader training and with projects and activities.

4. At least 7,000 youth enroll in 4-H youth program.

BUSINESS MANAGEMENT AND ECONOMICS

4-H Economics in Action

A. Needs Assessment

Many high school age students have had little or no exposure to basic economic concepts. A major focus is to backstop and to maintain the high quality program content and the levels of participation in the 4-H EIA program. A secondary need is the development of new materials and approaches to various audiences (especially large urban youth populations). Young people are working in areas of special interests (computers) and the development of 4-H EIA programs to address these interests is needed.

B. Objectives

1. To place emphasis on developing 4-H EIA programs in "high youth concentration" urban population areas.

2. To conduct 4-H EIA programs upon request throughout the state.

3. To develop 4-H EIA programs to meet specialized needs (computers, four kinds of business, etc.).

4. To continue the involvement of business leaders in planning, implementing, and evaluating 4-H EIA programs.

C. Methods

1. Club level activities for leaders and 4-H'ers that would:
   a. Prepare 4-H'ers to develop and present an American Business System demonstration.
   b. Supplement other 4-H projects that have an economic component.

2. Prepare videotapes to train agents and volunteers in carrying out 4-H economic education program.

D. Evaluation

1. New programs in urban population centers.

2. 15-20 4-H EIA programs in 1981-82.

3. Specialized 4-H EIA programs in computers and other areas.

4. Increased appreciation of business by 4-H EIA youth.

5. Decisions by youth to study economics and/or business at the college or university level.

American Business System

A. Needs Assessment

Many 4-H'ers are unaware of the different types of businesses in our economic system. In developing their career plans and their views of the economic system, young people need to understand how the American business operates and affects their lives.

B. Objectives

1. Utilize the seven district contact persons in disseminating information about and promoting participation in the American Business System 4-H demonstration program.

C. Methods

Workshops to train volunteer leaders and 4-H'ers on what the American Business System is about and how to develop a demonstration.

D. Evaluation

1. Development of effective competition at all levels in each district and a high quality state level program.

NATURAL RESOURCES AND ENVIRONMENT

A. Needs Assessment

North Carolina possesses natural resources which are invaluable to both the economy of the state and future generations. Over the past decade, however, a growing exploitation through commercialization, tourism and mining is occurring. The constantly increasing needs for effective utilization and preservation of the state's natural resources demand an educated and alert public.

Two thirds of North Carolina is covered with forest land. Eighty (80) percent of the land is owned by private landowners. Only one in five acres is being deliberately regenerated after harvest.

It is predicted the national demand for forest products will double within the next fifty years. The South will be called upon to supply most of this demand. Reforestation and management are needed to benefit from this rising need.

The acreage of good quality wildlife habitat is diminishing, while demands for hunting, fishing, and other recreational uses of the wildlife resource continue to grow. These problems are occurring because much of the privately owned land is unmanaged for timber production, wildlife, water, or recreation. The manufacture of forest products is almost $3,000,000,000 a year, making the industry second behind textiles and ahead of tobacco. Additionally, many wood products, and other industries, institutions, and homeowners are interested in the possibility of using wood as an alternative energy source.

Both mining and tourism are growing pressures upon the state's natural resources. Individual landowners are largely unaware of the potential harm these factors can have upon the value of their natural resources and their heritage.

North Carolina is also blessed with a coastline and its importance to the state is increasing rapidly. Exploitation of the marine environment is ever present. Increasing appreciation and effective utilization of this environment is needed.

While these problems are immediate, their solutions will depend significantly upon the rising generation of youth. While transfer of knowledge can be expected to reach present adults to some degree, real needs exist to prepare the next generation of youth to be capable managers of their natural resources and environment. Effective individual and community decision-making to improve the quality and effective utilization of the environment is vital to the growth and security of the state's future.

B. Objectives

1. Increase by 10 percent the participation by 4-H'ers in natural resource related projects.

2. Achieve a 50 percent increase in numbers of volunteers providing leadership to natural resource related curriculum.

3. Revise and reestablish a state-wide summer camp/conference for youth/adults for natural resource related project training.

4. Use of marine science project materials in 50 counties of state.

5. Participation by 50 percent of all counties in fall marine science project training.

6. Develop a western regional Natural Resources/Heritage camp with 50 percent of all counties participating.

7. Develop and implement a youth forestry contest.

8. Increase awareness among youth of the potential rewards of properly managed natural resources.

9. Greater understanding by youth and volunteers of the costs/benefits of mining/tourism upon the state's natural resources.

10. Increase appreciation of marine environment and utilization of marine resources.

11. Develop awareness of alternative energy sources, such as wood products, wind power, and coastal waters.

12. Increase leadership of volunteers in the implementation of educational programs related to the above objectives.

C. Methods

1. In-service training for 4-H agents, and subject matter agents will be provided through annual conference and other training sessions.

2. Volunteer training will be implemented through winter training sessions.

3. Linkages with Wildlife/Forestry Associations along with other related natural resource groups will be established to promote and plan events.

4. Planning sessions with western district 4-H agents are planned to develop regional resources conference.

5. Pilot a youth forestry contest to investigate, develop and test concept.

6. State Extension forestry staff in conjunction with liaison from 4-H staff and selected county 4-H agents will revise Forestry/Wildlife camp.

D. Evaluation

1. Assessment of the expected results can be generally determined if the following occur:
   a. number of natural resource related projects participation increases.
   b. quality of cumulative records improve.
   c. participation of numbers of 4-H'ers increases in activities, camps, etc.
   d. high scores on knowledge/values assessment tools utilized at activities, camps, etc.

2. Assessment of effectiveness of methodology can be generally accomplished by the following criteria.
   a. demand on specialist's time increases.
   b. numbers of volunteers in leadership roles increases locally, district, and statewide.
   c. assessment of end-of-meeting values/knowledge gained.
   d. quality of planned events.
   e. levels and numbers of participation.

By comparing Extension time spent versus numbers of participants standardized by a quality factor for each event, a cost effectiveness statement could be established.

MECHANICAL SCIENCE, TECHNOLOGY AND ENGINEERING

A. Needs Assessment

Ninety to 95 percent of youth own either a bicycle or motorized vehicle for some form of transportation. In addition, rural non-farm and farm youth who work on the farm need to know safe use and proper maintenance procedures of tractors and small engines. Many urban youth are earning money through operation of various appliances and equipment. They need knowledge and skills associated with managing resources to earn a profit.

As the world continues to respond to the energy crisis, youth need to develop knowledge and understanding of energy-saving practices relative to mechanical equipment usage.

B. Objectives

1. Youth to accept responsibility for utilizing and promoting energy conservation measures in the home, on the farm and in the community.

2. Youth to learn safe and efficient operation and maintenance of farm and home equipment, machines and appliances.

3. Youth to learn basic concepts related to electric power and how it can be used effectively.

4. Volunteer leaders to become skilled in teaching about small engines and electricity.

C. Methods

1. Introduce the "Learn to Earn" program as a packaged special interest delivered program.

2. Introduce a compact tractor skill driving contest as an event in district activity days.

3. Volunteer leaders, 4-H'ers and public officials will work cooperatively to conduct energy programs through community 4-H clubs and special interest groups.

D. Evaluation

1. Fourteen thousand youth to participate in the 4-H projects of automotive, electric, small engines, tractor driving, bicycle, and aerospace.

2. Increase of 20 percent on the participation of volunteer leaders.

3. Youth will become energy conscious consumers.

SAFETY

A. Needs Assessment

Youth need to learn to care for themselves and others in everyday and emergency situations with respect to accidents on the farm and in the home. Knowledge and skill development relative to

safe machinery use, chemical use, and recreational equipment should be integrated into all 4-H projects.

The incidence of home fires due to the use of wood stoves and small gas heaters, as alternative heat sources, is increasing. Youth need to understand the principles of fire and how to use alternative heat sources safely.

B. Objectives

1. Youth to be able to respond appropriately in any normal or emergency situation.

2. Youth to be aware of the causes of accidents and injuries.

C. Methods

1. An integrated safety project planning guide to help youth and volunteers plan safety curriculum.

2. Special interest program format and materials will be developed and used in training volunteers.

D. Evaluation

1. Eighteen thousand youth will participate in one or more safety programs.

2. Twenty-five counties will conduct a new first aid program.

3. A working relationship with the State Emergency Medical Treatment Organizations and State Medical Society.

FOOD AND NUTRITION (EFNEP - 4-H YOUTH)

A. Needs Assessment

Seventeen percent of North Carolina households are below the defined poverty level and of these number 43 percent have children under 18 years old. These limited resource households find it difficult to provide adequate diets for their members; thus, many of their youth are developing on diets well below recommended dietary allowances. Balanced meals served through federally funded programs are often the only quality nutrition the youth

receive. With present reduction in funding program budgets, many youth will not receive even these limited benefits.

Low-income families are unable to provide many opportunities to help their youth. The challenge of serving as a volunteer to work with youth and delivering the foods and nutrition content, securing suitable meeting facilities and adequate supplies also styme extra-curricular opportunities. Poor self-esteem and lack of self-confidence on the part of the youth, few incentives that stimulate activity or participation and little hope to break the poverty cycle contribute to a minimum level of motivation to strive. For many limited resource youth, 4-H EFNEP is the only extra-curricular, non-school activity in which they have the opportunity to participate.

B. Objectives

1. Provide learning experiences for youth which promote the acquisition of food and nutrition educational concepts and skills utilizing a variety of methods as: multimedia, day and overnight camps, demonstrations, workshops, project involvement (Plan-Do-Review), field trips, county and district activities.

2. Provide learning experiences designed to develop self-concept and self-esteem, thus promoting a sense of belonging and developing skills to handle social and personal situations.

3. Provide opportunities promoting interaction skills and abilities enabling 4-H EFNEP youth and volunteers to become better leaders and contributing members of the community.

4. Strengthen and expand 4-H EFNEP through:
   a. development of county 4-H EFNEP team of professional and paraprofessional staff.
   b. greater involvement, development and utilization of volunteers.
   c. increase involvement of 4-H EFNEP youth and their volunteers in planning, executing, and evaluating 4-H EFNEP experiences.
   d. further implementation and evaluation of 4-H EFNEP progression into totally leader support units.
   f. increase 4-H EFNEP involvement in county 4-H activities and opportunities.

g. recognition for successful project work by 4-H EFNEP youth and volunteers and for successful progression into 4-H units.

C. Methods

1. Area, district and state opportunities for professional and paraprofessional 4-H EFNEP staff to increase potential for leadership development in adult and youth volunteers and methodology for effective 4-H EFNEP experiences.

2. Designing leader development and project development tools that present subject matter content and leadership development as a unit progressing of the 4-H EFNEP group to a leader led unit while increasing the youth's knowledge in foods and nutrition.

D. Evaluation

1. Pretest and post-test youth determining nutrition knowledge gained of enrolled youth.

2. Completion of Plan-Do-Review 4-H EFNEP projects by 4-H EFNEP youth and volunteers.

3. Number of 4-H EFNEP units with two or more volunteers working in leadership roles with the youth.

4. Marked emergence of 4-H EFNEP units becoming independent of 4-H EFNEP aide.

PERSONAL AND FAMILY RESOURCE MANAGEMENT

A. Needs Assessment

Meeting day-to-day expenses and providing for a financially secure future are the major concerns of both adults and teenagers as revealed by national research. North Carolina Experiment Station assessed the educational needs of individuals and families, 20 to 40 years of age, in three counties and found money or financial management to be the major educational need. These data are further supported by the conclusion of the county Extension program planning groups who identified "coping with financial difficulties" as the major problem for individuals and families.

Recent years of spiraling inflation with slower growth in income and increasing unemployment have weakened individuals/families financial reserves and have resulted in increased indebtedness and depleted financial assets. This has heightened the concern for future security as well as for coping today. Our current period of "disinflation" is not remedying the situation.

Extension's direction for long-range programming relative to enhancing "family economic stability and security" and "family strengths and social environment" is compatible with the needs identified. In 80 county plans of work, requests are made for programs on financial management and coping with inflation. Other requests relate to women and the law and improving shopping skills.

B. Objectives

The continuing objective for the family resource management educational program will be to provide opportunities for individuals/families to increase their problem-solving ability and skills in the procurement, allocation and use of resources for strengthening family relationships and building financial stability and security through:

1. Systematically budgeting financial resources.
2. Profitable home production to provide for needs and wants.
3. Increased savings and investment activities.
4. Participation in activities on learning about money.

C. Methods

Participants in family resource management education programs are expected to learn and apply managerial skills for increasing returns on their economic resources and thereby strengthen their overall financial position and family relationships. Results expected this year and continued over the next five years are that 5,000 youth will improve financial management skills.

D. Evaluation

1. Monitor project materials' use and submission of long-term records.
2. Prepare, administer, and analyze pilot effort to determine number of 4-H club program units related to resource management.

FAMILY LIFE, CHILD DEVELOPMENT, AND HUMAN RELATIONSHIPS

Child Care, Growth and Development

A. Needs Assessment

In the absence of formal education in parenting, child care, growth and development, through the school curriculum, young people must seek other voluntary educational opportunities. The need for such education in North Carolina is indicated by a 10 percent failure rate in school competency tests and 11,484 confirmed cases of child abuse and neglect with 12 deaths reported in 1981.

B. Objectives

1. Twelve hundred young people will continue to gain knowledge and skills in child care, growth and development.

2. Fifty youth and their families will enhance family relationships.

C. Methods

4-H and other youth will gain knowledge and skills in child care, growth and development through enrollment in newly revised projects in babysitting and activities for young children and through babysitting clinics offered in cooperation with public health, fire and safety and other local agencies.

4-H and their families will enhance family relationships through participation in pilot family activity projects in two counties.

D. Evaluation

Benefits will be measured by numbers of youth enrolled and completing projects and clinics, through testimony of parents of young children with whom the youth worked.

Success of the family projects will be determined by polling the youth and their families and agents involved in the pilot phase.

TEXTILES AND CLOTHING

A. Needs Assessment

North Carolina preteen and teenagers experience difficulty in making their clothing allowance stretch to cover their wardrobe requirements. 4-H'ers need knowledge and skills in how to plan and acquire a clothing wardrobe, including knowledge of available clothing alternatives. To help 4-H'ers better utilize their available resources, volunteer leaders should be trained in the art of teaching youth about clothing decisions.

B. Objectives

1. 4-H youth and leaders will utilize wardrobe planning and appropriate clothing alternatives to stretch their available clothing resources.

2. 4-H and leaders will gain/improve their home sewing and fitting skills

C. Methods

1. Sixty counties will be actively involved in using appropriate clothing alternatives to stretch their clothing allowance.

2. Youth will have special experiences--
   a. Clothing Camp - 85 youth and 25 leaders
   b. Back-to-School Sewing Contest - 170
   c. State Fashion Revue - 25

3. One new project manual and supporting materials.

4. Videotape teaching module for clothing volunteer leaders.

D. Evaluation

1. Monitor project materials use and submission of long-term record books.

2. Prepare, administer, and utilize evaluation forms for special experiences/activities.

FOOD AND NUTRITION (OTHER THAN EFNEP)

A. Needs Assessment

The family meal is becoming less and less important to the dietary patterns of adolescents, especially older teenagers. The household survey phase of the 1977-78 Nationwide Food Consumption Survey indicated that teenagers 15-18 years of age had about 22 percent of their meals away from home. The largest proportion of these were consumed at school, followed by fast food establishments. Whether patronizing fast food establishments jeopardizes the adolescent's nutrient intake depends on the nutritional value and amount of specific foods selected. Because such a large proportion of meals are eaten away from home, it is mandatory that the adolescent acquire sound nutrition knowledge upon which to base wise food choices.

A portion of the adolescent population has a problem with excess weight, resulting from the consumption of high caloric foods of low nutrient density. Frequent between-meal snacks and consumption of sugar-containing foods such as candy, soft drinks and pastries have also been associated with the development of dental caries in this age group.

Very few studies have been conducted to assess the nutritional status of teenagers, although it is generally agreed that a significant problem exists. However, the studies that have been conducted on a smaller scale indicate that the nutrients most often consumed in inadequate amounts in teenage diets are iron, calcium, riboflavin and vitamin A.

Youth of today are more sophisticated than ever before and their interests are drastically different from youth of previous generations. There is a definite need for the development of new and innovative programs that address current issues in nutrition and appeal to the interests of today's youth.

B. Objectives

1. Incorporate recommendations of the 4-H Curriculum Development Committee into 4-H foods and nutrition projects, activities and events.

2. Develop a project planning guide for each of the foods and nutrition projects available in 4-H.

3. Plan and coordinate a statewide weekend "fitness" retreat for youth, emphasizing the importance of physical fitness to health, incorporating nutrition, weight control, values and decision making and self-concept. This retreat will be aimed at 4-H'ers, potential leaders and parents.

4. Plan for and teach the Nutrition and the Elderly training class during Annual Conference. In relation to this, develop materials to be used by agents on the nutrient needs of the elderly, drugs commonly used by the elderly and their effect on the metabolism of nutrients.

C. Methods

1. Coordinate the following 4-H events and activities:
   a. Pre-teen and Early Teen Canning Program
   b. Cumulative Record Judging:
      --Health Project
      --Nutrition Project
      --Dairy Foods Project
      --Food Preservation Project
      --Food Conservation and Safety Project
      --Breads Project
      --Peanut Foods Project
   c. 4-H Foods Demonstrations, District Activity Days:
      --Jr. and Sr. Fruit and Vegetable Use Demonstrations
      --Jr. and Sr. Dairy Foods Demonstrations
      --Jr. and Sr. Breads Demonstrations
      --Jr. and Sr. Peanut Foods Demonstrations

2. Provide interested 4-H youth with current information on Food Science.

D. Evaluation

1. 4-H Foods and Nutrition Project Leaders will increase by 10 percent in North Carolina by January 1, 1984.

2. Thirty counties will hold leader or 4-H training lessons related to "Nutrition for Fun and Fitness," as an outgrowth of the 4-H "Fitness" Retreat.

HOUSING AND HOME ENVIRONMENT

A. Needs Assessment

Energy and space are primary concerns in housing today. The cost of energy directly affects the cost of housing. Energy costs are now approximately 15 percent of the average annual home ownership expenditures. One alternative to reducing housing costs is to reduce the size of the house.

B. Objectives

1. Five hundred young people will continue to gain awareness of the need to conserve energy in the home.

2. Five hundred young people will develop energy conservation practices in their homes.

3. Twenty-five youth will develop skills in using space more efficiently and effectively in their homes.

C. Methods

1. Completion of activities in the home environment project.

2. Participation in the home environment demonstration.

D. Evaluation

1. Number of youth enrolled in the home environment project.

2. Number of youth who participate in the home environment demonstration.

LEADERSHIP DEVELOPMENT

A. Needs Assessment

The volunteer staff development effort will align objectives toward six categories of volunteer staff positions:

1. Programs to youth
2. Services to other volunteers
3. Indirect services
4. Advocate

5. Administration
6. Policy

The focus will remain on category one volunteers in an attempt to establish 4-H "unit level" volunteer staff consistent with the emerging multi-leader, 4-H club leadership team approach.

Additional emphasis will be given to 4-H club/unit establishment through utilization of a systematic approach to unit leadership team identification, orientation, and utilization, content and audience objectives, including both 4-H agents and key volunteer staff. The materials, tentatively titled "Team Growth" will offer content in staff recruitment, training, and support as well as a design for management and record keeping. A major change in the "leadership team" configuration will be the addition of "youth leaders" in place of "teen leaders."

B. Objectives

1. Given 4,000 4-H units consisting of at least two volunteer staff and five youth; the volunteer staff in 2,000 units will guide youth in the preparation of a club plan and calendar of learning experiences in at least two subject matter areas and for at least six months of time.

2. To provide a conceptual framework and systematic management system for volunteer staff identification, orientation, and utilization inclusive of an instrument for monitoring the sequence of "critical events" necessary for 75 4-H staff to secure leadership for five new 4-H units.

3. Given the formation of 400 new 4-H units, 4,000 volunteers will experience an orientation to 4-H and position-specific training for unit leadership.

4. Given the development of a youth leadership project planning guide; 5,000 youth will undertake a planned 4-H leadership experience.

C. Methods

1. Development of "team growth", an approach to volunteer "leadership team" identification, orientation, and utilization. Planned salaried/volunteer staff "team growth" orientation through:

a. Annual in-service training
b. Multi-county sessions
c. County, district, and state leaders' associations programs.

2. "Team growth" - A management technique for monitoring "critical events" in group development by use of a "facilitator's" factor.

3. "Team growth" - A "leadership team" orientation technique - A sequence of four two-hour sessions designed to develop individual and group position-specific knowledge and skills while producing enhanced individual and "team" levels of motivation.

4. A "youth leadership" project planning guide to integrate the "leadership" experience into both the subject matter/content objectives and outcomes of the 4-H club design as well as a program-specific position on the club/unit "leadership team."

D. Evaluation

1. Monitor levels of participation in the identified staff development sessions.

2. Redesign volunteer staff supplement of ES-237 to recover indicators of achievement.

3. Begin to develop club/unit level evaluative tools tied to projected "team growth" curriculum/program human development objectives.

ORGANIZATION DEVELOPMENT AND MAINTENANCE

A. Needs Assessment

An estimated 25 percent of new 4-H groups will fold after two years. Group leaders need skills in group involvement, goal setting and communications to increase stability of newly organized clubs and councils. County council members need a broader understanding of their role in relation to the county and community organizations.

Community clubs and county councils suffer maintenance problems many times due to the lack of skill in program development.

Needs assessment techniques and processes are inadequate to surface substantive needs.

B. Objectives

1. Community leaders to learn organization skills to improve their leadership capability.

2. Community members to develop communication skills to become effective representatives on county councils.

3. Group members to learn needs assessment strategies and techniques to plan educational programs.

C. Methods

1. Fifty 4-H youth committees will map and target areas for expansion to involve 400 additional units.

2. A State 4-H Program Development Council will be organized to examine the state 4-H program and look at youth needs.

3. Leadership in county and district level groups will train leaders in community groups how to improve their organizational leadership skills.

4. The quality of educational program will improve due to better communication and programming skills.

D. Evaluation

1. There will be at least 4,000 community or county based groups who are providing for the educational needs of youth.

COMMUNITY SERVICES AND FACILITIES (OTHER THAN HEALTH AND HOUSING)

A. Needs Assessment

Opportunities for the 1,140,000 young people between ages 9-19 in North Carolina to study and/or participate in community affairs are severely limited. It is estimated that less than .5 percent of this group is involved in a meaningful way when church and school activities are included.

Even though some students elect to take civics and other social science classes in school, these do not prepare them to become participants in the communities in which they live. Consequently, most young people do not acquire enough knowledge or skills to assume leadership roles as young adults. 4-H/CRD training can offer the knowledge and experiences necessary to help some of these youth develop into leaders who can effectively function as future community leaders.

B. Objectives

4-H/Community Resource Development programming continues to offer a viable format for allowing 4-H clubs and project groups to plan, do and review in response to community based needs assessment. A continuing problem is the integration of project planning, execution/doing, and reviewing/evaluation as both subject matter content, learning design/methodology, and youth development process. Emphasis remains on building volunteer guided and delivered, contiguous community based and youth staffed projects in response to community analysis by the young people involved.

C. Methods

Most of the effort will go to developing county teams which consist of 4-H agents, adult volunteers, and 4-H'ers who teach others to utilize the CD process in problem solving. Teams will make use of materials developed for this purpose by a statewide task force. These materials have been in use two years.

Building on past successes, a 4-H/CRD statewide workshop (retreat) will be conducted in October on Marine Science Awareness. The workshop will instruct "county teams" in both the technical and instruct process skills necessary to implement programs in their home communities.

D. Evaluation

The 4-H/CRD process efforts will be evaluated based on two criteria:

1. The number of programs initiated at the community level as a result of the on-going program. This will include an assessment of the number and types of experiences in which youth become involved.

2. The number of programs and activities at the county level which are initiated as a result of the Marine Science Workshop conducted at the state level.

ECONOMIC DEVELOPMENT, MANPOWER AND CAREERS

A. Needs Assessment

The need for a youth program in careers was identified by local committees and by the statewide program committees in developing the long-range plan for the North Carolina Agricultural Extension Service in 1976. The need continues to be identified by local committees.

The unemployment rate of Blacks and low income youth is persistent. Young people also have limited access to career counseling through the school system due to the lack of guidance counselors at the high schools. Through the 4-H program youth can begin to examine possibilities through 4-H projects and activities.

B. Objectives

1. To train professional and volunteer staff on how to incorporate a careers program into the on-going 4-H delivery system.

2. To develop donor relationship that will enhance the career awareness opportunities of youth.

3. To develop a state level volunteer leader team to give leadership to launching the state 4-H careers program.

C. Methods

1. Use of a state leader forum on careers to prepare county volunteer leader teams to introduce careers programming into community clubs. The forum will be planned and implemented by a state level leadership team with the guidance of Extension personnel.

D. Evaluation

1. Two thousand youth will learn skills for exploring careers and seeking a job.

2. Sixty volunteer leaders will receive training on how to give leadership to a county careers program.

3. Better relationships in counties between youth and the business community.