Winter 12-1974

Adult Education Aspects of a Program of a State Government

Kent K. Murray
ADULT EDUCATION ASPECTS OF A PROGRAM OF STATE GOVERNMENT

by

Kent K Murray

A DISSERTATION

Presented to the Faculty of
The Graduate College in the University of Nebraska
In Partial Fulfillment of Requirements
For the Degree of Doctor of Philosophy

Department of Adult and Continuing Education

Under the Supervision of Professor Wesley C. Meierhenry

Lincoln, Nebraska
December 1974
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I think I can see Adult Education deriving great benefit from the theorizing and research of the "change theorists" now so active. I see our technology being enriched by increased understanding of the process of individual, institutional, and social change, and especially of the phenomenon of resistance to change and strategies for helping with change.

Finally I see an enlargement of the definition of the clientele of Adult Education away from a primary focus on individuals qua individuals toward a concern with institutions, communities, and even larger social systems. I see us Adult Educators becoming increasingly concerned with improving educative quality of total environments and increasingly skillful in planning programs that will accomplish this end.

Malcolm S. Knowles
Professor and Philosopher of Adult Education
Adult Leadership
February 1967
INTRODUCTION

With the passage of LB-722 in 1959, the State of Nebraska embarked on one of the most extensive and challenging adult education programs of the past decade. LB-722 established the Nebraska Agricultural Products Industrial Utilization Research Program (Nebraska Program) which in the course of its ambitious life undertook the re-education, first of Nebraska's production-oriented agricultural citizens, and then of other agricultural states and the Federal Government. Seen as an adult education program, the Nebraska Program clearly represented the kind of "enlargement of the definition of the clientele of adult education" proposed by Malcolm Knowles. This was adult education moving "away from a primary focus on individuals qua individuals toward a concern also with institutions, communities and even larger social systems." It was education functioning within and concerned with a total environment, an environment whose production-oriented values, and whose success in living up to those values, had back-fired resulting in huge and embarrassing agricultural surpluses which depressed the market value of agricultural commodities, reducing the agriculture worker's standard of living and his status in the eyes of his fellow citizens.

Insofar as the Nebraska Program attempted to change values and attitudes it also functioned as a change agent, finding itself increasingly preoccupied with "the phenomenon of resistance to change and strategies for helping with change." Resistance to change was rooted in generations of emphasis on production and production
research. Supporters of the Nebraska Program were convinced that utilization research was the solution to agriculture's problems: the Program's educational objective was thus a reordering of research priorities and an attenuation of the produce-more ethic. The administrators who undertook this education effort had a firm precedent in the success that agricultural societies, institutes, and agencies have had in the education of the public for agricultural production, a success which culminated in the establishment of the nation's colleges of agriculture:

The local and regional agricultural societies which began appearing after the American Revolution to educate in agricultural production through printed materials, contests, fairs, and discussion... were also becoming more aware of the possibilities of enlisting government aid... The societies reached their peak in 1861 and began to wane in favor of farmers' institutes which... provided direct instruction in technological improvements in farming... The establishment of a federal Department of Agriculture and the passage of the Land Grant Act provided federal support for colleges to teach agriculture.

The size of its clientele and its role as change agent in a total socio-economic environment were not the only things which distinguished the Nebraska Program. The Program was also distinguished by the fact that it was administered, not by a traditional educational institution, but by an agency of a state government (the Nebraska Department of Agriculture), and by the fact that it saw the State's educational institutions as part of its clientele: production-oriented like the state's citizens, resistant to change, committed to maintaining the status quo vis-a-vis agricultural research. This view of the state's educational institutions as candidates for remedial education got the Program into difficulties with
the University of Nebraska. In particular, the University and its supporters in the State Legislature contended that an educational/research program in a traditional College of Agriculture area ought to be administered by the College of Agriculture. There was a heated exchange over the subject of who should administer the Program (a state agency or the University) when LB-722 was debated in the legislature, and partisans of the University continued to be vocal critics of the idea of state agency education throughout the life of the Program.

The Program's name—Nebraska Agricultural Products Industrial Utilization Research Program—is misleading. It sounded, not like an educational program, but like a research and development program. In fact, the Nebraska Program was originally conceived as a research and development program designed to find new uses for agricultural products, and although Program administrators came to see the Program's principal business as education, Nebraska citizens and their representatives in the State Legislature never ceased to hope that the Program would produce marketable products. This misunderstanding about Program goals was to create problems, particularly in the area of Program evaluation: seen as an education program designed to change attitudes and to reorder priorities in agricultural research, the Nebraska Program was a great success; seen as a research and development program, it was disappointing (only one product got to the marketing stage).

Although the agricultural surpluses which gave rise to the Nebraska Program have gradually disappeared, the educative work of
the Program will be of interest to those in the field of adult education who are engaged in programs of similar scope, or who are involved in education programs conducted by governmental agencies. The Program's problems and omissions, no less than its scope and daring, are instructive; in the judgment of this investigator, the Nebraska Program provided an exciting laboratory for testing the principles of adult education on a large population, and stands as a model for programs of similar scope and intent.
CHAPTER 1

AGRICULTURE'S PLIGHT

It has been widely held that the American democracy sprang full-flowered from the soil, that the family farm has provided the backbone of the nation, and that the farmer is the guardian of the American way of life. This belief has acquired the force of a myth--the agrarian myth--and the political consequences of widespread acceptance of this myth are mammoth. It is, for example, generally acknowledged that the most successful "lobby" in the United States has been the Farm Bloc. According to C. Wright Mills in The Power Elite:

It has been so successful that it is difficult to see it as an independent force acting upon the several organs, especially with the Senate, in which, due to the peculiar geographic principle of representation, it is definitely over-represented.¹

The same has been true in most state legislatures.

Agriculture has been an American giant, not only with regard to the political power it has wielded, but in almost every sector of the national life. This stature is not unmerited; American agriculture has advanced more in the past fifty years than in all prior years of United States history.² It has kept pace with other industries in improvements and technological developments, especially in the production area.

Moreover, although recent years have witnessed a migration away from the farm as a means of family livelihood, agriculture employed an estimated 7.1 million farm workers in 1960³--and five
million in 1970, more than the transportation, public utilities, steel
and auto industries combined. If the industries directly related to
agriculture are included in the picture, an even larger employment
figure results.

The investment in agriculture at the beginning of the 1960's
equaled 200 billion dollars, representing 21,300 dollars per agricul-
tural employee and 15,900 dollars per manufacturing worker. The
figure 200 billion dollars was equal to three-fourths the value of the
assets of all corporations in the United States or three-fourths of
the market value of all corporate stocks on the New York Stock
Exchange.

Agriculture has been most familiar in its role as producer.
However, the record shows that the farmer was also a good customer.
In 1959-60 he purchased 25.5 billion dollars of the goods and services
of other producers, other industries.

Fourteen billion dollars went for the same things urban people
buy—food, clothing, furniture, appliances.

Two and one-half billion dollars went for new equipment. (As
contrasted with the primary iron and steel industry which
spent only one billion dollars in 1959 for equipment and new
plants.)

Three and one-half billion dollars went for fuel, lubricants,
and maintenance. (Thereby directly aiding agriculture's
chief industrial product competitor, petroleum, which was a
heavy spender for research and development of products.)

Additional agriculture dollars purchased 320 million pounds
of rubber.4

The agriculture industry served as a creator of employment
indirectly as well as directly.5 Four of ten jobs in private
employment were related to agriculture, resulting from the ten million people required to store, transport, process and merchandize agricultural products and the six million jobs required to supply the farm. In addition, agriculture was a taxpayer, channeling into public funds one and one-third billion dollars in farm real estate taxes, twenty-five billion dollars in personal property taxes and one and one-fourth billion dollars in income taxes.

American agriculture extended its influence beyond the national boundaries. Agriculture held the distinction of being the world's largest exporter, with 65 million of 321 million harvested acres going for export; (equal to the combined cropland of Nebraska, Iowa and Kansas). In 1960, 4.8 billion dollars in farm products was exported. This power was exerted in the cause of both peace and war. Agricultural exports relieved hunger and promoted economic growth in newly developing areas of the world. For example, United States wheat made five billion loaves of bread a year in India. Agriculture therefore became a significant tool in dealing with nations, the goal being stable governments through economic well-being and a full stomach. Agriculture entered the arena of war when the United States bartered farm products for strategic defense materials—more than one billion dollars worth from 1954 to 1962.

So stood the giant agriculture, where output per man hour increased by six and one half percent per year in the 1960's, while output in non-agricultural industry increased by only two percent per year in the early 1960's and actually decreased during the late 1960's; where one hour of labor produced four times the food and crops
as in 1919-1921, allowing one farm worker to produce enough food for himself and 25 others. Crop production was 65 percent higher per acre in the 1960's.

Unfortunately for agriculture and its workers, and in the long run for the nation and its taxpayers, the above trends in agriculture bode ill rather than good. Nationally, minus signs began appearing with increasing frequency in the farmer's bookkeeping. And it was the little man, the small farmer who could least afford the losses, who got hurt first and usually the worst--and he was quite numerous, as indicated by the data below. In 1960 agriculture with 3.7 million independent producers had the following record:

- 1,638,000 farms or 44.2% of total farms sold less than $2,500
- 617,000 farms or 16.7% of total farms sold between $2,500-$4,999
- 653,000 farms or 17.7% of total farms sold between $5,000-$9,999
- 794,000 farms or 21.4% of total farms sold more than $10,000

Of those farms selling more than 10,000 dollars of products, only 102,143 farms, or two percent of the total, had sales totaling more than 40,000 dollars.

A drop in the proportion of farm personal income from 7.17 percent to 3.86 percent of the total national personal income was recorded between 1950 and 1960. During that same period, with agricultural products going largely into food uses, the national rate of expenditure for food as compared to total personal consumption expenditure dropped from 30.6 percent to 26.6 percent. This took place even though food costs rose less since the Second World War than most other items in the cost-of-living index:
<table>
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<tbody>
<tr>
<td>All items</td>
<td>27.5%</td>
</tr>
<tr>
<td>Rent</td>
<td>45.7%</td>
</tr>
<tr>
<td>Medical care</td>
<td>59.9%</td>
</tr>
<tr>
<td>All food</td>
<td>21.2%</td>
</tr>
<tr>
<td>Farm food</td>
<td>12.0%</td>
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The farmer got none (no rebate) of this increase in cost for the food he produced. In fact, he received 12 percent less for the farm food "market basket" than he did in the 1940's. This accounted for the fact that the prices of farm grown food had risen only 12 percent although processing and marketing costs had risen 36 percent. For example, the farmer received in 1960:

- 39¢ of $1 for all food
- 2¢ for the corn in a 26¢ box of cornflakes
- 2¢ for the wheat in a 20¢ loaf of bread
- 9¢ for the oranges in a 23¢ can of orange juice
- 27¢ for the cotton in a $4 shirt

Taxes paid by the farmers have already been noted. The low income tax figure as compared with the property tax figure and the number of farm people is indicative of the farmer's diminished income. The average small farmer netted an average of 986 dollars a year, and of that figure 329 dollars came from non-farm sources. This left a meager 657 dollars from purely farm operations. These figures appear even more meager when compared with the non-farm population per capita income of 2,232 dollars (including 18 dollars per person from the agriculture industry). The wide discrepancy in farm and non-farm incomes can be even better seen in a comparison of average wages: 82 cents per hour for the farmer compared with an average of 2.14 dollars per hour in food marketing and a 2.29 dollars per hour average in the factory. These were the statistics which briefly told a story with a
complicated plot and an unfortunate ending.

The experience of the State of Nebraska can be considered as a case study exemplary of agriculture's problems. Nebraska was part of the larger picture. Being located in the fertile Midwest, most of Nebraska's history had been connected with the tilling of the soil. During the first half of the 20th Century most of her citizens lived in rural areas, gaining their livelihood from gambling with the weather, fighting the insects and weeds, and more and more often winning the battle until graineries filled to overflowing. By 1970 there were still only two cities in the state, Lincoln and Omaha, which were classed as metropolitan and, as might be anticipated, their businesses and industries were linked to agriculture.

Lincoln and Omaha gained in population during the 1960's at the expense of the rural areas and the small towns. Farmers left the land in increasing numbers, adding themselves to the work force in the cities. The number of farms in Nebraska dropped from 121,000 in 1940 to 50,000 in 1970, while total acreage in these farms showed a gain from 47,344,000 acres to 47,956,000 during the same time period.

The question arose, what had caused these individuals to move from areas where actual tillable land had increased, where more families might have earned a living, to the city where the farmer is classified as "unskilled" and adds to the ranks of the unemployed? The full answer requires consideration of many variables, all of which contributed to the farmer's plights, and any one of which might have been considered its prime cause. One of the primary factors, and
the one which is the focus of this research, is the accumulation, at this time, of tremendous agricultural surpluses. It was this so-called "surplus" of harvested farm crops which, among other factors, had contributed to a lower income and standard of living for the average United States farmer. This "surplus" was in turn the result of a number of factors, chief among which were high production and under-utilization of farm crops. And the answer to that situation, as it was in the effort to increase American agricultural production, was education--but utilization education.

Both the Democratic and Republican parties had attacked the problem on the federal level by means other than education, but programs of production control and restricted land usage only brought charges of "bad planning." A lack of ways to dispose of surplus crops on hand brought the same charge. Meanwhile, production continued to outstrip utilization.

This was not the first time the nation had faced such a problem. Crop surpluses caused concern as early as the post-World War I period (1920's). In the 1950's and 1960's agriculture again began to feel an acute need to expand its markets or at least to halt their gradual loss. Both periods of cost-price squeeze were aftermaths of wars which had turned all efforts of industry and agriculture to production. During the 1950's and early 1960's, fear of a third world war led to further stockpiling of "grain reserves." The balance between production and consumption was upset. Even though the nation had a growing population and rising standard of living, the farm population's income began to lose pace.
By 1960, Nebraska's total personal income was three-fourths of one percent of the United States total personal income. Total Nebraska farm income in 1960 amounted to 2.8 percent of the United States farm income. The average Nebraska farm net income for 1960 was one thousand eighty-eight dollars. This situation, and what was seen as rural opposition to progressive change, moved one of her more renowned native sons to label Nebraska a "depressed area." Such name-calling was unfortunate, for the farmer like every other workman lived by the philosophy: To have more is to produce more in order to sell more. The Nebraska farmer relied upon production research and education to attain his goal of "having more." Such research and education gave him fertilizers, irrigation techniques, crop hybrids, and farming methods which offset federal production controls and caused record yields to be grown on less land. The result was that farm production consistently outran the capacity or inclination of the nation to consume farm products, thus creating the exact problems industry knew would afflict the nation if advertising could not keep the nation's consumer market for manufactured goods constantly increasing. The Nebraska Department of Agriculture's 1960 Biennial Report stated the average agricultural worker's plight well:

The regrettable fact is that the family farm, producer of many great Americans and moulder of the Midwestern character, can no longer support the farm family. The spread between farm produce prices and the cost of their production has become un-spread and is squeezing the economic life out of the small farm operator. Faced with the continued prospect of dwindling income, thousands are selling out and taking their chances with the towns and cities. Many are leaving the agricultural states altogether, transporting their education, acquired talents, and personal capabilities to other areas. The family farm is caught in change, consolidation into
larger, frequently huge work units employing machinery and methods too costly for the small operator, and which guarantee continuance of surpluses of major crops, further depressing the market.15

The urban population could not ignore the situation. Whatever affected the farmer inevitably had its effect upon the urban dweller. In his move to the cities, the farmer created new problems for an already booming urban population. Civic leadership was called upon to provide utilities, schools, homes, jobs, law enforcement, and living room for a segment of the population considered "unskilled." All this in the face of an American society which had become primarily urban-industrialized in composition and which was beginning to spawn urban dwellers, intellectuals, and political representatives who looked down upon agriculture, its workers and its problems. This situation was aggravated by a Supreme Court decision ordering reapportionment of state legislatures, so long dominated by rural influences. The only possible hope was to convince the urban dweller that the situation required a united attack. It was possible the pendulum would swing back again someday. Perhaps a catastrophic event could bring the nation to a greater dependence upon the farmer again. But, as one student of the situation observed:

... it is going to be difficult to get the land out of the hands of a few large landholders in which our farmland is coming to rest, if and when the population wants to return to the farm; to out-migrate from the city back to the farm.16

What to do about agriculture then? An increase in exports seemed unlikely as other countries became more self-sufficient and
such entities as the European Common Market arose. Yet Americans appeared to agree that their industries, agriculture included, should maintain a high level of efficiency and quality, therefore legitimatizing the farmer's continued belief in a high level of production. The prime question for agriculture then became: could agriculture develop profitable industrial markets in the national or international sphere capable of absorbing enough of the excess farm products to minimize, possibly even to eliminate, the need for costly restrictions, supports and surplus-disposing operations?  

These desperately-needed industrial markets lay at the end of a long, hard road paved with large amounts of money. Turning raw agricultural materials into manufactured goods required a concentrated program of research, development, and marketing, plus acceptance by the public and cooperation by the manufacturing industry. Unfortunately, the manufacturing industry had assisted in the decline of agriculture. Most of its new products had been based on non-agricultural raw materials. This was a reversal of a past practice. Industry increased its investment in research by at least three billion a year from 1951 to the beginning of the Nebraska Program--three percent of its gross sales (see Figure 1). By utilizing its big, well-integrated units and large resources of men and money, it produced a flood of new and improved products--fabrics, plastics, building materials, surface coatings, drugs, detergents and chemicals. Most of these products had non-agricultural raw material compositions. This was, however, not entirely industry's fault. The reason that it turned to such materials as petroleum for compositional bases was the
FIGURE 1
INDUSTRY'S INVESTMENT IN RESEARCH
Total of $14.5 billion spent in 1961 or 3% of gross sales. (Compare $375 million spent by agriculture in 1961 or 1% of gross sales.)

Industry: $14.5 Billion

Agriculture: $375 Million

FIGURE 2
AGRICULTURE'S INVESTMENT IN RESEARCH
Of $375 million spent in 1961 for agricultural research, 40% went for basic research and development and only 5% for utilization research.

$148 Million
Basic Research and Development

$16-18 Million
Utilization Research

$192 Million
Other Agricultural Research
same reason any producer or manufacturer changes his practice, the economy and efficiency of new materials and processes. Agriculture, in other words, made the mistake of placing too much emphasis on production research and allowed industry to out-compete it in the field of utilization research and development. Such segments of industry as petroleum made good use of the three billion dollars that industry added each year to the money set aside for research and development of new products. In contrast, agriculture's expenditure for its total research program reached only 375 million dollars by 1961—about one percent of its gross sales. Most of this figure went for production research, with 130 million dollars going for "basic" research and development and no more than 16 million dollars to 18 million dollars going for "applied" utilization research (see Figure 2).

It can be clearly seen that emphasis was lacking in the area of agricultural utilization research and development. Nor had this imbalance gone unnoticed:

Under the surface, but potent politically, is the feeling that too much money has gone to the industry and its research institutions on the East and West Coasts of the United States. The Midwest and the South, in particular, feel slighted.20

There were rumblings in the Congress about looking into the situation. It was evident, however, that increased allotments of federal funds for agricultural research would not allay agriculture's problems unless those funds were clearly earmarked for utilization research and education.

The inpouring of government money for production and
development during the two world wars gave industry a good base from which to advance its utilization research after the wars. Agriculture in contrast devoted most of its energy only to production during the wars, and to production research after. Such utilization research as was carried on by agriculture (that is, the development of new war materials) resulted in such discoveries as penicillin, nylon from corn cobs, synthetic rubber, frozen fruit juice concentrates, and wash and wear fabrics. For some reason, agriculture failed to exercise the foresight that experience should have engendered. It failed to press its advantage, to exploit its opportunity and therefore to meet the competition industry presented in the field of utilization research and development.

Industry had taken the competitive initiative and gained the advantage. With its billion dollar expenditures during past years it had researched synthetics which had captured the natural fibers market from cotton, wool, flax, and silk. Industrial plastics, films, and adhesives had shouldered aside heretofore agriculture-supplied products. Two out of three tallow and fat soaps had been replaced by non-degradable, petroleum-based detergents. Agricultural oils for cooking, painting, and lubricating were bypassed. Two out of three pairs of shoes were made from leather substitutes, with three out of three a distinct possibility:

Last week [April 6, 1964] the tumultuous United States marketplace was deciding the fate of a brand-new material--man-made leather [Corfam] for shoes. And the new synthetic looked like a winner for the giant E. I. Du Pont Company. The material itself is an acknowledged triumph of sophisticated chemistry and cost approximately $15 million to develop. This event was followed by the Arman Industries, Incorporated,
all-plastic shoe. The $700 million-a-year tanning industry is, of course, challenging all claims of both companies.21

Industry, because of its high monetary rewards, was able to attract the best scientific minds. It was able to obtain increasingly better results from costly programs which produced products worth the risk and effort. As a consequence it was able to also hold prices stable, resulting in consumer acceptance of new products. In addition, an adequate, steady flow of high quality supplies made manufacture and distribution easy within well-integrated industry.

Industrialists attested to the efficacy of their utilization and new product research programs. Frank Pace, Jr., Chairman of the General Dynamics Corporation, was quoted as saying that almost 90 percent of his company's current products did not exist a decade ago.22 According to David Sarnoff, Chairman of Radio Corporation of America, four out of every five dollars of RCA's record 1960 sales came from products that were researched and developed after World War II.23

Agriculture, for its part, reacted sluggishly when it awakened to its lag of six to eight years in utilization/new product research and development. It found, as is pointed out in the chapter on the Nebraska Agricultural Utilization Research Program, that there was usually a further lag of five to seven years or more before money spent on utilization research began to show up in new developments.24 It found that, even though it possessed the same raw materials and capacity as industry, the risks of new product development were mounting, and that industries on the decline, as was the case with
agriculture, assumed greater risks. It became evident that the statement, "Just stop your research for a year while your competitors keep right on--you'll be dead," had serious meaning for the production-oriented, economically sick agriculture industry which had failed to give adequate emphasis to utilization research. Agriculture needed massive aid and superhuman effort to even begin to compete with companies which could devote 300 man-years of labor, 50 million dollars for development, and two million dollars for promotion of one new product. Agriculture, in contrast, would be mightily taxed to absorb a loss on even one of its new utilization research products, by the failure of even one product to gain industrial and consumer acceptance, that is, markets which return the investment.

Before agriculture could even think about competing with industry for markets, she had to exert herself to catch up. Until she did, the pendulum would continue to swing to industry's advantage. Agriculture was only beginning to realize these facts of life of the industrial-technological age. But there were a few who saw the problem clearly: "Industry has done a wonderful job in the field of utilization research. Given the opportunity, agriculture can produce the same results."

Individuals who had foreseen the need for agricultural utilization research programs, such as those who initiated and administered Nebraska's educational and lobbying program in 1959, argued that agriculture had all it needed to initiate and press competition. It had the raw materials, capacity, and potential. Petroleum and
starch provide a good example of the competition between industrial synthetics and agricultural raw materials. Industry increasingly used petroleum as the basic raw material for a majority of its synthetic materials. These materials were then converted into consumer products, invading markets heretofore dominated by agricultural raw materials. Petroleum took over dominance of such fields as detergents, plastics, explosives, adhesives, germicides, pharmaceuticals, resins, soaps, and cooling and lubricating fluids. This happened even though the raw materials produced by the farmer were made of the same chemical components as most non-agricultural materials, including petroleum. Coal and petroleum were, after all, plants that died and decayed long ago. It followed that the agricultural plants now existing possessed the same characteristics and potential as their predecessors. There could be no other conclusion than that research must make the difference. If farm products could be modified and tailored to particular needs through utilization research, new products would mean new consumer demand and more markets for agriculture.

The ingredient that had been lacking was the realization on the part of agriculture that agriculture as an industry had to do the initiating, the pressing, instead of merely trying to maintain the markets it possessed—or those it had traditionally possessed in the past. Agriculture seemed concerned only with maintaining the status quo, and deploring the loss of markets to industrial substitutes. In a few words, what was needed was education of the
farm and non-farm public in the benefits of utilization and utilization research in agriculture. Such an effort required imagination and aggressiveness.

Except during World Wars I, and principally II, materials from the farm had not had intensive, systematic, utilization research emphasis.

Because in the past food was never abundant, because manpower had to be released from farms to run industry, because great wars created great necessities, most research emphasis and funds in agriculture have gone to production research.29

The philosophy of "to produce more crops is to have more income" had been religiously followed by the producers of agricultural raw materials, with disposal and utilization supposedly taking care of themselves through routine marketing procedures.

As this system began to fail, responsibility for assistance in the disposal of agricultural products was viewed as a problem of national scope and therefore an area of proper concern for the Federal Government. This was not without precedent. The government's subsidies (a main cause of agriculture's bad public image), purchases, storage programs and gratis handouts of agricultural products had increasingly made it the farmer's agent, researcher, salesman and public relations agency. But this was also true of industry, at least in the area of research. In this crucial area, much of the time the Federal Government found itself financing both sides of the competition: "Much of today's [Industrial] research is paid for by government. About $3 out of every $5 of such spending is paid from the federal treasury, even though the actual work is done by
industry." The main problem with the Federal Government's handling of this area of agricultural affairs lay in its continued emphasis on production--production research and education--and a lack of emphasis on utilization research and education. The State of Nebraska, for one, grew increasingly disturbed over this fact and began to voice its concern: as in "The current program of the USDA, invaluable in so many ways, indicates an apparent reluctance to conduct applied \textit{utilization} research in areas competitive with other industries." 

The USDA and the colleges of agriculture had been agriculture's champions in the production research efforts of the past years. Within these agencies' jurisdiction were laboratories and test plots used for agriculture's advancement. The USDA handled additional duties for the agriculture industry in the fields of education, information, and administration of agricultural affairs on a national and international basis. The agriculture colleges, with their campus facilities, extension programs and experiment stations also handled extensive education and information programs. However, questions were beginning to be asked: Had these institutions had a clear enough view of what agriculture should be doing? Had they put effort in the areas necessary to keep agriculture competitive with industry? Had they kept pace in the Technological Age? Had they responded to change and adopted the successful methods of industry? Had they recognized that agriculture must be progressive? A negative answer in the first instance implied negative answers in the others and perceptive individuals maintained that a negative answer must indeed be given.
The charge was that the USDA was not competitive and, though it had some programs and labs in the area, its philosophy, history, and current operations demonstrated a definite lack of utilization research emphasis. The charge directed against the colleges of agriculture was that they were too conservative and were almost totally production and production research oriented. The loss of markets and the building of huge surpluses were the only results to be expected of the failure to change emphasis from production to competitive utilization and new products research as the battle was joined with industry. It was said that agriculture—its farmers, its government agencies, its schools, its laboratories, its representatives—needed a push, or at least needed some kind of help to get moving in the direction of competitive research. The institutions and agencies, of course, assumed a defensive stance, especially when it was suggested that they modify their traditional emphasis.

Against this strong, long-established tide stood an increasing number of people in agriculture led by a few far-seeing individuals. These leaders, using their positions, their voices, and the instrument of education which had proved so effective in production efforts, began to press for the change of emphasis needed in the industry of agriculture. They began to seek legislative measures to implement their convictions. Such leaders faced a problem in rallying necessary support from a loosely organized farm industry and its population. But without this support, legislators could and would not act. If the farmer himself remained unconvinced of the results of utilization research, he would leave his representatives
in Congress--those who controlled the large USDA research establishment--open to arguments and influence which have inevitably resulted in inaction. Many Congressmen from agricultural areas, despite good intentions, had faced a Congress deadlocked by such arguments, pulled all ways. In addition, both groups, farmers and representatives, faced United States Secretaries of Agriculture whose office traditionally resisted attempts to alter its priorities. A few Nebraska private citizens, various congressional representatives from Nebraska, and fellow senators and representatives from the Midwest and South had tried time and again to shake Congress out of its inaction on the agricultural utilization research issue. But lack of understanding by even their own people at home hampered such a cause. Reliance upon the Federal Government and its subsidies appeared to have blinded an industrious people to a chief cause of its ills, and so utilization research, which might have been a solution to agriculture's plight, remained sidelined. It became apparent that the first order of business was an educational, or rather a re-educational, effort operating on two fronts: the public and the Federal Government (Congress and the USDA).

In other words, Congress had to be motivated to act by the lobbying pressure of a newly informed public. And the USDA had to assist it in acting. A change in emphasis could be achieved only through sound federal legislation.

The Nebraska Program was an initial attempt to educate the public and to educate and influence the Federal Government by example. The dramatic "research" program initiated by the state in
1959 operated to inform citizens of utilization research's promise in the hope that they would in turn exert pressure on the federal agencies. But before examining the Nebraska Program in detail, congressional action—or inaction—and USDA positions will be examined. It will then be possible to consider Nebraska's Program in the appropriate perspective.
CHAPTER 2

CONGRESS, THE USDA, AND THE WELSH REPORT

An overview of the work of Congress and the United States Department of Agriculture in the utilization research area illustrates why the Nebraska Program was initiated. What follows is an examination of the support utilization and utilization research received from the nation's representatives. Unfortunately, the progress of this "cause" had been painfully slow in each chamber of Congress. Both the Senate and the House had given consideration to the problem of surplus, but neither had been able to agree that utilization research was the means by which to alleviate the problem. The House Committee on Agriculture had requested a report on the history and progress of utilization research and marketing for the past seventy-five years, prior to 1954. The resulting information in the form of the Pace Report was made available to state agencies, including state departments of agriculture, for the first time in a collected form. This constituted the first comprehensive guide on the progress of utilization research and development, and an index for detecting duplication of research.

It was not until 1956 however, that Senator Capehart of Indiana with thirty co-sponsors introduced the first utilization research and development bill, in the 84th Congress. Its failure to pass later prompted him to introduce Senate Bill 724, a duplicate
measure, into the first session of the 85th Congress. Similar legislation was proposed in the 84th Congress by Senator Curtis of Nebraska (S. 2306) and Senator Johnston (S. 3697). The House was somewhat slower in introducing such legislation, but once started it came up with a multitude of bills:

H. R. 1050, 4923, 6800, 6985, 8186, 8324, 8325, 8326, 8428, 8539, 9192, 9366, 9677, 10099, 11508, 11610, 12384, 13305, 13513, 13605.2

All of the above bills were efforts to implement the recommendations of a 1957 follow-on study to the Pace Report, the Welsh Report. This all-important study was one result of the 84th Congress's 1956 Agriculture Act.3 The Act, known officially as Public Law 540, contained Section 209 which Senators Carl Curtis of Nebraska and Capehart of Indiana had managed to attach during the bill's movement through the legislative process. Section 209 established a bi-partisan, five-man "President's Commission on Increased Industrial Uses of Agricultural Products" to deal in its own way with the farm surplus problem. Specifically the act requested that the commission conduct studies of all agriculture crops and products useful or potentially useful in industry. It provided for the organization of 188 of the nation's leaders in agriculture, industry, and science into 18 task groups to do the actual grass roots work under the leadership of the five-man Commission. J. Leroy Welsh, a prominent Omaha, Nebraska businessman--a grain dealer--was appointed as chairman.

The Commission, after approximately a year of work, submitted an Interim Report to the 85th Congress on April 17, 1957. This
allowed Congress to begin considering the report before it was completed, but in time for legislative action. The final report was submitted to Congress on June 15, 1957. Two years later, as a congressional committee debated the subject of the report, the committee chairman would explain why, during the 22 month time period since the report's submission, none of the recommendations had been implemented:

Some may wonder why we are a little late getting into this field since the Report was made in 1957. The fact was that the Report was made during the latter weeks of the 1957 session. And during 1958, despite all of the work that was done by numerous members of the House and Senate, this subject is not yet off the ground... Personally, I think that is very unfortunate. It is an important subject. In my judgment, it offers the only real outlet for American agriculture to regain its once prominent position in the American economy. I am very happy that at the beginning of this session we have been able to get our wheels up and get the hearings going. I am hopeful that before the session is concluded that even though there are wide differences of opinion as to what should or should not be done that we will come up with some legislation.

The foregoing comment could be considered an understatement, considering the urgent need for action on a national scale and the fact that the states had been waiting for federal leadership for many years. What then did the 1957 report recommend to Congress that caused endless debate, numerous hearings, and the loss of so much time?

The major findings and recommendations of the final report were not much changed from the interim report. It outlined 106 broad fields of utilization research and development which had been thoroughly researched by the 18 task groups and were considered areas where emphasis should be placed. The tone of the report was set by
statements on the agricultural situation and various comparisons with industry and its synthetics. The Commission also stated on behalf of agriculture precisely what industrial manufacturers and advertising men had long realized about their product markets:

American farmers have succeeded so well in the necessary effort to increase efficiency that they now consistently out-run the capacity of the economy to consume what they produce. To cope with this situation the government has resorted to costly programs for restricting land use, controlling production, and disposing of surpluses. . . . Can the economy develop profitable industrial markets capable of absorbing excess farm production?

The report deplored government control programs which attempted to bring the supply and demand situation back into balance, primarily because of the cost factor. This criticism had the support of most Americans, as of their representatives in Congress. In order to eliminate the need for such costly supports, restrictions, and surplus-disposal operations, the Commission found that four basic needs warranted attention: Admitting that there seemed to be little prospect of a sufficiently large expansion of food markets in the next decade to use all the excess, the main need seen by the Commission was for a sharp sense at the federal level--lacking so far--of the possibilities inherent in the industrial utilization approach. Obviously, education of the public's representatives had priority. Complementing this would be an expanded program of fundamental and applied research, the second need. Of certain interest to educators, scholars, and scientists was the third need, education of the public. Money was to be channeled into adult education programs dealing with utilization. Some funds for this purpose would be transferred from production
areas. The use of fellowships, scholarships and grants was projected to attract, train and channel scientific talent into the "neglected" field of farm product research and development. The fourth need was concentrated in the competitive area of product development and marketing, a field of high risk in which both agriculture and industry had experienced a multitude of failures for every success during past years. The Commission saw the need to provide financial incentives during development and delicate trial periods.

The Commission professed to see its report as primarily an educational document. Later congressional hearing testimony by chairman Welsh bore this out. Its text and recommendations made the following points, later to be utilized by the Nebraska Program and its administrators in launching attempts for support: (1) The Commission restated the generally accepted feeling on the part of the public that the spending of a great quantity of money on education and research meant great returns. There were numerous references in the Commission and Nebraska Program literature to the fact that each year industry increased its investment approximately three billion dollars over the past year in the field of education and research and development--three percent of its gross sales. While agriculture, including federal and state efforts, increased its efforts by reinvesting only about one percent of its gross sales. (2) Past results of agricultural research were pointed out. The Commission reported that 125 processes worked out in federal government agricultural research laboratories during the late 1940's and early 1950's were in commercial use. This highlighted the concrete results
that could be obtained from such efforts, but also recorded the small number of attempts. It was further emphasized that 300 other processes and products awaited commercialization in 1957. The Commission appeared to realize, as the Nebraska administrators later did, that researching new processes and products was not the hardest part of a utilization program. It was the "development" part of the program, the commercialization, the selling of processes to industry, the selling of products to the public (development of mass markets), that required the greater effort. (3) And, of importance to the current study, education of the public and education of greater scientific manpower in the field of utilization research was projected.

The conclusions the Commission reached in its Report To Congress were contained in ten specific recommendations interwoven through the report and each backed by commentary. Grouped together they were:

1. The Commission proposes as its first and most "necessary recommendation" that the funds for industrial uses research be increased to not less than three times the amounts currently ($16,145,000) available; and that additional sums be provided as herein suggested for education programs, new crops research, trial commercializations, development, and incentives.

2. The Commission recommends that Congress declare as a matter of policy the obligation to foster basic research in agricultural products and their uses, and that the administrators, in the allotment of funds at their disposal, be directed to place appropriate emphasis upon research projects having as their objective the discovery of new basic knowledge of farm products.

3. The Commission recommends that administrators be authorized, in addition to using facilities of the
United States Department of Agriculture, land-grant educational institutions and experiment stations, to contract also with other universities and colleges, non-profit or profitmaking research organizations, private corporations, and foreign institutions especially in countries where Public Law 480 funds may not be available.

4. The Commission recommends that the administrators be given authority to share research costs on specific projects with private industries or with other public research agencies where in their judgment such sharing will bring desirable results economically and efficiently.

5. The Commission recommends that the administrators be directed where appropriate to provide research grants, student fellowships, scholarships, and similar aids which, while accomplishing research projects, will also increase the supply of trained scientists. These funds should be so allocated that graduate training may be strengthened in each of the four major agricultural regions.

6. The Commission strongly recommends that an adequate annual investment in research and development for new crops be favorably considered along with suitable authority to the administrators of the program to provide incentives where essential to bridge over the 'awkward' stage of establishment.

7. The Commission recommends that the administrators of the industrial utilization and new crops program be empowered to enter into appropriate contracts for development of research results into trial commercial-scale operations, and that an adequate proportion of funds be authorized to be used for this purpose.

8. The Commission recommends that the administrators of the industrial utilization and new crops program be provided with authority and funds to extend suitable incentives to farmers or to industry where appropriate to hasten the establishment of a new crop or of a new industrial use, where such appear likely to lead to durable additional markets, and for rapid disposal through industrial channels of accumulated surpluses.

9. The Commission recommends that the creation of a non-partisan Board with five members be made, to be appointed by the President by and with the advice and consent of
the Senate, one of whom shall be an Assistant Secretary of Agriculture; the Board shall be known as the Agricultural Research and Industrial Board.

10. The Commission recommends that 15 percent of the annual gross receipts from customs revenues be alloted to the administrators of the industrial utilization and new crops program for carrying out the proposals herein described. Authorization should be provided whereby such funds could be carried forward in amounts not to exceed $150 million. Continuity of funds will greatly improve the ability to plan and execute both research and followup actions.\(^9\)

The above recommendations were important for two reasons. One, they served as guidelines for most of the legislation on agriculture utilization thereafter submitted to the 85th Congress. Two, they were followed to a degree by the State of Nebraska in establishing and sustaining its demonstration program. In addition, the body of the report documented some of what had and had not been done in the past by Congress, the USDA, the colleges, and other agencies and individuals in the area of agricultural utilization research. If later testimony and public statements by Commission members could be believed, the Commission in its writings strove to be non-critical of the USDA and the way it administered its research and education programs. However, criticism did show through in its recommendations and in the reasons cited for the Commission's report. The very fact that such recommendations were necessary implied criticism of existing practices under the guise of constructive proposals. In addition, the Commission Chairman, J. Leroy Welsh, at first made a determined effort to remain uncritical of the USDA and Congress when he was questioned before congressional committees in 1957-59. Later
this man, whose influence as a prominent Omaha grain dealer could be seen in the report by the stress placed on using grain to make alcohol, was to become more vocal as utilization legislation bogged down in Congress. He began using every opportunity in speeches and in the press to point out publicly not only the virtues of agricultural utilization research, but the express failure of Congress and the USDA in this field.

The finished report itself, after being submitted to Congress by Senator Carl Curtis of Nebraska, was quickly routed into committee for consideration. Its first airing was before the House Agriculture Subcommittee on Research and Extension in August 1957. The report was read before the Subcommittee as a matter of procedure. It was duly explained and some routine discussion resulted. The Welsh Commission was directed to formulate legislation on the basis of the report which Representatives Abernethy, Jennings, and Dixon would introduce during the first session of the 85th Congress. However, no support was given by the USDA and all bills containing Welsh Commission recommendations failed to pass.

The Welsh Report's second hearing was August 8, 1958, before the House Committee on Agriculture, Cooley of North Carolina presiding, during the second session of the 85th Congress. The hearing was called to consider Senate Bill 4100 and related House bills. S. 4100, introduced by Senator A. J. Ellender, Chairman of the Senate Committee on Agriculture, was of particular importance, for it incorporated elements from Capehart's S. 724, Curtis's S. 2306, and Johnston's S. 3697. It was a direct effort by the
Senate to implement Welsh Report recommendations by putting all such legislation into one workable package. S. 4100 had passed the Senate 81-0 on July 29, 1958, and was reported out of the Senate Agriculture Committee 28-0.

The hearing record showed Senator Capehart led the testimony by presenting the enormous cost to the nation of buying and storing surplus agricultural raw material from 1933 to 1959:

<table>
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<tr>
<th>Year</th>
<th>Cost</th>
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<tbody>
<tr>
<td>1933-52</td>
<td>$7.174 billion</td>
</tr>
<tr>
<td>1953</td>
<td>329 million</td>
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<tr>
<td>1954</td>
<td>964 million</td>
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<tr>
<td>1955</td>
<td>1.349 billion</td>
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<td>1956</td>
<td>1.936 billion</td>
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<td>1957</td>
<td>3.255 billion</td>
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<td>4.877 billion</td>
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<tr>
<td>1959</td>
<td>6.000 billion</td>
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This amounted to a 25 billion dollar expenditure to buy and store surplus in approximately 25 years.

Capehart cited the instituting of the Price Support Program by the Democratic Party in 1938 and the introduction of the Soil Bank by the Republicans in 1956. He asked if the nation could not alleviate the surplus problem by initiating a crash research program under a czar in the manner it did with the synthetic rubber effort during the Second World War. The Senator closed with the statement that there was no need for more money in the utilization research and development area, but a great need for increased awareness and emphasis. He made clear that education programs would affect awareness, and increased awareness and emphasis would surely bring more money and therefore more projects in the area.

The USDA had contacted Senator Ellender before the hearing
and expressed its opposition to S. 4100. The day before the hearing, True D. Morse, Acting Secretary of Agriculture, sent a letter to Representative Cooley, Chairman of the House Agriculture Committee, reiterating the USDA's opposition. The USDA's statement of opposition again demonstrated why the cause of utilization research had advanced so slowly in Congress. The USDA agreed wholeheartedly with the objective of S. 4100, but could not accept the possibility of the creation of a new organizational entity to administer an expanded utilization research program such as the bill (and the Welsh Report) recommended. Instead, the Department favored Representative Hill's bill, H.R. 13513, or Representative Dixon's bill, H.R. 13605, both which did not provide for a separate administrative unit.

In contrast to Capehart's testimony, which called for increased emphasis on utilization research based on funds already available, the USDA spoke in terms of a need for increased appropriations. It stressed that its facilities and personnel were ready for increased work on utilization research, but that Congress would not appropriate requested funds, as it had not in the 1959 Budget. In fact, according to the USDA its total research budget had been reduced even though the Department had doubled its research in the five years before 1959. The Department felt that a new agency would have the same source of funds as the research structure within the USDA and would get only what the USDA got, therefore it could be only as effective as the USDA. The USDA's committee testimony agreed, as the Nebraska Program would emphasize later, that the problem was the responsibility of the Federal Government, that the Federal Government alone was in a
position to provide the increased research:

Utilization research is, or we believe must become, an increasingly heavy responsibility of the federal government through the Department of Agriculture. The federal government is in a position to provide the concentrated research needed. Only in recent years has this fact become fully apparent in areas of vital importance to agriculture and the nation. . . . Farm producers, to whom the outcome is a matter of economic life or death, must look to public agencies. 14

But the bill which would have placed additional responsibility for such research on the Federal Government was opposed in its entirety by the USDA because of the Department's fear of a new agency. Such occurrences prompted observers to comment: "The current program of the USDA, invaluable as it is in so many ways, indicates an apparent reluctance to conduct applied research in areas competitive with other industries." 15 The USDA had to face the further accusation that it had initiated no bills to increase emphasis on utilization research and therefore appeared lacking in initiative as well as uncompetitive to the states which were looking to this public agency for action.

Members of Congress immediately counterattacked, saying in effect that they did not care how the program was carried out, just that it was carried out. In reference to the above bills, the USDA was accused by Senator Capehart of fearing a loss of authority and of having the Washington disease of N.M.H. (Not Made Here, in the USDA) in accordance with Parkinson's Law. 16 Most of the provisions of S. 4100 and the other bills were stressed as being advantageous to the USDA, i.e. authority for trial commercialization of research products, authority to make research grants to other institutions,
authority to initiate education programs, authority to grant scholarships in research.

Yet the USDA continued to fight the bills, saying that a new research agency would not be considered as a threat to the USDA's authority, but as a duplication of effort. The Department stressed that it would be against the principles of sound administration to have a dual-headed arrangement with no unity of command. Applied research in the USDA was already in a separate unit of the Department, the Chemistry Division, where a utilization research unit was separately budgeted and directed, but whose work was coordinated with all other departmental research through an Administrator of Research and an Assistant Secretary of Agriculture. Each side had good arguments, and there the matter stood for the duration of the 85th Congress. No action was gained on proposed legislation.

The Welsh Report was given its last federal consideration at a third set of hearings before the House Agriculture Subcommittee on Research and Extension on February 18-19, March 4-5-6-11, and April 20, 1959. The Subcommittee met to consider a number of 86th Congress legislative bills drawn up to implement the Welsh Report's proposals: H.R. 127, 309, 2380, 2718, 2720, 2766, 2803, 2880, 2881, 2970, 3070, 4167, 4168, 5234, and 5441. The list included two bills which were drafted by the Welsh group: H.R. 309 introduced by Representative Abernathy of Mississippi and H.R. 2970 introduced by Representative Brock of Nebraska. In the Senate, parallel legislation was being introduced by Senators Mundt of South Dakota (S. 43), Curtis of Nebraska (S. 74), and Johnston,
Proponents of utilization research were giving solid support to the Welsh Report and resulting legislation from which the agriculture industry would gain so much. Present to either support or refute the Report were, from the USDA, E. L. Peterson, Assistant Secretary of Agriculture; Dr. B. T. Shaw, a Senior USDA administrator; Dr. E. C. Elting, Deputy Administrator of USDA's Agricultural Research Service; and Dr. G. W. Irving, Deputy for USDA Utilization Research (a man later to become an important contact for the Nebraska Program's administrators); from the academic world, the Deans of eight state university colleges of agriculture; others included J. Leroy Welsh, interested scientists and congressmen, and representatives of industry and agricultural groups.

The USDA immediately voiced its objections to most of the proposed legislation for the reasons it had given during past testimony: it remained totally opposed to the idea of any new and independent administrative agency being set up to give utilization research increased emphasis by being singularly responsible for this task (thereby taking the USDA's utilization research functions unto itself). The USDA continued in the opinion that it was giving due emphasis to such research in the programs of its Agricultural Research Service. It asserted its qualifications for administering any expanded utilization research program within the department's present structure. It felt that a new agency would unnecessarily duplicate its work in the field and therefore reiterated its support for those legislative bills before the subcommittee which would increase the
emphasis on utilization research but continue to leave utilization research responsibility in the USDA.

The USDA did have impressive credentials for such work. Its Research Administration was created December 13, 1941, and an Assistant Secretary of Agriculture was put in charge, with the Secretary of Agriculture having overall supervision. Utilization research came to be centered in the USDA's Chemistry Division, which was set up in 1889 and reached bureau rank in 1901. The Division's laboratories, including four regional ones throughout the nation, were authorized by the Agricultural Adjustment Act of 1938 and completed in 1941. But the Welsh Report pointed out that "for nearly half of their existence these laboratories, created to further industrial utilization, have been obliged to be diverted from such work in order to engage in war and defense research work." The state university laboratories in turn emphasized production research when their work turned to war efforts. Criticism of the lack of utilization research after the Second World War was stifled by the onset of the Korean War. The accompanying fear of World War III also tended to increase production research and the consequent production and storing of large quantities of agricultural raw materials. During the Second World War, however, USDA laboratories had managed to develop synthetic alcohol, penicillin, and dextron blood plasma, all using agricultural materials. This gave great hope for the peacetime future of uses of agricultural products.

After World War II the Research and Marketing Act of 1946 emphasized the desire to increase utilization research and granted
USDA the authority and funds to contract with outside agencies. It also established an Advisory Committee of eleven men which met quarterly. This Committee was cited in congressional subcommittee testimony and is important because of the resemblance the future Nebraska Program's seven-man advisory committee would bear to it. The USDA committee was further augmented by twenty-five sub-advisory committees which usually represented the groups that used the discoveries of USDA research. A key component which the USDA research structure contained, and which the Nebraska Program would lack because of its emphasis on use of research findings for educational and lobbying purposes, was the technical liaison personnel at USDA laboratories who kept industry informed on research results and brought industry's problems to the attention of the laboratories.

Of particular note is the admission by the USDA before the congressional subcommittee that the Department's utilization research programs didn't get going effectively until after the Korean War and then were hampered by fear of World War III. According to the USDA, the year 1955 apparently marked a renaissance of utilization research when this type of work was put on a par with other agricultural research within the USDA. The Department made a case for its side of the issue, as it had in the past. Yet, while granting the many points touched upon by the USDA representatives, the congressman pressed the issue during the hearings. The chairman of the subcommittee recalled that "fifteen years ago it was the feeling on this Hill that utilization research was not getting off the ground." He pointed out that Representative Clifford Hope, a past member of the
House Agricultural Committee, had collaborated with Representative Flanagan, Chairman of the Committee, in introducing legislation which became part of the Agricultural Research and Marketing Act of 1946 to correct this situation. Of interest was the fact that J. Leroy Welsh appeared before the Senate Agriculture Committee in 1945 by invitation of Senator Curtis of Nebraska to testify for increased emphasis on utilization and utilization research.

By 1951 Representative Hope had become disappointed with the progress of the government program he had initiated. He began to speak of a need for education efforts because of a lack of understanding or confidence by the public and by the federal government, i.e. Congress and USDA, in what utilization research could do for agriculture in the United States. He urged certain research administration changes to the Secretary of Agriculture; to no avail, since the Secretary had just reorganized the USDA along different lines. Hope finally concluded that:

... it was not even the fault of the Appropriations Committee of Congress in not giving the full funds authorized by law for the program that the effort failed, but the fact that the intent of Congress was never carried out with the funds available.

It was evident that Hope's identification of a continuing lack of awareness at the public and federal levels was a key point.

The disappointing developments Representative Hope saw in the years following his 1946 legislation to stimulate utilization research were to continue through the 1950's. In 1956, when the USDA finally supported expanded utilization research, Congress appropriated 24 million dollars for the next five years. But by the
end of fiscal 1957 only a small part of the expanded program's schedule for that year had been attained. This situation directly brought about the Welsh Report and new attempts at legislation based on its findings.

The final congressional hearing on the Welsh Report in 1959 found Assistant Secretary of Agriculture Peterson disputing Hope's contention that awareness and not appropriations was to blame for unsatisfactory progress in utilization research efforts. Various statements by Peterson before the House Subcommittee on Research and Extension indicated the USDA felt appropriation difficulties to be directly responsible:

... in recent years the Appropriations Committees of Congress have reported out bills, subsequently passed by Congress, which, as the record will indicate, have increased our funds available for this purpose [utilization research] quite substantially, as measured by the funds going into this work of some years past. I must also say, however, that the Appropriations Committees and subsequent legislation deriving from their activities has not in all instances included the funds we have asked for this or other research purposes. ... I think the need for increased funds to step up utilization research is quite apparent. ... The USDA was forced to cut its dollar request for utilization research in half even after the Bureau of the Budget had approved the increase in 1959. ... The request of USDA for increased funds was not able to be accommodated in the 1959 federal budget because of the total administration decision to attempt to contain the gross of federal expenditures with federal revenues [an Eisenhower balance-the-Budget attempt].

The Assistant Secretary then reaffirmed the USDA's position that there was no need for new legislation, no call to separate the field of utilization research from the USDA--especially to give it a new agency--that what was needed was more money to maintain the present program of agricultural research administered jointly by the
USDA and the land-grant colleges. He said nothing about not having spent what had been appropriated by past Congresses, as Hope had charged. He merely continued to point to the money gap that statistics plainly showed existed:

1940  Agriculture got 40 cents of the Federal Research Dollar.

****  *  *  *  *  *

1957  Forty seven million dollars budgeted for Production Research, Federal Government.
      Fourteen million dollars budgeted for Utilization Research, Federal Government.

1958  Fifty three million dollars budgeted for Production Research, Federal Government.
      Fifteen million dollars budgeted for Utilization Research, Federal Government.

1959  Total Federal Agriculture Budget: 121,689,000 dollars.
      Fifty eight million dollars budgeted for Production Research, Federal Government.
      Nineteen million dollars budgeted for Utilization Research, Federal Government.
      Five million dollars budgeted for Utilization Research, State Governments.

(1960  Total Federal Agriculture Budget: 120,000,000 dollars.
      Total public agricultural research effort, state and federal: 234 million dollars.
      Gross national product of agricultural raw material production: 40 billion dollars.)

Congress, through committee, then proceeded to investigate the effort the colleges of agriculture of the land-grant universities were expending on utilization research. The eight college deans who appeared before the 1959 Subcommittee hearing gave useful testimony. Their testimony was to be considered later by the State of Nebraska.
It played a part in the Nebraska Program's conception and operation. It was to cast doubt on the wisdom of a Nebraska State Senator's later request that the Nebraska Legislature "give the Nebraska Program to the University of Nebraska and keep it out of politics." 28 And on the wisdom of a campaign promise made by a former United States Secretary of the Interior running for the Nebraska governor's office: "If I am elected I will increase and expand the Nebraska Program, giving more of the Program to the University of Nebraska instead of to outside institutions." 29 When United States Representative Abernethy stated in the hearing that his bill, H.R. 2718, to be introduced in Congress, would increase the five million dollars currently being spent annually by the states on agricultural research in the utilization area, and that the states could and would expand their research through the colleges of agriculture and experiment stations as provided for in H.R. 2718, 30 it would have been supposed that the college deans would have responded positively. Such was not quite the case.

Testimony revealed that "land-grant colleges were only lukewarm to marketing and utilization research in the past," 31 and it was "doubtful that the colleges' attitude had changed since 1957 when they opposed a Congressional appropriation of twenty-five percent of university-oriented research funds for utilization research." 32 Under questioning by Representative Quie of Minnesota the deans admitted that facilities for utilization research might have been made available in their agriculture colleges, but certainly not person-
Additional weight was given to these statements when Herbert Voorhees, an American Farm Bureau Federation Board of Director's member, and John Lynn, Legislative Director of the same organization, stated under questioning that the agricultural schools did not have the people or facilities for an expanded utilization research program. They were disappointed in this fact because they felt the public should urge its high schoolers and college people into utilization research careers, just as the Welsh Report had advocated. Later statements by Welsh Commission members and USDA officials were to point out that the land-grant colleges probably preferred to keep utilization research programs within the USDA because the colleges felt they would get more of the research dollar that way. The Subcommittee members concluded that in the end, no matter whether expanded programs were directed by the USDA or by a separate and independent agency, there was no doubt but that each would turn to the colleges of agriculture for assistance—just as in the past.

The question that remained for the deans and their colleges of agriculture was whether the colleges were changing or ever would change their attitude toward utilization research and education. Administrators and researchers who had been reared in the school of production at the colleges of agriculture would, no doubt, find it difficult to change. They were faced with somewhat the same situation as when leaders of agriculture and agricultural education had established the colleges and put pressure on the schools to give agriculture better production methods: if those leaders now so convinced
Congress, the colleges faced congressional legislation which, if they wished to stay allied with the USDA, would require them to undertake not only a change in research emphasis, but to engage in an education and information program through their extension and adult education resources. This new research emphasis would entail a massive re-education campaign designed to change the attitude and behavior of the agricultural and non-agricultural public. The agricultural worker would have to be persuaded that producing more did not automatically assure him a good living; that utilization research would be a long range "preventive" medicine applied to his income situation, not a short-range, stop-gap measure with punitive side effects in case of non-compliance as in past programs, i.e. the Soil Bank. This need for the re-education of the public was directly responsible for the initiation of the Nebraska Program.

The testimony given during the 1959 Congressional Subcommittee Hearing by J. Leroy Welsh \(^3\)\(^6\) deserves special mention, for his appearance apparently damaged his cause more than it helped. The more he was questioned, the more a negative situation developed between this advocate of utilization and congressmen who were basically sympathetic. Welsh approached the members of the Subcommittee with the attitude that they were not aware of the true situation and its seriousness. He repeatedly talked down to his distinguished audience, many of them gentleman farmers from the South, frequently beginning his remarks with such statements as:

I ask you gentlemen today, do any of you know what the problem is going to be on surplus... \(^3\)\(^7\)
I wonder how many of you know...38

I am sure none of you can realize...39

This type of approach can be dangerous when speaking with any individual, and it was no less so before the House Agriculture Subcommittee on Research and Extension.

The generalizations and speculations cast about by Welsh immediately provoked considerable comment from Representative Cooley of North Carolina, Chairman of the House Committee on Agriculture, who was sitting in on the Subcommittee hearing. Democrat Cooley felt that Republican Welsh was criticizing the Democrats for the so-called, in Welsh's words, "failure of past agriculture programs." Cooley felt Welsh was implying that the price support/production control programs of past years, initiated by a Democrat-dominated Congress, had failed. Cooley questioned Welsh closely about Welsh's possible agreement with Republican Secretary of Agriculture Benson, then in office under President Eisenhower, that the "agriculture programs of the last 20 years had failed." Cooley felt that there was definite evidence Benson was trying to discredit the price support/production control programs of the Democrats, and that Welsh was assisting.

Cooley therefore proceeded to cast all blame for the lack of utilization progress on Benson: Benson was blamed for lack of leadership, failure to use funds at hand, failure to accept more authority offered by Congress, and of course for trying to discredit the then existing agriculture programs. Cooley pointed out that the price support program made 13 million dollars in the 20 years it operated prior to 1953 and that utilization programs would have to be carried
on along with other important programs such as price supports. Welsh immediately stated that he was referring to previous attempts at ending the surplus through utilization research when he spoke of programs failing. Cooley was unmollified and ended the exchange by exclaiming:

When a man comes in this committee room and denounces the agriculture programs as failures, and does not know why they failed, and does not know what we could do to improve them—and the Secretary of Agriculture tells us he does not need any more authority—what can we do?

It took Representative George McGovern of South Dakota (a Democrat and friend of the soon-to-be-appointed Nebraska Director of Agriculture, Pearle F. Finigan) to soothe feelings and to point out again that all was evidently a misunderstanding, the two men were talking about two different things: Cooley was speaking of the overall agriculture programs of the Democratic administrations, while Welsh was speaking in terms of the utilization efforts only.

Undeterred, Welsh continued to lecture the Subcommittee in his eagerness to present his case and advance his cause. His attempts to impress the group as to the "seriousness" of the situation began to raise more questions in the members' minds than were answered. Things progressed to a point where Welsh was not allowed to finish a sentence. In the end, although most of the Subcommittee members were sympathetic to Welsh's cause, he did not make any friends, and it was questionable whether utilization research did. The Welsh Report received less and less attention during and after subsequent Agriculture Committee and Subcommittee hearings. Congressional bills incorporating the report or drafted by the Welsh Commission were
defeated in Congress. The bills would usually get out of committee, but bog down on the floor. The reason was put very well by Senator T. G. Abernethy of Mississippi:

When the USDA opposes something, we in committee get very strongly divided. It is a bad situation, but that is what happens. I am not criticizing anyone, because everyone is sincere about his position.41

When the bills went to the floor of Congress without the strong support of a committee they usually became stalemated, and this eventuality was a partial explanation of congressional inaction in the utilization research area. As a consequence, the Welsh Report remained nothing more than a report. Welsh would later tell of approaching President Eisenhower in 1959 and introducing himself as the former head of the President's Commission on Increased Industrial Uses of Agricultural Products. Welsh was greatly taken aback when Eisenhower replied, "Oh yes! By the way, whatever happened to that report?"42

It was evident to observers that years of argument were getting nowhere on the federal level. Obviously more intense pressure had to be brought to bear on the Congress, the USDA, and the colleges of agriculture, and this pressure could only come from the public. Representatives of that public on the state level thus initiated the educational effort necessary to awaken and inform the public--agricultural and non-agricultural, urban and rural, state and national. These leaders envisioned an education program that would exploit dramatic research results, utilize educational methods and serve as such an outstanding example of what could be done through
increased utilization research that the lagging public institutions could not resist the lobby. A program devised, initiated, financed, and administered by the State of Nebraska is examined in detail in the following chapter.
CHAPTER 3
THE NEBRASKA PROGRAM

The Stage Is Set

As a state directly involved in one of the six most pressing national problems, agriculture, Nebraska faced the challenge of attempting to find possible solutions to the agricultural surpluses dilemma after federal government attempts at solution proved ineffective. The state pondered an expensive do-it-yourself effort, then decided in view of finances to attempt instead an education program which would move an awakened public to demand a refocusing of federal efforts in the field of utilization research. In doing so the State experienced several changes in its political makeup: the outlines of a true two-party state emerged, both parties came to be represented in state leadership, an ambitious Program designed to have national effect was initiated, and the largest department of state government moved from a passive role to one of power. Under the guise of a state research effort Nebraska began an education program designed to bring the Federal Government around to its way of thinking.

The stage for the above events was set with the election in 1958 of Ralph G. Brooks (inaugurated January 8, 1959), the first Democrat elected governor of Nebraska since the 1930's. Brooks, an educator from McCook, Nebraska, was dedicated to his state and anxious to initiate programs which he felt would help the state and also
advance his party's standing within the state. This had to be done within the mandate given him, as a Democrat, by the Republican as well as the Democratic voters who had helped elect him. He therefore retained many Republican department chiefs in the state government, while appointing the usual partisan followers in certain key offices. One of those appointments, made before the governor's untimely death on September 9, 1960, was a relatively unknown individual, Mr. Pearle F. Finigan, as Director of the Nebraska Department of Agriculture and Inspection.

Finigan, a University of Nebraska graduate, had been a well-to-do farmer all of his life except for five years with a Colorado drug firm as treasurer and vice president. His family had been active in Nebraska politics as well as in the controversial National Farmers Organization. But as was the case of the Labor Party in Britain before World War II and the Republican Party in the Southern United States before 1964, a long period as the "out" party had left the Nebraska Democratic Party with few known and tried individuals who could be even slightly identified as members of a "shadow cabinet." Mr. Finigan therefore found himself in the right place at the right time with a history of work for the victorious party behind him.

The Nebraska Legislature with whom the new governor and director would work was elected on a nonpartisan ballot and contained a majority of registered Republicans during the 1959-1960 time period. In its makeup, however, was a registered Democrat, Senator Hans O. Jensen of Aurora, Nebraska, destined to play a part in Nebraska history because of his foresightedness and his chairmanship of the
Legislature's Agriculture Committee.

The Nebraska Program: Preliminary Maneuvering

Realizing that a group of like-minded states, or preferably the Federal Government, was the only organization which could handle a large-scale attack on the problems of agriculture--specifically the surpluses situation--and discouraged by inaction on the part of the states and the ineffectiveness of federal action, Nebraska set out to show where it thought the solution lay. It had seen, as had the nation, what research could do for production in the agricultural and industrial fields. Those who saw utilization research as the next logical step for the application of technology to agriculture faced the problem of how to bring the full weight of all research organizations--federal, state, university, and private--behind such research. The capacity for such research had been maintained primarily in federal laboratories, but operated on a small budget in proportion to all other research in government and industry. Senators Jensen and Bahinsky of the Nebraska Legislature therefore began preliminary work to initiate a Nebraska program designed to demonstrate what could be done by the states and the Federal Government in this field, should they choose or be forced to concentrate their efforts in this area. In 1957 the two senators introduced Legislative Resolution 62 into the Nebraska Legislature. Although this resolution dealt with locating a grain alcohol plant in Nebraska, it contained the first mention of "industrial uses" in the State Legislature and was a first effort to redirect federal attention
to the utilization research field, for it endorsed United States Senate Bill 581\textsuperscript{3} which dealt with such research.

The successful political effort which resulted in the Nebraska Program began on February 2, 1959 with the introduction of Legislative Bill 604\textsuperscript{4} in the Nebraska Legislature. Again Senator Jensen was the author, with Senators Ruhnke, Otto, and Olinger as co-introducers. Senator Jensen stated later that he "had had the idea for a long time" and that he "had read the Welsh Report."\textsuperscript{5}

Whether the idea was conceived first by him and then encouraged by the Report, or the Report initiated the idea, was not clear. In any case, the bill asked that a four percent tax be placed on the gross amount wagered through parimutual betting in the state, with the funds going to an agricultural-industrial utilization research program. Of further note is the fact that the bill gave control of the funds and the authority to administer the program to the Nebraska Department of Agriculture:

Fifty percent of the betting tax balance shall be allocated and paid to the Department of Agriculture and Inspection to be used for the development of additional uses or new industrial uses for agriculture products, and for research. . . .\textsuperscript{6}

LB-604 was read to the Legislature for the first time on February 2, 1959, then referred to the Revenue Committee. At that time State Senator Carpenter of Scottsbluff informed Senator Jensen that he, Carpenter, also was drafting such a bill. The bill, Legislative Bill 658, was comparable in intent to LB-604, but suggested that funds should come from property taxes and go into the
state's General Fund—not directly to the Department of Agriculture. Carpenter asked Jensen to allow a combining of the two bills. Jensen agreed and allowed LB-604 to be postponed indefinitely in the Revenue Committee, believing that the collection of funds was secondary to the main purpose of the bill and that who administered them was also secondary as long as the main goal of an Agresearch Program was left intact. To Senator Jensen's dismay, the final bill as it came from the Revenue Committee had collection of revenue spelled out but made no mention of use of the funds for research:

The committee felt that the principle of taxing pari-mutual betting was good (LB-604), but another bill was accepted (LB-658) which allocated such tax money into the State General Fund. It was the feeling of the committee that a bill which ear-marked the proceeds would have a more difficult time earning passage than LB-658 which provides for the proceeds to go into the General Fund. It was also felt that it would be harder to amend LB-604 into a workable form than LB-658.7

The committee advanced the bill (LB-658) to the General File, for it felt this bill would have the best chance of passage. All members of the committee agreed to support the bill.8

The Nebraska Program Forms

Senator Jensen, backed by Governor Brooks, therefore entered the legislative battle again with the introduction of a new bill and a call for the killing of both LB-604 and LB-658 as they returned to the General File and the Legislature for discussion and a vote. The new bill, Legislative Bill 722, became the base for an effort destined to be expanded in concept from a small-scale, bit-contribution attack on the national agriculture problem, to an education/lobbying program directed at the state and national public,
with federal action the ultimate goal. LB-722 was more carefully handled than the two previous bills. It went from the Legislature into the Revenue Committee under the guiding hand of the Agriculture Committee which Jensen headed. Hammering out of the final draft of LB-722 proceeded, with interest picking up in the state and Legislature as time and debate proceeded in the Revenue Committee.

Jensen led the testimony, pacifying production-oriented individuals and groups, cautioning against high expectations, subtly urging continuity in any legislature-established program and, significantly, hinting at the expanded national, federal government, and public support needed:

I support continued production research, but utilization research must be emphasized now. The University of Nebraska has some facilities and personnel for such work, but not enough.

A crash program with large sums of money would not necessarily bring early results. Results of such research are slow in coming and often unpredictable. There are no magical results.

Meetings are needed for coordination with the rest of the nation. Our program here in Nebraska would be but one part of that going on in the rest of the nation. The problem is so high and complex and the research so expensive that alone we could do very little. But we need to do our part. By getting a good program underway. Nebraska should be able to participate in federal funds. In addition, we must establish a program which will have continuity. To have continuity, it must develop strong public support.9

The remarks forewarned of the eventual by-passing of the University of Nebraska. They later became by-words for Program administrators attempting to gain public support and quiet public impatience. And they served as first mention of the direction the Nebraska Program would take toward solving agriculture's problem of surpluses--the
initiation of a combined research and education effort. LB-722 was to be interpreted in practice much differently than many of the Program's early supporters expected. Those whom the creators charged with the administration of the Program soon realized that the research effort was too small to solve the problem of agricultural surpluses. Therefore the question of whether public support for federal government attention to the Program's proposed solution could be developed and maintained became of foremost importance. In view of the above statement by Senator Jensen it is apparent that he at least to a certain extent anticipated this development.

Two private citizens appeared to voice opinions in committee debate on LB-722. Mr. Elton Breck, Director of the Nebraska Farmers Union, appeared in support of the bill. In opposition came Mr. Henry Behrens, a private citizen from Beemer, Nebraska, stating:

The money will not actually do any good or bring relief, as it will go for salaries and miscellaneous expenses. The life of the bill, if it is passed, should be shortened from the suggested ten years.10

Letters arrived from numerous chambers of commerce throughout the state supporting the bill. A letter also was received by the Revenue Committee from J. Leroy Welsh of Omaha, former chairman of President Eisenhower's Commission on Industrial Uses and an ardent advocate of increased federal help in this area. Welsh had been pessimistic about the bill and, though he never missed a chance to utilize a public platform or the media to advance his cause, he uncharacteristically declined an invitation from Senator Jensen to appear before the committee in support of the bill, sending a letter
instead. He later changed his mind when it appeared that the Nebraska Program was aimed toward his favorite targets, the education of the public and the influencing of the Federal Government to assist in solving the problem of agricultural surpluses. He became a firm supporter of the effort.

There appeared at this critical moment in a capitol city (Lincoln, Nebraska) newspaper an editorial which the field of Adult Education would consider quite sound in its advice. It called for "an advisory commission to assist in administering the program" and suggested that "more benefit might be insured if the bill which provides money only for research was broadened to include 'development.'" Such utilization of mass media for urging adoption of certain principles by the people's representatives was a forerunner of the use to which the media would be put to educate and influence the people themselves when the program began operation. The constructive advice offered was weakened in the editorial by the following:

The program will demand an imaginative but sound administration. The bill places this function in the State Department of Agriculture. The question of who administers the program does not seem a vital one as long as ample provision is made for coordination with the University of Nebraska and other public and private research agencies both within and outside the state.

As it happened, LB-722 in its final reading made no mention of "other public and private laboratories within or outside the state," although provision was made for coordination with the University of Nebraska. However, the question of who would administer the program was to be most vital. Determination of the direction the program
would take and what its ultimate goals would be would lie directly in the hands of the program administrator, and the administrator alone would determine what part universities, laboratories, media and education would play in the program. Administration is dealt with in full later in this chapter and in Appendix A.

Not one to ignore constructive advice, Senator Jensen submitted an amendment during the May 20, 1959 Revenue Committee hearing to set up an advisory committee and to insert the word "development" into LB-722. Senator Munnelly of Omaha moved the amendment be adopted and the motion carried. Senator Olinger moved that the time limit of the program be shortened from ten years to six years. The motion also carried. Although the advisory committee which was later duly created accomplished little, the "development" aspect was to be highly utilized in the upcoming education program.

No effort of government can go forward without money. With the prefatory remark that "industry spends ten dollars for research and development for every one dollar agriculture spends," Jensen submitted for committee discussion the following projected program budget:

| Equipment                      | $200,000 |
| Eight staff personnel--1 year  | 100,000  |
| Fifteen technicians--1 year    | 60,000   |
| Operating expenses--1 year     | 30,000   |
| Temporary and part-time personnel provision here. | 10,000 |
| **TOTAL**                      | **$400,000** |

The Revenue Committee proposed to place a tax of one-tenth mill on all property in the state except intangible property. Such a tax would have raised 350,000 dollars annually, or 2.1 million
dollars during the six year duration of LB-722 (later shortened to five years). Jensen made it clear in legislative debate that "he didn't care where the funds came from as long as it was specified that they went to utilization."  

Before LB-722 moved to General File, Senator Burbach added one last amendment. Burbach moved that the bill be amended to include a provision to receive any federal grants or funds if available. The motion carried. LB-722 passed its committee hurdles on May 20, 1959 and went from the Revenue Committee to the General File by a vote of five to none, two not voting.

With the realization that a Nebraska research program was awaiting debate on the floor of the Legislature and had a good chance of becoming reality, senators rushed to define what type of program they were actually calling for. Senators Jensen, Stryker, and Ruhnke, realizing who in agriculture (as opposed to industry) was primarily responsible in the utilization research field, introduced Legislative Resolution Thirty-Nine into the Legislature on May 25, 1959. It appeared to be aimed at establishing guidelines for a program of state self-help, but had primarily to do with the Federal Government. The resolution was in two parts. In the first part, a committee of five was appointed from the Legislature to not only study the type of program needed, but to determine the extent to which federal-state coordination was being achieved in the area of research on industrial uses. In addition, the second part of the resolution called upon Congress to establish a laboratory at the University of Nebraska for the purpose of doing basic and applied...
utilization research. To maintain momentum during the committee study period, Senators Stryker, Jensen, and Ruhnke introduced a similarly worded resolution on June 26, 1959, having mainly to do with a federal research laboratory—as in Part Two of Resolution Thirty-Nine. 15

Many United States Senators had already tried to introduce resolutions similar to the above in Congress. 16 Resolution Thirty-Nine was a continuation of that effort on the state level. As this became more and more evident to Nebraska state senators, seven additional legislators rushed to add their names to Resolution Thirty-Nine as co-introducers. LB-722 was therefore gaining more assurance of passage on the Legislature floor.

Legislative Bill 722 Establishes The Nebraska Program

LB-722, during its consideration on the floor of the Legislature in June of 1959, met with two challenges, one minor, the other serious. Senator Carpenter, who had been involved in the determination of revenue for the Program, submitted an amendment designed to tax intangible property for research revenue. The amendment, submitted on June 1, 1959, was later withdrawn by Carpenter in favor of the Revenue Committee's recommended tax of one-tenth mill on all property except intangible property. 17

A more serious attempt to change LB-722 came from Senator Cooper who, agreeing with a charge by Senator Romans that "the program should be kept out of politics," strongly advocated movement of program administration from a political arm of the state government, the Nebraska Department of Agriculture, to an educational branch, the
University of Nebraska and specifically its College of Agriculture:

Mr. Cooper moved that LB-722 be returned to Select File for the following specific amendments:

1. Amend section 1 of the bill by striking line 2 and inserting "the University of Nebraska College of Agriculture. . . ."

2. Amend section 2 of the bill, lines 3 and 4 by striking "Department of Agriculture and Inspection" and inserting "University of Nebraska College of Agriculture. . . ."

3. Amend the bill by striking section 3 and inserting in lieu thereof the following:

Section 3. To aid and advise the Dean of the University of Nebraska College of Agriculture in carrying out the provisions of section 2 of this act, there is hereby created an advisory committee to consist of 14 members to consist of the Director of the Department of Agriculture and Inspection, the Dean of the University of Nebraska College of Agriculture, the Chairman of the Committee on Agriculture of the Nebraska State Legislature et cetera. . . . The committee shall meet on the call of the Dean of the University of Nebraska College of Agriculture. . . .18

Senators Cooper and Romans had, as had J. Leroy Welsh, foreseen the use of any developing program as a political instrument by state administrations. The two senators and Mr. Welsh were later proved correct. In a state where campaign issues were few, the program developed by the legislative branch was soon seized upon by the executive branch as a political cornerstone upon which to build an administration record. But a majority of others in the Legislature apparently were of another persuasion. LB-722 survived this most important challenge unchanged by a vote on the amendment of twelve ayes, twenty-five nays, six not voting.19 Program administration was therefore left in the hands of a political division of
state government.

Governor Brooks continued to give his full weight to the bill as it came from Committee into the Legislature. In a significant move outside the Legislature, the Governor sent his Director of Agriculture, Pearle F. Finigan, to Washington D.C., making it clear to all that Mr. Finigan would, among other things, check into utilization on the federal level. Finigan upon his return suggested a literature survey of the utilization research field, legitimate advice for a fledgling research and education effort. These steps suggested that the Governor and the man who would direct the program, Finigan, were reasonably confident of LB-722's passage. And in fact LB-722 had been picking up strength as it moved through the legislative process. Additional senators became convinced, some of the possibility of successful utilization research on the state level, others of the possibility of successfully lobbying the federal government via an "example" program. In the Legislature life was given to the Nebraska Program on June 10, 1959:

LEGISLATIVE BILL 722

Voting In the Affirmative, 37:

Adams
Aufenkamp
Bowden
Bridenbaugh
Burbach
Carpenter
Cooper
Erlewine
Fenske
Fulton
Gerdes
Hollenbeck

Jensen
Klaver
Lautenschlager
Liebers
Marvel
Moulton
Munnelly
Olinger
Orme
Otto
Peck

Russillo
Skarda
Stryker
Swanson
Syas
Tews
Thompson
Vosoba
Webb
Williams
Voting In the Negative, 3:

Diers                  Pizer                  Romans
Not Voting, 3:
Donner               McHugh                 Simmons

LB-722 was signed into law by Governor Brooks on June 11, 1959.

While LB-722 was under consideration in the Nebraska Legislature, United States Secretary of Agriculture Ezra Taft Benson was opposing United States Senate bills on agricultural utilization research in Congress. At the time Benson was committed to the Soil Bank Program as a solution to the surpluses situation. Congress was of the same mind, for even when United States Senators Russell of Georgia and Curtis of Nebraska tried to raise federal appropriations for agricultural production research by twenty-five million dollars, Congress cut the figure to four and one-half million dollars. Others could therefore look at the Nebraska-federal situation and say, "The Nebraska Program looks like an example of the self-reliance that once was known as an American trait." But those who were concerned with the direction and goals of the Nebraska Program, while they were willing to take credit for self-reliance, also felt it necessary to re-emphasize the national character of the problem:

The farm problem is a national problem requiring and deserving national consideration and solutions. However, the people of Nebraska have indicated, through the action of their legislative representatives, their wish to find some of their own answers, so far as possible.

This statement accurately gave due credit to the representatives who saw the people's needs. Thus Nebraska set out with a two-fold purpose: To attempt to find some answers via the research and
education efforts of its Program, and to demonstrate to the Federal Government that increased utilization research as a solution to one of the six most pressing national problems should be given national-level consideration.

The Administering Agency

A statement was reported earlier in this chapter from a source outside education and government suggesting that the question of who administered the Nebraska Program was not a vital one as long as the provisions of sound and imaginative administration and coordination were adhered to. This view proved incorrect. Granted, whatever the agency, it would have had to be capable of developing into an efficient administering unit in addition to maintaining its normal duties. But much more is entailed when such a program is given to a political agency rather than to a research or educational agency. A political agency is limited to a greater extent than the other two agencies by the necessity for its officials to please the public that oversees its activities. In addition, it is possible that a program within a political agency might be used to further other, more political goals than just those of the program. It can be seen, then, that placing the Nebraska Program within the Nebraska Department of Agriculture and Inspection, a political division of state government, made for a much more "interesting" administration of the program than would have occurred if the program had been given to, say, the University of Nebraska.

Under past state administrations, until 1959, the Nebraska
Department of Agriculture and Inspection functioned almost entirely as a service agency with several non-agricultural functions. In addition, it was a non-technological, non-educational operation. Least of all was it involved in the research/production areas of the agriculture industry. Both its name and its image were misleading. The Federal Government and the University of Nebraska handled the technological, educational, and research/production functions, leaving the Nebraska Department as a catchall for state government services:

- Motor and Aircraft Fuel Regulation and Tax Collection Unit
- Gas and Oil Severance Tax Collection Unit
- Cigarette Tax Collection Unit
- Nebraska Resources Industry Attraction Unit
- Chemistry Laboratory (Quality Testing Only)
- Dairies and Foods, Weights and Measures Regulation Unit
- Truck Ports-of-Entry Operation and Maintenance
- Veterinarian Unit
- Plant Industry Unit
- Weed and Seed Regulation Unit
- Wheat Development, Utilization and Marketing Unit
- Agricultural Statistics Unit (State-Federal cooperative effort).

Approximately one-third of the Department's activities could be called agricultural service functions, but even these were more of an inspection or regulatory nature. Since indirect protection of quality and markets was the most identifiable service rendered the citizen, it sometimes appeared that the Department was most concerned with the urban dweller. Such an image had brought past accusations that the Department was actually against the farmer, while its name implied it was established to assist agriculture. Indeed, so much an instrument of state government had the Department been in the past, in its inspection and tax collection
duties, that a more accurate name would have been the "Department of Inspection, Collection, and Consumer Protection." As a direct result of the Nebraska Program initiated by LB-722 a name change later took place when the Nebraska Legislature selected "Department of Agriculture and Economic Development" in July of 1963.

Department-University relations had not been extremely cordial during past years. The University resented any attempt by a political agency to intrude into its research and education affairs and other areas of responsibility. For its part, the Department, being the biggest and most powerful agency of the state government which controlled the University, tended at times to believe it could influence policy in the College of Agriculture of the University. Events in the 1959-1967 period of the Nebraska Program did not give evidence that this situation had changed. The very initiation of the Program was, in fact, partially directed at a University "failure" to see and emphasize the "correct" agricultural goals, specifically in its research and education. The Nebraska Department of Agriculture appeared to believe that the public and its government should, as a consequence of their having been educated in the correct goals of agricultural research, direct the University to channel government funds into utilization research and education.

Department relations with the national governmental level had followed normal lines of state-federal partnership. Most contact was maintained by way of the United States Department of Agriculture. The Nebraska Department of Agriculture participated in
federal funds through such cooperative efforts as compilation of agricultural statistics and the maintenance of crop production experiment stations around the state. Each government agency maintained its areas of responsibility, guarding its dominion but never hesitating to try to expand its sphere of influence by attempting to bring its partner to a concurring view on a particular subject. In the course of the Nebraska Program, the State went on the offensive, assuming responsibility for "educating" the USDA and the federal government about what it saw as a national problem, the need for increased utilization research by agriculture.

Contrary to popular knowledge, the Nebraska Department did have contact with foreign governments and an international public during the period before 1959. Most of these foreign relations were conducted through the Nebraska Wheat Commission, a unit of the Nebraska Department of Agriculture. This commission, the nation's second, established in 1955, worked closely with the Nebraska Wheat Growers Association and the Great Plains Wheat Organization, both private groups with extensive networks of foreign offices. Only in this one instance could the department be said to have been involved in increased utilization efforts, and then only to the extent of increasing sales through market expansion. But the State of Nebraska, through its new Program, became even more involved in international dealings. Nothing could have been more advantageous for the gaining of wide-spread public attention for the Nebraska Program. The Wheat Commission was in a position to exploit this attention, for one of its purposes was education. In addition, the
Federal Government naturally took notice of any intercourse between a state government and a foreign government, such notice providing definite encouragement for Nebraska's work on the international level.

However, with little public knowledge of the Nebraska Department of Agriculture's activities except as a tax-collection regulatory agency, the department had developed a severe negative image, inspiring the press to comment:

What should be one of the most important departments of state government, the Department of Agriculture, has in the past, been pretty much a routine operation of collection and inspection, with some attention paid to agricultural legislation before the Unicameral. 24

Past administrations had been content to let the department remain an agency partially closed to agriculture. Department directors and personnel appeared to accept the idea that the Department was an irritant to the public because of its collection-inspection duties, and abided by the motto "The less the Department is known, the better."

The passage of LB-722 was sensed by many as the beginning of a role in keeping with the agricultural part of its responsibilities.

The Director of Agriculture and the state administration could meet the challenge facing Nebraska by making the job take on stature. With Nebraska agriculture at the crossroads, the Department of Agriculture could furnish leadership in education, industrial uses of agriculture products, and attraction of industry. This should not overlap the areas already covered by the University of Nebraska, but should complement and make use of the research and educational work by the university. The time has passed when Nebraskans should be content to let the Department of Agriculture be merely a fiscal collection agency for many
functions, some of which have nothing to do with agriculture. 25

There had been an earlier attempt to refocus the attention of the Department on agriculture. A legislative bill in the State Legislature's Agriculture Committee had proposed taking restaurant inspection duties away from the department and giving them to the Health Department. If the bill had passed, other such shifts were certain to follow. Ironically the Department of Agriculture opposed the measure on the grounds that its real functions were being taken away: that instead of making the department more agricultural in emphasis, the bill would actually weaken the department's real responsibilities. Yet, with the initiation of the Nebraska Program the Nebraska Department of Agriculture assumed the role of a government utilization research and education agency and, in doing so, underwent a transformation that put it squarely in the field of agricultural administration with a role similar to that of the USDA. The new role of the Nebraska agency fitted that which the Welsh Commission had envisioned on the federal level:

"It would be impossible to build up another series of laboratories and enter the field for the manpower to carry on research. We are talking about setting up an agency to do no research but to have the power of decision, to have the money with which to contract research with companies and laboratories, and to use the manpower it already has. 26

Upon the passage of LB-722, a flurry of organizational activity enveloped the Nebraska Department of Agriculture as the agency marshalled its resources and staff to begin the as yet ill-defined Program. With no particular guidelines established by the Legislature, efforts began to find areas that could be utilized to
demonstrate to the watching public and to the Federal Government that utilization research contained the potential answer to a serious national problem. Whatever its later stated "discoveries," "new uses," or "improvements" in the research area, the Program never became more than this--an educative/lobbying effort. Therefore, the Department took the Welsh Report and transformed department administrative divisions into a supporting operation for a program that would serve as a showcase for the Report's recommendations. The transformation of the Department was not so much physical, barring the addition of a few personnel and changes of letterheads, as it was an intangible occurrence which resulted from the integration of the Program effort into the entire department. It was not quite attained with the "manpower it already had," but nearly so. As the Department transformed its image into a positive, leading agency of state government, divisional chiefs and personnel were never allowed to forget that supporting the Program was a primary duty, whatever their unit's assigned duties. And as the Program inevitably became immersed in election campaigns, it became as important for the department to sustain the Program for short-range political reasons as it was to press toward the Program's long-range goals. The Nebraska Department of Agriculture began immediately in 1959 to initiate action designed to produce a showcase program, an educational effort which became more far-reaching and involved than any of its proponents dared visualize. The implications of the Program for a state and its citizens, for a nation and its government, and for certain individuals increased significantly during the 1959-1967
The Showcase

The first step of the Program, the literature survey, was not difficult since the Welsh Report served that purpose. A second move included the appointment of an advisory committee as follows:

Pearle F. Finigan Director of the Nebraska Department of Agriculture; CHAIRMAN.

Dr. W. V. Lambert Dean of the University of Nebraska College of Agriculture. Later replaced as Dean and committee member by Dr. E. F. Frolik.

Maynard W. Jensen Gentleman farmer from Aurora, Nebraska. Son of LB-722's author, Senator Jensen. Considered friendly to the Brooks Administration and cooperative with the Nebraska Department of Agriculture and its intentions.

E. Thorne Johnson Gentleman farmer from Fremont, Nebraska. Considered of opposite political persuasion to the state administration, but friendly toward the Program and cooperative with Department efforts.

Robert R. Rauner Private citizen from Gurley, Nebraska. Former member of Nebraska Legislature and cooperative with the Department and the Program. Friendly toward the Brooks Administration.

Vince E. Rossiter Private citizen from Hartington, Nebraska. Former member of the Nebraska Legislature. Friendly toward the Brooks Administration, the Agriculture Department and the Program.

Although these members might appear to have been selected on a political basis, their appointment was strongly in keeping with
educational theory. These men were eager students, involved in the effort because of their connections with agriculture and anxious enough to see the Program work to give of their time and talents. The representatives on the committee reflected those sectors of the public engaged by the Program: farmers, legislators, urban dwellers, educators, administrators, and researchers. The committee was expected to play a vital part in the Nebraska Program; however, its proponents did not reckon with its meeting a strong and ambitious administrator in the form of the chairman of the committee, the newly appointed Nebraska Department of Agriculture Director, nor did they foresee that the committee after some success might not actually operate as it was designed to.

Committee members initially contributed significant suggestions useful in setting up the education effort and also played a small part in actual administration of the Program. Rossiter and Jensen were sent to Chicago where they contacted Dr. C. B. Linn of Universal Oil Products Company, Des Plaines, Illinois, who held patents on methods of interchanging petroleum and grain starch molecules. Since petroleum-based synthetics were the chief rivals of grain starch-based goods, it was believed that potential relief of the national farm surplus would come from utilization research discovery of areas where grain could compete with petroleum. After a briefing by Dr. Linn, the two committee members went to Washington D.C. to view and discuss the national government's research efforts with various federal officials.

The Program Advisory Committee, after a few meetings, usually
once a month, and a few trips, virtually dropped from view. The Nebraska Department of Agriculture Director assumed a position of dominance through his day-to-day handling of Program administration details. Although the committee was still useful as a program-guiding sounding board, it began to meet only sporadically. Possible decisions with political implications were thrown to the committee to determine reaction of the public to certain Program moves. What had begun as an educationally sound concept, a board made up of Program participants began operating quite imperfectly.

In addition to the advisory committee, other sections of the public immediately responded to the Program. In the late 1959 period while enthusiasm for the Program's objectives as stated in LB-722 ran high, a group at Central City, Nebraska led by State Senator Hans V. Larson and Mr. Thomas Moats formed the Merrick County Agricultural and Industrial Corporation. Its first efforts were directed toward investigating the possibility of opening a pilot grain alcohol processing plant in Central City. This was stimulated by some remarks made by Director Finigan concerning the reopening of such a plant in populous Omaha. Before industry, with government backing, could be enticed to do so, both had to be convinced it was necessary and possible. Thus the pilot plant was established for demonstration purposes.

A second private group, the South Central Nebraska Agricultural and Industrial Corporation, was formed at Hastings, Nebraska, and was to become important in the New Crops phase of the Program. Both of the above groups contained competent promotion-minded
individuals and were destined to play significant roles in the education part of the Program as it developed from the theory stage into the "education of the Federal Government by example" stage. Since this was an important facet of the Program, it can be seen that these groups became of increasing importance to Program administrators.

In advancing from the theory stage to the actual initiation and operation of a program which would serve as a front and a lever for obtaining other objectives, the Nebraska Department of Agriculture assigned staff personnel to gather quantities of utilization research information presumably not available through the literature search. Evidence of this searching, researching, discussing, initiating and administering can be found in the 20,672 dollars in Program funds that were spent by the Department by June 1962. But funds were as plentiful as information in those first idealistic years of the Program. In an initial move, the federal government was persuaded to release 200,000 dollars to the Nebraska Program from the recently deactivated Rural Rehabilitation Corporation, a left-over from Depression years. Either State Senator Burbach had had his eyes on federal money in such funds as the aforementioned or he had surmised that, as in many previous cases, there would be some available when he added the amendment to LB-722 in committee which allowed any available federal funds to be used by the Program. In any case, the 200,000 dollars was the first channeling of federal money into the Nebraska Program.

To guide the information gathering, the funding, any future
researchers, and the watching public in its education and evaluation, Finigan disseminated the following philosophy--mainly by way of the press: "Since Nebraska needs results fast, most funds of LB-722 will be spent for applied research which does not take the time of basic research." Again, this was a sound move, for applied projects usually have more usable, "showy" results for educational purposes than basic research efforts. This statement was expanded in a department publication which presented the philosophy in a candid manner:

The position of the department and its advisory group, the Agricultural Products Research Fund Committee, has been that basic research is an essential element of progress, but is primarily the responsibility of the universities and the privately endowed institutions who can afford to look far into the future; that, on the other hand, our present situation, being in the nature of an emergency, cries out for relatively short-term results. This is particularly true of the LB-722 program, financed as it is from public tax funds and heavily dependent as it must be upon public support for its continuance from one legislative session to the next.

The publication continued:

The main factors determining approval or disapproval of a research project proposal have been and will continue to be:
1. Practicality of the subject matter.
2. Its apparent chance of success in the not too distant future.
3. Its cost in comparison to its prospects.
4. Its eligibility for funds within the wording of LB-722.
5. Reasonable assurance that its performance will not duplicate other previous or existing projects.
6. Demonstrated competence of the research institution and personnel to be assigned to the project.

The department-committee team has not been hasty in committing itself to projects.

It appeared, then, that "practicality" figured predominately in determining research projects and institutions which could handle
them. The word was in fact mentioned quite frequently in Nebraska Department of Agriculture publications. Such an identifiable fact possibly stemmed from one or more of the following:

1. Nebraska Midwestern heritage of practicality.
2. The need for tangible evidence or material to work with in the educational effort.
3. The need for quick results by the Program for political reasons on the state level and lobbying reasons on the national level.
4. The pressing need for a total solution or alleviating alternative to the agricultural surpluses situation.

The Tangible Program

It did not prove difficult to begin actual research. The difficulty lay in the careful selection of projects within the money allotted, the chief criteria for which, as noted above, was practicality. There was immediate interest from private companies and individuals. The state was contacted by American Maize Products Company of Roby, Indiana, and Dr. J. W. Evans, Vice President In Charge of Research, briefed the Nebraska Agricultural Products Research Committee on the merits of corn containing a high content of a chemical called "amylose." Dr. Evans suggested that Nebraska test-grow the corn and laboratory-research the results, for the amylose starch had a high potential for use in industry. In addition, Dr. Evans suggested that Nebraska could point to itself as the western-most state to undertake such an effort and could advertise itself as a potential natural supplier for the West Coast market. It went without saying that the American Maize Company would have been happy to see a non-competitive agency supply research effort and dollars toward the production and improvement of the very
item the company dealt with in the manufacture of food, textiles, paper and construction materials. It appeared to be a natural partnership containing much potential in regard to the publicity that could be gained for the Nebraska Program.

An inquiry on castor beans was received by the Department from the Platte Valley Fertilizing Company of Nebraska. The company pointed out that the beans were used in industrial foams, missile fuels, and jet aircraft high-temperature lubricants, and that ninety percent of those put to such usage were imported from Brazil—interesting information for those attempting to find not only industrial uses but industrial crops to replace staple crops in surplus. Also of interest with respect to this particular proposal was the fact that in 1953 the University of Nebraska had worked on a castor bean project directed by Dr. J. H. Williams. The effort was an attempt to grow the bean in Nebraska and was aided by the Baker Castor Oil Company and the Pacific Vegetable Oil Company of Richmond, California. While the effort was not a total failure, for data was obtained, it was nevertheless terminated without apparent success. It was decided that the slow growing season and weed and harvesting problems ruled out the castor bean for Nebraska. The University was therefore highly skeptical at the consequent promotion of the castor bean by the Nebraska Department of Agriculture. And when the Department and its company allies succeeded in initiating an education effort which persuaded Nebraskans in ten counties to grow ten thousand acres of the beans in 1960 through Program education and assistance, the University exhibited concern. Not that it did
not have reason, for it could easily have been provoked by the increasingly education-oriented Department of Agriculture's use of the press and other mass media to promote department Program goals. Nevertheless, here was the tangible beginning of a coolness between university administrators (especially College of Agriculture individuals, but in the end reaching to Chancellor Hardin) and Department of Agriculture administrators in regard to the Program.

The Department found that the first research institution-submitted project suggestions as supplemented by its own information-gathering on crops were sound, and added the following to its philosophy of Program operation:

Another area of decision lies in the phrase "research and development." The committee has interpreted this as permitting work both in the laboratories and in the field test plots (including the growth of new crops, with the hope of eventually diverting sizable acreage from surplus grains) as well as the development of new products...

Now two areas of endeavor were defined which would be used to promote the Program's educative and lobbying goals.

From Dr. C. B. Linn of Universal Oil Products Company, Des Plaines, Illinois, came a proposal for the development of paper from corn. However, the department was at that time looking into the making of paper from wheat and was somewhat reluctant to change its emphasis, expecting more support from the well-organized wheat-growers and therefore more power behind its impact on the federal government. Nevertheless, high-amylose corn eventually produced the better paper in commercial form after the Department had accepted Dr. Linn's proposals. It proved a belated but wise
decision, for the concrete results which were promptly forthcoming were extremely useful to Program education efforts and political lobbying progress. 36

As proposals continued to be received and projects continued to be evaluated, the Department found its activities in the agricultural administration area expanding. Department Program administrators, Director Finigan and his aides, decided on a bold move. It was announced through the Advisory Committee that the Committee had voted in February 1960 to secure project proposals from private laboratories. 37 There had been no provision made for such a move, no basis established in LB-722. This broad interpretation of the Bill was another significant step in the Program in which the committee had a part. Further, the Committee took full responsibility for the move, shielding Finigan and the Department from criticism and thus freeing them for immediate action. Before possible opponents could grasp the significance of the move, they were presented with a fait accompli.

There was immediate action on the part of the private laboratories, as could have been expected, for private laboratories, non-profit or otherwise, usually have many dormant projects and ideas which only await a source of working funds. Southwest Research Institute of Texas which had done previous work in the area of grain alcohol responded, as did Midwest Research Institute of Kansas City which had worked on uses for grain, and the Institute of Paper Chemistry of Wisconsin which had worked on starches for paper. The National Chemergic Council, which was later to elect Finigan to its
board of directors, was also heard from with an offer of cooperation and assistance to the Program. This last group, being national in character, was a step forward in achieving the national recognition Nebraska was trying to bring to its Program, and the resulting educative fallout of which would be invaluable. It was of extreme importance to the educative/lobbying efforts of the Program that by contracting out projects to private laboratories Nebraska had begun to spread its efforts over the entire United States, and would soon be able to release "results" obtained from laboratories reaching from New York to California and Wisconsin to Texas.

A further development was that the USDA itself began submitting project proposals. Three were forwarded by the Northern Regional Laboratory of the USDA at Peoria, Illinois. Nebraska, which viewed this development as an immediate Program educational success, gave the proposals serious consideration, but rejected them when it was found Nebraska would merely have been paying technicians working on existing USDA projects under USDA administration. This was not quite the effect of the educative/lobbying effort Nebraska had in mind. Further, patent rights for any discoveries would not have gone to Nebraska under such a state-federal arrangement. Here again there seemed to be little of educative value, since the USDA could take credit for any discoveries. Later, after the ironing out of such details, cooperative projects were established at the University of Nebraska and on the West Coast at the USDA's Western Research Laboratory. The USDA, though, not yet fully cognizant of the goals of the Nebraska Program, continued to
hold the opinion that Nebraska's work was a duplication of USDA research work with too little effort given too much emphasis for its size. When a Nebraska Department of Agriculture representative called on the USDA Assistant Administrator of Utilization Research, Dr. W. D. McClay, in Washington, the Nebraskan showed the official a copy of a *Saturday Evening Post* editorial (June 10, 1961 edition) which praised the Nebraska Program, calling it "an example of the self-reliance that was once known as an American trait." Still not comprehending the true goals of the Program, but thinking mainly in terms of the research work, the administrator replied: "We've been doing this for seventeen years and they don't even know we exist."

The atmosphere of the visit remained cool during the rest of the meeting, according to the representative. However, other indications of aroused USDA interest in the Nebraska Program were just enough to convince Program administrators that they were on the right track to the achievement of their purposes.

In all, a total of twenty-two projects and their derivations were given initial consideration by the Nebraska Program.

These included:

(a) Industrial utilization of wheat gluten.
(b) Utilization of grain starch.
(c) Market potentials for high-amylose (high starch) corn and corn in general.
(d) Breeding high-amylose corn hybrids for industrial utilization.
(e) Feasibility of castor beans as a commercial crop in Nebraska.
(f) Development of production practices for castor beans in Nebraska.
(g) Modification of dry-milled starch products for use in papermaking.
(h) Development of improved starch products of increased versatility in paper-making systems.
(i) Effects of water conditions on the cooking, dispersion and paper-making properties of starch.
(j) Industrial utilization of lard, tallow, and meat scraps.
(k) Detoxification of castor bean pomace.
(l) Use of wheat straw in paper-making.
(m) Utilization of flesh of yearling hens.
(n) Safflower products investigation.
(o) Vegetable growth and commercial processing.
(p) Basic research into modification of starch molecular structure.
(q) Use of Nebraska wheat in bulgar-type products.
(r) Use of hard red winter wheat in the macaroni industry.
(s) Analysis of market opportunities for organic acids produced by fermentation processes.
(t) Three projects submitted by Northern Regional Laboratory of the USDA at Peoria, Illinois.

In what could possibly be called the first approved Program project, it was announced through the Advisory Committee that the Nebraska Department of Agriculture would cooperate with the Great Plains Wheat, Incorporated, organization of which the Nebraska Wheat Commission of the Department and the privately financed Nebraska Wheat Growers Association were members, to "give market bottlenecks as much emphasis as moving researched products into industry." It had been suggested in the past that the entire Program should have been geared to function like the Great Plains Wheat, Incorporated, marketing programs. Be that as it may, Nebraska had again established an inroad to the federal government, for the chief partner with Great Plains, Incorporated, was the Foreign Agricultural Service (FAS) of the USDA which was responsible for promoting utilization through export markets. Great Plains and FAS offices were located in the Netherlands, Peru, India, Pakistan, Japan and Washington D.C. This placed Nebraska's Program in an area of inter-
national operations, an area of endeavor which later proved to be very successful for all parties and a rich field for Program educational use. The project became increasingly important for its ability to use its international aspects to garner national attention—as is pointed out later in this chapter.

Nine research projects were initially assigned of the twenty-two given initial consideration, supported by Program funds located in the Nebraska Department of Agriculture's Budget Appropriation Account Number 14-A:

MARCH 1960
"(a)" above was assigned to Midwest Research Institute, Kansas City, Missouri.

MAY 1960
"(b)" and "(c)" above were assigned to Midwest Research Institute.
"(f)" was assigned to the University of Nebraska Agricultural Experiment Station, Lincoln, Nebraska.
"(e)" was assigned to the South Central Nebraska Agricultural and Industrial Corporation, Hastings, Nebraska.

JUNE 1960
"(d)" was assigned to the University of Nebraska Experiment Station.

AUGUST 1960
"(g)" "(h)" and "(i)" were assigned to the Institute of Paper Chemistry, Appleton, Wisconsin.

By the end of 1964 contracts and understandings had been established with seven institutions, all non-profit organizations:

BJORKSTEN RESEARCH LABORATORIES, Madison, Wisconsin
FOSTER D. SNELL, INCORPORATED, New York, New York
INSTITUTE OF PAPER CHEMISTRY, Appleton, Wisconsin
MIDWEST RESEARCH INSTITUTE, Kansas City, Missouri
SOUTHWEST RESEARCH INSTITUTE, San Antonio, Texas
UNIVERSITY OF NEBRASKA, Lincoln, Nebraska
USDA WESTERN RESEARCH LABORATORY, Albany, California
The assigning of projects to the institutions carried with it the problem for the Department of giving the institutions some idea of what the Program was to accomplish as to both its long- and short-range goals. Much time was spent in conferences where the Department stressed that research results should be forthcoming, and that it was these quick results, not continued investigations, Nebraska was interested in for educative and lobbying reasons. The research agencies may have found instructive what the public was being told:

Every effort is made to apportion research funds among projects with a reasonable prospect of measurable success within the period for which they are set up. Extreme long shots are not in favor—the Program prefers more favorable odds and operates on a rather conservative basis.42

It was repeatedly emphasized to the laboratories that such successes as were realized should be exploitable. Exploitable for what was the key to the entire effort. Some still believed that project results should be marketable.

A proposal was submitted by J. Leroy Welsh to reopen a grain alcohol processing plant which the Federal Government had operated in Omaha during World War II. The plant, which had produced alcohol for aircraft engines, had operated at a loss and was consequently closed at the war's end. J. Leroy Welsh, being an Omaha grain dealer, had tried for years to get legislation passed in Congress for the addition of grain alcohol to automobile gasoline. It was hoped that the Omaha plant could then be re-opened. Congress paid no heed, and Welsh turned to the Nebraska Program immediately upon its initiation. But the Nebraska Department of Agriculture was also unwilling to press the case:
\[\text{We} \] are not interested in "one shot" uses for farm commodities where technical feasibility has been demonstrated, but economic practicality has not. The committee thoroughly investigated the possibilities. \[43\]

Director Finigan and his Assistant Director, Leon Kreiner, also publicly repudiated the idea. \[44\] Nebraska's thinking was further demonstrated for research institutions to heed in a speech by Finigan before the newly organized, Nebraska-initiated Agricultural Products Utilization Association (examined later in this chapter) on September 26, 1960. In the course of the attempt to expand the Program's educative aspects nationally and therefore increase its lobbying pressure on the Federal Government, Finigan counseled:

A sound economic approach similar to Nebraska's is advocated before large sums are spent on random research projects that could produce interesting products, but ones for which the farmer could not afford to supply raw materials. \[45\]

The issue of "marketability" which stood in the way of pursuit of the Program's true goals was felt by administrators to have been effectively dealt with.

Although several projects had been assigned to the University of Nebraska, Nebraska's primary research and education agency, it appeared that the Department had made these assignments to the University to avoid criticism from Nebraskans. It was likely that the University would emphasize research over education. In any case, it was significant that the University was given projects which dealt only with production research, i.e. the New Crops phase of the Program. Since the University had done previous work on castor beans, safflower, and amylose corn, it was quite appropriate that the University undertook this type of Program research. A more
realistic appraisal was that the Program administrators believed the University lacked personnel and facilities for utilization research and development, that production research facilities and staff were more readily available, and that quick, exploitable results were needed by the state's utilization campaign. The University consequently began with two projects and later was given four more, all but one continuing for five years. It was doubtful that the college even as an education agency recognized that many of the Program's efforts were educational in nature. It did however have a media department which disseminated news about progress of the projects. Later discussions with university personnel revealed that they considered their work on these projects informative and therefore educational. This at least would have pleased the Program administrators.

Relations between the executive leadership of the Nebraska Department of Agriculture and the University of Nebraska's College of Agriculture were not particularly amiable. The two agencies had in common only a like dependence on the Legislature for funds, and the common title of "Agriculture." A better relationship existed on a person-to-person basis among the second echelon workers and administrators in both agencies. Individuals of certain divisions of the Department and the University worked with and respected each other, both in regard to the research effort and in other day-to-day work of mutual interest. But the ever-changing personnel and policies of a political agency were confusing and sometimes irritating to the University. And the Department, in turn, did not seem to fully trust
the University with the full duties or full knowledge of the utilization education effort. Consequently, suspicion of motives, operations, and objectives was evident in Program cooperation between the two agencies, and credit for any research results was guarded by both. The citizen who was not able to talk with individuals working in the agencies saw the battle being fought mainly through the press. This was much the way the struggle also went at the federal level. While the Nebraska Department pressed its case, the Federal Government's USDA attempted through the media to counter Nebraska's educative efforts which, it began to see, had the task of pointing out that not enough attention was being given utilization and utilization research. Each agency, the Nebraska Department of Agriculture, the University, and the USDA attempted to claim that its progress in the field was the most important, most spectacular, and most recent. All of this assisted the Nebraska Program's cause of educating the public about utilization.

The Department-University conflict escalated significantly in late 1964 when Finigan abruptly cancelled all projects at the University and refused to pay $100,000 dollars in research claims by the institution. Finigan stated that "no progress was being made at the University and the agency had not complied with requirements for reporting expenditures and results." Chancellor Clifford Hardin, at a meeting of all concerned, apparently ended department-university Program cooperation for some time by candidly declaring that "[the University] does not have ambitions in this utilization research direction. The University doesn't want to become
involved where it would be a contracting agency for other groups."

It could, therefore, be concluded that the Nebraska Department of Agriculture was initially correct in not wanting to contract utilization research with the University, but was forced to do so by pressure from the public and the Legislature. On the other hand, there could be little doubt that the University had ultimately looked beyond its projects, had viewed the entire Program and had seen that it was not a true research program, but rather an educative effort in which the University had little part in either the research or the education, and an attempt to lobby the Federal Government by attention-getting tactics. In other words it saw an attempt underway to educate the public to bring the same kind of popular pressure on the Federal Government that it had brought on the Nebraska Department of Agriculture in order to force the Department to contract research with the University. Thus ended for the time being cooperation between a state political agency and a state university on a vital national problem. It had endured approximately four and one-half years. In the end Program administrators had found the University deficient in the pursuit of Program goals, both educational and political.

Exactly the opposite type of relationship appeared to develop between the Department and the Midwest Research Institute (MRI) of Kansas City. And as events would show, within the contracts of MRI lay the future power and glory of the Nebraska Program. The Nebraska Department of Agriculture worked most closely with this agency and was rewarded by the production of the most spectacular
results of the Program, promptly promoted by both institutions in relation to each agency's purposes. The philosophy of MRI seemed to have been ready-made for Nebraska's efforts. The outer page of an MRI publication invariably bore the following inscription:

Nothing is so powerful as an idea arriving at the right time--GOETHE

Midwest Research Institute was built upon the fact that the Midwest needed an agency to help it participate and compete in the new technological age which this nation was entering in the middle 1940's. . . . It is only recently, particularly in the post-Sputnik years, that the general public has begun to grasp the importance of scientific research; informed persons have recognized for many years that it is essential to the welfare of all people and to the prosperity and security of the nation.

The continued flow of the material blessings of civilization depends not only on the increase in scientific knowledge, but on the way in which knowledge can be put to use by industry. . . . MRI's research must not only be outstanding, but of economic value to the sponsor. 49

Perhaps because it so closely reflected the needs of agriculture and the parallel educative and research needs of the Nebraska Program, MRI became the primary research agency that helped press the awakening of the general public and its representatives to the promise of utilization research.

The states had been as guilty as their publics in their lack of foresight in this field. And while the USDA had carried on research mostly in the production area, it could not be as heartily condemned, for it did have some utilization research in progress. Thus as the unique state-sponsored utilization program was underway (viewed by the public as a program of much the same type as the education and technology crash programs of the late 1950s, early
Nebraska, as it wished, became an experiment watched by many other states and the Federal Government. The State of Nebraska itself was a "pilot plant," and it fell to the Midwest Research Institute to make good both its own and Nebraska's philosophies in the research field. MRI was to produce the results for Nebraska to use in accordance with its Program goals.

MRI was given the first three Program projects assigned outside the State of Nebraska. Those projects, that state money, and the MRI philosophy later produced, among other things, a dissolvable film package made from corn which could be cooked and eaten without being removed from the food it contained—an item into which industry had put some six million dollars for research and development. Another initial MRI item was the Nebraskit Survival Ration. Both of these items proved invaluable to Nebraska Program goals. MRI immediately became the lead agency in the production of short-range, "crash" research results in the Nebraska Program. It was then up to Nebraska and its Department of Agriculture to accomplish the more subtle, long-range educational and political results in which the Program was engaged.

A successful initial effort was also made by the Institute of Paper Chemistry (IPC). It submitted promising results of its research on grain starch as a paper bonding agent. IPC was given three initial projects in August of 1960, involving some 69,000 dollars, to try to demonstrate the feasibility of bringing grain starch into competition with paper bonding starch then imported from
Midwest Research Institute watched this effort closely, for it was, as has been previously stated, also interested in starch utilization as applied to uses such as packagings and films. Nebraska Program directors were fully aware of the need and potential of such research, but was the United States Congress or the public at large? Nebraska Program directors did not think so. The head of Ford Foundation Resources for the Future, former Chancellor of the University of Nebraska, Dr. R. G. Gustafson, who may have been aware of the developing Nebraska effort, had stated the situation in remarkably clear language:

In my opinion, if the day they drilled the first oil well in America they had, instead of hitting a supply of petroleum, hit a supply of starch that would have served humanity for all time, and we had carried on like research on starches as has been carried on by the petroleum interests on petroleum, we could have been making practically everything that we are making today out of petroleum out of starches that are a surplus on the face of the earth and a burden to this nation and the taxpayers today.56

The South Central Nebraska Agricultural and Industrial Corporation of Hastings, Nebraska extended its interests by providing field test plots and furnishing supplies to the research institutions. In addition, with Nebraska Department of Agriculture guidance, other private individuals outside the corporations were furnished assistance in growing test plots. Such participation by individuals was evidence of the initial support being won for the Nebraska Program in its early stages through its educative efforts.

All of the above projects and institutions were involved in the initial "tangible program" designed to produce "results" that could be exploited for educational, and later political, purposes.
Projects at Bjorksten Laboratories and the USDA's Western Laboratory were added in 1961, and Snell, Incorporated and Southwest Research Institute were signed in 1962. The "research" effort was well underway by 1963.

Goals Of The Research Projects

It should not be forgotten that two areas of endeavor were paralleling each other during the above work. The intangible, ultimate goals of the Program were actively pursued on the educational/political levels during the actual work on the research projects. Even though the awarded projects were of high importance to the Program and its relief-of-the-surpluses public goal, they must be kept in perspective by assigning them their proper place as a means to an end. And that end was an educational/political goal, the education of the public about utilization research and resulting public pressure on the Federal Government to adopt utilization research as a possible solution to the agricultural surpluses problem. It was, therefore, not essential for Nebraska's research program to undertake anything more than the initiation of "promising" projects and the revelation of spectacular "results" for educational and political reasons.

In pursuing the above mentioned tactics, certain bodies of the public were concentrated on. It was clear that education of the Nebraska public was of primary importance, for it supported and maintained the Program. Of equal tactical importance was the attraction and education of other states of the Union which could
lend public, political, and financial support to the effort. Naturally Nebraska's neighboring states were aware of proceedings because of their proximity and their mutual interests. But Nebraska's efforts did not stop with the attention of neighboring states: a much wider national education effort was planned. Public officials from the Nebraska Governor on down, particularly the Director of Agriculture and the Agresearch Advisory Committee, in addition to numerous private individuals of high prestige, energy, or interest, formed an education task force whose focus was the nation. This endeavor met with some success as the Program came to assume a place of interest among certain areas and groups of the nation: various state governments, individual public officials, legislatures, groups among the public, the press, schools and educators. The most favorable result Nebraska hoped for among the states was positive legislative action on their part, adding assistance to what was yet only an isolated state action. Bringing the concerted power of state governments to bear on the Federal Government was expected to have the influence that a reverse action usually has on the states.

As a first step in the effort to obtain the backing of other states, Nebraska Governor Brooks requested that a conference be held among states having an interest in the Nebraska Program either agriculturally, industrially, financially, educationally, politically, or otherwise. It was a first attempt to establish negotiations among the states, with the desired strategic result being a coordinated education effort culminating in a forceful public lobbying effort.
upon the Federal Government. Admittedly, the assistance which a regional effort would bring was most important in the area of the education effort, for all else—moral support, financial backing, active research participation, promotion, political assistance—would be expected to follow. The initial meeting of the interested and the curious was held January 6, 1960 at Shenandoah, Iowa, sponsored by that city's chamber of commerce. Many of the states represented did not confer official status upon their representatives. Officially the roster read that Iowa, Missouri, and Nebraska attended. Nebraska Director of Agriculture Finigan served as chairman of this meeting which named committees on "organization" and "by-laws." The name "Agriculture Products Utilization Association" was selected to give the loose union some type of official standing.

Director Finigan later reported that the tactical purpose of the meeting was "the coordination of applied research and an exchange of information in the development of new uses for agriculture products now in surplus." He added: "It was not our purpose to immediately initiate research programs in independent laboratories, educational institutions, or private businesses as reported by some of the press." Nebraska was therefore tactfully not asking for an immediate outlay of money by other states, a tactic which might have caused immediate skepticism among members and potential members of the Association. Rather, it appeared that the ultimate goals of the effort were stressed. And it could not be denied that it was an appropriate time to stress those intangible
goals, for no greater pressure could be brought to bear on Congress or the Federal Government than the voice of the states, their legislatures, and their people, who also choose the makeup of the Congress and therefore the Federal Government as a whole. The strategic aim of the entire effort was made clear for the close observer to discern and for the states to actively support on an educational or political front. The official statement as released by the Shenandoah group declared that the group would:

... follow Nebraska U.S. Senator Carl Curtis' suggestions as contained in an amendment to the 1959 House Industrial Bill. These were: a. Continued pressure to require the federal government through the USDA to contract with outside research facilities including colleges of agriculture for a substantial and increasing amount of agricultural research and, b. Continued pressure to require the federal government to include in all agricultural-industrial research contracts provisions for pilot testing and trial commercialization of new farm products and new crops in order to assist utilization.59

Such bold indications of the true direction of the entire effort, from Nebraska's Program to the coordinated actions of a regional or nation-wide group, were rare.

Of passing note at this meeting was a suggestion by Iowa State Senator Harbor. The Senator proposed that federal financial help be requested only as a last resort in any state's utilization research venture. The probable impact of this proposal on the gathering, especially upon the Nebraskans, could be theorized as somewhat other than positive, for prodding the Federal Government to greater action whether on the federal level or on the state level was one of the chief goals of the meeting and the effort. No support was gained for Harbor's suggestion. It was, however, agreed upon to
ask Vice President Nixon to attend a future Midwest meeting of interested states.\textsuperscript{60} Investigation revealed no record of Mr. Nixon or United States Secretary of Agriculture Benson ever accepting such an invitation by this group.\textsuperscript{61} Representatives of the states remained at this point the highest opinion leaders the Nebraska Program could draw, educate, and hope to see spread its gospel.

A second meeting of the Association, held February 25, 1960 in Lincoln, Nebraska, saw serious organization get underway among members. Nebraska State Senator H. B. Stryker was elected chairman of the Association and an acting board of directors was created:

Jefferson Broady, Brownville, Nebraska  
Hans V. Larson, Central City, Nebraska  
H. B. Stryker, Rising City, Nebraska  
Frank Hoxie, Shenandoah, Iowa  
J. W. McMannama, Shenandoah, Iowa  
Raymond Eveland, Kelly, Iowa  
Franklin Main, Lamoni, Iowa\textsuperscript{62}

Incorporation of the Association took place under Nebraska's Nonprofit Corporation Act. Incorporators were:

Iowa State Senator Frank M. Hoxie  
Missouri State Representative Fred Mahon  
Nebraska State Senator Harold B. Stryker  
Nebraska Research Advisory Committee member Maynard Jensen\textsuperscript{63}

At this and subsequent meetings held at Saint Joseph and Kansas City, Missouri; Denver, Colorado; Council Bluffs, Iowa; and Omaha, Nebraska during the 1960-1962 time period, full discussion took place on methods for advancing the purposes of the organization. Reports of the Nebraska Program's progress were disseminated and the views of the various specialists were heard. Association officers and other individuals also reported on their progress. The organization
had achieved the wide interstate character it had hoped for, if one considered the states present at its meetings. These included at various times representatives from New Mexico, Oregon, Wyoming, the Dakotas, the South, and the Midwest. However, by the last meeting of the Association in 1962 before it ceased to meet, only Iowa and Nebraska were official members. States such as Missouri continued to send only unofficial representatives; Colorado's Governor Nichols indicated his interest by sending a personal, but unofficial observer; Kansas was represented at one meeting and not thereafter. Nonetheless the Association was serving its purpose as an educational group, a sounding board, a pressure group, an official working body carrying the battle to the Federal Government via the states. This prompted Nebraska Director of Agriculture Finigan to observe: "A regional program, even if only Iowa and Nebraska participate at first, will accomplish far more than we could hope to alone."

Iowa did indeed make a valiant attempt to assist its neighboring state. Advocates of utilization research in Iowa, Kansas, and Missouri had actively campaigned for programs similar to Nebraska's, but only Iowa's came close to realization when in 1960 Iowa legislators indicated at the convening of their Legislature that a bill concerning such research would be introduced. An Agricultural Products Utilization Association meeting was called on November 20, 1960 by Nebraska to influence such a bill. The education effort undertaken upon the Iowa public and its representatives by the Association could be termed a precedent, forecasting similar action in the hope of influencing other states' legislation
in the same area. Unfortunately for such hopes and for the progress of the over-all effort, Iowa's legislation was indeed introduced but failed to be voted into law. This in turn, of course, resulted in yet further intensification of the Nebraska Program's education efforts in Iowa, as its need was seen to be greater than at first expected.

Governor Brooks of Nebraska had meanwhile been utilizing his office to assist in widening the education and political front on a higher level, to keep the struggle to draw other states into the effort moving. In conjunction with Finigan's work in forming a utilization association to act as a center for cooperative thought, education, and action, Brooks persuaded the Governor of Minnesota, Orville Freeman, to hold a Midwest Farm Conference in Saint Paul, Minnesota. (Ironically, Freeman was later to become United States Secretary of Agriculture and was therefore to assume a position which, among others, would be a focal point of attack for the very forces he was assisting in 1960. After he assumed the Secretary's duties in 1961 it soon became evident that he was seeing things from a federal standpoint.) The conference, held March 4, 1960, was attended by two other Governors, Loveless of Iowa and Herseth of South Dakota. Representatives were sent from other surrounding states.

The stated purpose of the meeting, significantly broad so as to interest as many states and individuals as possible, was to discuss the economic impact of pending federal farm legislation.
Brooks gave added impetus by publicly stating:

The farm bills before Congress leave too much discretionary power in the hands of the Secretary of Agriculture. That situation has been substantially responsible for the agriculture problems of farmers such as in Nebraska.65

After taking one last verbal swing at Secretary of Agriculture Benson, branding him as "opposing all positive progress,"66 Brooks revealed through further statements the underlying purpose of the Minnesota meeting. It was to Brooks' credit that, while criticizing present policy, he suggested constructive alternatives. The presentation of those alternatives was the purpose of the meeting, and those alternatives were, of course, "positive approaches to agriculture problems like Nebraska's Legislative Bill 722 and organizations like the South Central Nebraska Agriculture and Industrial Corporation of Hastings, Nebraska."67

The conference soon focused on consideration of proposed federal legislation and appeals by the group for serious public and federal consideration of the utilization research approach to agriculture's problems. Limited results were obtained at the meeting on both subjects, but Nebraska had at least been successful in establishing another educative inroad among high opinion leaders, the political leaders of other states who could do no less than amplify the Nebraska Program's voice among their peoples and through their channels to the Federal Government.

From 1961 to 1962 the educative effort applied to other states to gain overt support for the Program slackened. Nebraska leaders were marshalling forces and gaining new evidence with which
to renew the tactical effort to convince other states. By 1962 Nebraska began to feel that its sister states, especially Iowa which had appeared so promising, were merely tagging along providing some vocal support but little financial or legislative action until they saw how the Nebraska Program fared educationally and politically: whether it could maintain public support in the face of a production-orientated tradition, and whether it did indeed have a chance of federal recognition. Evidence of this Nebraska concern began to appear in speeches by Nebraska officials and in their statements to the press. In 1962 at one of the last significant meetings of the Agricultural Products Utilization Association (attended, among others, by Iowa Governor Erbe, his Secretary of Agriculture Liddy, Iowa State Senator Hoxie, Nebraska Governor Morrison, his Director of Agriculture Finigan, and Nebraska State Senator Stryker), Liddy responded to this criticism by asking that it be remembered Iowa had made an unsuccessful attempt two years before to set up a program like Nebraska's, but could get no funds appropriated.68 Governor Erbe poured oil on the troubled waters by stating that Iowa would try again to launch a program within two years, but that getting money from the legislature was a big limitation.69 Finigan responded that (apparently in spite of Nebraska's efforts on the education front) "Iowa's try for a program failed because legislators and the people had not been convinced of the value of such a program."70 J. Leroy Welsh, whose patience was by then growing thin with congressional inaction on his commission's proposals, took the occasion of a speech before the Association to blast the national
public, Congress, and the USDA for a similar lack of understanding of the problem. On those notes the Association, which was an excellent educational device, seemed to again fade into the background. It was June of 1962 before another concrete act took place outside Nebraska's borders to complement the Nebraska effort. A private group of individuals opened Agri Research, Incorporated in Manhattan, Kansas to promote utilization research through education to attract industries which would use agricultural products.  

The Nebraska Program also met a serious crisis on the political front in 1960. Approximately one year after the Program's enactment and six months after its strong supporter Governor Brooks of Nebraska had launched his drive for other states' support, the Governor died in office (September 9, 1960). Lieutenant Governor Dwight W. Burney assumed the Governor's chair.

The resulting political situation could have affected the Nebraska Program in many ways. The passage of LB-722 had pleased many people on both sides of the political aisle. The registered Republican majority in the "nonpartisan" Unicameral had until this time been indulgent of Brooks' and Finigan's Program management. That "honeymoon" was now endangered. Brooks and his appointed fellow Democrat Finigan had worked together as an effective team not only as officials of state government but as close personal friends. The Governor's death struck Finigan deeply. It also dealt a blow to the Democratic Party in Nebraska, for its first governor elected in some two decades was struck down before he had completed even one term.

With the assumption of the Governor's Office by Republican
Lieutenant Governor Dwight W. Burney, the appointed Democratic administrators of the Nebraska Program became apprehensive about the future of the Program and of their jobs. Their fears must surely have increased when Governor Burney removed Mr. Frank Golden, Chief of the State Cigarette Tax Division, Nebraska Department of Agriculture, because of his parallel job as Chairman of the Lancaster County Democratic Party organization. At this same time, the close cooperation between the Governor's Office and the Office of the Director of Agriculture ended. Director Finigan could certainly have been removed for his activities as a stalwart in the Democratic Party. If this had in fact happened, the utilization research effort would have lost a champion in a position of leadership within a state. However, events served to keep the same Nebraska Department of Agriculture administrators with their first-hand knowledge of the Program in their positions. This is not to say that others could not have handled the Program, but to point out that those who had helped create the Nebraska Program, managed it through the legislative process, devised realistic goals for it, put it into operation, and attempted to expand it nationally were permitted to continue in positions where their past experience could continue to benefit the effort. Perhaps Governor Burney felt he did not have a proper or powerful enough mandate at the time to make further changes. Possibly there were other pressures, but probably Burney decided to await the impending elections when a most likely (in Nebraska) new Republican governor would have the prestige of election to remove the popular Finigan by exercising the prerogative
of a newly elected governor to appoint his own directors. This situation almost came to pass, not through a Republican governor, but because Frank B. Morrison, another Democrat (from Lincoln), was elected Governor November 3, 1960.

Despite the fact that the new governor and the incumbent director of agriculture were of the same political party, the question arose as to Finigan's retention. Morrison and Finigan were not on the best of political terms because of past differences on how the Nebraska Democratic Party should be run. Finigan and the late Governor Brooks had been powerful voices in the party by right of their offices and tended to cooperate with the Chairman of the State Democratic Party, Bernard Boyle of Omaha, top party policy-maker and political foe of Morrison. Finigan's political past was therefore tainted as to his inclusion in a Morrison Administration. It became a question of whether Finigan would adhere to Morrison policy, which would include one unsuccessful attempt and a later successful effort to remove Chairman Boyle and replace him with a Morrison man; whether Morrison would realize Finigan's usefulness to his administration, to the state and to its Program; or whether Finigan might move on to a United States Senate nomination, for which Morrison was certain to have tried in the next election and for which Finigan was now considered the most likely substitute. It appeared likely that Finigan would have announced his Senate candidacy had he been turned out of office, but he first made known that he would prefer to remain in Nebraska, in his job with the Program, and in harmony with Morrison. Morrison accepted the new ally whose worth he realized and
whose help against Boyle he needed, and reappointed Finigan after the Governor assumed his office January 1, 1961. Finigan therefore remained as one hold-over link between the old administration and the new one in regard to the Nebraska Program, for Senator Jensen, author of LB-722, left the Nebraska Legislature to himself assume a federal job. Thus the Nebraska Program weathered political events and fortunes during the first year or so of its existence. The future appeared promising, for the Morrison Administration anchored itself on the Program and began to apply itself to it; however, the use of it for gaining public exposure for the administration later proved to hinder the true goals of the Program, which were educational.

The Political and Economic Context of the New Crops Effort

At first the New Crops section of the Program made the most progress while the laboratories were beginning the somewhat slower activity of product utilization research. The goal of this work was to demonstrate to Nebraskans that they could become the nation's leading producers and processors of industrial oil crops. The ability of Nebraska to compete in this field was based on its abundance of usable land and water, in contrast to chief competitors Texas and California with their high-cost land and water. The over-all effort was helped by the very kind of political assistance Nebraska was trying for--federal legislation. In 1962 Congress passed legislation permitting the farmer to plant industrial crops on the same idle acres he was drawing government payments on for
taking the land out of production. The farmer could therefore plant, harvest, and sell the very crops the Nebraska Department of Agriculture was encouraging through the New Crops section of its utilization education program, while drawing one-half of his previous federal payments. In this particular case an interesting effect was noticed: The Nebraska Program, stressing utilization education, had capitalized on the traditional production-oriented thinking of the farmer, and Nebraska castor bean and safflower acreage increased significantly. This successful experiment, especially the castor beans, proved to be a "feather in the cap of Director Finigan and the Nebraska Department of Agriculture," not to mention the fledgling Democratic Administration which was striving to gain prestige and maintain position. But more in keeping with Program goals, such success with legislation and experiments could not help but have had an educative effect on a wide public and its representatives.

While attending to the favorable educative and political effects all this would have, Director Finigan was aware of the desirability of achieving a transition from a state dependent upon agriculture to one dependent upon industry, although an agricultural emphasis would have to be maintained in that industry. At least a balance would be tried for, with an awareness that industry would later have to gain a predominance if Nebraska and her fellow agricultural states were to compete effectively in an industrial-technological American society. This fact could also be found in the Nebraska Blue Book statistics for the 1950's, for even though
the industrial work force rose in the state from 1950 to 1960, the rise was not in balance with the reduction in agricultural workers:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>AGRICULTURAL (FARM) WORK FORCE</th>
<th>INDUSTRIAL (MANUFACTURING AND PROCESSING) WORK FORCE</th>
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<tr>
<td>1950</td>
<td>200,000</td>
<td>45,000</td>
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<tr>
<td>1960</td>
<td>130,000</td>
<td>66,000 + 21,000</td>
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The progress of the New Crops effort was not without its troubles. Noteworthy among these was the running University of Nebraska-Nebraska Department of Agriculture battle conducted mainly in the press as to who should get credit for introducing industrial crops to Nebraska and for educating the state's public as to their worth. The University, while willing to concede that its fellow state agency had been fairly successful in its education program to gain widespread adoption of the crops, correctly claimed that it had been the first to recognize the importance and promise of such a program and had experimented with the industrial crops in the past. The University was effectively countered by the fact that it had concluded that industrial crops were not suited for growing in Nebraska and had abandoned its efforts to convince Nebraskans to plant and grow them.

Another inevitable struggle was the political two-party conflict. Although the Program enjoyed over-all bipartisan support, it became painfully clear to Republicans that the Democratic administrations were deriving total benefit and increasing strength from Program progress. Republican-oriented newspapers, such as the
The Hastings Tribune owned by former Eisenhower Secretary of the Interior and later Nebraska gubernatorial candidate Fred Seaton, mixed their reporting of the Program with criticism, however constructive. Among various charges by the Tribune and the Omaha World-Herald was the Tribune’s accusation that the Program Advisory Committee was encroaching on the duties officially assigned to the Resources Division of the Nebraska Department of Agriculture, the legitimate organization charged with bringing industry into the state and locating it. (In doing so, the Division was to educate industry about Nebraska, and Nebraskans about how to get and treat industry.)

The Tribune commented:

The Agriculture Committee is taking over some of the duties of the Nebraska Resources Division in locating industry in Nebraska. It isn't that the Resources Division can't use help, but it appears to this writer that the committee would be more effective in using its funds for basic research. . . . Indeed, it would seem that Finigan, in his newspaper columns, should discuss functions of the committee, telling just what it can and can't do.75

The foregoing was valid, constructive criticism, but no direct reply by Finigan was ever made. The answer to such a charge lay in the fact that the Resources Division, though it had done a commendable job in the past, lacked adequate funds and personnel to fully carry out its duties. Since Nebraska and its Midwestern sister states needed all the help they could get in attracting industry, the chance to use the funds, personnel, educational structure, publicity, and prestige of the Program was looked upon by Program administrators as an assist to the Resources Division's work, not as a usurpation or duplication of its authority and duty. In addition, not only was
Director Finigan the head of the department of which Resources was a division, but he was by law the Resources Division Advisory Committee Chairman as well as being Chairman of the new Nebraska Program Advisory Committee. In sum total Director-Chairman Finigan was in an excellent position to utilize the Resources Division and the Nebraska Program for similar purposes as he pleased.

As a sidelight to the above situation, and perhaps a clue to why the Resources Division question was exploited by the Seaton-owned Tribune, was the fact that the Resources Division head, Mr. David Osterhout, was a staunch Republican appointed during a past Republican administration. It was well known that his views and Finigan's were not compatible, for obvious reasons. The political climate that had caused many Republicans to desert their party and assist in electing a Democrat governor in 1959 caused that governor (Brooks) to wisely maintain his strength by being moderate, even quite conservative (as his successor Morrison would be), and keep many Republicans in leadership positions within the state governmental structure. This sometimes caused delicate working relationships and some political conflict, as can be seen from the Finigan-Osterhout situation.

The New Crops Educational Effort

A look at the New Crops branch of the Program can best be given by viewing the work done with castor beans. The need to change the thinking and behavior of agricultural workers was pointed out by such things as this newspaper headline: "Need To Find Replacement Crops
For 245,000 Acres Of Wheat Lost As Quotas Tighten. In Nebraska, a Cheyenne County committee went to the state university with the problem. The University promised to do research; however, it was by that time significantly behind the Nebraska Program in such a field, having concentrated its efforts on increasing production of traditional crops through hybrid grains production research. The University had originally experimented with castor beans in the 1950's, but had abandoned them as not feasible for growing in the Midwest. At the beginning of the 1960's another state agency took up the challenge on two fronts: the education of the public in the growing of the plant, and the utilization of it.

Using as a stimulus the fact that ninety percent of all castor oil used as low grade lubricants, medicines, and high temperature oils in the United States was imported from Brazil, the Nebraska Department of Agriculture let contracts for laboratory experimentation on the oil as an industrial fluid and funded the growing of 1,500 acres of the plant by the University of Nebraska and the South Central Nebraska Agricultural and Industrial Corporation of Hastings in 1960. With the help of the Department the Hastings Corporation contracted with Pacific Vegetable Oils Corporation of San Francisco and Baker Castor Oil Company of Bayonne, New Jersey for purchase of the harvest from 1,000 of the planted acres. This purchase proved that the all-important buyers, the industrial users of the product, were available. It was up to the Nebraska Program to make the Midwest public aware of the opportunity to attract these industries, and to therefore widen production of both raw materials and finished
products. The Federal Utilization Laboratory at Albany, California, a federal government institution which was watching the progress of the state-run, state-financed Program, estimated that an awakened agriculture industry could increase its castor oil market by ten to fifty times—significant encouragement for the Nebraska Program from an important branch of the Program's target federal agency, the USDA.

The University of Nebraska reactivated its abandoned castor bean breeding program and, with restored Nebraska Program funds which previously had been withdrawn as recorded in this chapter, began experimentation on the production of hybrids for the Midwestern climate and conditions. The University was back with the Program, operating where it performed best—production research. As education about this crop was increased by the Department and the newly aroused University, interest within Nebraska increased: five hundred people gathered at Hastings, Nebraska to see the first castor bean crop harvested in the fall of 1960.77

Another 1,500 acres of the crop were grown in 1961, but in 1962, as the education effort expanded, those who had held back to watch the outcome of experimentation cast their vote, and 10,000 acres were grown. This figure represented fifty percent of the nation's 1962 production of a crop hardly known in the Midwest before the Nebraska Program.78 McRoberts Industries of Hastings, Nebraska began producing castor bean harvesting heads to fit wheat combines,79 and tractor-mounted flamethrowers were experimented with for cultivating the crop.80

Education designed to increase acreage, and publicity about
the attraction of more industry to Nebraska and the Midwest, an attractive prospect for urban workers, continued under Program auspices. Finigan stated that companies were discussing the possibility of establishing processing plants in the state costing three million dollars and having a projected payroll of one million dollars if 60,000 acres were grown. This was verified when the Pacific Oil Company of San Francisco indicated that if Nebraska could grow five hundred short tons of castor beans the company would build such a plant. Finigan and his staff met repeatedly with Nebraska chambers of commerce to discuss the attraction and location of such industry. Finigan then proceeded to ask the State Legislature for a 1960-61 Program budget increase of 156,000 dollars over the current 1959-60 allotment for resources and industry attraction, an increase over that total of 142,000 dollars in 1961-62, and a leap of 333,000 dollars over that in the 1962-63 budget.

Using the methods and inertia of the successful castor bean program, education about a second new crop, safflower, was begun. The newly aware farmer evidenced a crop-growing attitude and behavioral change that increased safflower's acreage enough that the Pacific Oil Company of San Francisco did indeed build a processing plant at Sidney, Nebraska. Sesame, a Southeast Asian plant used by Americans in foods, was introduced into the state by the educative machinery of the Program in 1962, while guar, another new crop from India and Pakistan, continued to be studied in test plots.

The Nebraska Democratic Administration seized upon the foregoing progress for political advantage in the eyes of the state
public, while continuing the effort to gain nationwide attention for the Program.

The Political And Economic Context Of The New Uses Effort

As time progressed, the laboratory projects, or "New Industrial Uses" branch of the Program, picked up momentum and began to gain its share of attention from the education unit. By September 1960, approximately one year after the Program's initiation, 444,630 dollars worth of projects had been approved for contracting to research institutions, and the Nebraska Research Advisory Committee, slowly regaining stature, continued to meet monthly to consider further proposals. At this point projects were well underway and could be used for educational discussion purposes, but there were as yet no results or discoveries to utilize.

The Nebraska Legislature also continued to work closely with the utilization research and education effort. A move to widen the scope of LB-722 to include certain other areas of investigation by the University of Nebraska was supported by Director Finigan and passed in September 1960. The Program's education unit had gained so much prestige for its accomplishments that Senator Joe Vosoba, at Governor Morrison's request, introduced a University of Nebraska study which resulted in the Legislature's Education Committee rushing to the floor a bill (LB-702) to create a Nebraska Industrial Research Institute, then sending in LB-160 designed to have the state's Abandoned Property Trust Fund finance it. Again Director Finigan
supported the move. 89

There were indications during this time that the Nebraska Program's educative apparatus was gaining increased national attention for the Program, a direct goal of the effort. In September 1960 representatives of the federal government (USDA), Midwest Research Institute personnel, and Director Finigan met in Kansas City, Missouri to discuss what Nebraska was doing. 90 The meeting was reported in these terms:

The federal government is curious about practical studies made by Nebraska. . . . The work of Finigan's department is beginning to attract widespread attention. There is hopefulness in the state's new policies. . . . But there are national problems in agriculture which cannot be successfully treated on the state level. 91

After such praise on the state and national level, Nebraska reiterated its bid for the location of a federal utilization laboratory in the state, 92 pushing its new-found advantage to the fullest extent.

The Legislature and the Nebraska Department of Agriculture began in 1961 to take action designed to anticipate the future. As information on results in the research projects began filtering in, consideration of patents on new products and processes was begun. In much of the research entered into by the Nebraska Agricultural Products Research Fund Committee the contracts provided for the assignment of patents on discoveries to the Committee (1959-1960). 93 Since the department had no previous guidance for dealing with patents, it was necessary for the Legislature to provide a further legal base. LB-597 was passed in 1961 designating the Nebraska
from the Nebraska-financed Program stay within Nebraska boundaries. This of course hindered progress toward the interstate cooperation state officials were working for. It became apparent that increased education efforts were necessary to inform Nebraskans of this need as well as to educate the national public as to its duty. Emphasis was soon switched to this endeavor for a period of time. Finigan, however, did not hesitate to approach the state public for increased financial support for the Program, commenting that he wished "to see the Agricultural Research Fund Levy raised to .5 percent of a mill from .1 percent."98

Utilization Education Material: New Uses Project Results

An examination of the laboratory research achievements found a tendency on the part of research institutions to claim significant or encouraging initial results in order to prompt renewal of their contracts. It was difficult to determine which claims of the research laboratory, the contracting agency and its education effort, and the politician were actually significant and which were part of the "carrot" technique.

During 1960 the Midwest Research Institute (MRI) of Kansas City, Missouri, working with a project under the direction of Dr. J. W. Barger, a former DuPont Company scientist in charge of basic and developmental research, produced a clear plastic film from amylose corn which had packaging, wrapping, and other commercial possibilities. Dr. Barger, Dr. J. W. Evans, Vice President for Research of American Maize Products Company, Roby, Indiana, and
Dr. John Lonquist, a University of Nebraska specialist, conferred with the Nebraska Merrick County Industrial Group and a Hamilton County group to see about the raising and supplying of amylose corn to the laboratories and eventually to a manufacturer. Merrick County was selected. Florida winter plantings of the corn to speed up research by year-around experimentation were cancelled as a result of the Merrick County group's agreement and the imminent perfection of the films.

Nebraska proceeded to take the necessary patent steps, filing applications in the United States ("Plasticized Extrusion for Amylose," United States Patent Office, Serial Number 159,752, December 15, 1961), in Britain and in Canada, all retroactive to December 15, 1961. An MRI patent attorney informed the Nebraska Department of Agriculture that a European Common Market single patent registration was imminent and that filing with the Continent could be held till then. Governor Morrison requested bids on the patent and the Department of Agriculture placed a legal advertisement in the Wall Street Journal, a significant historic move, for few states had ever put patents up for bids or received royalties from them. Response was immediate. A number of countries, several European and one Asian, expressed interest in the development of the film. American firms such as Thiokol Chemical Corporation of Trenton, New Jersey and others, it was learned through Dr. Max Thorton, a Vice President of MRI, had been paying visits to MRI during the past year gathering information on research progress in addition to sending written inquiries. In April 1962 the Nebraska Department
of Agriculture applied for the approval of the United States Food and Drug Administration for the films. By the end of 1962 the films were being experimentally produced commercially, with construction of a pilot plant at Central City, Nebraska slated for 1963. 104 During this time the Department's education unit prepared to exploit one of the developments it had hoped would be produced to dramatize the Program's goals. The pilot plant was invaluable to this effort.

As MRI continued its film, textile fiber, and adhesive research utilizing surplus agricultural products, Bjorksten Laboratories at Madison, Wisconsin, with an expenditure of 16,312 dollars later produced another plastic, film-like material with a tensile strength of 7500 pounds. The interesting aspect of this film was that it was made from ground-up corn cobs. Further pursuit of this project saw the development of a by-product, cornstarch-based adhesive made from the same process. 105 Bjorksten also developed cornstarch-urethane foams in solid form for insulation and padding. This institution, which had been given a contract to develop foam from starch for structural purposes in 1961, 106 produced these foams for such uses 107 a full year before the Burlington Railroad Company announced the development of the same in its research and testing shops. 108

The Institute of Paper Chemistry (IPC) at Appleton, Wisconsin submitted its findings. The Institute had found that 306 million pounds of tapioca starch were imported into the United States during 1961 (five times more than in 1954) for use in making paper and adhesives and for industrial sizings. This raw material amounted to
eighty-nine percent of all American starch imports and entered the nation's shores duty-free, in contrast to the European Common Market which imposed a twenty-eight percent duty on it. Wheat was initially tested as a prospective competitive substitute for this import, but was outperformed by cornstarch as a filler and beater adhesive for paper at IPC.\textsuperscript{109} The Institute was sure that cheap, dry-milled corn flours could compete and gain the market for surplus American agricultural products.\textsuperscript{110} IPC was soon able to produce high-quality paper with its process and a large quantity was experimentally manufactured for the Nebraska Program's educational unit's use.\textsuperscript{111}

The year 1962 marked the beginning of an alfalfa project at the federal government's USDA Western Division Laboratory in Albany, California. With the addition of this agency and the USDA's Northern Laboratory, two of the four USDA laboratories operating in the United States were actively cooperating with the Nebraska Program. The State of Nebraska allocated 200,000 dollars for this project in 1962, with a Platte Valley farmers group supplying the raw material. The Nebraska Department of Agriculture coordinated the three-party "New Uses" effort, as its over-all education and lobbying effort appeared to be making progress.

Also in 1962 Finigan announced that the Southwest Research Institute of San Antonio, Texas would investigate the use of grain alcohol in fuels to combat automobile exhaust pollution.\textsuperscript{112} (That year 200,000 tons of lead were released into the air by automobiles.) This institution had done past research on, and was expert in, the area of fuels and air pollution. In addition, J. Leroy Welsh, Omaha
grain dealer and producer of the Welsh Report, agreed to serve as an unpaid consultant to the parties engaged in the contract, while maintaining his duties as a trustee of the Southwest Institute. The Institute, after six months of work, released the usual encouraging news: "Grain alcohol research is promising in reducing lead in the air." Mr. Welsh, Program administrators, and the supporting public appeared satisfied with such pronouncements, but the gap between promise and fulfillment remained wide. Nevertheless, because it was an important part of the education effort the aura of promise continued to be emphasized, and attention and support for the Program continued to be gained in the state and nationally.

Midwest Research Institute again gave the education effort assistance when it took a survey of Nebraska Department of Roads highway paints and theorized that soybean oil could be refined and made cheap enough to win back the paint market from synthetics. As in the grain alcohol project, MRI felt "the problem was economics; a question of making products cheap enough for industry." The new project brought about a state-wide test of soybean oil-based highway paint: test strips were laid down and the education unit erected signs by these strips telling of the Nebraska Program project. All these developments were excellent material for the educational purposes of the Program, and gained the Program a good deal of discussion in the press and in the communities where the test strips were located. Reports on this project continued to be optimistic, with testing lasting into 1964.

Another Program project entered what could be considered to be
a spectacular and controversial area of endeavor when it was announced by the Nebraska Department of Agriculture that combinations of agricultural and petroleum materials were being subjected to cancer-control studies. These materials were said to be undergoing cancer chemotherapy screenings at a research laboratory under contract to Nebraska. Naturally some publicity was given this project by the media, but it was perhaps too dangerous an area for spectacular claims or promises, and investigation shows that the Department's educational unit did not exploit it for its purposes.

The latter part of 1962 saw another project produce educational, political, and practical results. It was a most timely development. Foster D. Snell, Incorporated of New York City had been given a contract to do research on new uses for animal fats and acids. The main goal was to find a non-foaming, degradable (soft) form of soap which would compete with market-dominating, petroleum-based, non-degradable (hard) detergents for the 800 million dollars per year market. However, Midwest Research Institute developed such promising soft detergents made from corn starch that they were given emphasis, while Snell turned its attention to developing lubricants from animal fats and tallow.

The Program's soft detergents gained public attention because of the increasing controversy over pollution of the nation's waters by non-degradable detergents whose petroleum base caused foam which would not dissolve through the processes of nature, unlike soft detergents. Detergent companies were under pressure from public and political reaction to the growing menace, a menace emphasized by the
nation's media and of increasing concern to a newly educated citizenry. Nebraska therefore asked its researchers to increase their efforts to perfect a soft detergent which might dramatize the suggestion that agriculture gain the market by getting a product made from surplus agricultural materials on store shelves before detergent companies could market a petroleum-based degradable soap. The State also aided the project on the educational and political fronts. Finigan formed a Detergent Study Committee to act as a sounding board for project efforts and to assist in the educative functions of the project through its advisory duties. This citizens committee, meeting infrequently at the Capitol Building in Lincoln, considered evidence of pollution in the nation's rivers, dams, streams, and reservoirs, and was instructed by various individuals concerned with control of water pollution in other parts of the nation. It considered alternatives and dispersed to form other discussion groups, give talks, and in general spread the message using educative techniques. The State Legislature was also presented with this evidence and the knowledge that other states of the Union, plus the federal government, were considering restrictive legislation. It was found that Germany and other European nations had already passed laws controlling marketing and use of hard, petroleum-based detergents.

The administrators of the Nebraska Program continued to push their advantage. The Director of Agriculture recommended that the Legislature impose a tax on hard detergents in Nebraska, realizing that not only would the state's waters benefit, but the
Program would gain considerable attention because of its soft detergent research. Such a bill was introduced into the Nebraska Unicameral by Senator Harold Stryker of Rising City, an individual who in the past had played a significant part in the Program. It failed to pass. The Program absorbed this political setback and continued its developmental research on the detergents, while easing its educational efforts in the area.

Snell, Incorporated, having been removed from detergent research, concentrated on its oil research. Nebraska had become increasingly envious of the role played by neighboring Missouri in the new missile and space age. Missouri had been able to acquire federal government contracts and to attract much private business and industry to help build missile and space vehicles, including manned orbital capsules. Nebraska, in contrast, had almost nothing outside of Strategic Air Command personnel. The state, through the educative apparatus of its Program, began demonstrating that castor bean oil and animal fats as lubricants might have a missile and space age role. Snell laboratories found that such fats and tallows were suitable for high temperature lubricants (in the 650-900 degree range) for use in jets and missiles. The company's contract which had called for an initial 12,000 dollars was doubled to 24,000 dollars and extended one year. The Nebraska Program now had the glamorous federal space program to utilize as another utilization education device.

September 1, 1962 marked the beginning of a most unique and modern education project by the Program. In cooperation with the
Nebraska Wheat Growers Association and the University of Nebraska, the Nebraska Department of Agriculture contracted for an information retrieval project for use in educating the public. The Association and the state agencies furnished the facilities for collection of all information available or being published on the subject of the utilization of wheat. North Carolina had just completed such a project with tobacco as the subject, and Miss Margaret Drenowatz who had been in charge of the Carolina effort was hired to direct the Nebraska retrieval project. She and her staff were to gather all available material into a central repository and publish a monthly abstract of publications for interested individuals and groups.

As the project advanced, a discovery was made which bore upon the philosophy of the Nebraska effort. It was found that the State of Washington was conducting a similar project with wheat as the subject and was preparing to publish an abstract. Receipt of a test abstract from that state caused consternation among Nebraska Program administrators. Here was clear evidence that there was a lack of coordination between the states in their utilization research and education efforts. The Nebraska retrieval project nevertheless continued to its completion on September 1, 1963.

At the end of 1962, Midwest Research Institute in its previously cited starch investigations came upon an ironical side-discovery. It was found that certain parts of agricultural starches which had the function of helping a plant to grow could be isolated, condensed, and used to stimulate rapid growth in other plants. This placed the Nebraska Program in an awkward position, for the "utili-
zation" program had rendered an "increased production" result. At the same time, the University of Nebraska College of Agriculture announced it had found a hybrid wheat which would double current production. These two developments illustrated exactly the type of thinking and research the Program and the several individuals who testified at the Welsh Report Hearings were publicly professing to be fighting and attempting to change via utilization research and education programs. The education unit, while viewing the University's find as a predictable result of the production ethic tradition, worked to provide an answer to the potentially embarrassing position in which the Nebraska Department of Agriculture and its administrators found themselves. Use of the stimulants for traditional crop production was played down, and their use on the new crops of the Nebraska Program was emphasized by the education unit. Statements to that effect by officials, notably Finigan, also lessened the negative implications of the stimulants. As for the University's discoveries, it was noted that they continued to be production-oriented even when faced with a surplus of the researched commodity. It was likewise expected that the University would continue to educate its constituency to produce more. The educative thrust of the Program had yet to have its effect on this institution.

Field tests of the stimulants were scheduled for the spring of 1963 in five Nebraska counties, under the supervision of Dr. J. B. Skaptason, President of Biosearch and Development, Incorporated, Kansas City, Missouri. Various encouraging
statements by Nebraska officials and MRI people ("The research is moving fast, and if things work out the stimulants could be available in commercial quantities in 1964 . . . may provide more patents. . . .")\textsuperscript{124} accompanied each step of the project. Such publicity attracted the desired attention, and the material from this project was useful in the New Crops education effort. Queries were received in the Nebraska Department of Agriculture from, among others, interested cotton industry groups in Washington, D.C. and New Orleans, Louisiana. In a successful conclusion to an event that occurs frequently in research, accidental discovery of an important side effect while in pursuit of the main goal, the rights to the stimulants were sold in late 1963 for 300,000 dollars in advance royalties—a figure equalling the budget of the Nebraska Program for one year.

One of the best known results of the Program in Nebraska and nationally, one which became almost a symbol of the effort because of its renown, was the NEBRASKIT. This small, edible wheat bar gained an educational value unsurpassed by any other instrument developed by researchers for the Program's purposes. In fact, it was one of the few Program items that moved from a place of educational value to one of commercial value. Its name was registered as a trademark with the Nebraska Secretary of State, and a patent was applied for.

The NEBRASKIT became a prime device in the effort to urge the Federal Government to increase agricultural utilization research. The immensity of the national defense posture motivated Nebraska
officials to plan to link agriculture to national defense through the accumulated grain reserves and by aggressive research and lobbying. In 1961 circumstances created a situation which allowed the Nebraskans to capitalize on their ideas. Facing a Berlin crisis, the Federal Government announced plans to move 213,000,000 bushels of surplus bulk wheat from Midwest storage points to metropolitan areas of the United States. This food would be stockpiled in readiness for an all-out United States-Union of Soviet Socialist Republics armed confrontation.

Immediately upon learning of the Federal Government's plans, the Lincoln, Nebraska Chamber of Commerce through Mr. Daniel Olson, Chairman of its Agriculture Committee, proposed in a letter (dated July 29, 1961) to President Kennedy and other officials that the wheat be processed into an edible wafer form before shipment. His reasoning was: (1) Bulk wheat would be of very little use to an urbanized society whose processing machinery was destroyed and, (2) bulk wheat would be more difficult to store and dispense than a processed item. Governor Frank B. Morrison rushed a delegation with Finigan at its head to Washington to talk to USDA, Civil Defense, Pentagon, Congressional, and White House personnel. Before leaving for Washington, Finigan authorized crash work on the formulation of a wheat bar by Midwest Research Institute with an initial allocation of 3,000 dollars.126

The Federal Government through the USDA had done previous work with wheat as a basic food for mass feeding, but mainly in the area of shipment of bulk wheat without processing. The only act
which could be considered "processing" was the crushing of the grain to make it more usable. Since the government had five such processing plants in the United States and planned to buy 130,000,000 bushels for feeding use, Finigan and his staff worked to get both crush-type processing plants and end-item, wheat bar processing plants into the Midwest, therefore connecting the area more closely to national needs and the national administration of agricultural raw material utilization.

Nebraska, while not gaining its grain-crushing processing plants, did see the federal government begin a quest for processed grain "survival rations." The Defense Department decided not to purchase the type of ration developed by the USDA from the Federal Government's own crushed-wheat raw material because of the ration's unsatisfactory characteristics. In addition, the Pentagon found that the food industry did not have sufficient facilities immediately available to efficiently produce such a ration on a full-scale basis. The State of Nebraska therefore gained added time to gear its educative apparatus to the vigorous promotion of its Program-developed "survival ration." In this endeavor Nebraska obtained a measure of success. By joining forces with the civil defense education effort and anticipating the need for a ration to stock shelters in the then strong fall-out shelter market, by initiating research through an in-progress research program, by aggressive competitive bidding, and by intensive lobbying by public officials, Nebraska gained an initial five million pound order for NEBRASKITS out of a 30 million pound federal order to industry.
In April of 1962 the Federal Government purchased another 16 million pounds of NEBRASKITS, $3,700,000 dollars worth, out of an 18.3 million pound contract to industry. And in June, Nebraska received another far larger order for 45 million pounds of the ration, $11,063,589 dollars worth. The State of Nebraska through one of its public agencies had begun the movement of agricultural raw materials from laboratory research to end-item sale, and involved itself in a commercial endeavor that dealt with the sale of a processed item to another public agency. Specifically, 66 million pounds of NEBRASKIT survival rations were processed by industry and purchased by the Federal Government from January 1962 to June 1962. By such example Nebraska could say it was itself practicing what it was preaching through its educational program.

At this particular time there was increasing fear, building to a climax since 1945, of a third world war between the Communist Bloc dominated by the USSR and the Western Alliance led by the United States. It was the "darkest before dawn" period before the Kennedy-Khrushchev detente of 1963. Therefore, just as the Berlin Crisis of 1961 had, in the government's view, created a need for an item such as the NEBRASKIT, so did the Cuban Missile Crisis of 1962 create a public demand for it as a commercial product. As the public became educated about and reconciled to the realities of atomic age civil defense, sales of fall-out shelters rose, and correspondingly so did the demand for food stocks that could be met by the NEBRASKIT.

Realizing the potential of the public as a market, and that
this could translate into the crowning educational vehicle for the utilization research program, Nebraska worked to move the NEBRASKIT wafer into commercial markets. The State applied for a patent on the formula and requested bids from private companies. The Department of Defense, which gained the formula as a proviso of its former contracts, contracted with the National Biscuit Company and the Kroger Company to provide more rations for the Federal Government's programs, for the State of Nebraska's Department of Agriculture was no longer acting as a coordinating agency between private industry and the Federal Government. Nebraska did, however, continue to receive royalties from such federal licensing agreements, just as it did from its own agreements with private producers. The statements of Nebraska's Governor Morrison and his director of agriculture about the Program eventually paying its own way began to appear quite valid.

The commercial aspect of the NEBRASKIT proceeded, directed by a state agency (an unusual situation in Nebraska), by distribution of the item through certain department stores and retail chains. The product sold well, possibly out of need for it, possibly out of novelty, but surely because of the immense publicity given it. All retail outlets were constantly sold out. The education unit of the Nebraska Department of Agriculture kept a large supply on hand in its State Capitol Building offices for use in the education effort, besides acting as coordinator of bulk shipments between commercial producers and distributors. Every item of educational material mailed or handed out to individuals or groups contained
NEBRASKITS and their utilization research success story. The Nebraska Program now had a product which was financed by one state (Nebraska), developed in another (Missouri), and produced in yet another (The Johnson Company, Council Bluffs, Iowa). There were at that time no facilities for producing the ration within the State of Nebraska, but the Department of Agriculture stressed the fact that it hoped to locate such a plant in Omaha as part of the "industrial" aspect of the Program. By such moves the opportunities to reach the state's largest urban population with utilization research education, in this case using the NEBRASKIT, were being seized.

Realizing that the survival ration market was a severely limited one, as critics were quick to point out, Nebraska asked its contracted laboratories to modify the NEBRASKIT in order to move it into international feeding programs which were designed to reduce world political tensions through the policy of sharing the wealth and filling the stomach. A strong possibility for expanded use of the item was under the newly inaugurated Public Law 480 Food-For-Peace Program passed by Congress in 1962. Nebraska, already blessed by having native son Theodore T. Sorenson working as Special Advisor to the President of the United States, was further encouraged when it saw former United States Senator George McGovern of South Dakota, an old friend of Nebraska and its Director of Agriculture, appointed to head the 480 Program by the Kennedy Administration. Governor Frank Morrison again moved on the political front, organizing a Nebraska Food-For-Peace Committee which from 1962 until 1967 held meetings with the Governor, the Nebraska
Department of Agriculture, various United States Senators, and other interested individuals and groups. Because of such early efforts, which resulted in Nebraska being the first state to organize such a committee to assist the federal government's program as administered by the USDA, Morrison and Finigan were called to Washington by United States Secretary of Agriculture Freeman. There, voicing the belief that "food could be used as a weapon," they spent considerable time seeing about the use of surplus agricultural raw materials. The education of the Federal Government and its USDA could be seen to be proceeding apace. Now it was not the USDA laboratories requesting information from the Nebraska Program, it was the Secretary of Agriculture himself.

Parallel to these efforts to establish a cooperative project with the Federal Government, an effort to which the Nebraska Program was well geared, Program administrators began cooperative projects through the Nebraska Department of Agriculture with other groups: The Great Plains Wheat Marketing Organization, The Nebraska Wheat Growers Association, and the Nebraska Wheat Commission, all marketing and educational organizations. Cooperation with these public and private organizations led to several Latin American projects utilizing Program-developed food bars. NEBRASKITS were sent in quantity to Peru where a feeding program suitability test was conducted under the supervision of Program personnel and individuals from the above organizations. The success of this test resulted in a Nebraska Department of Agriculture representative being sent to Guatemala, El Salvador, Panama, and Columbia to
attempt to arrange programs which would see Program food rations, including the newly developed solid milk bar, sent to relief agency officials in those countries for use in feeding programs for school children. One interesting result of this face-to-face negotiating was a request for NEBRASKITS by the armed forces of Columbia and Guatemala for testing with their troops on maneuvers. It was not exactly a "food-for-peace" request, but they received their test rations.

Officials of the American Dairy Association met with Director Finigan to discuss markets for the follow-on to the NEBRASKITS, the new Program-developed solid milk bar. As a result of coordinated efforts, joint agreements were concluded with the Federal Government (State Department and Food-For-Peace), United Nations relief agencies, and several private agencies for initiating shipments of NEBRASKIT wheat and milk bars to Europe. The first test shipments went to Greece. Corn, soybean, and milo were also developed into food bars, and growers of each crop sought a processing plant in Nebraska with the assistance of officials in the Nebraska Department of Agriculture. The Program had gone international.

And utilization education was taking big strides. In its short span of life from 1959 and reaching toward its cut-off date of 1967, the Program had developed working relationships with the Federal Government, the United Nations, and national private agencies. It could not be denied that some surprisingly solid achievements had been made in research, and satisfactory progress was
evident in the education effort's attempt to gain attention for and understanding of utilization and utilization research needs among a newly awakened public. The long-range goals of the Program, public awareness resulting in pressure for federal attention and help, appeared to be realistic in their chances for success. The cost of this success was made available for the supporting public to scrutinize when, for the first time, Program administrators released financial information in mid-1962:

<table>
<thead>
<tr>
<th>Contracted Research To Public and Private Agencies, including $59,482 to the University of Nebraska</th>
<th>$473,563 (87%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Services</td>
<td>37,934</td>
</tr>
<tr>
<td>Travel Costs</td>
<td>20,672</td>
</tr>
<tr>
<td>Board and Lodging Costs</td>
<td>4,840</td>
</tr>
<tr>
<td>Miscellaneous (Office supplies, equipment, maintenance)</td>
<td>9,478</td>
</tr>
</tbody>
</table>

**TOTAL PROGRAM COST (approximately three years)** $546,487

The Program had operated for a sufficient time to provide the figures, and the public was by then educated and involved enough to expect such information. Program officials pointed out that administration costs were six percent of the total figure, in contrast to USDA research administration costs of twenty percent for the same amount of money. Program administrators could, in retrospect, feel confident in the progress of the demonstration and education effort. The public continued its interest and support. The educative effort appeared to be working. And, given the success of the NEBRASKIT, one last area remained to be further exploited: the international sphere.
Utilization Education On An International Stage

The effort to gain national interest was increased as the Program progressed. Nebraska used every opportunity to expand its state-supported Program into a states-supported one, and finally into a federally-supported one. It began its efforts with its neighboring states and worked toward such expansion through meetings of regional associations. But Nebraska's neighbors adopted a friendly, cautious, wait-and-see attitude. By 1962, Iowa, which came the closest to direct assistance, apparently wanted another two years to view results of the Program before fully committing itself.

Inquiries were received from other states after Nebraska presented its case at the Fourteenth Annual National Chemistry Conference in Kansas City on November 16, 1962. Twenty-four papers on agricultural utilization research and education were presented at this meeting and Director Finigan was asked to serve on the conference's main symposium. In addition, another important stimulant to other states' interest occurred when the National Utilization Research Association agreed to hold its 1962 meeting in Lincoln, Nebraska. The informational and educational opportunities presented the Program by the meetings were augmented by an offer of cooperation from the National Chemergic Council in a letter from that body to Finigan.

Utilizing national stages afforded by national associations, the nation's press, the United Nations, and traveling Program representatives, the Program became known in many parts of the world. Requests for and usage of food bars by Latin American and European
nations has been discussed previously. Some other examples:

In 1960 five English businessmen representing the British milling industry visited the Nebraska Department of Agriculture and submitted a request for a shipment of Program-developed high-amylose flour for experimental purposes. The request was filled somewhat belatedly because of developing department reluctance to release research results free-of-charge. However, because of the overriding interest of utilization education which could exploit possible market development, the English got their Program product.\(^{140}\)

In 1961 Program administrators received news of a foreign utilization research development which stimulated their interest. Just as American scientists had in the past obtained nylon from coal, so had a Belgium manufacturer now produced cloth made from milk and wood. Program officials had a dress made from the process and displayed it throughout the nation along with other Program results. The education unit of the Program, aided and abetted by the nation's press, had a field day.\(^{141}\)

In 1962 news of Program-developed dissolvable wrapping films not only gained the interest of the United States Army Quartermaster Corps, which asked for test samples, but brought inquiries from C. Itoh Company, Limited of Japan, and from an import-export company in Sweden, asking respectively for manufacturing rights in the Orient and agent's rights for the Scandinavian countries.\(^{142}\) Also from Sweden via Canada came a "new" process (though used in England for fifteen years) for making fire-proof building insulation from straw.\(^{143}\) A pilot plant for the educational purpose of demonstrating
the feasibility of this process was established in Nebraska by Program administrators. Various other countries such as Germany requested information about the Program and its results, thereby demonstrating the interest engendered in this modest, cautious, scientific/educational Program with socially and economically important goals run by one lone state and supported by a small tax-paying population. The need for utilization education and research in Western European nations at the time was demonstrated by France's experience with the agonies induced by agricultural surpluses:

For French farmers, government officials, riot policemen and vacationers, harvest time has become a sort of annual summer madness. Every year, increasingly mechanized and efficient farms yield such a cornucopia of produce that market prices inevitably collapse under the load. And then the 'madness,' or—as the French call it—le malaise agraire, begins... Farmers stage rebellions reminiscent of what their serf forebears did in the Middle Ages, aimed at prodding the government into doing something about the surplus produce. In one city 6,000 farmers stormed into the area. President Charles de Gaulle, however, thought the vision of the farmers was faulty. The surplus problem, he quipped, lay not with the government but with the 'good Lord.' Instead of seeing their local government prefects, the general added, the peasants should go to their bishops.144

In addition to the above international affairs, the Department was engaged in other types of international projects. A personal friend of Finigan, Sergeant Shriver, Director of the newly-established Peace Corps, contacted him about assisting in the recruitment of agricultural volunteers. Even though Peace Corps efforts concentrated on acquiring production-oriented people for underdeveloped countries, this assistance was given in the form of an information saturation effort in Nebraska by the Program's
education unit, and the appointment of a department recruiter. 145

The prospect of sale of grain to the Soviet Bloc was also considered by the Department in 1962. Several organizations questioned department officials closely as to whether this might be tied into the Program in some manner. However, the Department decided to concentrate on less controversial Program subjects, letting the USDA field such issues in the foreign policy area as trade with the Soviets. In fact, it was not until ten years later, in 1972, that such trade was actually established.

This did not, however, preclude Russian visits to Nebraska. At the beginning of the 1960's an agreement to exchange visits of certain cultural and professional personnel had been worked out by the United States and the USSR. After an initial tour of Russia by a group of American agricultural officials, 146 the Russians returned the visit in the summer of 1962. Upon reaching the Midwest the group, which included K. G. Pysin, Soviet Minister of Agriculture, and M. A. Olshanskiy, President of the All-Union Academy of Agricultural Sciences, insisted upon seeing Nebraska Department of Agriculture and Economic Development operations and talking with Director Finigan. Department operations and the Nebraska Program were discussed in detail. Because of the intense Russian interest in the Department and what it was doing through the Program, so much time was spent that the group's entire tour schedule had to be revised. 147

This exchange program eventually sent United States Secretary of Agriculture Freeman to Russia and brought Soviet Premier
Nikita S. Khrushchev on an agricultural tour that reached into Iowa. Premier Khrushchev, even though he was but a few miles distance, did not express an interest in the Nebraska Department of Agriculture, its Program, or its director. The Premier was known to be production-oriented and concerned with opening up Siberia to agriculture.

Nebraska Director of Agriculture Finigan was, however, officially invited to tour the USSR under the exchange program. He did not do so, as departmental and political concerns pressed without let-up. The Program demanded constant attention and Nebraska was approaching the November 1962 gubernatorial campaign, thereby increasing political duties. Programs such as the Nebraska effort do not operate in a neutral vacuum, and politics began to have its effect. Regardless of far-flung international dealings, the parochial influence of state politics was always the more pervasive.

The 1962 Gubernatorial Campaign--The Political Situation

Nebraska Republicans had not had a chance to manage the state government since the inception of the Program in 1959. It appeared that, unless they could find a particularly strong candidate in 1962, their party would not be able to unseat Democratic Governor Frank B. Morrison because of his personal popularity and the success of his administration's programs. The political climate of the State of Nebraska had in the past been unfavorable to the election of a Democratic governor. So Republican and conservative was the state that, should a Democrat win any state office, his re-election would be equally startling.
The Democrats, who were fortunate enough to see their candidate elected in the 1958 gubernatorial election for the first time in some thirty years, were unfortunate enough to see him die in office during his first term. But the Republican Party fielded a weak candidate against Frank B. Morrison, Democratic Party candidate in 1960 and a man who knew how to project an image, and the Republicans found themselves without the governor's office for another two years.

Morrison, although he had not held elective office before, proved adept at handling official duties while maintaining his image and improving his and his party's political position in Nebraska. The two years from 1960 until the 1962 election were busy in preparation for the predicted hard fight by the now thoroughly determined Republican Party to win back the governor's chair. Morrison vigorously pushed his administration's programs, building groundwork for political claims of accomplishment in 1962. And that year did indeed see the need for a strong position, for the battle was joined with a well known Republican, Fred A. Seaton of Hastings, Nebraska, former Eisenhower Secretary of the Interior. Morrison, the incumbent, naturally enjoyed an advantage and had in reality been conducting his campaign during the preceding two years. The challenger was left to form his issues, what few he could find.

Because of the lack of fresh, substantive issues, the campaign proceeded slowly. It reached what the state's press termed "the bottom of the barrel" after it had covered the usual charges and counter-claims about highway mileage built, soil and water conser-
vation, state promotion, and education. Finally, personal attacks began on Morrison and his Director of Agriculture for the dismissal of several employees of the Department of Agriculture during the reorganization/revitalization and economy measures Finigan had under-
way. This issue served two purposes: (1) It could be used as a badly needed campaign issue and, (2) it led an attack on the Morrison Administration's strongest area, the Nebraska Program directed by the Department of Agriculture under Finigan.

The Program In The Campaign

Except for the short interim opportunity of approximately four months by Republican (Lieutenant) Governor Dwight W. Burney, between the time Governor Brooks died in office September 9, 1960 and the assumption of office by Morrison on January 6, 1961, Nebraska Republicans had only been able to state what they would do with the Nebraska Program. They could not get in position to take action. Candidate Seaton needed to find areas of Morrison Administration weakness in the Program and give creditable suggestions as to where he, Seaton, would improve it, for this Program alone became recognized as the one which would make or break either candidate. It had great voter interest. As the campaign progressed, however, the public began to appear fairly satisfied with the job Morrison and his Administration were doing.

Seaton used the previously mentioned attack on Finigan to try to weaken some of the prestige the director was building for Morrison and for himself via the Program. He faced a difficult task.
Because of the lackluster campaign which had few major issues except for the Program, there were some in Nebraska who commented: "Finigan is perhaps more valuable than either candidate."\(^{148}\) Even though Finigan had in the past been associated with Morrison's political enemy and rival for party leadership, Democratic Party Chairman Bernard Boyle of Omaha, Morrison and Finigan achieved a working relationship which culminated in the governor's answer to a campaign question of would he or could he replace Finigan: "Finigan cannot be replaced."\(^{149}\) Seaton, in a speech and question and answer session before University of Nebraska students in October 1962 did not seem as sure, or at least as clear, in his answer to the same question.

Morrison and Seaton met twice, once for a debate at the University of Nebraska and once for a question and answer session before the microphones of Radio Station KFMQ of Lincoln, Nebraska. Each time the Nebraska Program received considerable attention. Morrison never failed to stress its progress, and Seaton never failed to say he would "strengthen and accelerate it, mainly by using the University of Nebraska more instead of giving contracts to companies outside the state."\(^{150}\) Seaton was, of course, appealing to the pride and sense of justice of Nebraska tax-payers. Morrison would counter Seaton's statement by citing Program accomplishments, thereby challenging the suggestion that strengthening and acceleration of the Program were needed. And the listening taxpayer was then led by Morrison to believe that Seaton's ideas entailed more money. Finigan would counter the remainder of Seaton's statement by proclaiming that: "Forty percent of the Agresearch dollar already goes to the
University of Nebraska. The university is working on all it can handle in eight projects. Finigan was supported in his attempts to keep control of the Program out of the hands of the University by farm groups who feared the Program's utilization education emphasis would be warped or over-shadowed by the production orientation of the school. They appeared to also feel that state officials were in a stronger position to deal directly with industry and the federal government.

The day after the election left no doubt about the Program's role in Nebraska political history. With its state, national, and international image, it had caught the public's fancy. How it would affect the state's or nation's social and economic, as well as political, history remained to be seen, but a re-elected Governor Frank B. Morrison knew where to give credit for assistance:

Governor Frank Morrison placed his finger on striking progress in Nebraska's Agricultural Research Program as the key voter-appeal factor in his re-election victory. Tasting the sweet fruit of the largest Democratic gubernatorial triumph in the past 26 years, Morrison pointed to five phases of his administration's progress which he believes attracted heavy voter appeal. First by far, the 57-year-old chief executive declared, was the Agricultural Research Program.

The Nebraska Program At High Tide And Waterloo

The Program pursued its educative way with surprisingly smooth sailing through the middle 1960's. Critics and skeptics refrained from open battle, apparently choosing to adopt a wait-and-see attitude combined with occasional sniping. The educational effort continued to get sympathetic assistance from the state and national media. Sophisticated Program education unit methods and materials
had, by the middle 1960's, reached a point of routine operation and dissemination. And the research projects, which had produced a flurry of exploitable material in the early 1960's, continued to offer a convenient item frequently enough to keep the educative/lobbying effort alive and moving. All of the above established an inertia for the Program that continued until approximately 1965. After the Program had weathered its use in the 1962 gubernatorial battle, its administrators attempted to put the Program into perspective with the rest of the educational and political programs of the State. It was not as heavily utilized as a campaign issue when Governor Morrison went on to win a third term in 1964. The more spectacular methods and claims utilized early in Program were mostly gone, as promotive techniques gave way to orthodox educational methods.

The lower profile and more orthodox methods possibly contributed to an easier than expected Program renewal struggle in 1963. It was not a time for observers, directors, or senators to draw solid conclusions about the Program. While some state senators severely disagreed with the Nebraska Director of Agriculture's committee hearing statement, "I feel the Program has made good strides," a majority appeared to agree, as did the media. The Nebraska Legislature therefore accepted for debate Senator Jules Burnbach's bill to extend the Program to 1968, but debated primarily the administration of the Program and its involvement with the University of Nebraska. This assuredly was a short-sighted view of the Program, yet political reality demanded that this type of debate again take
place. The long-range goals of the Program were almost totally ignored—except as they pertained to the administration/University debate.

Most senators were as yet reluctant to form a firm opinion of the Program. But they were equally reluctant to let a vote on Program extension slip by without hearings, feeling that information might be gained which would assist in developing an opinion. Governor Morrison, Senator Burbach, and Director Finigan would have been pleased to see the Program allowed to continue without the lengthy interruption of committee hearings. Senator Burbach, who had introduced the extension bill upon the request of the Governor, asked that the measure be placed on general file without a public hearing, but those who resented past use of the Program for political gain thwarted this move. Even though Burbach attempted to appease the Legislature by declaring "I chose 1968 because that date will fall in the middle of the new four-year gubernatorial term and keep this legislation/Program out of politics," he was thwarted by such statements as the following:

A great amount of money has been spent on the Program since 1959. I want to see if we are getting our money's worth.\(^{157}\)

I wish to question policies regarding the Program and use of out-of-state facilities.\(^{158}\)

I would like to explore the possibility of delegating more of the work to the University of Nebraska.\(^{159}\)

I want a public hearing.\(^{160}\)

Director Finigan adopted a discreet silence: "I have no recommendation to make on this subject."\(^{161}\)
All doubt that the Program would not be granted continued life was removed when the Legislature's Revenue Committee voted 6-1 for renewal of the Program's tax levy. In order to assist this continuance, Governor Morrison made, among others, one statement calculated to gain continued support for the Program from the public and therefore influence its representatives: "I believe that it's possible the Program will be self-sustaining by 1968 from royalties from research discoveries." This was a politic statement but, given the true goals of the Program, it did not appear to have a good chance of coming true. The research was not designed to achieve such a goal, being useful as a means to other ends. In fact, by August of 1966 Director Finigan would state: "This Program wasn't designed to make money." This was true, it was an educative/lobbying effort only. Finigan, in the same 1966 statement, confirmed that the Program was only an education-effort-by-example when he announced that the state had proved its point and therefore his department would not actively support continuation of the Program by the 1967 Legislature.

Finigan's statements, uttered in the late 1960's as the Program approached another renewal date, were prompted by rising criticism of the Program's administration. There was no indication that certain members of the media and the Legislature, who became the chief critics, had come to disagree with the goals or even the means of the Program. Their interest appeared to lie with the money spent and how the Program had been administered.

The administration of the Department of Agriculture as an
agency was not challenged. Nor would it have been easily possible to have done so. Finigan, his staff, and the Program had continued to change the concept and image of the Department of Agriculture. People who had bemoaned the fact that the Department had in the past been merely a routine inspection-collection operation, began by the end of 1960 to see the strong administrative hand of Director Pearle F. Finigan bring about positive changes. Finigan initiated significant changes in the Department's operating structure, combining scattered similar administrative functions into a single office, merging inspection duties to eliminate overlap, eliminating activities such as state-line truck inspection ports-of-entry which were not paying their way and substituting more economical means. He particularly emphasized cost reduction in his agency. The reorganization of these offices and activities brought about a ten percent decrease in department operating expenses from 1960 to 1963. The director was consequently praised for overcoming Parkinson's Second Law, but severely criticized by some individuals for putting workers out of jobs and arbitrarily shifting personnel who had no Civil Service protection. The latter figured in the 1962 gubernatorial campaign. 168

In 1963 two bills reached the floor of the Nebraska Legislature which assisted in changing the concept and operation of the Department. Legislative Bill 717 requested a change in the Department's name from the Department of Agriculture and Inspection to the Department of Agriculture and Economic Development. The bill won first-round approval, was then killed, but later was revived and
passed. At the same time Governor Morrison proposed Legislative Bill 767 which would have set up an independent division of state government designated the Department of Economic Development. The bill, which also reappeared later and successfully established such a department late in the 1960's, was defeated by a 25-15 vote of the Unicameral on June 4, 1963. As the Governor's bill read, the Department of Agriculture would have lost both administrative control of the Nebraska Program and the Department's Resources Division which dealt with promotion of Nebraska's industrial development. Whatever the merit of arguments for the bill, the fact is that Program management remained within the Department of Agriculture and Economic Development until the Program's semi-demise in 1967. By this time the significant changes in the Department were stabilized and Nebraskans began to realize and rejoice in a fact long recognized by perceptive observers, that:

The work of Finigan's Department was beginning to attract widespread attention. What happened was a departure from the conception of a state department as a caretaker agency to one of constructive competition against depressing problems. However, the skepticism and reduced support evident in the Legislature as to continuation of the Department's education and lobbying program could be charted with a listing of the steps taken when the Program came up for its second renewal in 1967, and for subsequent Legislative action.

1967 LEGISLATURE (77th SESSION), GERDES LB-34
Created the Nebraska Department of Economic Development, formerly the Division of Nebraska Resources in the Department of Agriculture and Economic Development.
1967 LEGISLATURE, CARPENTER LB-862
Changed name of Department of Agriculture and Economic Development back to Department of Agriculture.

1967 LEGISLATURE, ROBINSON LB-877
Transferred Nebraska Agricultural Products Research Fund to Department of Economic Development, effective July 1, 1967. Passed: For 43 Against 2 Not Voting 4

1967-71: OLD NEBRASKA PROGRAM DORMANT
The Economic Development Department, because of criticism of past administration of the Program, preferred to let the research projects run their course and to not initiate any new action of an educational or lobbying nature. It was considered too much of a "hot potatoe" politically in the state.

1971 LEGISLATURE (82nd SESSION) SCHMIDT LB-776
Frustrated by non-renewal of the original Program and by the inaction of the Department of Economic Development where the reduced program was placed, Senator Loren Schmidt obtained the passage of a bill establishing an independent Agresearch Committee of the Legislature for a two-year period, funded with 68,000 dollars. The Department of Agriculture was listed as an advisor. This development is examined in the Evaluation section of this paper.

1974 LEGISLATURE (83rd SESSION) SCHMIDT LB-756
New, reduced program reaches renewal date. Governor Exon signs into law, March 2, 1974, legislative bill 756 severing the Committee from the Legislative Council and creating an independent agency: Agency No. 60, Agricultural Products Industrial Utilization Committee. Appropriation given of 117,423 dollars to June 1974.
Those who viewed the Nebraska Program with a penetrating eye should have been able to discern that the Program was other than a true research effort. Nor, given the level of spending authorized, could it have been a true research effort. In the face of the tens of millions of dollars industry put into utilization research each year, $300,000 dollars per year for research by a state was woefully inadequate. The real goals of the Program—and the only reasonable goals, given the Program's funding—were educational and political. The utilization research effort was but a device to achieve those ends.

Seen not as a research and development effort but as an educational effort, the Program still represented a considerable undertaking. It was going against hundreds of years of tradition in challenging the thinking of those who believed that agriculture's problems could be solved by traditional production efforts. Program administrators were faced with initiating nothing less than an immense re-education effort with clearly-defined attitudinal and behavioral objectives. Achievement of educational objectives was to be evidenced not only by an attitude change (support for utilization research over production research) but also by public action (pressure on the federal government to increase its utilization research). Moreover, the Program would have to be managed in such
a way as to secure continued public support (i.e. funding). Program administrators reasoned thus: an education effort utilizing a dramatic research program would through promotion cause the Nebraska taxpayer to support the program, thus causing him to continue to fund the very device which was used to acquire his support. Therefore the "research program" had three goals: to educate for utilization and utilization research, to lobby the Federal Government, and to keep itself going.

There were indications in 1959 of how much the new Brooks Administration appreciated the role of education even as Brooks, himself an educator from McCook, Nebraska, took office. His office immediately initiated an educational program for agriculture, calling a Midwest meeting of the University of Nebraska, the Nebraska Department of Agriculture, farm organizations, and other groups from within and without the State. The purpose was to plan the engagement of the public in a discussion which would raise agriculture's tarnished image. That image included loss of status as an industry, price supports as a tax burden, and agricultural groups whose attempts to raise market prices produced a rise in consumer prices.\(^1\) It took approximately one and a half years to get the effort organized and launched, but the formal announcement finally came that the program was in existence and operating. At that time a committee was formed and charged by Brook's successor, Frank B. Morrison, to draw the public into an educational effort in the previously mentioned areas.\(^2\) This Brooks-initiated program was to be completely overshadowed by the educational work of the Nebraska
Program. By its very nature and goals the Nebraska Program encompassed the concerns of the governor's committee. The Program's efforts, which began almost immediately upon passage of LB-722 in 1959, had gained such a head start and so much emphasis and attention that the governor's committee was eclipsed.

As a first step in the Program's educational effort, the Nebraska Attorney General was asked for an opinion on the use of Department of Agriculture funds for public education on utilization research in agriculture. This official ruled that department funds contained in its Resources and Wheat Commission Divisions had been in the past and could in this instance be used for such education. It was assumed that most Nebraskans would be interested in the plight of agriculture and therefore drawn to the Program. As taxpaying students they would also be paying their way.

The next move was to begin gathering personnel to handle the educational effort. Program administrators realized that they must have on hand written material to work with, material the public could read and digest. Every educational effort needs its textbooks. A journalist hired as "publications director" was given the mandate to expand the supply of printed documents. From this base came the eventual use of all media. The first job of the publications director was to promote the Program, to get its name before the public. Like a politician, this educational effort with a political goal had first to sell itself in order to draw people to it and its cause. Once a dialogue was established, education could proceed with interested participants. The first educational documents
produced of which there is any record were of a promotional type quite simple in design and message. They were attractive and designed to announce the State of Nebraska's initiation of a program of utilization research which was said to offer an answer to the problem of market-depressing surpluses.

A Nebraska Department of Agriculture assistant director was named, moved up from heading a department division, and given the duty of not only overseeing day-to-day operations of the Department but of directing the Program's newly formed education unit. It was significant that this particular man, besides being loyal to the party in office, was a former educator who was currently working on a doctorate in educational administration at the University of Nebraska. This appointment meant that the educative business of the research program was to be given serious attention at a high level in the Department. The business of directing the research projects would fall mainly to another individual, a "research coordinator," and to the department director.

A full staff under the assistant director, to complement the already acquired publications specialist, began to form with the addition of two former university agricultural economics instructors, a former science instructor, and graduate students from the University of Nebraska's Education, Political Science, and Agriculture Departments. In addition, a former agriculture instructor who was also working on a doctorate in Adult Agricultural Education Administration was named Secretary of the Nebraska Wheat Commission of the Department of Agriculture, moving from a position with the
University of Nebraska Center for Continuing Education.

Initial deliberations by this education unit centered around the best methods to educate the public. Certain things were realized. First, the research projects were to be used to dramatize utilization research. Second, the media would serve as the chief educative device whereby teaching and learning would be pursued; later, in-person group instruction would be added. Third, the educational effort would gradually be expanded to reach all Nebraskans, to interest the public outside Nebraska in other states, and finally to engage certain agencies of the Federal Government. The planners also added private agency personnel to their numbers. The Lincoln, Nebraska firm of The Carroll Company was selected in 1961 to assist because of its years of experience in handling the educational work of the Nebraska Wheat Commission. However it was not without difficulty that the firm was oriented in a primarily educational, in contrast to a purely promotional, direction. The Program's early need for promotion created a mind-set that gained a momentum of its own. Certainly publicity had to be given the Program, but the educational goal was to remain uppermost. This effort became even more complicated when the final political goal of influencing the Federal Government through education of the public became enmeshed in Nebraska politics and accompanying party struggles.

The Carroll Company began by initiating radio shows and building traveling displays. The radio shows were centered around the definition and value of utilization research. Experts were interviewed, various subjects explored in-depth, people visited with, and
information disbursed in great quantity. The public was invited to participate by sending in written questions which would be answered by the education unit through correspondence if not on a radio show. This format was followed until the research projects began to produce exploitable material. The focus then shifted from people to projects and their products.

The traveling displays were designed by the education unit with various suggestions by Carroll Company personnel in regard to their actual construction. Use of machines in education was at the time very much in vogue. The use of electricity, light and sound, was gaining adherents among entertainers and among those who would make education attractive (and possibly even entertaining), as the education of an adult clientele must be. Therefore the first displays were teaching machines, large, cumbersome affairs, full of lights and wires, which displayed questions on utilization research and required the adult to manipulate buttons to gain an answer. The panels were purposely built at a high physical level to thwart a child's playfulness, but the urge to stop and "play" with these machines was too great for most passing adults. The displays drew those curious about the machines as well as the Program. The educational cause was served. Attendants were later stationed by these displays to pursue that cause even further by engaging the participants in informal conversation about utilization research and the Nebraska Program. Attempts would later be made to conduct formal Program effectiveness surveys in this manner. The displays, which would in time become less kinetic and less cumbersome, were especially
useful in the education of Nebraskans at state and county fairs in Nebraska, since a large number of Nebraskans attended those occasions. The displays were by no means limited to fairs, showing up at most any function that had people and floor space. University students hired part-time were dispatched throughout the state with department trucks full of such exhibits; on special occasions, higher-level department personnel put in an appearance. The reverse was also true: no department official appeared anywhere without a display and printed material. Eventually the more elaborate machines were to be utilized nation-wide as the Nebraska Program expanded its constituency as planned.

A second company was hired in 1962 to submit and pursue ideas on how to educate through use of the media. Rall and Raglin, Incorporated of Lincoln, Nebraska consisted of Frank Rall, a scholarly individual who often lectured on journalism at the University of Nebraska, and Jim Raglin, a dynamic, outgoing personality. Both were former newspaper reporters (and editors) who had been assigned to the State Capitol Building. They therefore had good experience in the writing of news releases and news stories, and in knowing the right people for getting the fullest exposure for the Program. As in the case of the Carroll Company, Rall and Raglin's main efforts were to be directed toward drawing attention to the Program, using news stories, articles, and printed material to engage the public in a full-fledged discussion of utilization research. The underlying purpose was to motivate members of the public to inform themselves about utilization versus production
research, and to form them into a pressure group so convinced of utilization research's value that the federal government would be influenced by their powerful lobby.

A first move by Rall and Raglin was to send out to all newspaper publishers and editors a memo pad made from newly-developed corn starch paper with a short message about the Program printed on the bottom of each page. (By this time the research projects were beginning to show results.) The result was almost total saturation mention of the Program in the state's press--both in columns and editorials--in December 1962. The in-depth analysis included in this attention was considered educationally invaluable. The state press continued to cooperate as the results and promise of the research projects began to provide copy. Almost any statement composed and distributed by Program officials found space in numerous newspapers throughout the state. The education unit and its allies became increasingly busy composing speeches, news copy, articles, printed documents, scripts, and research abstracts. It was not until 10 years later, 1972, that society would realize the opportunities latent in the use of newspapers to give formal instruction. The National Endowment for the Humanities in cooperation with the Extension Service of the University of California, San Diego, began to offer college courses by newspaper at that time. 3

Department planning provided for a consistent and ever-increasing supply of information to be utilized by the daily press. Weekly or monthly magazines and newspaper supplements provided a format for in-depth presentations. These in-depth articles and the
loose-leaf material the Department printed provided education unit personnel with their first "textbook" materials: now they could begin to deal with formally organized groups in the state. Nebraska Program instruction at first assumed the character of a speaker's bureau, consisting of six of the seven personnel assigned in the Department's utilization research area and two of the people working with the New Crops section. A direct follow-on from this effort was the production of taped instruction packages and slide shows. Professionals from radio and television were brought in to lend their expertise and trained voices. Of course, the radio and television programs were also available on tape and film for playback to groups. In the course of this work the education unit became experienced enough to produce its own series of radio shows through the Ash Williams Recording Studios of Lincoln, Nebraska utilizing only the unit's own personnel. This type of instruction continued for over three years. Complementing the previously mentioned material were the research abstracts produced in abundance by cooperating laboratories or test farms. In essence they represented a constant up-dating of all the "textbook" material. Finally, the Department expanded its Biennial Report, a publication required by the State as a state-of-the-department message to the governor, legislature, and people of Nebraska, to include a large section on utilization research, the Nebraska Program, and the research abstracts. One could almost label these reports the textbooks of final authority.

The farm groups were the organizations which contained the
most interested and participating individuals in the education effort, as might have been expected. Department personnel spent a great deal of time out in the state with these groups, until group leaders were either well enough informed in-the-field to take over or until they could be brought in and instructed in the department's offices in Lincoln. During the early 1960's the Grange's president spent a period of time working in the department's offices learning about utilization. The Farm Bureau, the Grange, and the Farmers Union were most cooperative, with the National Farmers Organization less readily accessible. Other groups with an educational bent were willing students: The Future Farmers of America (FFA), Future Homemakers of America (FHA), 4-H clubs, and similar groups of many names. It was felt that the youth were open to change and a new emphasis in agriculture because their economic future depended upon adaptation and the sensing of trends or the need to change. The main thrust of the Program's message was always the imbalance between production research, which was generously funded and produced ever larger crops, and utilization research, which was not funded at the level necessary to supply new uses for those crops. Of great advantage in conducting an educational program among these groups was their practice of holding regularly scheduled meetings. The atmosphere was not always one of open acceptance of ideas when working with production versus utilization, given the long traditions of agriculture, but the instruction and discussions usually met with interested listeners and participants—something all educators sincerely appreciate but do not always find at levels of learning other than adult education. According to
Nebraska Program group leaders, to work with these groups was to feel that one was indeed assisting the process of "learning." To observe the actual changing of attitude or behavior was exhilarating.

Groups which either contacted the Department or were contacted by the Department were fed a steady stream of speakers, printed matter, instructional lectures, and audio-visual materials. These groups included community development leaders of Nebraska towns and cities, high school classes and assemblies (especially FFA and FHA classes), college classes and groups (especially in agriculture colleges), discussion groups such as library, church, and adult education classes; radio and television shows with group discussion formats, educational television, political education groups such as the League of Women Voters, political party meetings, conventions, and service group meetings such as the Elks, Eagles, Lions, Masons, Rotary, Chamber of Commerce, and union and business groups. The education of these last opinion leaders, which usually included the community development personnel, business leaders, school and church personnel, and governmental officials of a city or county, was considered of utmost importance. More than one conflict in scheduling was resolved in their favor. The use of department-sponsored field trips to the participating laboratories and to the New Crops test plots was a useful device in attracting and holding the participation of these leaders. The Department's education unit and the personnel assigned to a particular research project usually conducted the laboratory trips, while the two New Crops men assigned from the Department's Weed and Seed Division assisted the education
unit with what could truly be called "field" trips to planted acreages and test plots. These last two men, both gentlemen farmers, had previous experience with experimental farm crops through their state government seed work and, most importantly, had experience in education through one of their number being a former college agriculture instructor. Both had conducted a state government educational program in weed eradication, including the building of displays, the composing of printed material, media exposure, and the handling of test plot field trips--surely the right men for the new job in the Nebraska Program. These men were responsible for taking the New Crops effort to the public, and the public demonstrated its interest by turning out 500-strong in 1960 to see one of the first large castor bean harvests in Nebraska (see Chapter 3, Footnotes 46 and 77).

The passing of time brought the expected exploitable results from the research projects, plus a gradual increase in the acres of new crops planted. The project results were used, as had been planned, to dramatize the utilization research program and what could be done if efforts were increased in this area--especially on the federal level. The results so used are examined in the discussion of the research projects in Chapter 3 of this study. Suffice it to say here that the products made from surplus agricultural raw materials found wide use as teaching examples: foams, paper, milk bars, Nebraskits, growth stimulants, insulation, fuel additives, adhesives, foods, packagings, and paint. Pilot plants to be used for the purpose of producing some of these program-developed
products were established in several Nebraska towns. The plants had two goals: to produce example products to draw the people to the Program in order to be educated, and to demonstrate feasibility to industry in hopes of attracting it to the state to put the new products into production.

While group and opinion leaders were being trained and high school and college instructors were being asked to move utilization and utilization research study to a primary place in their curriculums in the state, the media were kept busy with their important contribution. This effort was of a continually expanding nature, some of it through trial and error, but mostly planned by the educational unit of the Nebraska Program using its knowledge of educational methods. As the Program began to operate smoothly in the state, the decision was made to execute the next step, taking the Program to the nation's public.

The pattern followed the methods tested and proved in the State of Nebraska. It was first necessary to catch the national public's interest. The greatest concentration of effort had to be in the states with a primary interest in agriculture. The most fertile ground was thought to be the southern states, with which Nebraska often found itself allied in Congress because of common agricultural interests and conservative philosophy. These cotton- and tobacco-growing states were ripe for the Nebraska effort, as evidenced by the following press report appearing in 1961:

There is a need for two things in the cotton industry. There is a need for a positive educational program to win back the public image of cotton as a vital industry producing vital
materials; to dispel the negative image of cotton as a price-support tax burden. Further, there is a need for cotton to go deeply into research to win back markets from synthetics. The cotton industry has just now begun an information retrieval project based on the successful tobacco industry effort. Cotton is an old industry with a built-in love for the status quo. Its biggest hurdle is to overcome entrenched traditions. If the cotton industry ever goes out of business it will be because of dogged clinging to the past.4

The warning evidently came too late, for on July 1, 1964 the historic New Orleans Cotton Exchange closed after ninety-three years of business. Advertisements were placed in the nation's newspapers which pointed out precisely what Nebraska was saying in its educational effort: the agriculture industry as a whole had failed to take heed of the situation which the cotton growers had experienced, and past federal actions had proved ineffective or unfair. The Exchange's swan song read thusly:

We cede our role in the market place to the United States Secretary of Agriculture. Under federal government substitutions for the free enterprise system, cotton is the first to fall. Will the cotton industry be followed by all the rest? [We blame] the closing on a new government cotton plan under which the government would pay 6.5 cents per pound subsidy on domestically consumed cotton. The taxpayers will not stand still for these subsidies forever.5

The conclusion could be drawn that cotton as a part of the agriculture industry had indeed been tardy in entering the education, utilization, and utilization research fields. In spite of that negligence, Nebraska's Program was saying, it had a chance to regain its stature through these mediums.

The Nebraska Program was, in contrast to such status quo factions of the agriculture industry, aggressive in its education efforts. Utilizing modern mass media, it adopted the methods of
industry and manufacturers in its "southern campaign." The states of North and South Carolina, because of their emphasis on cotton and tobacco, were the prime education targets in the South.

As to the rest of the nation, a media program was designed and pursued in an ever-widening circle out from the State of Nebraska. Articles frequently appeared in newspapers in Wisconsin, Colorado, Kansas, Iowa, the Dakotas, Missouri, Texas, and Florida. The best coverage on the national level was considered to be articles placed in the Wall Street Journal (see March 25 and November 5, 1965, for examples) and one by Bob Considine, a nationally syndicated columnist (example in the Boston Record-American, March 18, 1962). Coverage of the Nebraska Program was also given on a Huntly-Brinkley NBC-TV News Special. The educational unit immediately tried to get a full special done on the Nebraska Program over network television by these same individuals. Despite requests by high Nebraska officials and some indication that the effort might be successful, the NBC program as it was finally produced dealt with the plight of agriculture and its surpluses in general, mostly outlining the problems, not solutions.

The spreading knowledge of the Program enticed the Association of State Departments of Agriculture to hold its convention in Nebraska in 1962. After absorbing some of the Nebraska Center for Continuing Education's (Kellogg Center) ideas and methods, education unit personnel worked to the point of exhaustion arranging formal seminars, informal discussion groups, field trips, and displays. Here was adult education operating at its finest, with a group of
interested, live-in students located in the best of facilities with a program designed for them. It was realized that a state's news people followed the movements and doings of their state officials; therefore the media effort alone, especially in the area of printed matter, was massive. Neither the officials nor the media returned home with their heads and hands empty.

As a follow-up, education unit individuals visited certain colleges and capitols of the states in attendance, concentrating on the colleges of agriculture, and discussed with them utilization versus production philosophy, the idea of increased utilization research, new crops, and the Nebraska Program. It was at approximately this same time that Nebraska's Department of Agriculture, after viewing the successful tobacco and cotton information retrieval programs, initiated its own information retrieval endeavor as part of its education effort. One outcome of this retrieval program was a realization that some education and lobbying had to be directed toward certain of the large United States corporations, for it was found that since the companies were entering the agriculture area by buying up farm land, their laboratories were beginning to devote increasing attention to finding better ways of producing agricultural crops. These corporations were found to be increasing their agricultural raw material-producing landholdings until states such as California had 45 corporations owning some 3,700,000 acres, making California the leading farm state by the end of the 1960's. The increased production emphasis was, of course, anathema to the Nebraska Program.
A more welcome increase came in the area of national attention for the Program. The effort proceeded well during the early and middle 1960's. The attention of state governments, private laboratories, the USDA, Congress, the White House, the national news media, and a wide public was drawn to the Nebraska endeavor. But the Nebraska Program had not yet ended its expansion. It initiated movement into the international arena in order to use resulting publicity for educative/lobbying purposes. The projects involved in these international affairs of state are discussed in another part of this paper (see Chapter 3). Only mention of their educational aspects is made here.

Naturally when a state of the Union dealt directly with other nations the Federal Government took notice. And Nebraska began so dealing, knowing that the federal government's interest would be stimulated. The NEBRASKIT and the milk bar were relied upon to give dramatic emphasis to the Program through international attention, and the Food-For-Peace Program was found to be the most natural outlet for these food products. The Nebraska Program had utilized a national stage when the Federal Government was convinced to buy tons of NEBRASKITs for civil defense shelters. Now the NEBRASKIT was gaining an international stage. Nebraska was convinced that the nation and its Federal Government would soon see the immense value of increased utilization research.

Accompanying the international movement of food products were the inquiries received from foreign nations such as Sweden and Japan concerning the patenting of Program-discovered processes. Clearly,
had the Program been an effort adequately funded for utilization research rather than one utilized for education and lobbying purposes, it could have been impressive indeed, by several indications including this one. Yet, perhaps all efforts, education, research, and lobbying, would have failed in the end no matter what the emphasis and funding, in the face of political manipulation—and in the face of increasing confusion over the Program's goals (was it a research and development program or an education and lobbying effort?). These problems are examined in the final chapter of this study.

The education unit took advantage of the increased attention given to the Program by initiating continuous correspondence with individuals. Aware of the success of the United States Government, private industry, and military suggestion programs, the education unit (using Director Finigan as its voice) asked individuals to correspond with the Department and write in their ideas for research projects. Out of this grew a type of educational correspondence bordering on a correspondence course for the individuals involved, for a constantly increasing amount of upgraded material was sent to them for study. This educative aspect of the Program developed to an extent whereby it required a good deal of Program personnel time, and several secretaries were assigned to assist with the immense amount of paperwork. On a purely state level the effort was valuable for its contribution to state government-private citizen relations, especially in giving the taxpayer-supporter of the Program a sense of participation and authority. Herein lay a recognizable adult
education method aptly described by Malcolm Knowles: "The adult education processes were most effective in mobilizing public support when used directly for this purpose."8

In addition, Program personnel talked at length with citizens in the state and nation as well as keeping in contact with federal officials. What could be called formal interviewing was carried out most commonly by personnel stationed with traveling displays. Education unit personnel assigned to these exhibits eventually devised a short checklist which they used to prompt questions and record answers. Of course, statistical information could be checked each year to discern how much more acreage of new crops had been planted, how much more utilization research the federal government's USDA was doing in its laboratories, how much more correspondence was coming in, how much more media coverage had been attained, or how much more educational material was being prepared and used. Nebraska Department of Agriculture staff meetings of Program personnel usually ended with education unit members and department director Finigan attempting some evaluative steps by discussion and by use of such material and statistics. These education personnel were Finigan's top staff members, as they in fact should have been in view of the utilization research program's true educative goals. These should also have been the evaluative personnel. It is easy, however, for personnel to get so involved in a program that they do not fully and objectively examine it. Operations assume a life of their own, and activity confers a seeming value upon the individual worker and his efforts. The Nebraska Program was no different. Its history of accomplishment
as orchestrated by administrators and the education unit, and
documented by the media, seemed commendable. Even the eventual
realization by the public that the Program was not in itself a true
research effort that would solve agriculture's problems did not
lessen the worthwhileness of the effort in relation to its methods
and goals—though this realization was in part responsible for the
reduction and modification of the Program in 1967.

Were the Program's true goals accomplished? Had the public's
attitudes and behavior been affected? Were the problems of an
industry on their way to being solved? Had the education effort been
effective? The next section of this study looks at these questions.
The methods, the progress, the triumphs and failures have been
evaluated by this researcher, in the expectation that the experience
of the Nebraska Program can serve as a model for similar efforts by
similar agencies which find the courage to pursue this kind of
education program.
CHAPTER 5

EVALUATION: ADJUSTING THE PROGRAM MODEL

The Program's personnel did not do a very systematic job of evaluating their work. Some evaluation was done, but Program personnel did not concern themselves at all with the answers to questions which were uppermost in this researcher's mind. Questions such as: Were citizens mistrustful of an education program administered by a political agency? From what sources did Nebraskans get information about the Program? What organizations did people trust as sources of information? Consequently, this researcher found it necessary to conduct a survey of Nebraska citizens and their legislative representatives. The results of this survey (See Appendix B), along with the investigation of the conduct of the Program in Chapter 3, provided the basis for the conclusions presented in this chapter, and made it possible to identify the points at which the program planning model should be adjusted.

Two separate questionnaires were composed: one for legislators and one for citizens (see Appendix B). The legislator questionnaire was sent to every senator who had served in the Nebraska State Legislature during the years 1959-1967. The citizen questionnaire was sent to a randomly-selected group of Nebraska citizens in cities, towns and rural areas selected via area-probability sampling. The areas represented in the survey were an eastern Nebraska small town and surrounding rural area (Geneva), a
western Nebraska small town and surrounding rural area (Bridgeport), a medium-size city (Grand Island), and a metropolitan area (Omaha).

Results of the Citizen Survey

Agencies or officials wishing to initiate similar education programs may be heartened to discover that responses to the citizen survey indicated that the public can be receptive to education programs originating with political—in this case state governmental—agencies. Contrary to this researcher's expectations, most people surveyed felt that the information they had received in connection with the Program had been of an educational nature, that its purpose had been educational rather than political. Few seemed to have felt that the Program had been exploited for personal or party political gain. Despite this public confidence in the apolitical nature of the Program, this researcher felt that political exploitation (along with secretive administration and confusion over goals) hurt the Program when it came up for renewal before the Legislature in 1967, resulting in considerably reduced scope and funding. It should be noted here that 16% of the legislators and 18% of the citizens responding to the questionnaire did feel that the Program had been exploited for political purposes. A number of citizens indicated that they had felt the Program had been both educational and political, and 37% said they had voted for candidates who supported the Program.

It was pointed out in Chapter 3 that despite the earnest desire of most people connected with the Program to "keep the
Program out of politics," it was almost impossible for the Program to avoid politics: to begin with, one of the goals of the Program was political--i.e. pressure on public representatives at the state and national levels to support utilization research. Further, the Program was initiated and administered by a government agency. The fact that the Program operated in a political context made it dependent on the good graces of politicians for its very existence. It also made the Program susceptible to political exploitation by the existing state administration and the object of criticism by opponents of that administration. At the heart of the Program, of course, was its massive education effort designed to change the attitudes of a production-oriented citizenry--an effort with an economic rather than a political motive.

A number of questions on the survey were designed to ascertain how many people had received information about the Program, where they got it, and how they regarded various sources of information. (See Table 1.) A whopping two-thirds of those to whom the Program was directed had heard of it. And of those who had heard of the Program, 75% said they had supported it (the other 25% were undecided). There was no significant difference in degree of support for the Program between rural and urban respondents. It is interesting to note that virtually all of the urban respondents indicated that they felt their work, if not directly related to agriculture, was related to the fortunes of agriculture: in light of this feeling, urban support for the Program is not surprising. Of course, urban support for the Program may also have had something to do with the fact that new uses
TABLE 1

SOURCES OF INFORMATION

Respondents to the citizen questionnaire were asked to identify the sources from which they received information about the Nebraska Program. The table below lists the various media utilized by the Program in its education effort and the percent of respondents who learned about the Program through each. Sources are listed in order of effectiveness.

<table>
<thead>
<tr>
<th>INFORMATION SOURCE</th>
<th>% OF RESPONDENTS REACHED</th>
</tr>
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<tbody>
<tr>
<td>Newspapers</td>
<td>76%</td>
</tr>
<tr>
<td>Television</td>
<td>40%</td>
</tr>
<tr>
<td>Magazines</td>
<td>32%</td>
</tr>
<tr>
<td>Word of Mouth</td>
<td>26%</td>
</tr>
<tr>
<td>Radio</td>
<td>26%</td>
</tr>
<tr>
<td>Farm Organization</td>
<td>24%</td>
</tr>
<tr>
<td>County or State Fair Display</td>
<td>20%</td>
</tr>
<tr>
<td>Speaker</td>
<td>00%</td>
</tr>
<tr>
<td>Printed Pamphlet</td>
<td>00%</td>
</tr>
<tr>
<td>Department of Agriculture Personnel</td>
<td>00%</td>
</tr>
</tbody>
</table>

Respondents were also asked to rate the trustworthiness of various sources of information. The table below lists the various agencies and media which generated information about the Program and the percent of respondents who felt each to be trustworthy. Sources are listed in order of trustworthiness.

<table>
<thead>
<tr>
<th>INFORMATION SOURCE</th>
<th>% WHO FEEL SOURCE TRUSTWORTHY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nebraska Department of Agriculture</td>
<td>64%</td>
</tr>
<tr>
<td>Media</td>
<td>56%</td>
</tr>
<tr>
<td>Nebraska Department of Economic</td>
<td>40%</td>
</tr>
<tr>
<td>Development</td>
<td></td>
</tr>
<tr>
<td>Nebraska Governor's Office</td>
<td>32%</td>
</tr>
</tbody>
</table>
for agricultural products might result in new jobs in new industries
(although one 26-year old respondent said he didn't regard new
industry as desirable per se).

Of those who said they had actively supported the Program,
just under half said their chief means of active support had been
vocal--talking about the Program with friends and neighbors.
Consequently, it was not surprising to find that approximately 25% of
the people who had heard about the Program had gained at least part
of their information by word-of-mouth. In terms of number of people
reached, newspapers ranked first (75% of respondents had gained at
least part of their information from newspapers), television second
(42%), magazines third (32%), and radio, word-of-mouth, farm organ­
izations, and fair displays fourth (20-25% apiece). It was inter­
esting to note that a significantly larger number of rural than of
urban respondents cited magazines, fair displays and farm organ­
izations as sources of information. This finding should be of
interest to educators attempting to reach adults in rural areas.
Newspapers, radio, television, and word-of-mouth were equally
important sources of information for both urban and rural respondents.

The Program's educational effort relied heavily upon press
coverage to disseminate information, so it was not surprising to find
that newspapers were the largest single source of information about
the Program cited. Responses to a question which asked citizens to
rate sources of information for trustworthiness rated the press
considerably higher than either the Governor's Office or the
Department of Economic Development (the present Program custodian).
It should be noted that the Nebraska Department of Agriculture also rated comparatively high in trustworthiness ("comparatively" because even the press received only a 56% vote of confidence!). A related question asked whether citizens would place more confidence in information released by private research laboratories or by university college of agriculture laboratories. Responses gave an edge of 10% to university laboratories, not a very considerable margin, but nonetheless a significant one. This result tends to confirm the judgment of those legislators and Program personnel who had argued for a larger role for university laboratories.

All of the sources of information discussed so far—newspapers, radio, television, etcetera—have involved individual learning. Responses to the questionnaire revealed that group learning also played an important role: 60% of those surveyed had participated in some sort of group discussion of the Program. In addition, 45% of those responding said they would consider joining a discussion or study group on the topic of utilization research if such were to be offered in the near future. And although 20% said they would not be interested in joining such a group, 35% were undecided, all-in-all an indication of considerable receptivity to the idea of group learning. Of those who had participated in group discussions, 25% had attended a farm group, another 25% a school or church group, and the remainder had participated in informal groups of various kinds. Although group participation was not significantly greater in the rural areas than in the cities, it was the rural respondents who had participated in farm groups and the urban ones
who had participated in school or church groups. The 25% participation in farm group discussions seemed to justify the time, effort and expense which the Program expended in getting educational information out to these groups. However, responses to the questionnaire revealed that other kinds of groups (e.g. school and church) ought not to be overlooked.

Because the Nebraska Program was designed as a model to demonstrate what should and could be done in the field of utilization research, the results of its various research projects were themselves employed as educational devices. The results of the projects which produced the Nebraskit, milk bar, paint from soybeans, paper from cornstarch, etcetera were widely publicized. Samples were made available to the public at state fairs and were distributed as widely as resources made possible. This being the case, this researcher was interested to discover how well people remembered individual projects, and how many had had an opportunity to test any of the results.

The two best-remembered projects were the Nebraskit wheat biscuit and the grain alcohol additives for auto fuel (recalled by 68% and 64% respectively). This result was not surprising to this researcher, as the Nebraskit had been the most widely used of the projects in the educative effort. It was named after the state, was widely covered in the media, and was served at countless dinners and luncheons. The fuel project, though less widely publicized, was the one project continued by an independent committee of the Nebraska Legislature and vigorously pursued after the original Program was reduced in 1967 (at which time most of the surviving projects were
given to the Nebraska Department of Economic Development). Thus most recall of this particular project was probably a result of recent media coverage.

Three other projects—milk bars, paint from soybeans and paper from corn starch—were recalled by about a third of the respondents: only half as many as recalled the Nebraskit, but still a respectable showing. Again, this researcher was not surprised, as these projects had lent themselves particularly well to educative situations. The milk bars, along with the Nebraskit, were touted as survival rations and as nutritional supplements. Highway paint test strips were put down in numerous communities and identified via signs posted for motorists. Corn paper was made into desk pads, etcetera. What did surprise this researcher was the fact that, considering the wide distribution of samples, so few respondents (only 17%) had actually tested any of the research products. There is scanty statistical evidence that these teaching materials contributed as significantly to the education effort as believed. The fact that so many more people recalled these projects than had actually tested them confirms the superiority of the media for information dissemination. This is not to say that the research products were not important: the Nebraskit in particular was important as a symbol—as an example of what could be done—but it was important irregardless of whether you had actually tasted one!

One other project should be mentioned here: growth stimulators were recalled by a significant number of respondents despite the fact that no particular effort had been made to publicize them (aside from
acknowledging their existence as a project). The discovery of growth stimulators as a new use for surplus agricultural raw materials was in itself somewhat ironic, and one can only surmise that people remembered them because they continued to be interested in increasing production despite the best efforts of the Program to shift emphasis to utilization.

Considering the reasonable success the Program had in reaching a large constituency, it was interesting to find that 68% of the respondents felt that they had not received enough information about the Program. In addition, almost all the respondents indicated that they would like to see more information about utilization research prepared and made available to the public. One suspects that this would have been gratifying intelligence for Program officials, for it signifies that the education effort had interested, motivated and responsive learners. It appears that the public would have welcomed an education effort even more ambitious than the one undertaken. Although almost no one was opposed to the Program or its goals, a significant percentage of respondents were undecided about its merits. Given the respondents' stated desire for more information about the Program, it seems likely that the 25% or so of respondents who were undecided about the Program simply lacked sufficient information to respond affirmatively.

When asked to compare the 1959-67 Nebraska Program with its modified successor, most respondents found the former effort to have been satisfactory in both scope and funding. They appeared dubious that the reduced program was doing an adequate job of achieving
Program goals. However, when asked whether they agreed with a state senator's opinion that the Legislature would grant the Program all the money it asked for, only 18% of the respondents agreed that this should be done. It is this researcher's opinion that this response reflects a commitment to the idea of fiscal restraint, rather than a reluctance to fund the Program adequately (especially since most respondents felt the original, better-funded program was preferable to the present one).

It is doubtful that reliable statistical information of this sort regarding public attitudes toward spending for utilization research was available to State Legislators when the Program came up for renewal in 1967. Program evaluation efforts conducted by Program personnel were neither particularly extensive nor systematic. Further, although some evaluation was conducted, there is little evidence that the guiding officials utilized this feedback to good effect to modify the existing program. This is a common criticism and failure of education programs. Probably a system of evaluation should have been devised by the Nebraska Department of Agriculture when it first assumed administration of the Program. But it is possible that initiation of operations required all expended effort. In any case, evaluation phased into existence slowly and uncertainly during the education unit's work. This researcher's survey found that none of the respondents had been involved in any attempt to evaluate the Program prior to the present one.
Results of the Legislator Survey

The results of the legislator survey are most interesting at those points where they provide a contrast with the results of the citizen survey. For example, responses to the legislator survey suggest that attempts to get information to legislators should utilize different avenues than those used to educate citizens. Most legislators (85%) got at least part of their information about the Program directly from the Nebraska Department of Agriculture—from personnel associated with the Program's education unit or from Program progress reports forwarded directly to individual legislators. This provides a significant contrast with citizens, none of whom cited the Department of Agriculture as a direct source of information. Citizens seem to have received their information almost entirely secondhand—e.g. through newspaper reports (75%), television (42%), magazines (32%) and radio (26%). While legislators also read about the Program in their newspapers (60% cited newspapers as the source of at least some of their information), only 10% of legislators cited the electronic media (radio and television) as a source of information (5% cited radio and 5% television).

The close physical proximity of the Legislature's chambers and offices to the Department of Agriculture's offices probably accounted for the success of direct department contact with the senators. It is harder to account for the fact that so few legislators cited radio and television as sources of information. Either the legislators didn't watch television, or other sources of information were so far superior that television was insignificant in
comparison. The one method of acquiring information which ranked in the same order of importance for both legislators and citizens was word-of-mouth (cited by 25% of both citizens and legislators, with legislators naming lobbyists, personal staff, and other senators as well as department personnel as sources of word-of-mouth information).

In general, the legislators seemed to be even better informed about the Program than the citizens—in particular they had better recall of individual projects (with one important exception) and fewer were undecided on questions which asked for personal responses to the Program. This was at least partly a consequence of the fact that legislators had to vote on the Program's renewal: this made it imperative that they inform themselves on its progress and accomplishments.

The combined influence of the education unit and the need-to-know requirement of individual legislators created a Legislature well informed about the Program's various research projects: 90% of the legislators recalled the fuels project, compared with 64% of the citizens; and 40% recalled paper compared with 28% of the citizens. Interestingly, the citizens recalled the paint project twice as well as the legislators: only 15% of the legislators recalled this project (compared with a 30% recall by citizens), making it one of the projects least well-remembered by legislators. Citizens, on the other hand, recalled only the Nebraskit and the fuel projects better. The reason lies in the efforts of the Program's education unit, which went into a large number of communities and literally "painted the town" by laying down numerous paint test strips on the main streets. Close
contact on the local level evidently made this project stand out in
the minds of citizens, while legislators recalled it only dimly if at
all.

When asked to evaluate the success of the Program's effort to
re-educate the state's production-oriented citizens, 80% of the legis-
lators said they felt the Program had been successful: as a result
of the Program, the state's citizens would be willing to support
increased utilization research. This result correlates favorably
with the citizens' own evaluation and suggests that the legislators
knew their constituencies very well indeed: 79% of citizens agreed
that utilization research needed more emphasis.

Interestingly enough, while 80% of the legislators felt that
the Program had been responsible for increasing public support for
utilization research, only 33% felt it had been responsible for
increasing support in the Legislature itself (33% disagreed and 33%
were undecided). The senators may have felt that they did not need
the Program to convince them of the necessity of utilization research:
after all, they would hardly have initiated the Program if they had
not been already convinced of the need for utilization research.
Not surprisingly, those who felt the Program had not increased legis-
lative support for utilization research included the 16% who
expressed the belief that the Program's educational effort was
essentially political, as well as the 20% who opposed emphasizing
utilization research at the expense of production research.

Some 30% of the legislators said that the information they had
received about the Program made their attitude toward the Program
more negative. Those who chose to comment on the source of their negative attitude cited a feeling that the Program had promised more than it had delivered. One senator whose attitude had become more negative during the course of the Program said he felt that the Program had been a good investment, but he had come to feel that utilization research could be better carried out on the national than on the state level. His feelings exactly parallel those of Program administrators in the Nebraska Department of Agriculture, who came very early on to see that the Program could hope at best to be no more than a model program, an example for other states and the Federal Government, and that no one state could support the level of research necessary to get new projects into actual production.

The feeling of disappointment, of unfulfilled promise, on the part of certain legislators points up an important failure of communication between Program administrators and the Legislature regarding Program goals. While legislators were remarkably well informed about individual projects, many senators seemed to regard these projects as ends in themselves. When they voted for the Program, most senators had felt that they were making a direct investment in the state's economic well being—that the Program would spawn new products which would utilize the state's agricultural surpluses. If this expectation of direct economic dividends from their investment was unrealistic, no one in the Legislature seemed aware of the fact at the time; what is surprising is the fact that Program administrators did not disabuse the senators of their expectations after it became clear that the Program's goals would have to be more modest.
Confusion over the Program's goals (should the Program be seen as an "example" program, or should it press on for marketable products?) may have contributed to its 1967 reduction in scope and funding. In any event, legislators were divided on the survey question which asked them to judge whether the reduced Program was doing an adequate job of meeting Program goals. The survey found that 50% of the legislators approved of the reduced Program and 30% favored the old one, with 20% undecided. If, as Director Finigan had asserted, the Program had served its purpose out by 1967, the question of which program was better is academic. (The Department of Agriculture had not recommended renewal in 1967, arguing that the Program should be seen as an "example" and that its work had been done.) There is however considerable evidence that to this day many senators see the Program's essential focus as research and development. For example, of those who favored the better-funded 1959-67 Program, half said they would have favored giving it even more money than it had been allotted—as though more money would have enabled it to be a "real" research and development program rather than a mere example. Also, half of those who preferred the present reduced Program favored reactivating some of the projects initiated by the 1959-67 Program. The citizens gave an even stronger vote of confidence to the old Program, 40-50% favoring the old Program and only 5-10% favoring the new one. One can only conclude that most Nebraskans felt that paint from soybeans might be on the market today but for the 1967 cutback in Program funds.

This is the point at which to recall that nearly everyone
queried felt the Program had been educational—i.e. the information they had received about the Program had been informative, reasonably objective, and seemed to be in the public's best interest. This is a particularly important verdict, considering that the Program had been administered by a government agency. On the other hand, just because the respondents felt the information they had received was educational does not mean that they understood the Program's goals to be "merely" educational, or that they did not expect marketable results from the Program. The evidence, as noted above, is quite otherwise.

If the Nebraska public did not get what it expected from the Program, what did it get? Clearly, it got itself educated about utilization research, but did it get anything more? More had been promised, even in the fairly modest objectives of Department of Agriculture administrators. It had been hoped that if the Program could not produce marketable results on its own, it would at least attract the attention of other states and the Federal Government, so that acting in concert expanded utilization research programs might be undertaken. What evidence is there that this in fact happened? When Nebraska legislators were queried about the influence the Program might have had on Congress, 57% felt the Program had had a positive influence. Another 24% disagreed, and 19% were undecided. Queried about the Program's influence on the USDA, 38% felt the Program had had a positive influence. Nineteen percent disagreed, and 38% were undecided. The large number who were undecided points up again the lack of systematic evaluation of the Program. It also suggests that
many senators had never considered the Program's influence on Congress and the USDA to be an important goal, and so were unprepared to make a judgment on that point.

How Effective Was The Example?

There remains the question of how effective the Program was in reaching the public beyond Nebraska's borders. In particular, what influence, if any, did the Program have on spending for utilization research by other agricultural states and by the Federal Government? As we have already noted, there is no record of any attempt by Program personnel to answer these questions. This would seem a rather serious omission for an "example" program whose ultimate goal was to convince Congress, the USDA and other agricultural states of the need for increased utilization research. On the other hand, this investigator discovered that the statistics necessary to make such an evaluation are all but impossible to come by. The researcher wrote to seven agricultural states requesting a comparison of expenditures for utilization and production research during the life of the Program. Without exception, he was informed that available records did not distinguish between these two categories of research, and that the time and expense required to compile such figures would be prohibitive. It is possible that such statistics would have been easier to acquire had they been requested each year as budgets for agricultural research became available. At any rate, they are not available now. It was called to the investigator's attention that the best source of information about agricultural economics is the Current Research Infor-
mation System (CRIS) which inventories agricultural research at the state agricultural experiment stations and the United States Department of Agriculture (USDA). However, this system was not set up until 1966, and consequently would not provide statistics for the years when the Program's influence would have been felt most strongly.

Efforts to evaluate the Program's influence on the USDA met with somewhat better success, partly because it was possible to obtain the necessary statistics from the USDA Agricultural Research Service. It should be recalled that only 38% of Nebraska legislators responding to this investigator's survey had felt that the Program had had a positive influence on the USDA. There is, of course, no way of telling from statistics alone whether increased spending for utilization research was the result of the influence of the Nebraska Program. However, an analysis of USDA spending for utilization research from 1959-1967 reveals that the greatest increase in spending occurred during the first half of the decade. It is interesting to note that these were the years when the Nebraska Program was expanding its activities and making its most successful bid for public attention. Of course, spending for other kinds of agricultural research (including production research) was also on the rise during these years. In fact, there was only one year during which the spending for utilization research increased at a significantly greater rate than spending for other kinds of agricultural research.

In 1963 spending for utilization research increased by 21%--the biggest jump of the decade--while spending for other kinds of
agricultural research increased by only 4%. This significant increase in spending may reflect the lobbying efforts of the Nebraska Program and the National Utilization Research Association (which had held its 1962 meeting in Lincoln, Nebraska). This was also the year that the Kansas City National Chemistry Conference had heard 24 papers on agricultural utilization research, and Nebraska Program Director P. F. Finigan had participated in the conference's main symposium. Last but not least, 1962 was the year that the Federal Government purchased 66 million pounds of Nebraskits for use as survival rations. It is not impossible that the USDA's 1963 budget for utilization research, drawn up during 1962, was influenced by these events. The relevant statistics were provided this researcher by the USDA and appear in Table II on page 190.

The Program's most clearly-demonstrable success remains the success it had with Nebraskans, educating them about utilization research and reordering the agricultural research priorities of the University's College of Agriculture. Statistics provided this investigator by the College of Agriculture reveal that from 1959-1970 spending for utilization research increased by 305% while spending for production research increased by only 126%. This is only a relative gain however; in terms of dollars spent, production research still outstrips utilization research. (See Table III, page 190.)
### TABLE II

**UNITED STATES DEPARTMENT OF AGRICULTURE**

**Agricultural and Utilization Research Obligations, 1959-1967**

(In Thousands of Dollars)

<table>
<thead>
<tr>
<th>Fiscal Years</th>
<th>Other Agricultural Research</th>
<th>% of Increase</th>
<th>Total Utilization Research</th>
<th>% of Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>1959</td>
<td>$109,057</td>
<td></td>
<td>$19,900</td>
<td></td>
</tr>
<tr>
<td>1960</td>
<td>115,207</td>
<td>03%</td>
<td>19,198</td>
<td>00%</td>
</tr>
<tr>
<td>1961</td>
<td>137,597</td>
<td>16%</td>
<td>22,105</td>
<td>14%</td>
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<tr>
<td>1962</td>
<td>137,554</td>
<td>00%</td>
<td>22,870</td>
<td>03%</td>
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<td>1963</td>
<td>143,958</td>
<td>04%</td>
<td>18,897</td>
<td>21%</td>
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<tr>
<td>1964</td>
<td>177,703</td>
<td>18%</td>
<td>30,154</td>
<td>07%</td>
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<tr>
<td>1965</td>
<td>200,864</td>
<td>12%</td>
<td>35,683</td>
<td>14%</td>
</tr>
<tr>
<td>1966</td>
<td>224,000</td>
<td>10%</td>
<td>35,655</td>
<td>00%</td>
</tr>
<tr>
<td>1967</td>
<td>230,733</td>
<td>03%</td>
<td>37,693</td>
<td>05%</td>
</tr>
</tbody>
</table>

### TABLE III

**UNIVERSITY OF NEBRASKA COLLEGE OF AGRICULTURE**

**Funding for Agricultural Research**

<table>
<thead>
<tr>
<th>Year</th>
<th>Production Research</th>
<th>% of Increase</th>
<th>Utilization Research</th>
<th>% of Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>1959</td>
<td>$ 601,770</td>
<td></td>
<td>$104,995</td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>1,364,987</td>
<td>126%</td>
<td>425,699</td>
<td>305%</td>
</tr>
</tbody>
</table>
Final Evaluation

At this point, the strengths and weaknesses of the Program can be assessed. The strengths lay in three areas: funding, personnel, and educational methodology. The weaknesses were on the surface more numerous: friction with the University of Nebraska College of Agriculture, unpreparedness on the part of the administering agency, political exploitation of Program gains, failure to communicate goals to the public, and inadequate evaluation. Actually, all five of these problem areas had their source in the fact that the Nebraska Legislature had broken new ground in assigning what came to be an education program to a political/governmental agency. Under the circumstances, it is remarkable that the Program did so well. From the vantage point of hindsight, none of the problems encountered by the Program are at all surprising. It would even seem that they might have been anticipated and steps taken to prevent or minimize them.

For example, friction with the University of Nebraska College of Agriculture was inevitable the moment the administration of what was essentially an education program in agricultural economics was assigned to a "non-educational" agency. In any field the personnel of an established institution understandably think of themselves as the appropriate persons to conduct research in that field. It should not have been at all surprising then if university personnel felt their expertise had been neglected when the administration of the Program was given to the Nebraska Department of Agriculture. But university pique wasn't merely a matter of bruised egos: adminis-
tration of the Program would have brought with it access to special sources of funds not otherwise available to the school. The intense competition for funds in education is well known. Reputations depend upon funds for research, and when the administration of the Program was given to a political agency, the College of Agriculture had to content itself with the five projects (and associated funds) allocated to it by the Department of Agriculture.

This problem was in fact not unforeseen, and when the issue of Program administration was being debated in the Legislature, the College of Agriculture had its proponents. Patiently, opponents argued that it was precisely because the College of Agriculture had traditional competence in the field of agricultural economics that it should not be entrusted with a project designed to challenge the prevailing wisdom in the field. The leaders of institutions which have worked in a given way over a period of years develop a proprietary interest in their work and cannot be expected to regulate or change themselves to any great extent. It was further argued by those who opposed administration of the Program by the University that the College of Agriculture, with its strong programs in production research, should itself be one of the targets of a utilization research education program. In supporting the prevailing orthodoxy (production research), the University was engaging in social and economic maintenance; its programs reinforced existing thinking and priorities rather than reordering them. B. E. Swanson and C. Lindly, in an article entitled "College and the Community," have warned adult educators that established educational institutions, busy maintaining
the status quo, cannot be counted on as agents of social intervention or change.1

In the end, the Nebraska Legislature allowed itself to be persuaded that the Nebraska Department of Agriculture ought to go into the education business, or as it was seen at the time, the research and development business. Administration of the Program was given to this Department, which had no particular education or research bias, since it had never done either: its job heretofore had been inspection, tax collection and consumer protection. If the University College of Agriculture was upset by the decision, it was only natural; and it was only natural that the University should adopt an "I told you so" attitude when the Department of Agriculture found itself ill-prepared to undertake the resulting educative effort.

Unlike the University, the Department of Agriculture did not have its own facilities either for research or for public education. So it began by delegating these tasks--research to private laboratories, and education to private firms. What could be sounder? It was felt that, with no philosophical preconceptions, these private agencies could be counted on to carry out the tasks for which they were being paid. As the focus of the Program changed from research and development to education, the Department began to put together an education unit of its own. At first, however, the department's education unit saw itself as only another kind of public relations or public information agency, whose work was no different in kind from that of the hired public relations agencies. It engaged itself in promoting the Program (assuring Nebraskans that their investment
would pay off), the Department of Agriculture (look what a great job we're doing for you), and the administration of Governor Frank Morrison ("Nebraska's Governor has provided valuable support to the Nebraska Program," headlined a state fair display). Fortunately for the Program, this public relations phase was outgrown. It is, however, hardly surprising that a governmental agency with little or no experience in the field of public education should initially conceive of its job in terms of public relations. No one in the governor's office—and none of the Democratic appointees in the Department of Agriculture—was going to object if the Program's education unit engaged in public relations for the Governor or the Department. Nor were the state legislators averse to making political points from Program successes.

Political exploitation of the Program and consequent pressure on Program personnel to produce visible results—especially in terms of potentially marketable products—was responsible for what was perhaps the Program's greatest weakness: its inability to state its goals clearly and publicly, and to acknowledge the fact that its administrators had come to see it as essentially an education program—not as a research and development program. Program administrators suspected that Nebraskans would not take kindly to the idea of investing 300,000 dollars a year in what was essentially an effort at consciousness-raising. Furthermore, legislators controlled the purse: the Program would be up for review every four years, and senators who had voted for research wanted results to report to the folks back home. It is not surprising then that respondents to both
the citizen and legislator questionnaires of this investigator seemed to regard the Program's primary focus as research and development—even though they granted the educational nature of the information they had received about the Program. Nor is it surprising that 68% of the citizen respondents felt they had not received enough information about the Program (as opposed to individual research projects): the public had been left to infer Program goals from bits and pieces of information about utilization research and about individual projects. It was not until the Program neared its second renewal in 1967 that Nebraska Director of Agriculture P. F. Finigan publicly stated his understanding of Program goals, saying he considered the effort to have been no more than an "example" program, that in fact as far as he was concerned its work was done—even though only one project had reached the marketing stage.

On the face of things it would seem that Program administrators had been disingenuous, that they saw that continued funding depended upon their producing some kind of visible results, and so they allowed people to think that products like the Nebraskit would some day be produced in Nebraska, providing a ready market for state agricultural products. Meanwhile, Program personnel were importuning federal officials and their own representatives in Congress with the argument that the Nebraskit was only a "model" product, an example of the sort of product which could be manufactured and marketed if—and only if—federal funding and facilities were re-directed toward this end.

Evidently, Nebraska Department of Agriculture officials did
not in fact care if the Program failed to generate marketable products. It was as if they set the Program up with every expectation that it would fail, that they counted on it to fail—that is, to raise expectations which could not possibly be met. And that they expected to use those disappointed expectations to raise a cry for a stronger utilization research program on the federal level. In a sense, this was a maneuver designed to turn certain failure into success. By a shrewd early assessment of what the Program could reasonably be expected to accomplish, Program administrators had seen that if the Program was to succeed it would have to succeed as an education program rather than as a research and development program. And since they believed in utilization research, they were willing to accept this more modest but clearly important goal. They were also shrewd enough to suspect that the Nebraska public would not be willing to pay for a program which would not return immediate economic dividends. Consequently, Program personnel did all they could to encourage public excitement over the Nebraskit and other research products. It looked to the public as though its investment in the Program was paying off. The Program was indeed paying off—but not in the way John Q. Public thought. The projects raised public expectations, and raising public expectations vis-a-vis utilization research had become a major goal for Program administrators. In their view of things it did not really matter if a project ever reached the marketing stage: John Q. Public may have had his eye on the market, but the Program had its eye on John Q. He had become the object of a massive public education campaign.
If politics was the reason that the Program's goals were not clearly delineated to the public, it was also the reason that the Program was not adequately evaluated. That is to say, the Program was not evaluated in terms that would satisfy an educator. In the political sphere, a program's success tends to be judged in terms of its ability to garner votes for its legislative supporters; "evaluation" comes down to a legislator asking himself whether the program had a positive press so that he can count on the people back home being favorably impressed. And while the Program's administrators could not have shared the senators' reasoning, they too depended largely upon the press for feedback about the Program, hiring a press clipping service to keep a record of the Program's progress. Not that the Department really expected the media to be critical. The chief role of the media, as the Department saw it, was to provide an avenue for disseminating information about utilization research to the public. The Program's education unit or one of the public relations agencies provided copy, and the media cooperated by using it. It must be said that the Program enjoyed a cooperative, even an enthusiastic press. This happy arrangement lasted until 1965, when a reporter for the *Lincoln Journal* decided to do some investigative reporting on the Nebraska Program and find out for himself precisely what the people of Nebraska were getting for their investment. He wanted to know, for instance, exactly how much money was being spent and on what, and when and where the Program would pay off in the marketplace. The answer to the latter question was of course "never." Department officials were certain that
answer would please neither the paper’s reporter nor its readers, and repaid the reporter’s curiosity by declaring him persona non grata. Although a full disclosure of spending had been made in 1962, no further disclosures were made, and as journalists pressed to take a more active role in evaluating the Program, Program officials became increasingly reluctant to release information. Strange behavior on the part of a program which "welcomed" feedback from the public.

Letters which the Program received at Department of Agriculture offices represented another potential source of feedback, but they do not seem to have been seen in this light by Program personnel. Public suggestions and comments had been actively solicited by Director Finigan, especially at the beginning of the Program when Program personnel were looking for research projects. The public’s response to this invitation to participate in Program design was to broaden into a give-and-take exchange resembling a correspondence course for participants. Here, as with media coverage, Program personnel showed themselves to be more interested in getting the information out than in evaluating public responses. Every contact with the public was seen as an opportunity for spreading the word about utilization research: little thought was given to the possibility of utilizing these contacts to provide feedback about the Program.

The single exception to this pattern took place at the state and county fair exhibits. Program personnel manned these exhibits, and it occurred to someone in the Program’s education unit that friendly chats with passersby could be turned into opportunities to
conduct non-directive interviews. Mental files were replaced by notetaking which was in turn replaced by a survey sheet. These surveys were not, however, very scientific. No attempt was made to extend the survey to include the non-fair-going population, and there is no evidence that such feedback as was acquired in this way was utilized to modify the Program.

This lack of attention to the business of evaluation is particularly surprising when it is recalled that the Program was to come up for review after a stated length of time. The material describing the Legislature's creation of the Program made no mention of evaluation procedures despite the provision for periodic review, but as has been noted, legislators have their own methods of judging a Program's success. Nor are their methods to be scorned: Homer Kempfer, in his book on adult education, cites among informal but useful methods of program evaluation "votes at elections, trends in vital statistics, and attendance at speeches and group discussions." Judging by their reluctance to disappoint public expectations about the Program, Program administrators were themselves not a little sensitive to such indicators.

We have seen that all of the Program's problem areas--friction with the University, initial unpreparedness on the part of the administering agency, political exploitation, failure to communicate goals, and inadequate evaluation--have their source in the fact that the Program represented a new kind of venture for the administering state agency. Even had it accomplished nothing else, the Program would have demonstrated the sorts of problems likely to beset a state agency that
undertakes an educational venture. Not that all of these problems are the exclusive property of programs conducted under the auspices of governmental institutions. For example, an article in the 1970 Handbook of Adult Education noted vis-a-vis program evaluation that "Often evaluation plans are not considered prior to the implementation of the program. As a result, there are often inadequate bases from which to determine the success of the program."³

This researcher has suggested that many of these problems might have been foreseen and steps taken to prevent or ameliorate them. At any rate, if the Nebraska Program is to serve as a model for similar education programs, one wants to adjust the model at the points where problems occurred. Some of the adjustments suggest themselves: the problem of inadequate evaluation could be avoided by setting up evaluation procedures during the planning stages of a program. It is also clear that evaluation is not possible without a clear statement of a program's desired outcomes. In the case of the Nebraska Program, the goals were clear to Program administrators, but were not clearly understood by the public. Not that evaluation depends upon a public statement of goals: programs designed to change attitudes and/or behavior do not often state their purposes in so many words. But if evaluation is to become a matter of public record, as it clearly must if a program is to be reviewed by a state legislature, a clear public statement of goals would seem to be imperative.

Some problems can hardly be avoided--e.g. controversy over who should administer a program. In the case of adult education programs,
institutions with traditional competence in the field of education will resent the competition of agencies whose primary function is seen as something other than education. Similarly, when government goes into the education business, it is not going to be possible to entirely eliminate political pressure. There are steps which might be taken to minimize political pressure, but they are not foolproof. For example, a bipartisan advisory committee might be created, in order to prevent polarization of support for a program along party lines, with one party claiming credit for the program and the other trying to sabotage it. (The Nebraska Program did have an advisory committee, but it wasn't realistically bipartisan.) Another measure which might insulate education programs in government from political pressure would be the setting up of independent education divisions within the administering agencies. Of course, personnel of even "independent" divisions are not completely immune from political pressures. Further, if one is going to be concerned about the philosophical bias of established educational organizations, an education division of a state agency is going to be no less susceptible to bias than, say, the state university.

It would clearly be impossible to preclude all problems in a venture of this sort. Moreover, if the entry of government into the field of education and social change is fraught with problems, it is also blest with certain advantages. All of the Nebraska Program's strengths--funding, personnel, and methodology--can be traced in part to the fact that it was a program of state government. For example, funding: the Program was initiated by the State Legislature and was
generously funded from the outset. Unlike many new education programs, it did not have to allocate funds for itself out of already-limited resources.

Similarly, the fact that the Nebraska Program represented a new venture on the part of a state agency was at least partially responsible for the way in which its education unit was staffed, drawing as it did upon the skills of public administrators, public relations and information officers, and professional adult educators. Some of these personnel were transferred from other duties in the Department of Agriculture; others were new recruits. In any event, it never occurred to the Department that the work of the education unit should be entrusted to educators alone. One of the results was that the education unit functioned initially as a sort of public relations agency for the Program, and while it quite properly moved beyond this public relations function, public relations skills continued to be important throughout the Program. This is not surprising: Roger Axford has observed that the true adult educator is:

... a person who could just as well have been with an advertising agency. ... An honest-to-goodness adult educator is ready, willing and anxious to have his ideas duplicated, emulated, replicated or even stolen. ... 4

Furthermore, adult education programs have long had to employ promotional tactics as an integral part of their structure—e.g. in the "selling" of programs to potential participants. In this, the Nebraska Program was no different. Potential participants in the New Crops program or in farm organization discussion groups on utili-
zation research needed to be "sold" on the Program. When Boyle & Johns, in an article in the 1970 Handbook of Adult Education, caution about public relations tactics in adult education, they are discussing a kind of public relations which the Program soon outgrew:

Public relations efforts, even though of an educational nature, are usually intended to generate support for the agency. Consequently, they are illustrative of an administrative or maintenance function directed toward a population external to the agency. . . .

While certain of the education unit's activities did in fact serve to generate support for the Department and even for the Governor and his administration, the general thrust of the Program could scarcely be called "maintenance," directed as it was at social and economic change.

Levin and Slavet, in Continuing Education: State Programs for the 1970's, speak of programs like the Nebraska Program in terms of the rise of a new profession. They contrast the traditional approach to education in state government, which was conducted through public information officers and served primarily to promote particular agencies, with what they see as a new professionalism. The "new profession" of state agency education places its emphasis upon substantive education and requires the related skills of public administration, adult education, and public communication, as well as familiarity with the substance of state agency programs. This is in fact quite a good description of the Nebraska Program's education unit.

Besides the public administrators transferred from other
department duties and the public relations individual hired at the outset of the Program, the education unit recruited a number of professional adult educators. Professional adult program personnel have not been plentiful in the past. Only a few universities trained these individuals, who were then faced with very narrow employment opportunities. As more attention has been focused on providing adult programs in society, more professionals are becoming available. At the time the Nebraska Program was initiated, there was no Department of Adult Education at the University of Nebraska; there was, however, a handful of individuals in the Education and Agriculture Departments who were attempting to specialize in adult education programs. This small group was drawn upon to form the nucleus of the Nebraska Program's education unit (a list of personnel is included in Appendix A). One man was usually depended upon to suggest another. On the face of it, this procedure might smack of parochialism, for well-trained personnel might also have been found outside state boundaries. In point of fact, hiring practices were influenced by a belief that Nebraskans "knew the territory" better, and of course, by politics: qualified adult educators who not incidentally were good Democrats recommending other good Democrats.

Strong in funding and personnel, it is not surprising that the Program's education unit went to work with a will, developing a formidable array of educational methodology. It tried just about everything except offering a formal course in the subject of utilization research--an important exclusion, reflecting perhaps an adult educator's philosophical bias against the methods of formal
education, or perhaps the ad-hoc nature of the education unit and the resources available to it. It was clearly not possible for the education unit to hold formal classes in utilization/research for an entire state, and responses to this investigator's surveys revealed that while the vast majority of legislators had received information about the Program directly from the Department of Agriculture, the citizens had received all of theirs second hand, catch-as-catch-can via print and electronic media, state fair displays, discussion groups and word-of-mouth.

While certain physical constraints—e.g., available personnel and size of the target group—were operative, there was also good theoretical basis in the literature of adult education for this informal, catch-as-catch-can approach. For example, in its concentration upon agricultural workers, the Program was directing its efforts toward a group of low socio-economic status whose formal education was comparatively low. The author of an article entitled "The Influence of Social Class Behavior upon Adult Education Participation" reported that persons of low socio-economic status prefer informal participation in activities of an educational nature to formal. Verner and Booth, in their text on adult education, confirmed this preference for informal participation: they reported that 60% of the population, irrespective of economic status, does not take part in the organized group life of a community, although there is a high rate of informal participation. This is borne out by responses to this researcher's survey, which revealed that fully 50% of the citizens who had participated in group discussions of the
Nebraska Program had participated in informal, rather than formal
groups. Responses to the survey also confirmed dramatically the
utility of the media as an avenue of informal education. It should be
noted here that the Nebraska Program's use of the media, especially the
newspapers, to transmit educational content, antedated by a full
decade the University of California's pioneering experiment in
offering college courses via newspaper.

Researchers in the field of public attitudes point out the
importance of the role of opinion leaders. The Nebraska Program's
education unit tried to reach opinion leaders by making a special
effort to proselytize for the Program among farm group leaders. This,
however, ignored that group of opinion leaders who are not formal
leaders and who are consequently difficult for educators to identify
and influence. Here again reliance on the media as the chief avenue
of education paid off. As Katz and Lazarsfeld have pointed out,
informal opinion leaders:

... tend to be the audience of mass media who then dissem-
inate the information gathered to those whose opinion they
influence. Such leaders are not readily identified, therefore
adult educators cannot work through them directly. By
judicious use of mass media, through which information can be
diffused to opinion leaders as well as to potential partic-
ipsants, the importance of adult education can be amplified.\(^9\)

Fully 25% of the citizen respondents to this investigator's survey
cited "word-of-mouth" as a source of at least some of their infor-
mation about the Program. It would seem that informal opinion
leaders were at work here picking up information about the Program
from the media and "disseminating the information gathered to those
whose opinion they influence."
The importance of individual participation in the learning process is axiomatic in contemporary education theory. Further, group self-help activities are considered a social virtue—especially in the American heartland. The Nebraska Program itself was originally conceived of as a self-help program, and the Program's education unit provided numerous opportunities for citizen participation: the New Crops program, group discussions, and state fair displays which required the individual to take part rather than remaining a spectator. Many of the state fair displays were mechanical or electronic and operated in the manner of teaching machines. Responses to this researcher's citizen survey revealed that 20% of respondents had received at least part of their information about the Program via these participatory fair displays. Another 60% of the citizen respondents had participated in a discussion group of some sort. Participation in the New Crops branch of the Program was particularly gratifying to Program administrators, especially considering the fact that this phase of the Program was seriously understaffed. The increase in acreage planted to three of the new crops was dramatic:

<table>
<thead>
<tr>
<th>Crop</th>
<th>1960</th>
<th>1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>CASTORBEANS</td>
<td>153,000 acres</td>
<td>2,000,000 acres</td>
</tr>
<tr>
<td>SOYBEANS</td>
<td>150 acres</td>
<td>824 acres</td>
</tr>
<tr>
<td>SAFFLOWER</td>
<td>3 acres</td>
<td>86 acres</td>
</tr>
</tbody>
</table>

The Program's other industrial crops, although introduced and grown on private acreage, remained primarily experimental. Guar, for example, proved to be unsuitable for Nebraska's growing season. It
should be noted that the New Crops branch of the Program appeared to be the best evaluated, probably because it was the easiest to evaluate, involving no more than a comparison of acreage figures available from other sources.

By way of conclusion, one might recall Arthur Garner's observation that:

Almost every department of every level of government is actively engaged in adult education, yet within the governmental structure itself there is little awareness of the extent to which government is involved in adult education. 11

The Nebraska Department of Agriculture, as it existed prior to 1959, bore out this observation. It had given little thought to the educative aspects of its operations, and although it had a public relations officer in its employ, her role was seen largely as promotion of the agency. When the Department assumed administration of the Nebraska Program in 1959 it was breaking new ground, moving beyond its traditional service capacities to a position of advocacy. It found itself serving as an education agency and operating, as it were, within the context of what Malcolm Knowles has called a developmental philosophy—education as a means to an end. 12 Kidd would call the same philosophy "reconstructionist," which he sees as deriving from Progressivism—educational goals derived from national purposes, while social processes provide the context for learning. 13 The Nebraska Program's goals were nothing if not derived from national purposes: its ultimate goal was nothing more nor less than the socio-economic well-being of citizens—and education, directed toward reordering priorities in agricultural research, was
seen as the means to that end. Further, the educative work of the Nebraska Program clearly went on within a context of social processes. Those processes had been at work eroding the socio-economic well-being of the nation's agricultural population, eroding as well the agricultural worker's sense of self: the most efficient agricultural workers in the world had not only lost status as an industry, but had also been baffled and hurt by public resentment of farm price supports and rising consumer prices for agricultural products. Social processes had made the Program necessary and social processes ensured it an interested and highly motivated clientele.

The success of the Nebraska Program in educating its target groups--and the size of the investment made by the State of Nebraska in this education venture--bodes well for similar programs. Adult educators, after decades of existing on marginal finances usually earned on a self-supporting basis, may find that their time has finally arrived. Impressed with the practical results a successful adult education program can show, government may be more willing to devote tax monies to adult education programs, and the clientele of adult education may be vastly expanded. If this should prove to be the case, the Nebraska Agricultural Products Industrial Utilization Research Program (Nebraska Program) should be examined as a model for future government agency education programs.
Program Personnel

Behind the phrase "Program administrators" is a group of able and energetic men who deserve to be described more fully.

PEARLE F. FINIGAN: After his appointment as Director of Agriculture and Inspection by Governor Brooks in January 1959, Finigan took strong administrative control. He exhibited enthusiasm, ability, and perceptiveness as to what the Nebraska Program could do for Nebraska, for agriculture and its problems, and for the Brooks Administration. His leadership of the Research Advisory Committee became almost total, since he was the only one to have a day-to-day relationship with the Program. He negotiated research contracts, with the recommendations of his staff, and therefore knew the complete details of all work. The committee then was filled in on the details and usually approved contracts on the basis of Finigan's recommendations. This was not to say that the committee was entirely useless, but to demonstrate Director-Chairman Finigan's control and to further point out that the "advisory" role was somewhat reversed.

Finigan was showing himself to be a developing master politician as well as a competent administrator. In a year and a half he had become so well known that he was considered "in the running" for United States Secretary of Agriculture if John F. Kennedy was elected in the 1960 presidential election. Mr. Finigan seemed to possess all the qualifications Mr. Kennedy specified. Actually, Director Finigan stood about seventh in line for the job, and when a man of higher rank and of more strategic political value, Governor Orville Freeman of Minnesota, got the job (despite Nebraska Governor Frank B.
Morrison's ardent support for his Director of Agriculture, Finigan was appointed to head the Nebraskans for Kennedy organization.¹

Finigan would no doubt have accepted the position of Secretary of Agriculture, had it been offered to him. It was a high office. It would have continued a rapid rise in politics and, as a cabinet office, would certainly have made good references for an elective term in a state or national legislative body or office. Further, and most important to this analysis, he would have been in a position to strongly back the cause of federal assumption of the burden of utilization research in the field of agriculture. His selection and the loss of his services would have been a tactical blow to the Nebraska Program, but a strategic victory for the cause. One of the goals of the Program, a recognition of the importance of and need for increased utilization research, would surely have been closer to realization.

Finigan apparently decided that his future and the Program's success did not lie with his acceptance of certain jobs within the Federal Government. Several times from 1960 to 1963 he was offered positions by the Federal Government such as the Food-For-Peace directorship which George McGovern of South Dakota left in order to run for Congress. But Finigan would consider only a top job, preferably in the USDA as an assistant on utilization research to the Secretary of Agriculture. He refused all other offers of payment for his work for Kennedy. Governor Morrison and other individuals and groups continued to promote Finigan² from the time he was considered for the cabinet position until the Kennedy Administration (and most
of Nebraska's White House contacts) crumbled with Kennedy's death in November 1963. It should also be noted here that Finigan was considered for the Nebraska Democratic Party's Senatorial nomination which the late Governor Brooks was certain to have tried for in the November 1960 Congressional election. However, because of personal or political considerations Finigan did not make the bid, and the Nebraska Program retained its top administrator at a crucial time.

Finigan was reappointed by Morrison in both 1961 and 1963, both seemingly content with their relationship and the progress of their and the Program's fortunes. Finigan continued to gain luster and stature state- and nation-wide as a result of the Nebraska Program, being elected to the National Chemurgic Council's Board of Directors in December 1962 and to the Vice Presidency of the North-Central Association of State Departments of Agriculture in June 1963. In this instance the situation made the man, not to neglect the point that Finigan gave a commendable account of himself as an individual, politician, and administrator. He proved himself a Democrat for Republicans to contend with if he moved on to other things from a Program which had made his name known--even popular--with the public.

In 1962 a University of Nebraska senior wrote an in-depth study of Director Finigan and his direction of the Nebraska Department of Agriculture and its Program. Though slightly dramatic, the lengthy newspaper article won a national journalism award for the student, Mr. Norman Beatty, and the University's Journalism School. Mr. Beatty had access to a great amount of information about Finigan, the Department of Agriculture, the Nebraska Program, and the
political state of affairs, for he was employed in a part-time position by Rall and Raglin, Incorporated, one of the agencies handling Program public relations for the Department of Agriculture. A large number of Nebraska newspapers carried the article, some in condensed or serial form. Whatever the form, it gave immense publicity to Finigan and the Nebraska Program, furthering the image of both through the positive and sometimes dramatic style of the author.

Staff

At the time the Program was initiated, no special division was set up within the Department of Agriculture to carry out the work of Program administration. This workload was assumed by the Director's staff. All department divisions and offices were expected to contribute personnel and material, and all personnel were expected to put forth effort for the furtherance of the Program. In the early days of the Program, the only people formally identified as having responsibility for the Program were the Department Director (as Research Committee Chairman) and an individual whose job it was to serve as "research coordinator." The education unit moved around to different locations within the Department, finally finding its home in the assistant director's office and ultimately in the research coordinator's office.

Finigan gathered around him a young, dynamic staff, many of whom were still engaged in getting their education. They were loyal, ambitious, and intelligent. At the end of 1963 most of these
personnel working directly with the Program held designated official positions within the department as assistant directors, special assistants, consultants, division chiefs, or field men. A total of nine full-time individuals were most readily identifiable. Four held college bachelor degrees, four held masters degrees, one held a law degree. Of these, four were former full or part-time teachers, three were part-time college students (one of these was pursuing his doctorate), and one was a former reporter. They were assisted by other university undergraduate and graduate students hired part-time from the fields of Education, Political Science, Agriculture, and Law. Director Finigan held firm control. Assistant Directors LEON W. KREINER (January 1960-July 1962) and JEFFERSON R. BROADY (July 1962-December 1966) handled duties ranging from routine day-to-day Program matters to some long-range planning, but generally existed to lighten the load on the Director as far as smooth operation of the Department was concerned as it administered, among its varied responsibilities, the Nebraska Program. Although overshadowed by Director Finigan, assistant directors were intelligent, competent, shrewd individuals, loyal to the Program and confident of its success.

ROGER L. LANGENHEIM was perhaps one of the most unsung influential individuals involved in the administration of the Program. Certainly he was as responsible for the Program's development and progress as Director Finigan, for Finigan relied heavily on this man's advice. Langenheim was a student attending his final year at the University of Nebraska's College of Law and working part-time as a reporter for a Lincoln, Nebraska newspaper when the
Program was initiated. He took an interest in what he considered to be a Program with far-reaching implications, and supported it with the "power of the press." He was consequently hired away from his reporter's job by Finigan and put to work examining research proposals submitted to the Department by laboratories and gathering extensive information on such research. Langenheim soon became a much-relied upon individual in the Program's administration, ultimately earning the title of Research Coordinator. Within this designation from January to May 1960 he occupied a position similar to the assistant director, but did not have as a primary duty anything to do with department operation. His first concern was administration of the Program. Langenheim maintained an advisory role in the Program even upon moving from the Department to employment with a law firm in Kansas City, Missouri, for the firm was the very one which handled the Program's account in its contracts with the Midwest Research Institute of Kansas City. Langenheim's influence could be considered strong in project considerations and development work through 1964; he was in effect carrying out the role of the advisory committee. In point of fact, it can be stated that he was the only person outside of the director and assistant director who devoted some time to the important "development" part of the Program: the introduction of research results into industry and the commercialization of patents. Finigan continued to respect Langenheim's advice even as distances, communication, and relationships changed from 1960 to 1966.

Because of the above unusual relationship of Mr. Langenheim to
the Program, this gentleman was later accused of conflict-of-interest by political opponents of the Program and its administrators. These antagonists accused Langenheim, apparently correctly, of being a paid lobbyist in the State of Nebraska's Legislature for a western cattle firm at the same time he was a full-time lawyer in Kansas City and working on the State of Nebraska's Department of Agriculture payroll—an involved situation to say the least and one which could possibly sustain the charge. Whatever its negative aspects, it should not overshadow the fact that the Nebraska Program owed much to the labor of Mr. Langenheim, a fact which will probably remain little known.

Other individuals involved in administering the Program were:

DONALD L. DOESCHER, a dynamic, intelligent individual who assumed the title of Research Coordinator after Mr. Broady vacated the position when he succeeded Mr. Kreiner as Assistant Director. (Broady had originally succeeded Langenheim as Research Coordinator.) Doescher was capable of great flexibility in handling a variety of "trouble-shooting" duties in regard to Program administration and department operation.

R. HAROLD MARKS, information and publications supervisor of the Department, moved from the Department's Resources Division to the director's staff in June 1960. He was a competent and meticulous journalist by training, and handled the press and public relations duties so important to the Program's acceptance and progress.

ELLSWORTH R. CARLSON and ARTHUR E. HABERLAN, the New Crops managers. Carlson rose from an inspector's job with the Weed and
Seed Division of the Department to chief of that division, which was to handle the field activities of the New Crops part of the Program. Haberlan became chief field agent for the New Crops effort under Carlson. Together these two practical, amiable Nebraskans, who took intense pride in their work, created a warm working relationship with a skeptical University of Nebraska, the diverse farm groups, and other individuals whom they had contact with throughout the state.

RAYMOND M. SNYDER, a scholarly, well-read individual whose intelligence and interest in the Program gained the notice of the department's Program staff and raised him from an obscure position in the Department to the director's staff in 1963.

These individuals, together with numerous department personnel, outside resource people, and university student help, put together an educative effort which included an example research program that lasted nearly eight years.
Dear Fellow Nebraskan,

This nation is aware that American agricultural workers have been extremely effective in the production of agricultural raw materials. In fact, so successful has the production effort been that a large surplus of such materials has accumulated. In view of this fact, the State of Nebraska initiated a program during the 1960's which attempted to deal with the problem of surpluses. The program worked to change the priorities of the public, the Congress, the USDA, and the colleges of agriculture from an emphasis on production to one of utilization. Using the dramatic results of small research projects, and utilizing educational methods, the Nebraska Program tried to present itself as such a powerful example of what utilization research could do that no group or institution could resist the lobby of a re-awakened, re-educated public.

A sample, of which you are an important part, is being taken of selected groups among the public. The enclosed questionnaire is a part of that sample, and is designed to find out how well the Nebraska Program presented itself to the public and how successful it was in its methods and aims. Your answers will represent the thinking of several hundred of your fellow citizens. It is believed that governmental agencies wishing to conduct similar programs in this or other states will benefit by responses to studies of this kind. The public's interest will be served by government's knowledge of how the public accepts and reacts to such programs which attempt to solve societal problems. Better programs can then be constructed and pursued with the interest and active support of the individual citizen.

The questionnaire is strictly anonymous. If you sign your name to any comments, it will be held in confidence. The answers will be used to compile statistical totals. The value of the study will be increased if you will give careful thought to each answer and return the form to me as promptly as possible.

Thank you for taking a moment from the numerous demands on your time.

Sincerely,

Kent Murray
Ph.D. Candidate
University of Nebraska
CITIZEN QUESTIONNAIRE * NO NAME PLEASE
ALL ANSWERS ARE COMPILED AS STATISTICS

1 *I lived in or around Omaha, Grand Island, Geneva, Bridgeport, Nebraska during the 1960's. CIRCLE CORRECT CITY.

2 *If you did not live in one of the above named areas during the 1960's, WRITE IN CITY AND STATE LIVED IN: ____________________________

3 *I was out of the State of Nebraska during the following years of the 1960's:
STATE YEARS: ____________________________________________________________________________

4 *Occupation ________________ Age __________ Sex ________________

5 *I consider my work directly related to agriculture.
YES 40% NO 60%.

6 *If not directly related to agriculture, I consider my work related to the fortunes of agriculture. YES 74% NO 27%.

7 *Do you recall a state program during the 1960's called the NEBRASKA AGRICULTURAL PRODUCTS INDUSTRIAL UTILIZATION RESEARCH PROGRAM (AGERESEARCH)? YES 48% NO 52%

IF YOU DO NOT RECALL THE NEBRASKA PROGRAM, PLEASE RETURN THIS QUESTIONNAIRE NOW WITHOUT ANSWERING THE REST OF THE QUESTIONS. THANK YOU FOR YOUR TIME.

8 *The Nebraska Department of Agriculture administered the Nebraska Program during the 1960's to change the priority of the public, the Congress, and the USDA by education and example from an emphasis on production to one of utilization in regard to agricultural raw materials. CHECK THE PROJECT YOU REMEMBER HEARING ABOUT:

<table>
<thead>
<tr>
<th>Project</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEBRASKIT</td>
<td>68%</td>
</tr>
<tr>
<td>MILK BARS</td>
<td>28%</td>
</tr>
<tr>
<td>PAPER FROM CORN STARCH</td>
<td>28%</td>
</tr>
<tr>
<td>PAINT FROM SOYBEANS</td>
<td>28%</td>
</tr>
<tr>
<td>WRAPPING &amp; COOKING FILM</td>
<td>20%</td>
</tr>
<tr>
<td>INDUSTRIAL FOAMS</td>
<td>04%</td>
</tr>
<tr>
<td>AUTO FUEL FROM GRAIN</td>
<td>64%</td>
</tr>
<tr>
<td>GROWTH STIMULATORS</td>
<td>24%</td>
</tr>
<tr>
<td>INSULATION FROM STRAW &amp; COBS</td>
<td>36%</td>
</tr>
<tr>
<td>TANNED HIDES UTILIZATION</td>
<td>20%</td>
</tr>
<tr>
<td>CASTORBEANS</td>
<td>32%</td>
</tr>
<tr>
<td>SAFFLOWER</td>
<td>44%</td>
</tr>
<tr>
<td>GUAR</td>
<td>16%</td>
</tr>
<tr>
<td>NONE OF THESE</td>
<td>00%</td>
</tr>
</tbody>
</table>
9 *I supported the Program described above. CHECK APPROPRIATE BLOCK:

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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<tbody>
<tr>
<td>17%</td>
<td>57%</td>
<td>26%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

10 *If you supported the Program, how? Vocal support 48%, Wrote letter to newspaper 04%, Wrote letter to state legislator 04%, Voted for candidates that supported the Program 37%, Other (State) 07%.

11 *During the 1960's the Nebraska Program attempted to get Nebraskans to support a program of utilization research to find new crops and new uses for agricultural products as strong as the state's very successful production research program located in the University of Nebraska College of Agriculture. Do you agree that utilization research needed more emphasis?

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
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<tr>
<td>22%</td>
<td>57%</td>
<td>22%</td>
<td>0%</td>
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</table>

12 *One of the goals of the "New Uses" branch of the Program was to draw industry into Nebraska to produce the new products. I supported this goal.

<table>
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<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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<tbody>
<tr>
<td>27%</td>
<td>59%</td>
<td>09%</td>
<td>00%</td>
<td>05%</td>
</tr>
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</table>

13 *I had an opportunity to test actual products such as Nebraskits, milk bars, and corn paper. YES 17% NO 83%. STATE PRODUCT TESTED: ________________.

14 *I participated in evaluating the Nebraska Program. YES 05% NO 96%. State method of evaluation: SURVEY__, INTERVIEW__, MACHINE TEST__, QUESTIONNAIRE__, OTHER (STATE) ____________.

15 *How did you get information on the Nebraska Program? FARM ORGANIZATION 24% NEWSPAPER 76% MAGAZINE 32% RADIO 25% T.V. 40% WORD OF MOUTH 26% SPEAKER 00% PRINTED PAMPHLETS 00% COUNTY OR STATE FAIR DISPLAY 20% CONTACT WITH DEPARTMENT OF AGRICULTURE PERSONNEL ASSOCIATED WITH THE AGRESEARCH PROGRAM 00%.

16 *What groups did you participate in that discussed the utilization research projects and products part of the Nebraska Program? FARM BUREAU 16% GRANGE 04% FARMER'S UNION 04% NFO 00% FAMILY 08% SCHOOL 08% INFORMAL GROUP 24% OTHER 20%.
17 *What groups did you participate in that discussed the New Crops part of the Nebraska Program? (STATE): Farm Bureau = 16% Grange = 04% Other = 12%  

18 *Considering all the sources of information on the Nebraska Program listed in questions 15, 16, & 17, do you feel that you got: ENOUGH INFORMATION 39% TOO LITTLE INFORMATION 68% MORE THAN I CARED FOR 00%  

19 *Do you remember considering this information as: EDUCATIONAL 68% POLITICAL 00% BOTH 18% NEITHER 14%  

20 *Studies of the public during the late 1960's and early 1970's reported a distrust of information produced and distributed by the Federal Government. I trusted the information coming from my state government agencies on such subjects as agricultural production, utilization, and education.  

21 *I trusted the following agencies or organizations for information. CHECK AGENCIES: Nebraska Department of Agriculture 64% Nebraska Department of Economic Development 40% The Nebraska Governor's Office 32% The Media (newspapers, radio, T.V., newsmagazines, etc.) 56%  

22 *I would have placed more confidence in information about utilization, utilization research, and the Nebraska Program if it had been given out by private laboratories contracted with by the State of Nebraska.  

23 *I would have placed more confidence in such information if it had been given out by University of Nebraska College of Agriculture laboratories.  

24 *I would have liked more educational information about utilization, utilization research, and the Nebraska Program to have been prepared and issued to the people of Nebraska.  

22% 17% 30% 26% 04%  

Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree  

22% 35% 22% 22% 00%  

Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree  

22% 59% 09% 00% 00%  

Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree
25 *I would now consider joining a discussion group or study group formed by an organization such as the state educational agencies (NU), the farm organizations, the Elks, the Rotary, a labor union, social, church, or library club, etc., to better educate myself about utilization research, resulting increased farm opportunities, and jobs from new industry in Nebraska cities.

26 *The Nebraska Program and its $300,000 per year were taken from the Nebraska Department of Agriculture by the Legislature in 1967. The research projects continue at a reduced rate in the Nebraska Department of Economic Development because of reduced funding. The implementation of research findings (applications such as the Gasahol Car) was given to an independent Committee of the Nebraska Legislature and continues at a reduced level.

26a *The old Nebraska Program was better with many, diverse projects, top priority, and $300,000 per year.

26b *The reduced program is better with fewer projects, reduced priority, and $68,000 per year.

27 *In 1972 certain Nebraska Senators in the State Legislature stated that the Legislature almost to a man would give a utilization research and education program all the money it requested. Do you agree with this attitude?

28 *Nebraska utilization research and education programs located outside the University of Nebraska College of Agriculture in other agencies such as the Committee of the Legislature or the Department of Economic Development should be cancelled altogether.
YOU ARE ENCOURAGED TO USE THE REST OF THIS PAGE AND THE BACK OF IT TO MAKE COMMENTS AND CRITICISMS OR TO "LET OFF STEAM" ABOUT THE NEBRASKA PROGRAM. YOU MAY SIGN YOUR NAME IF YOU WISH TO MAKE THIS QUESTIONNAIRE AND THESE COMMENTS A MORE PERSONAL REPLY, BUT YOUR SIGNATURE WILL BE HELD IN STRICT CONFIDENCE.

THANK YOU AGAIN FOR YOUR TIME. PLEASE MAIL THIS FORM BACK AS SOON AS POSSIBLE.
TO: Present or Former Nebraska Legislator

SUBJECT: Research Survey

Dear Sir/Madame,

The Legislature of the State of Nebraska initiated an effort during the 1959-1967 time period known as the Nebraska Agricultural Products Industrial Utilization Research Program. It was administered by the Nebraska Department of Agriculture. Using the dramatic results of small research projects, and utilizing educational methods, the Nebraska Program tried to present itself as such a powerful example of what utilization research could do that Congress, the USDA, and the colleges of agriculture could not resist the lobby of a re-awakened, re-educated public. Nothing less than a complete change of priority from production to utilization was expected.

Records indicate that you were a member of the Nebraska Legislature during the 1960's. The purpose of the enclosed questionnaire is to determine how well the Program presented itself and how successful it was in its methods and aims. As a legislator, you are one of a small but influential group of opinion leaders who also have some control over efforts of this kind; therefore your opinions are important. It is believed that governmental agencies wishing to conduct similar programs in this or other states will benefit by your responses to studies of this kind. The public's interest will be served by your evaluation of this effort which attempted to solve the societal problem of agricultural surpluses. Better programs can then be constructed and pursued, emulating the Nebraska Program's successes and avoiding its failures.

The questionnaire is strictly anonymous. If you sign your name to any comments, it will be held in confidence. The answers will be used to compile statistical totals. Since there are only a few legislators, the value of the study will be increased if you will give careful thought to each answer and return the form to me as soon as possible. A similar questionnaire is being sent to selected sections of the public.

Thank you for taking a moment from the numerous demands on your time.

Sincerely,

Kent Murray
Ph.D. Candidate
University of Nebraska
LEGISLATOR QUESTIONNAIRE * NO NAME PLEASE
ALL ANSWERS ARE COMPiled AS STATISTICS

1 *I was a member of the Nebraska Legislature during the years

2 *I supported the 1959-1967 State of Nebraska AGRICULTURAL PRODUCTS
INDUSTRIAL UTILIZATION RESEARCH PROGRAM (AGRESEARCH).

| 56% | 44% | 00% | 00% | 00% |
| Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree |

3 *I supported the Nebraska Program: Vocally 33% Supported
governor who ran on his record as a strong supporter of the
program 19% Wrote newspaper letter or article 00% Made
speeches in favor to constituents 00% By votes in Legis-
lature 33% Other (State) 00%

Did not support 00%

4 *While I was a legislator, my constituents asked me to

17% 83% 00% the Nebraska Program.

Strongly Support/Support/Not Support

5 *My talks out in the state ran

38% 62% 00% 00%

Strongly/In Favor/Against/Strongly the Nebraska Program.

In Favor

Against

6 *I received most of my information on the Nebraska Program via:

Newspaper 60% Radio 05% TV 04% Directly from Nebraska
Department of Agriculture personnel 60% Lobbyists 15%
Indirectly from Biennial Reports or pamphlets and releases of
Department of Agriculture 25% Constituents 15% My own staff
10% Other senators 25% Other (State) 15%

7 *Over the period of time I was in the Legislature, the information
I received about the Nebraska Program made my attitude toward the
Program: More Positive 72% More Negative 28% (The
attitude toward it I began with was: Positive 100%
Negative 00%).

8 *Most of the information I received about utilization, utilization
research, new crops, and the 1959-1967 Nebraska Program was of an
objective educational and informational nature:

05% 84% 05% 05% 00%

Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree
9 *Most of the information I received about utilization, utilization research, new crops, and the Nebraska Program was political and not objectively educational:

<table>
<thead>
<tr>
<th>Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree</th>
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<td>00%</td>
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</table>

10 *What Nebraska Program projects do you recall? Growth stimulators 45% The Nebraskit 60% Corn starch paper 40%

- Auto fuel from grain 90%
- Wrapping and cooking films 50%
- Industrial foams 30%
- Soybean paint 15%
- Milk Bars 15%

- Castorbeans 60%
- Safflower 60%
- Guar 15%
- Utilization of tanned hides 15%
- Insulation from straw 25%

11 *Besides developing New Uses for agricultural raw materials, introducing New Crops, and attracting New Industry, the Nebraska Program of 1959-1967 tried to educate Nebraskans to support utilization research efforts equal to or greater than production research in order to lower the agricultural surpluses. The Program succeeded: Nebraskans will support increased utilization research programs.

<table>
<thead>
<tr>
<th>Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree</th>
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<tbody>
<tr>
<td>05%</td>
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</table>

12 *Leaving aside the question of whether the Nebraska Program changed public attitudes, I agree that it at least made Nebraskans and the national public more aware of utilization research:

<table>
<thead>
<tr>
<th>Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree</th>
</tr>
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<tbody>
<tr>
<td>20%</td>
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</table>

13 *It was hoped during the 1960's that the re-education of the Nebraskan public or a wider public to support utilization research, and the demonstrated success of Nebraska Program-sponsored utilization research projects, could be used with whatever national public help could be gained to pressure Congress, the USDA, and the production-oriented colleges of agriculture to support and undertake more utilization research. Was this pressure effective with Congress?

<table>
<thead>
<tr>
<th>Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree</th>
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<td>05%</td>
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with USDA?

<table>
<thead>
<tr>
<th>Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree</th>
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<td>05%</td>
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with Colleges

<table>
<thead>
<tr>
<th>Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>05% 43% 33% 19% 00%</td>
</tr>
</tbody>
</table>

14 *Leaving aside the question of whether the Program succeeded as a pressure tactic, I agree that the Federal Government was at least aware of the Nebraska Program.

<table>
<thead>
<tr>
<th>Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree</th>
</tr>
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<tbody>
<tr>
<td>10% 70% 10% 10% 00%</td>
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</tbody>
</table>

15 *The current Nebraska Legislature will support utilization research and education programs:

<table>
<thead>
<tr>
<th>Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>14% 64% 18% 05% 00%</td>
</tr>
</tbody>
</table>

16 *What current Legislature support exists is a result of the 1959-1967 Nebraska Program.

<table>
<thead>
<tr>
<th>Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>00% 33% 33% 33% 00%</td>
</tr>
</tbody>
</table>

17 *The old 1959-1967 Nebraska Program was better with many, diverse projects, top priority and $300,000 per year:

<table>
<thead>
<tr>
<th>Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>05% 33% 24% 33% 05%</td>
</tr>
</tbody>
</table>

18 *The new reduced program is better with fewer projects, reduced priority and only $68,000 per year:

<table>
<thead>
<tr>
<th>Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>00% 40% 25% 30% 05%</td>
</tr>
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</table>

19 *The old 1959-1967 Nebraska Program was given $300,000 per year. This was adequate.

<table>
<thead>
<tr>
<th>Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree</th>
</tr>
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<tbody>
<tr>
<td>10% 52% 14% 24% 00%</td>
</tr>
</tbody>
</table>

20 *A Nebraska legislator stated in 1972 that the Nebraska Legislature almost to a man would give utilization research and education programs all the money they needed and asked for. Do you agree with this statement?

<table>
<thead>
<tr>
<th>Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree</th>
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<tbody>
<tr>
<td>05% 05% 00% 59% 32%</td>
</tr>
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</table>
21 *Should the Nebraska Department of Economic Development be given funds and encouragement to reactivate the dormant 1959-1967 Program utilization research projects?

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent</td>
<td>09%</td>
<td>41%</td>
<td>27%</td>
<td>18%</td>
<td>05%</td>
</tr>
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</table>

22 *I feel utilization research and education to reduce agricultural surpluses is essential:

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent</td>
<td>33%</td>
<td>57%</td>
<td>05%</td>
<td>05%</td>
<td>00%</td>
</tr>
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</table>

23 *Utilization research and education is more essential at this time than production research and education:

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent</td>
<td>43%</td>
<td>38%</td>
<td>05%</td>
<td>14%</td>
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</table>

YOU ARE ENCOURAGED TO USE THE REST OF THIS PAGE AND THE BACK OF IT TO MAKE COMMENTS AND CRITICISMS OR TO "LET OFF STEAM" ABOUT THE NEBRASKA PROGRAM. YOU MAY SIGN YOUR NAME IF YOU WISH TO MAKE THIS QUESTIONNAIRE AND THESE COMMENTS A MORE PERSONAL REPLY, BUT YOUR SIGNATURE WILL BE HELD IN STRICT CONFIDENCE.

THANK YOU AGAIN FOR YOUR TIME. PLEASE MAIL THIS FORM BACK AS SOON AS POSSIBLE.
CHAPTER I


9. Ibid.

10. Ibid.


15. State of Nebraska, Department of Agriculture and Inspection, op. cit., p. 8. See also that Department's Division of Nebraska Resources Publication, 1960 Census of Population: Nebraska Population Counts, April 1, 1960, p. 10.


23. Ibid.

24. Ibid.


27. Interview with Mr. J. Leroy Welsh, former Chairman of the President's Commission on Increased Industrial Uses for Agricultural Products, Omaha, Nebraska, September 4, 1961. Personal notes.

28. Commission on Increased Industrial Uses of Agricultural Products, op. cit., p. XV.

29. Ibid.


34. Lincoln Journal, Lincoln, Nebraska, August 10, 1966.
CHAPTER 2


5. Indeed, can industry maintain its own position, let alone accept and aid agriculture: "Marketing men across America are facing a fact that is hard for them to swallow. America's capacity to produce may have outstripped its capacity to consume."--Ernest Dale, Graduate School of Business and Public Administration, Cornell University, as quoted by Vance Packard in The Waste Makers, (New York: David McKay Publishing Company, Inc., 1960), p. 9.


7. Commission on Increased Industrial Uses of Agricultural Products, op. cit., p. XIV.


9. Commission on Increased Industrial Uses of Agricultural Products, op. cit., p. XIV.


11. Ibid., pp. 7-21.


19. Dr. G. W. Irving had been Deputy for Utilization Research in the USDA since 1957. He was friendly toward Nebraska and its Agriresearch Program and therefore had his laboratories cooperate.


24. Ibid.

25. Ibid.
26. U.S. House Committee on Agriculture, Subcommittee on Research and Extension, op. cit., p. 76.


29. Mr. Fred Seaton, Speech, University of Nebraska, Lincoln, Nebraska, October, 1962. Personal notes.


31. Ibid., pp. 126-127.

32. Ibid., p. 127.

33. Ibid.

34. Ibid., pp. 127 and 238.


37. Ibid., p. 165.

38. Ibid., p. 175.

39. Ibid.

40. Ibid., p. 168.

41. U.S. House Committee on Agriculture, op. cit., p. 10.

42. Ibid., p. 85.
CHAPTER 3


7. Ibid.


12. Ibid.


19. Ibid.


25. Ibid.


29. Ibid.; For additional information see *Syracuse Journal-Democrat*, Syracuse, Nebraska, July 7, 1960.

30. Amylose: "Any compound obtained by the hydrolysis of starch." See unabridged dictionary for full technical description.


32. In a more friendly instance, Cornell University scientists expressed amazement at some of the Program's accomplishments when a Nebraska Department of Agriculture member paid an unofficial call in 1962. Personal notes.

33. State of Nebraska, Department of Agriculture and Inspection, *op. cit.*, p. 19.


36. Ten years later some of the paper was still usable. This researcher was given a supply on which to have his manuscripts done.


39. Memo from Nebraska Department of Agriculture and Inspection Information Officer to Department Director Finigan, "Conference with Dr. W. D. McClay," June 15, 1961. Files of the Department.


42. State of Nebraska, Department of Agriculture and Inspection, Biennial Report, June 30, 1962, pp. 13-14.

43. State of Nebraska, Department of Agriculture and Inspection, Biennial Report, June 30, 1960, pp. 17-21.


45. Ibid., October 6, 1960.


47. Omaha World-Herald, Omaha, Nebraska, December 15, 1964.

48. Ibid.

49. Dr. Charles N. Kimball, 15th Annual Report of the President of the Midwest Research Institute to the Trustees, Kansas City, Missouri, May 9, 1960, pp. 1-3.


53. Sidney Telegraph, Sidney, Nebraska, June 8, 1960.
54. David City Banner, David City, Nebraska, December 15, 1960.
58. Interview with Pearle F. Finigan, Director, Nebraska Department of Agriculture and Inspection, September 25, 1962. Personal notes. For an example of the press reports referred to see Fremont Guide-Tribune, Fremont, Nebraska, February 26, 1960.
60. Minutes of the Meeting, Files of the Nebraska Department of Agriculture and Inspection, State Capitol, Lincoln, Nebraska, January 6, 1960.
61. Ibid.
63. Ibid.
64. Columbus Telegram, Columbus, Nebraska, November 30, 1960; Lincoln Journal, Lincoln, Nebraska, November 16 and 21, 1960.
65. Lincoln Star, Lincoln, Nebraska, February 27, 1960.
66. Ibid.
68. Omaha World-Herald, Omaha, Nebraska, March 1, 1962.
69. Ibid.
70. Omaha Journal-Stockman, Omaha, Nebraska, March 9, 1962.

71. For complete information on this organization's functions see Market Digest, June 7, 1962.


73. Sidney Telegraph, Sidney, Nebraska, May 21, 1962.


77. Omaha World-Herald, Omaha, Nebraska, September 29, 1960.


79. State of Nebraska, Department of Agriculture and Inspection, Resources Division, Nebraska On The March, November 1961.

80. Omaha World-Herald, Omaha, Nebraska, November 8, 1961.


82. Farmers Union, Nebraska Farmers Union, Omaha, Nebraska, August 9, 1960.

83. Alliance Times, Alliance, Nebraska, November 25, 1960.

84. Holdrege Citizen, Holdrege, Nebraska, June 29, 1960.


86. Holdrege Citizen, Holdrege, Nebraska, June 29, 1960.


88. Ibid., for details on modification of the bill.

89. Ibid., May 3, 1961.


91. Ibid., October 27, 1960.

93. State of Nebraska Department of Agriculture and Inspection, Biennial Report, June 30, 1960, p. 18.

94. State of Nebraska, Nebraska Revised Statutes, R. S. Supplement 1961, pp. 2-2505 and 2-2506.

95. Lincoln Star, Lincoln, Nebraska, April 27, 1960; Tecumseh Chieftain, Tecumseh, Nebraska, January 18, 1962.


100. Lincoln Journal, Lincoln, Nebraska, November 5, 1960.


103. Tecumseh Chieftain, Tecumseh, Nebraska, January 18, 1962.


110. Columbus Telegram, Columbus, Nebraska, June 6, 1962.


112. Omaha World-Herald, Omaha, Nebraska, June 18, 1962.

113. Ibid., November 6, 1962.

115. Falls City Journal, Falls City, Nebraska, October 29, 1962.


118. Syracuse Journal-Democrat, Syracuse, Nebraska, August 9, 1962.


121. Lincoln Journal, Lincoln, Nebraska, October 17, 1962.

122. Ibid., October 20, 1962.


125. Lincoln Journal, Lincoln, Nebraska, October 20, 1959.


129. Omaha World-Herald, Omaha, Nebraska, April 24, 1962.


135. Omaha World-Herald, Omaha, Nebraska, August 18, 1962.


137. Ibid., January 22, 1962.

138. This concludes the detailed enumeration and analysis of individual projects as they bore on the main goals of the Program. For commendable coverage of Program projects from 1959 to 1963 see Nebraska Farmer, Nebraska Farmer Publishing Company, Lincoln, Nebraska, May 5, 1962; and Omaha World-Herald, Omaha, Nebraska, December 30, 1962.


140. Pender Times, Pender, Nebraska, May 12, 1960.

141. Nebraska Farmer, Lincoln, Nebraska, September 1, 1961.


146. See report on the visit by a participant, Robert H. Terhune, Director of Agriculture, State of Ohio, Omaha World-Herald, Omaha, Nebraska, May 9, 1962.

147. Omaha World-Herald, Omaha, Nebraska, August 29 and September 10, 1962.


149. Lincoln Journal, Lincoln, Nebraska, October 15, 1962; For a lengthy report of Morrison's views on agriculture and his Director of Agriculture (views which did not change from 1960 to 1965), see Lincoln Journal, Lincoln, Nebraska, August 4, 1960.
150. Ibid., October 11, 1962.

151. Ibid.

152. For further information on the campaign stands of Morrison and Seaton with regard to the Nebraska Program see lengthy report in Lincoln Journal, Lincoln, Nebraska, October 20, 1962.


154. Committee Hearing testimony as reported by Columbus Telegram, Columbus, Nebraska, May 24, 1963.

155. See Director Finigan's praise of the state's press for its help in the Program in Mitchell Index, Mitchell, Nebraska, October 18, 1962.

156. Legislative Bill 795, 1963 Nebraska Legislature (71st Session).


158. Ibid.

159. Ibid.

160. Ibid.

161. Ibid.


165. Ibid.

166. One of the top supporters among the press who assisted with the education effort was Mr. Glen Kruscher, a Lincoln Journal and later Nebraska Farmer writer and news reporter. He later turned critic, and his investigative reporting got him thrown physically out of Finigan's office on one occasion. Ironically, he was chosen for the Director of Agriculture position when the next Democratic governor took office (Exon, 1971) -- after a four-year Republican interlude.


171. *Ibid*.


174. Interview with Ronald J. Mertens, Chief, Research and Education Division, and Acting Director, Department of Economic Development, Lincoln, Nebraska, July 25, 1972. Personal notes.

1. **Lincoln Star,** Lincoln, Nebraska, August 17, 1960.


6. **Time,** April 24, 1972, p. 22.


CHAPTER 5


APPENDIX A


5. Omaha World-Herald, Omaha, Nebraska, January 10, 1963.


7. For complete article see Omaha World-Herald, Omaha, Nebraska, November 28, 1962.
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May 20, 1959.

Nebraska State Legislature, Legislative Journal.
68th Session, 16th Day, September 28, 1957, Page 194;
69th Session, 26th Day, February 2, 1959, Page 333;
69th Session, 97th Day, May 25, 1959 Pages 1762-63;
69th Session, 102nd Day, June 1, 1959, Page 1468;
69th Session, 108th Day, June 9, 1959, Page 1795;
69th Session, 109th Day, June 10, 1959, Page 1619;
69th Session, 119th Day, June 26, 1959, Pages 2249-50;


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Chadron Record, Chadron, Nebraska, May 23, 1960.
Columbus Telegram, Columbus, Nebraska, November 30, 1960; June 6, 1962.
David City Banner, David City, Nebraska, December 15, 1960.
Falls City Journal, Falls City, Nebraska, October 29, 1962.
Greeley Citizen, Greeley, Nebraska, June 15, 1962.
Gresham Gazette, Gresham, Nebraska, June 30, 1960.
Hartington News, Hartington, Nebraska, April 17, 1963.
Kansas City Consumer, Kansas City, Missouri, January 15, 1963.


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ABSTRACT

ADULT EDUCATION ASPECTS OF A PROGRAM OF STATE GOVERNMENT

Kent K Murray, Ph.D.

University of Nebraska, 1974

Adviser: Wesley C. Meierhenry

I think I can see Adult Education deriving great benefit from the theorizing and research of the "change theorists" now so active. I see our technology being enriched by increased understanding of the process of individual, institutional, and social change, and especially of the phenomenon of resistance to change and strategies for helping with change.

Finally I see an enlargement of the definition of the clientele of Adult Education away from a primary focus on individuals qua individuals toward a concern also with institutions, communities, and even larger social systems. I see us Adult Educators becoming increasingly concerned with improving educative quality of total environments and increasingly skillful in planning programs that will accomplish this end.

Malcolm S. Knowles
Professor and Philosopher of Adult Education
Adult Leadership
February 1967

With the passage of LB-722 in 1959, the State of Nebraska embarked on one of the most extensive and challenging adult education programs of the past decade. LB-722 established the Nebraska Agricultural Products Industrial Utilization Research Program (Nebraska Program) which in the course of its ambitious life undertook the re-education, first of Nebraska's production-oriented agricultural citizens, and then of other agricultural states, the USDA and
Congress. Seen as an adult education program, the Nebraska Program clearly represented the kind of "enlargement of the definition of the clientele of adult education" proposed above by Malcolm Knowles. This was adult education moving "away from a primary focus on individuals qua individuals toward a concern also with institutions, communities and even larger social systems." It was education functioning within and concerned with a total environment, an environment whose production-oriented values, and whose success in living up to those values, had back-fired resulting in huge and embarrassing agricultural surpluses which depressed the market value of agricultural commodities, reducing the agriculture worker's standard of living and his status in the eyes of his fellow citizens. Insofar as the Nebraska Program attempted to change values and attitudes it also functioned as a change agent, finding itself increasingly preoccupied with "the phenomenon of resistance to change and strategies for helping with change." Resistance to change was rooted in generations of emphasis on production and production research. Supporters of the Nebraska Program were convinced that utilization research was the solution to agriculture's problems: the Programs' educational objective was thus a reordering of research priorities and an attenuation of the production ethic.

The size of its clientele and its role as change agent in a total socio-economic environment were not the only things which distinguished the Nebraska Program. The Program was also distinguished by the fact that it was administered, not by a traditional educational institution, but by an agency of a state government (the
Nebraska Department of Agriculture) and in fact saw the state's educational institutions as part of its clientele: production-oriented like the state's citizens, resistant to change, committed to maintaining the status quo vis-a-vis agricultural research.

The Program's name is misleading. It sounded, not like an educational program, but like a research and development program. In fact, the Nebraska Program was originally conceived as a research and development program designed to find new uses for agricultural products, and although Program administrators came to see the Program's principal business as education, Nebraska citizens and their representatives in the State Legislature never ceased to hope that the Program would produce marketable products. This misunderstanding about Program goals was to create problems, particularly in the area of program evaluation: seen as an education program designed to change attitudes and to reorder priorities in agricultural research, the Nebraska Program was a great success; seen as a research and development program, it was disappointing (only one product got to the marketing stage).

Although the agricultural surpluses which gave rise to the Nebraska Program have gradually disappeared, the educative work of the Program will be of interest to those in the field of adult education who are engaged in programs of similar scope, or who are involved in education programs conducted by governmental agencies. The Program's problems and omissions, no less than its scope and daring, are instructive; in the judgment of this investigator, the Nebraska Program provided an exciting laboratory for testing the principles of adult education on a large population, and stands as a model for programs of similar scope and intent.