



Organization and operation of the Montana Extension Service
by Mamerto B Totaan

A THESIS Submitted to the Graduate Faculty in partial fulfillment of the Requirements for the degree of Master of Science in Agricultural Economics
Montana State University
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Abstract:

American experience in planning and aiding the economic and social betterment of its people has proven a very useful guide to leaders in relatively undeveloped countries. With respect to agriculture and agricultural folk, the United States Cooperative Agricultural Extension Service had much to offer as a model. Not only Eastern Nations, but Western European countries—particularly Scandinavia, Germany and Italy have benefited by a study of American Extension organization and methods. The relatively more undeveloped nations in Southeastern Asia have considerably more to profit by in this area of endeavor Here follows an inquiry-into the Federal, State (Montana is the particular example for this purpose) arid local aspects of the Cooperative Agricultural Extension Service for purposes of suggestion to those interested in promoting an Agricultural Extension Service in less developed countries. For this reason, the description is Organized as follows: "A Brief History of Agriculture and the Evolution of the Agricultural Extension Service in Montana" gives us a perspective of the development of the Extension Service as it grew in response to the needs of farming and farm families in this State.

"The Current Organization of the Montana Agricultural Extension Service" affords a look at (a) the Administrative and Supervisory Staff, (b) the Subject-matter Specialist Staff including the 4-H Club Staff, and (c) the County Agent and Home Demonstration Field Staff.

"The Classification, Description, Discussion of Methods Used by the Extension Service for the Diffusion of Information" describes and classifies the techniques of information diffusion, the various educational methods enjoyed such as, press releases, meetings and office calls.

"A Review of Research Literature Evaluating Agricultural Extension Methods of Information Diffusion" peruses some of the methodology and findings of, research. This is done in an effort to evaluate the effectiveness or usefulness of particular methods and to make some comparison between methods as to their relative effectiveness.

Finally, "Problems of the New Philippine Agricultural Extension Service" describes what is being done in the Philippines to extend agricultural and homemaking information to the farm population and points out some of the problems in applying American and particularly Montana Extension experience to the Philippine situation?. Here the, writer takes the opportunity to point out some cautions with respect to the transferring of lessons from American experience to Ms homeland. He plans to work in the new Extension Service upon his return to the Philippines.

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The Department of Agricultural Economics is contemplating some evaluative research on extension methods. It is hoped that the present paper will furnish some background information, on the Montana

Extension Service organization and some suggestions from out-of-state research about the methodology for, and areas of, profitable inquiry into the evaluation of Extension methods for diffusing information.

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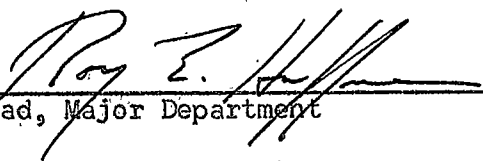
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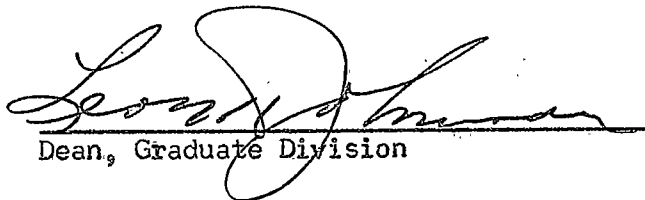
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TABLE OF CONTENTS

ACKNOWLEDGMENT iii

PREFACE iv

PART I. A BRIEF HISTORY OF AGRICULTURE AND THE EVOLUTION OF THE
AGRICULTURAL EXTENSION SERVICE IN MONTANA 1

 Introduction 1

 Explorations 1

 The Indian Frontiers in Montana 2

 Agricultural Progress Among the Indians 3

 Railroads 3

 Beginning of Agriculture 4

 The Development of the Gallatin Valley 5

 Land Laws 7

 The Role of the Government 8

 Development of Agricultural Education in the U. S. 9

 Montana Becomes An Agricultural State 12

 The Beginning of Extension Work in Montana 14

 The Smith-Lever Act 17

 Montana Extension Service Legislation 18

PART II. THE CURRENT ORGANIZATION OF THE MONTANA AGRICULTURAL
EXTENSION SERVICE 20

 Overall Organization and Administration 20

 Federal Acts 20

 Secretary of the United States Department of
 Agriculture 20

 The Secretary of the United States Treasury 21

 The State College of Agriculture Shall Perform
 the Following 22

 The County on the Local Farmer-Rancher Level
 Shall Perform the Following 23

 Division Organization 24

 The Montana State College 24

 The Director of the Montana Extension Service 24

 Agricultural Supervisor 25

 Subject-Matter Specialist 25

 Montana County Extension Agents 28

 Home Demonstration 30

 State Home Demonstration Leader 32

 Assistant State Home Demonstration Leader 33

 Home Demonstration Specialists 33

 Home Demonstration Agents 33

 4-H Clubs 34

 Montana Extension Service Publication Department 36

 Montana Extension Service Finance Department 37

PART III.	CLASSIFICATION DESCRIPTION, AND DISCUSSION OF METHODS USED BY THE EXTENSION SERVICE FOR THE DIFFUSION OF INFORMATION	38
	Direct Method	39
	Farm and Home Visits	40
	Office Calls	41
	Informational Meetings	43
	Demonstration	43
	Indirect Method	45
	Press	45
	Bulletins and Circulars	46
	Special Methods	49
	Fairs, Exhibitions and Contests	49
PART IV.	REVIEW OF RESEARCH LITERATURE EVALUATING AGRICULTURE EXTENSION METHODS OF INFORMATION DIFFUSION	51
	Direct Methods	52
	Office Calls	52
	Informational Meetings	53
	Meetings	53
	Indirect Methods	54
	Press	54
	Bulletins	55
	Circular Letters	55
	Radio	56
	Television	58
	Special Methods	58
	Exhibits	58
	Exhibits	60
	General Effectiveness of Extension Work	60
	Agriculture	60
PART V.	PROBLEMS OF THE NEW PHILIPPINES EXTENSION SERVICE	63
	Introduction	63
	Mutual Security Agency	64
	Organization	64
	National Level	64
	Provincial Level	64
	Municipal Level	65
	4-H Club	65
	Some Problems	65
	Assumptions and Conclusion	69
	SELECTED BIBLIOGRAPHY	70

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PREFACE

American experience in planning and aiding the economic and social betterment of its people has proven a very useful guide to leaders in relatively undeveloped countries. With respect to agriculture and agricultural folk, the United States Cooperative Agricultural Extension Service had much to offer as a model. Not only Eastern Nations, but Western European countries--particularly Scandinavia, Germany and Italy have benefited by a study of American Extension organization and methods. The relatively more undeveloped nations in Southeastern Asia have considerably more to profit by in this area of endeavor.

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PART I

A BRIEF HISTORY OF AGRICULTURE AND THE EVOLUTION OF THE AGRICULTURAL EXTENSION SERVICE IN MONTANA

Introduction

Montana is the Treasure State in the United States. It was a part of the geographical territory of the Louisiana Purchase, consummated between the United States and Spain, April 30, 1803.^{1/} Its geographic area was first included in the territory of Idaho between March 3, 1863 and May 26, 1864.^{2/} Eight counties of what is now Montana were created by the first Assembly of Idaho in 1863. Montana became a distinct and separate Territory, May 26, 1864, with Sidney Edgerton as its first governor,^{3/} and became a member state in the Union, November 8, 1889.^{4/}

Explorations

Lewis and Clark undertook the first extensive and official exploration for the United States Government of the northern areas covered by the Louisiana Purchase. They entered what is now Montana on April 25, 1805.^{5/} There were subsequent explorations headed by white men after that of Lewis and Clark. These pioneered the white men's settlements in Montana largely through the formation of the fur trade companies and the mining frontiers which drew the attention of people in the East.

^{1/} Burlingame, M. G., The Montana Frontiers, State Publishing Co., Helena, p. 150.

^{2/} Ibid., p. 151.

^{3/} Ibid., p. 154.

^{4/} Ibid., p. 390.

^{5/} Ibid., p. 5.

The Indian Frontiers in Montana

The Indians were the first inhabitants of Montana. When the historic period of Montana began, the Indians were spread out sparsely in the area. There were several major tribes of Indians, each tribe settled in a clearly defined geographical region of the state, and sometimes extending over into adjacent states or Canada. The Indians had distinct tribal differences of language and customs and their hunting areas were well marked in Montana.^{6/}

The Missouri River and its major tributary, the Yellowstone, during the exploration period, were about the most easily accessible routes for the white men in the northeastern and central Montana area.

The Indians were largely found in the mountains and along the streams that afforded them means of transportation and travel. With the advent of the horse the Indians became more mobile than formerly when the dog was the chief beast of burden. The explorers and the fur traders brought with them certain ways of living that gave rise to jealousies, strife and disease which eventually resulted in disorganization of the Indians way of life and decrease in numbers. Treaties were made among the whites and Indians and between Indian tribes.

These early agreements between the Indian tribes and the white man were important at the time of the opening of the route to the Pacific across Montana. The Montana Indian tribes received food products and other goods each year for a specified length of time as a result of the early agreements with the white men. These goods were known as annuities.^{7/}

^{6/} Ibid., p. 18.

^{7/} Ibid., p. 32.

Agricultural Progress Among the Indians

The way of life of the Indians was a matter of serious concern to the white men. Agricultural activity, and sedentary settlement were considered the solution to the problem of subduing the Indians. From the start the government provided support to the projects designed to further the agricultural education and uplift of the Indians but many difficulties arose. The need for the change from hunting to an agricultural economy came much faster than the Indians could make the transition.^{8/}

Railroads

The coming of the livestock industry, mining, agricultural settlement by the whites and then the railroads to Montana heralded the eradication of the frontier in Montana. The Northern Pacific Railway Company was chartered in 1864.^{9/} Primary concern revolved around securing feasible routes and advantages in desirable townsites. New agreements were necessary with the Indians in order to make possible the land grants to railroads and settlements along the new lines. The ceremony of driving the golden spike, completing the construction of the transcontinental line, took place on September 8, 1883.^{10/}

Later, in addition to railroad construction, highway construction was carried through chiefly from east to west within Montana. The network of railroads constructed across Montana was a distinct mark of a mature

^{8/} Ibid., pp. 189-190.

^{9/} Ibid., p. 146.

^{10/} Ibid., p. 147.

community carrying all the major economic activities utilizing resources in the area.

Beginning of Agriculture

The rapid settlement followed the repeated explorations of Montana. Among the early interests that drew people to Montana were the missionizing of the Indians, fur trading, gold mining, cattle raising, and lumbering, but rarely farming in the diversified manner.^{11/} The first productive farming in Montana was done by the Roman Catholic missionaries at the St. Mary's Mission in the Bitter Root Valley. The Indians felt that the putting of good grains and potatoes in the ground was a sign of the white man's lack of understanding. The Indians protested the first farming that took place in 1842.^{12/} The farming done by the missionaries encouraged Indians to take up farming and settle on or own parcels of land to farm. The white men in providing agricultural products greatly helped the Indians to save themselves from hunger. In places where the Indians carried on agricultural work and in the places where they had been able to trade, they considered the white man's food a blessing.^{13/}

The mining industry attracted many people to Montana. Some of the people who came to the mining areas had agricultural experience, though limited and unadapted for the arid and semi-arid conditions of the state. Some came to establish mining claims and some came to work in the mines

^{11/} Ibid., p. 333.

^{12/} Ibid., p. 333.

^{13/} Ibid., p. 336.

to earn a living. When the best mining areas were claimed and the late-comers found it hard to make money or even a living, they began to look for a plot of ground to farm for a living.. The mining industry had taken one mining gulch after another, but some people were fortunate enough to have taken fertile valleys for agriculture near the mining camps. The conditions in Montana as to altitude, soil, moisture and growing seasons were so different from the regions of the East and Middle West that the settlers hesitated to undertake farming except as a last resort.^{14/}

However, the position of Montana greatly aided the rapid promotion and development of early agriculture. It was in a very favorable situation to supply flour to Idaho mines which were difficult to reach from the Utah region. The first area to be developed for purposes of agriculture was the Bitter Root Valley, where the work of the missionaries at St. Mary's had been established and successfully operated. In connection with trading, general farming operation following 1850 was carried on by the settlers. Strict owner-operated farming was conducted in Montana at first, since the ranchmen were unable to compete with the wages offered by the mining localities.^{15/}

The Development of the Gallatin Valley

F. J. Dunbar is said to have built the first house near the Three Forks of the Missouri in the Gallatin Valley in November, 1862.^{16/}

^{14/} Ibid., p. 337.

^{15/} Ibid., p. 338.

^{16/} Ibid., p. 337.

Large-scale farming was soon found to be best suited to the Gallatin Valley; it eventually became the granary of the territory.

John M. Bozeman was one of the first to make contributions to the development of the Gallatin Valley. In his trips across the Valley in 1863 on his way to mark a route for emigrant trains from the Oregon Trail to Virginia City, he observed that the Gallatin was an exceptionally fertile valley. John M. Bozeman, Daniel E. Rouse and William J. Beall made agreements and arrangements among themselves in 1863 to go to the upper end of the valley where Bozeman observed that better soils could be found. The town of Bozeman, named after the leader, John M. Bozeman, was organized in 1864 and the center of the settlement of Three Forks nearer the head of the Missouri soon moved to the deeper, better-watered soils near the present townsite.^{17/}

Soon after the introduction of productive farming in Montana, the Gallatin Valley farmers made use of agricultural machinery on the farm. An account is quoted from Burlingame:

"In 1865, some twenty thousand bushels of wheat were produced in the Gallatin Valley. Reapers were brought up the Missouri and overland from Fort Benton at a cost of about five hundred dollars (\$500) each. A thresher was brought across the Oregon Trail with great difficulty, but at the price of twenty-five cents (\$0.25) per bushel for threshing wheat it proved profitable to its owners... Blessed with an excellent climate, presenting the finest valley system to be found in the entire Rocky Mountain plateau, and possessing a soil singularly fertile and lasting, Montana offers unexceptional inducements to the agriculturists..."

^{17/} Ibid., p. 142.

Land Laws

At the time of the early settlement of Montana, important national legislation was passed. This legislation was particularly applicable in Montana because it insured a balanced land tenure, at least with respect to size of holdings.

The Preemption Law was passed in 1841, allowing the person settling upon land before survey was made to have first claim to it at the minimum price. The settler could take as much as 160 acres and file within three months after a survey had been made.^{18/}

The Homestead Act was passed in 1862, which provided that a person might acquire 160 acres free of any charge except filing fees, which usually were less than a total of \$25.00. The homesteader was required, however, to live upon the land for a certain length of time each year for five years, cultivate a part of it, and make certain improvements. The Homestead Act was not as useful in Montana as the people in the eastern part of the United States hoped it would be, since 160 acres of land was not sufficient for a single family farm except in the most fertile valleys.^{19/}

The Timber Culture Act of 1873, amended in 1878, was passed for the improvement of the Great Plains and to promote settlement. It gave 40 acres to anyone who would plant and care for 2 1/2 acres of trees for eight years, 80 acres for 5 acres of planting, and 160 acres for 10 acres of trees. Because trees were expensive to obtain and difficult to raise, this privilege was little used in Montana.

^{18/} Ibid., p. 347.

^{19/} Ibid., p. 348.

The Desert Land Act of 1877 was passed to encourage settlement in the arid regions. A settler might file on 640 acres of land which needed water to make it usable. He was to pay 25 cents per acre at the time of filing, and when he had given proof within a three-year period that provision had been made for irrigating the land and that a certain amount was under cultivation, he could take full title to the land upon payment of an additional one dollar per acre.^{20/}

The Timber and Stone Act of 1878 was proposed to give each settler who desired it access to timber to use for buildings, firewood and other uses, and perhaps stone for building purposes. It was used to a large extent in the forested region of western Montana. Under this Act a person might file 160 acres of unoccupied, unimproved, surveyed, and non-mineral land for his own use, paying a minimum price of \$2.50 per acre.^{21/}

Montana is very rich in natural resources. At the beginning of the early explorations to the West, the potential resources, soils, waters, ore and oil minerals, forests, plains and valleys were widely known and attracted the early explorers and emigrants. The two important and distinct economic industries are mining and agriculture which along with oil today make Montana the Treasure State of the Union. Both the National and State governments, along with other agencies, seek to encourage agriculture.

The Role of the Government

The State of Montana, aided by Federal Legislative Acts, has established and maintained the institutions and agencies to encourage the

^{20/} Ibid., p. 348.

^{21/} Ibid., p. 349.

development of natural resources. Three state and federally supported agencies, the Montana State College, the Montana Agricultural Experiment Station and the Montana Extension Service, serve the agricultural development of the state.^{22/} The first two were authorized in 1893. The third was created in 1914 by Federal Act and in 1915 by enabling legislation in Montana primarily to extend important services, especially the research findings of the Montana Experiment Station, to improve the conditions of the Montana farmers. In addition there are several state and federally supported field and area research stations that assist in studying agricultural problems and their solution.

Development of Agricultural Education in the U. S.

The idea of extension service was not a new thing, for it had long been in the minds of rural leaders. The Agricultural Extension Service, with the passage of the Smith-Lever Act in 1914, became an institution of the state and federal governments. The extension idea manifested itself in various activities for the improvement of agriculture in the United States. The study of farm problems is recorded in connection with the colonial leaders of America. In these times there were fairs where the latest improvements in farm implements, improved livestock and the best products of the farm and garden were exhibited. At the fairs the farm people saw the best products of the time and also exchanged experiences and views on matters concerning farm improvements and practices.

As time passed the successful fairs created further interests and discussions on farm topics by rural people in their gatherings. Soon

^{22/} Dunbar, R. G., Agriculture, Typewritten, Montana State College.

societies and clubs were formed for the promotion and extension of agricultural progress. Some of the more successful societies had funds for prizes for farm and garden exhibits.

The fairs and the farmers' meetings became popular in the farming areas of the United States. Fair associations were formed, several meetings held during the winter, and annual fairs put on in nearly every county in the more populous rural areas of the state. Out of these fairs and gatherings standardized procedure grew, and a state policy with reference to fairs was established with the support of the State Department of Agriculture.

Nationalism during the early American colonies was more prevalent than it is now. Each state prerogative was guarded against federal encroachment so that most internal policies were subjected to state action. The local and state initiative were almost wholly responsible for the enterprises for the promotion of agriculture. The variety of organizations and schemes led to several different ways of doing things for the advancement of agriculture.

Farmers' institutes were formed and held in the agricultural regions. Conducted as parts of county fairs or as separate local or state activity, they served a large and useful part in the development of American farming. They were media for the dissemination of agricultural knowledge in the United States; rural progress was markedly influenced by them. Farmers' institutes or group discussions in some form may not be entirely dispensed within the promotion of education among farmers.

The rural people continued their quest for a more abundant life. This was shown in the fairs, societies, clubs and institutes. As a result there were established the agricultural colleges which gave full-time employment at public expense to many of the qualified and recognized agricultural leaders. Progress became more rapid with the influence of the agricultural college. The intricacies in fundamental sciences needed in collegiate education led to the association of the experiment station with the agricultural college for mutual agricultural research.

The farming segment of the country made insistent demands for information and instruction on the problems that confronted them. The agricultural college and the experiment station personnel tried to satisfy such demand. This afforded close application of the teachings of the college and the findings of the experiment station to these problems. There were no clear differences in the public mind between the research and the extension work in agriculture. The growing demand from the rural people resulted in the organization of a separate extension staff.

All men are directly or indirectly concerned with the products of the land. The farmers are not the only ones interested in promoting agriculture. Many helpful ideas in farming come from other types of businessmen. They are constantly mingling with the farmers for the promotion and carrying on of agricultural extension. The railroad companies can be singled out as having been very active in agricultural extension work. Usually farming trains were operated over the railroads that carried exhibits, lectures, and demonstrations on several aspects of agriculture. There

were other companies that closely cooperated with the state departments of agriculture, agricultural colleges and experiment stations in the promotion of extension work.^{23/}

Montana Becomes an Agricultural State

The two early leading industries of Montana were mining and livestock ranching. The college of agriculture and the experiment station were organized with meager support and their popularity was not widespread during the first part of their existence. The mining and the livestock industries were hostile toward the agricultural college for a long time. They were independent and even opposed to the development of farming. This feeling was particularly evident among the livestock raisers of Montana. Self-interest was clearly indicated in their attitude toward farming. Farming was antagonistic to the free range livestock business; the less farming, the better for livestock ranchers. Although the development of scientific farming was discouraged by the range industry, many men with extensive livestock holdings encouraged and fostered scientific agriculture in spite of the menace to their own interests.^{24/}

The livestock industry reached its height at the beginning of the twentieth century so that by virtue of the introduction of more crop farming and diversification favorable conditions emerged thereafter for the better development of a more balanced agriculture. General advance in

^{23/} Cooley, F. G., A History of the Montana Extension Service, Typewritten, Unpublished, 1924.

^{24/} Ibid., p. 3.

land prices came all over the country. Farm owners in the older states of the East sold their land at high prices and invested the proceeds in cheaper lands in the West. The old farm owners knew the farming game and were confident of their ability to succeed in it in the cheap new lands of Montana. With the aid of savings and easy credits, many people from other slow progressing industries turned to agriculture. Public domain, large Indian reservations, grazing lands and sub-marginal lands were surveyed, occupied and placed into production.

Government reclamation by means of extensive irrigation works was pushed through, especially in the semi-arid regions of the West. In these regions, large sums of government and private money were spent for irrigation development resulting in an increase of business and employment of labor. Large numbers of settlers with means were attracted by the lands improved by private and government reclamation and they freely invested not only in land but in all kinds of equipment, livestock, building materials and family needs.^{25/}

Old irrigation systems were improved, thus valuations of improved farms and new farms were enhanced. The grants of land to railroads were opened for sale after their survey and division to the desired farm sizes. Some Indian reservations were opened for settlement one by one.

With the homesteading, sale of railroad land and reclamation going on in Montana, speculation came along. Land companies and agencies were

^{25/} Ibid., p. 4.

formed and operated in the principal towns. They took care of eager land buyers. Advertisements in newspapers throughout the country made Montana farms and products popular. Trains and cars of Montana products were exhibited in the East. The railroads aided in the development of farm production and the prosperity of Montana settlers.

Capital and credit to settlers sometimes in abundance and sometimes in a limited way only, provided by banks and loan agencies created for the purpose were important factors in the rapid settlement, development and improvement of the Montana agricultural areas. The lending institutions were very optimistic in the success of the farming industry so that loans in amounts quite hard to secure nowadays were readily granted to farmers. However, the unwise and enormous credit expansion created farm and bank failures when the period of deflation came in subsequent years.

The period of land settlement and speculation in Montana carried unidentified activity in agricultural extension which was not then recognized as such but is today very visible. The fairs, farmers' and livestock growers' meetings, served by the agricultural college and agricultural experiment station, were an extension activity of a sort.^{26/}

The Beginning of Extension Work in Montana

The Montana State College and the Agricultural Experiment Station attempted to answer some of the demands of the Montana farmers for help with their farm problems. There was a need for a separate staff of extension workers. Dr. W. J. Hartman, a livestock specialist, was employed in

^{26/} Ibid., p. 5.

1911 in agriculture extension work and also acted as assistant in charge of boys' and girls' clubs.

The leaders of agricultural education became conscious of the need for home economics instruction for farm homemakers. Recommendations were considered for the permanent employment of an instructor in this particular subject. Miss Stoner, Mrs. Laws, and Miss Lucille Brewer were employed, but permanent instruction was delayed owing to insufficient funds.

The Montana State Legislature passed an act on March 17, 1913, which enabled counties to appropriate money for the employment of agricultural agents. The first county agent in the United States was located in Texas in 1910 in the person of Dr. Seaman Knapp. Next came an agent in Broome County, New York, in 1911. M. L. Wilson was employed as the first county agent in Montana on May 1, 1913.^{27/} Mr. Wilson was a lecturer in the Farmers' Institute and supervisor of demonstration farms before his appointment.

The Montana Experiment Station and the Northern Pacific Railway operated demonstration farms in Forsyth, Bloomfield, Helena, Twin Bridges, etc. Better adopted crops and a system of cultivation without irrigation were demonstrated on these farms. Large meetings were held before harvest at these demonstration farms, which enabled the people to see what could be done and the way it had been successfully handled.

Mr. Wilson was assigned as county agriculturist to Custer and Dawson counties with headquarters at Miles City and Glendive. Ten counties now

^{27/} Ibid., p. 7.

comprise the territory included in the two counties of Custer and Dawson.^{28/} The area was an open range without fences or graded roads. Trails across the prairies consisted of wheel tracks, a comfort for travelers only because it gave confidence of reaching one's destination. Just after the coming of Mr. Wilson as county agent, the homesteaders and settlers began to fence the open range, trails were straightened and the roads were improved. Mr. Wilson served faithfully and well the people in the vast area. County agent work continued in Custer and Dawson Counties in 1913 and later, five county extension agents were assigned in the same territory.^{29/}

The office of the Farmers' Institute in Montana employed and assigned Carl H. Peterson as county agent to Fergus County in May, 1913. He was a superintendent of the college farm before his employment as county agent. Under the enabling law, the county commissioners of Fergus appropriated the sum of \$1,200 annually for county agent work, after receiving a petition signed by 51 percent of the county's voters engaged in farming. Fergus is the only county in Montana with the distinction of securing enough signatures to petition for an agent to satisfy the law.

The year before the passage of the Smith-Lever Agricultural Act, the Farmers' Institute Office gave advice and assistance to Wilson and Peterson in their work as county agents in Montana. However, they performed the work largely on their own initiative. Their work was so successful and valuable that Wilson became the first state leader of county agents and Peterson continued until 1924 as county extension agent.

^{28/} Ibid., p. 7.

^{29/} Ibid., p. 7.

The Smith-Lever Act

The United States Congress after several sessions under the pressure from the agricultural colleges, farmers' organizations, Chambers of Commerce and business groups, passed the Smith-Lever Act on May 8, 1914. The long deliberation over the Act before its passage by its advocates in the Congress acquainted a large number of interested people in the nation with it. The Smith-Lever Act is specific in its stipulation of the procedure to be used to accomplish its objectives.

The Smith-Lever Act has several salient features, which are:

1. The appropriation of a large sum of money to states for agricultural extension work.
2. A cumulative principle whereby this appropriation is increased yearly for ten years, thus providing for steady growth and avoiding the waste of public money from the sudden expansion without adequate planning.
3. A partnership with the states giving the latter an equal share in the responsibility of the work. All appropriations under this Act in excess of \$10,000 to each state must be offset by an equal appropriation by the state for the same purpose.
4. Division of these federal funds is according to agricultural population. Cities and towns of over 2,500 inhabitants are not included in computing the share of each state.
5. Emphasis of employment of local resident agents (agricultural, home economics or 4-H clubs) as the medium for extension work.

6. Creation of a federal administrative and supervisory office to direct and regulate the work of the states, approve the projects, and audit the expenses and examine the accounts.

Montana Extension Service Legislation

The Montana State Legislature had passed an act before the Smith-Lever law, authorizing a board of county commissioners to appropriate \$1,200 a year for the salary and expenses of a county agriculturist after receiving a petition signed by 51 percent of the county's voters engaged in agricultural pursuits. This act did not create the employment of county agents in most of the counties. Commissioners only appropriated money for the work when public opinion was favorable.

The Montana State Legislature passed in 1917 the enabling law removing the limit in amount of funds appropriated by boards of county commissioners and omitting the need of the petition of 51 percent of farmers in the county.

The financial foundation for extension work in Montana has three points of support:

1. Federal allotment under the Smith-Lever appropriation was initially \$10,000 per year, increased by \$2,400 each succeeding year, reaching an annual total appropriation of \$40,000 in 1923 which was the amount received under the original Smith-Lever Act. During World War I, extension allotments to the states were greatly increased and Congress has continued to make an annual supplemental appropriation for

extension work which is prorated to the state according to the agricultural population, in harmony with the provisions of the Smith-Lever Act.

2. The Montana Legislature appropriates funds to support extension work sufficient to match the federal allotment.
3. County commissioners appropriate from the general fund or make a special levy for extension work. Appropriations by counties range between \$2,400 per year minimum for one agent to \$6,500 annually where two agents are involved.^{30/}

^{30/} Ibid., p. 8.

PART II.

THE CURRENT ORGANIZATION OF THE MONTANA AGRICULTURAL EXTENSION SERVICE

Overall Organization and Administration

Federal Acts

The Morrill Act was passed by the United States Congress on July 2, 1862 (First Morrill Act). It provided for the donating of public lands to the several states and territories for the purpose of providing colleges to promote learning in agriculture and the mechanical arts.

The Hatch Act of March 2, 1887 provided Federal Aid for Agricultural Experiment Station to be associated with the Agricultural Land-Grant Colleges provided for earlier under the Morrill Act.

In line with the above emphasis upon agricultural concern and legislation the Smith-Lever Act of May 8, 1914, provided funds for cooperative agricultural extension work. This act, besides having appropriation provisions, also has directly and indirectly reposed authority, duties and responsibilities to officials and employees of the federal, state, county, and agricultural colleges on cooperative agricultural extension work to achieve the purposes suited by the Act.

Following are other aspects of organization and function to show the nature and degree of coordination between federal and state agencies for the welfare of agriculture.

Secretary of the United States Department of Agriculture:

1. Will mutually agree with the state agricultural college on the projects to be carried out in compliance with the Federal Act.

2. Shall allocate the appropriation annually to the states in accordance with the provisions of the Act.
3. Shall warrant the United States Secretary of the Treasury to pay to the treasurer or other officers of the state duly authorized by the laws of the state to receive the appropriation.
4. Shall ascertain and certify to the Secretary of the Treasury as to each state whether it is entitled to receive its share of the annual appropriation and the amount that it is entitled to receive under the Act.
5. Shall report with facts, reasons and the amount of withheld appropriation for a certain state or states to the President of the United States.
6. Shall make an annual report to Congress of the receipts, expenditures, and results of the cooperative agricultural extension work in all of the states.^{31/}

The Secretary of the United States Treasury:

1. Shall pay the semi-annual payment on the first of January and on the first of July to the state as warranted by the Secretary of the USDA.
2. Shall keep separately the appropriation withheld as ordered by the Secretary of the USDA and shall dispose of it as directed.

^{31/} Smith-Lever Act of 1914, Providing Fund for Cooperative Agricultural Extension work.

On the Non-Federal Level:

1. The state with an established agricultural college under the Act of July 2, 1862, shall direct the college to handle the affairs of the cooperative agricultural extension work in cooperation with the USDA.
2. The state legislature shall appropriate the sum of money equal to the federal appropriation for the state provided for under the provisions of the Smith-Lever Act of 1914 and under the provisions of the acts amending it.
3. The state shall render the detailed statement of the amount received and its disbursement on forms prescribed by the Secretary of the USDA.
4. The state shall replace any portion of the moneys received for the support and maintenance of the cooperative agricultural extension work, as provided in the Act that might have been diminished, lost, or misapplied.
5. The state shall appeal, if it so desires, to the United States Congress for the determination of the withheld appropriation for the state, if any.

The State College of Agriculture Shall Perform the Following:

1. The officials and employees of the college concerned should cooperate with the USDA in the cooperative agricultural extension work as provided for in the Smith-Lever Act of 1914.
2. The college should render annually on or before January 1 to the governor of the state where it is located a full and detailed

report of its operations in the direction of extension work as defined in the Act, including a detailed statement of receipts and expenditures from all sources for this purpose, a copy of which shall be sent to the Secretary of Agriculture and the Secretary of the Treasury of the United States.

3. The proper officials of the state agricultural college shall submit the plans to be executed in the state to the Secretary of the USDA.^{32/}
4. The college shall organize and maintain a definite and distinct administrative division for the management and conduct of the extension work in agriculture and home economics with a responsible leader or director selected by the governing body of the college and satisfactory to the Secretary of the USDA.

The County, on the Local Farmer-Rancher Level Shall Perform the Following:

The board of county commissioners is in charge of the finance appropriation for county extension service. Originally this board was authorized by the state legislature to appropriate funds for extension service purposes upon the petition of 51 percent of the farmers in the county. This Act did not do well among the counties. The enabling act was passed authorizing the board of county commissioners to appropriate money and to levy taxes for the purpose of extension work, removing the petition signed by 51 percent of the farmers. This Act today is operating well in the counties of the state of Montana.

^{32/} Ibid., Act of 1914.

Division Organization

The Federal Director of the United States Extension Service is directly responsible to the Secretary of the USDA. He has direct administrative and supervisory control over the officials and employees of the state agricultural college pertaining to the cooperative agricultural extension work in accordance with the provisions of the acts, circulars and memoranda of the USDA. The details are as follows:

The Montana State College

The President of the Montana State College and the Dean of the Division of Agriculture of the College as provided by the federal acts and State Legislature of Montana are directly responsible to the Federal Director of the United States Extension Service. They enter into mutual agreement with the Secretary of the USDA through the Federal Director of Extension Work as provided by acts pertaining to extension work. The governing body of Montana State College selects the State Director of the Montana Extension Service with the approval of the Secretary of the USDA. The President and the Dean have the joint administrative and supervisory management and control over the State extension work.

The Director of the Montana Extension Service

The Director of the State Extension Service is directly responsible to the Dean of Agriculture of the Montana State College. He has direct control over the staff: supervisors, extension editor, finance, State home demonstration leaders and the 4-H State leaders. He has the overall administrative and supervisory responsibilities of organizing the service for the most efficient work, determining and carrying out policies, developing

programs and making plans to carry out the purposes and objectives of the program, and establishing and maintaining satisfactory relationships between the college and the county operating groups. He is also in charge of evaluating and reporting the effectiveness of the work to his superiors and to the public, arranging for funds to finance the work, and has supervision over personnel selection, training and management.^{33/}

Agricultural Supervisor

There are 56 counties in Montana, divided into three districts: I, Western, II, Central, and III, Eastern.

The supervisor of each district is directly responsible to the director of the State Extension Service. He has direct supervision over the county agents in the counties in his district. He brings or sends information to and collects reports from the county agents in his district. He cooperates with the county agents in planning and carrying out the projects and programs designed for the improvement of the counties. He makes reports to the director pertaining to his district.

Subject-Matter Specialists

The subject-matter specialists in the extension work were few in the early stages of the Montana Extension Service. They extended the teachings of the department of their subject in the college and experiment station to the county extension agent and the people in the counties. In the public mind they were regarded as county extension agents to such an extent that they were directly requested by individual farmers to render services,

^{33/} Kelsey and Hearne, Cooperative Extension Work, Comstock Publishing Co., 1949, p. 43.

by-passing the county extension agents. They are appointed, however, with the intention that they are to prepare subject matter as assigned to them and to act as consultants in their area of specialization.

Currently the subject-matter specialists are members of the staff of the College in the several departments under the different divisions, and the College Experiment Station. The various department heads must approve the subject matter put out by the specialists in their departments, but, in most instances, the specialist makes his own selection of projects and programs and works out his own plan of work.

There are five broad groups of functions performed by subject-matter specialists related to extension work.

1. Planning functions.
2. Training functions.
3. Direct teaching.
4. Field studies to increase effectiveness of the work in their respective subject-matter lines.
5. Preparation of teaching materials.^{34/}

The Montana Extension Service may secure the services of the subject-matter specialists on the following: economics, marketing, range management, farm management, fish and wildlife, engineering, horticulture, weed control, sugar beets, poultry, livestock, home management, clothing, nutrition, and family life.^{35/}

^{34/} Ibid., p. 73.

^{35/} Moore, P. J., Annual Report, Montana 4-H Club, 1955, p. 6.

When there is more than one specialist in a subject, the work of the specialists may be coordinated to help solve problems involving one or more subject-matter fields. The head of the department or one of the specialists may be designated as the project leader. His duties are largely planning and coordinating,^{36/}

Kelsey and Hearne listed the specific duties of the specialists as follows:

1. Keeping state and county extension workers up-to-date with regard to the findings of science and their application to the solution of farm and home problems.
2. Serving as a bridge between subject-matter research departments and field extension workers; interpreting the results of research in terms of desirable farm and home practices.
3. Assembling and analyzing facts, clarifying problems in the subject-matter field, studying the status of his enterprise throughout the state and the nation.
4. Helping county agents to develop sound county and community programs in which subject matter is correlated to best serve the interests of the farm and home as a family unit.
5. Assisting agents in the effective use of teaching methods particularly adapted to the subject matter involved.
6. Backing up the county programs with suitable state-wide publicity, popular bulletins, form letters, motion pictures, film strips, slides, exhibit materials, and other teaching aids.
7. Making studies to determine successful and unsuccessful methods of organizing and conducting extension teaching in the particular subject-matter field.
8. Outlining measuring devices and procedures applicable to the subject-matter problems being attacked and assisting agents in their use.

^{36/} Kelsey and Hearne, op. cit., p. 74.

9. Handling direct teaching of rural people within the county in such a matter as to strengthen the position of the county worker and enable him to better meet subject-matter problems arising after the specialist's departure.

Montana County Extension Agents

The largest and most important group in the Montana Extension Service are the county agents. They are the official representatives of the State land-grant institutions and the USDA, living among the farm families. The county extension agents are in a well-placed situation to study the problems and serve the needs and interests of the farm families.

There are about 50 county agents with three supervisors serving the State Extension Service. In addition to the 50 county agents, there are 15 associate county agents and county-agents-at-large.

The county extension agents are selected on the basis of their experience, training and characteristics by the State Extension Service Director. They are directly responsible to the supervisor of the district and to the Director.

The counties in Montana have many things in common as well as many variations in their problems and needs. The duties of the county extension agents depend upon the problems and needs of the counties in the State of Montana.

The Annual Report^{37/} reveals that the short run and constant activities of the county agents fall into a routine pattern of duties. These functions have been described by Kelsey and Hearne as including the following:

^{37/} Wirak, O. S., Thirty-Sixth Annual Report, Gallatin County, Montana, 1955.

1. Represents the state land-grant institution and the United States Department of Agriculture in the county in carrying on an educational program to improve rural life.
2. Studies the county, its people, and its agriculture and rural life to ascertain its problems and possibilities.
3. Develops or aids in maintaining the necessary organization of rural people to help determine and carry out the county extension program.
4. Develops with the people of the county a long-time and current agricultural and rural life educational program based on the major problems and needs of individuals--adult and youth--and families.
5. Develops rural leadership.
6. Assists local organizations with their educational programs when their objectives coincide with the objectives of the county extension program.
7. Promotes friendly relationships and the coordination of activities of all agricultural and county-life groups within the county.
8. Maintains a public office where rural people and others may call, telephone, or write for information on all problems relating to agriculture and rural life.
9. Keeps informed regarding social and economic changes affecting the farms and homes of the county, and keeps up-to-date professionally through attendance at conferences, reading, participation in in-service training courses, and otherwise.
10. Develops interest and cooperation of various organizations and individuals in the solution of farm, home and community problems.
11. Assists local leaders by supplying supplementary material, visiting farms and homes, providing helpful literature.
12. Arranges for help of specialists.
13. Provides information to individuals and groups other than those regularly organized.

14. Helps evaluate work done by obtaining and analyzing records and preparing statistical and narrative reports for county, state and federal use.
15. Encourages the interest and cooperation of various organizations and of rural people in the development of boys and girls through club work.
16. Assists people in the communities in the organization of local 4-H Clubs, in the selection and training of local leaders, and in the development of club programs.

Home Demonstration

In 1896 extension work in home economics began, with the employment of Martha Van Rensselaer in the state of New York.^{38/} In the year 1913 extension work with adult homemakers in the United States got under way.

Home economics extension work came into the Montana state program with the appointment on July 1, 1914, of Miss Katherine Jensen of Fargo, North Dakota, as home economics leader. Miss Bess M. Rowe of Minnesota succeeded Miss Jensen in September, 1916. Under Miss Rowe, the work grew and expanded and a group of home demonstration agents were employed by Montana counties. Miss Clara A. Bush of Minnesota was the first home demonstration agent appointed in Missoula County, Montana, in 1917.

Currently there is a state home demonstration leader, a state assistant home demonstration leader, and home demonstration agents, the latter in the counties of Montana.

The home demonstration leader uses Montana Project Agreement objectives worked out by the Committee on Home Demonstration Objectives for the Extension Section of the Home Economics Division of the Association of Land-Grant Colleges and Universities. These objectives are:

^{38/} Kelsey and Hearne, op. cit., p. 25.

A. In the area of family living and management:

1. To help families to develop production and income-earning plans in order to meet their needs and wants, to provide for continuous improvement in their level of living.
2. To help families at all levels of income and education to achieve the greatest satisfaction from the housing, furnishing, equipment and clothing available to them.
3. To develop an understanding of the relation of the farm unit to the whole of agriculture and of the place of agriculture in the total economy.
4. To help families function as intelligent consumers in the selection of goods and services.
5. To help families to follow better nutrition, health and safety practice, to care for the sick and injured, and to make better use of health services.
6. To foster and encourage recreation and community improvement as important parts of living, and to help people to acquire interests that extend beyond their own family and work associations.
7. To develop an understanding of the dependence of the social and economic well-being of society upon the conservation and the wise use of our natural resources, both material and human.
8. To encourage an interest in reaching a higher level of education for children and adults as equipment for achieving a more enriched life.

B. In the area of relationships:

1. To assist families to acquire the attitudes, appreciation, knowledge, skills, and habits basic to a satisfying family and community life.
2. To help adults and youth to recognize values, to set their own objectives, and to make their own decisions in the light of their objectives.
3. To help adults and youth to develop the desire and the skills needed to maintain satisfying relationships with others.

4. To assist adults and youth in developing willingness to assume the responsibilities of citizenship and to acquire the knowledge and the skills needed to be effective citizens.

C. In the area of cultural and spiritual values:

1. To assist individuals to find and enjoy beauty, and to create beauty in many forms.
2. To help individuals and groups to think critically and constructively.
3. To help people recognize and build those values which make for family solidarity and community spirit.
4. To give families information and help that will enable them to make their homes centers of democracy.

State Home Demonstration Leader

The home demonstration leader and the assistant leader are directly responsible to the State Director for the administration and supervision of the state home demonstration section of the Montana Extension Service.

The duties of the state home demonstration leader are as follows:

1. The administrative responsibilities are to improve the working conditions of the county staff, hire personnel, be in charge of salaries, retirement, office equipment, leave, and clerical help.^{39/}
2. The supervisory responsibilities are assumed by the assistant leader in duties such as program planning in non-home demonstration agent counties and cooperating in the activities of the home demonstration agents of other counties with the knowledge and consent of the home demonstration leader.

^{39/} McClelland, B. E., Annual Report State Home Demonstration Leaders, M.S.C., 1955.

Assistant State Home Demonstration Leader

The assistant home demonstration leader is directly responsible to the home demonstration leader. She takes the place of the leader in case of leave of absence or temporary vacancy. She is the supervisor of the county home demonstration agents and cooperates in the planning of activities and programs in the counties of Montana.

Home Demonstration Specialists

There are home demonstration specialists in home management, nutrition, clothing, and family life in the office of the state home demonstration leader. These specialists are charged with the function of planning, training, preparing teaching materials, teaching, and field study related with their specialization. They cooperate with the county home demonstration agents when their specialized services are needed in projects and programs designed for the improvement of the farm homes in the counties. The relation of the home demonstration specialist to the home demonstration agent is essentially the same as the agricultural subject-matter specialist's relation to the county agent--as described earlier in this section.

Home Demonstration Agents

There are numerous home demonstration agents who fill a most important role in home demonstration work. They are assigned to the individual counties. There are 56 counties in the State but currently there are 29 home demonstration agents serving the counties. These are the direct representatives of the Director of the State Extension Service and the state home

demonstration leader. They live among farm families where they are in a good position to observe and study conditions and thereby render qualified service.

The duties of the home demonstration agents are:

1. To cooperate with the state home demonstration leader in the execution of approved projects and programs for the counties in Montana.
2. To bring information and to demonstrate household projects designed to improve family living.
3. To observe county problems and submit them to proper agency for consideration and solution of the problem.
4. To cooperate with the 4-H Club activities related to their work.
5. To make and submit reports in compliance to circulars and memoranda of the state home demonstration leader.

4-H Clubs

The four H's denote health, hand, head and heart. These physical parts are essentials in the total human mechanism; hence the importance of their early care, development and utilization among the young boys and girls of any society are obvious. This individual, family, county, state and federal concern is such that 4-H Clubs are found throughout the nation.

The Montana State 4-H Club organization is headed by a leader with an assistant. They are appointed by the State Director of Extension Work.

They cooperate in planning projects and programs for the 4-H Clubs in the counties of Montana. They compose the staff of the 4-H Club that is responsible for the general organization and planning of the Montana Extension Program pertaining to 4-H Club work. They supervise the State 4-H Club program and give assistance to county extension agents in planning and carrying out 4-H Club activities in the counties of Montana.

The duties of the 4-H State leader are:

1. Preparation of general literature, record books, etc.
2. Training extension personnel and leaders in the 4-H Club work.
3. Assisting subject-matter specialists in the preparation of subject-matter literature.
4. Organizing and conducting state and district 4-H events and observances such as the National 4-H Club Week, Montana 4-H Conservation Camp, National 4-H Club Congress, Montana 4-H Congress, district conferences and other similar events.^{40/}

The county 4-H Club activities are under the joint management of the 4-H State leader, the county extension agent and the home demonstration agent in a county. They select the adults and junior leaders in the communities in the county. These selected adults and junior leaders are trained in a 4-H training school designed by the State Extension Service staff. The adult and junior leaders compose the County 4-H Council. The Council appoints committees that organize and carry out 4-H activities. The 4-H Clubs sponsor activities on livestock, crops, and homemaking.

^{40/} Moore, P. J., op. cit.

They participate in county, state and national 4-H Club activities such as meetings, training schools, programs, conferences, fairs, camping and scholarship competitions. These are all designed to develop, promote and improve leadership ability among youth.^{41/}

Montana Extension Service Publication Department

The extension publication editor is charged with the responsibility of preparing for publication information that will be of value to the agricultural industry in Montana. He also directs and gives training in methods of communication to all Montana Extension Service personnel.

The information prepared goes to farmers, ranchers and others interested in agriculture, through all available means of communication. Those most commonly used are newspapers and periodicals, national magazines, radio, television, publications of all sizes and shapes, circular letters, and visual aids.

The department also edits all publications of the Montana Extension Service, handles all the details of printing from original copy, charts, photographs, through the entire printing or duplicating process, including distribution.

The publication department confers with authors before a publication is started, works with them throughout the writing, illustrating, makeup, and the many other processes of preparing a publication for a printer. The department writes some publications entirely and occasionally rewrites others. The function of the publication department is important in the Montana Extension Service.

^{41/} Wirak, O. S., op. cit., p. 41.

Montana Extension Service Finance Department

Currently, the finance department is under the Secretary to the Director of the State Extension Service. The department is charged with the preparation and keeping of records of personnel, employment, insurance and retirement and accounting. The department cooperates in the preparation of the annual as well as the supplementary budgets of the Extension Service. It prepares and keeps the bookkeeping and accounting of the budget in forms prescribed.

Records of personnel, insurance, and retirement, are prepared, filed and kept available for the purposes they are intended. The department cooperates with the preparation, adjustment and settlement of insurance and retirement requirements, requested and required of the personnel and employees in the State Extension Service in accordance with existing regulations.

PART III

CLASSIFICATION, DESCRIPTION, AND DISCUSSION OF METHODS USED BY THE EXTENSION SERVICE FOR THE DIFFUSION OF INFORMATION

The rural regions of the United States have in the Department of Agriculture and the land-grant colleges what has been called the greatest adult education system in the world.^{42/} Any growing agency that becomes institutionalized develops patterns of objectives, sources of information, and a system of methods or techniques in order to fulfill its purpose.

The sources of information of the Montana Extension Service are the College Agricultural Experiment Station, the United States Department of Agriculture's research agencies, the Division of Extension Service of the United States Department of Agriculture and private companies primarily dealing in farm implements and supplies that conduct experiments and research work, the successful findings of which are released by the press.

The College Agricultural Experiment Station is charged with the duties and responsibilities of conducting experiments and research work in unexplored areas. There are several subject-matter specialists who handle the job and who are consultants on the released findings and results of such subject matter. The findings and results of the Agricultural Experiment Station are published in circulars and bulletins which become available to the Montana Extension Service.

The Federal Extension Service of the U. S. Department of Agriculture is composed of technical men in various fields. This service releases

^{42/} Brownell, B., The Human Community, Harper and Brothers Publishers, New York, p. 162.

bulletins and circulars concerning results of experiments and research works which often become sources of information for the Montana Extension Service.

Private companies carry on experiments and research work to advance their desires to help find up-to-date and salable implements and supplies on the farms and in farm homes. The findings are published in bulletins, circulars, pamphlets, leaflets and magazines which may become sources of information for interested parties.

The staff of the Montana Extension Service evaluates and selects, experiment and research results that are applicable to the Montana agricultural and farm home situations. These selected materials are in turn classified and prepared by the staff to be diffused to the counties by the Montana county and home demonstration agents by the suited methods and techniques available.

The success of the diffusion of information as an education process for the benefit of large numbers of people depends partly upon the methods and techniques involved. The Montana Extension Service uses direct, indirect and special methods such as farm and home visits, office calls, informational meetings, mass media and demonstration. These methods and techniques are discussed separately as they are used in the State.

Direct Method

The direct method involves a face-to-face relationship between the informant and the learner. It uses such techniques as:

Farm and Home Visits

The farm and home visit is extensively used by the Montana Extension Service as elsewhere. It serves a variety of purposes, some of which are:

1. It may be made in the nature of a service call made upon request to give advice or assistance on a wide range of farm or home problems.
2. It may be part of the teaching plan outlined at the beginning of the year to forward some phase of the county extension program.
3. It may be for the purpose of securing a cooperator or demonstrator, arranging a meeting, or discussing a local 4-H Club activity.
4. It may be in the interest of good public relations with officers of local organizations, elected officials or other key individuals.
5. It may be merely to extend the agent's acquaintance of people and farm operation and home.
6. It may be part of a planned effort to interest those who do not participate in organized extension activities and who are not reached through mass media.

The agent's visit to the farmer, homemaker, or 4-H Club member provides an opportunity for them to jointly work out practical solutions to specific problems. The visit of the extension agent to the farm or home makes possible the modification of general recommendation to fit specific situations, thereby increasing their usefulness and the likelihood of their use. It also provides an opportunity to arouse interest in farm, home or community improvements not yet recognized by the individual as desirable.^{43/}

^{43/} Wilson, M. S. and Gallup, G., Extension Teaching Methods, Extension Service, Circular 495, Federal Extension Service, USDA, August, 1955.

A visit for the primary purpose of getting information would enable the agent to gain first-hand knowledge of the circumstances and therefore actively interpret problems for their better solution. A familiar knowledge of the farm and home conditions and the rural people, obtained largely through personal contact, is essential to program planning and the selection of effective local leaders. Thus the agent comes to know at first hand the problems of the people in the county and at least parts of the farm people know from observation that the agent knows his job.

In connection with the farm and home visits, the county and home demonstration agents have a fuller opportunity to emphasize the sources of information concerning farm and home problems. They can point out that the local office of the county extension service is the immediate source of information and is ready to answer many sorts of farm and home inquiries. They should also point out the wisdom of consulting the county office first before trying more distant sources for the economy of time and effort on the part of the inquirers.

The county extension and home demonstration agents for the State of Montana are extensively using the farm and home visit method to diffuse information and to gather materials. A total of 27,695⁴⁴/ farm and home visits were made in 1955 by the county extension and home demonstration agents of the Montana Extension Service.

Office Calls

The county extension and home demonstration agents' offices are the most immediate representative and closest source for information from the

⁴⁴/ Beers, N. E., Annual Report, Supervisory Staff, Form ES, Montana State College, 1955, p. 3.

Montana Extension Service. These offices are the sources of information devoted especially to the rural farm population.

There are subject-matter specialists in the various divisions of the Extension Service at Montana State College. When necessary to clarify subject-matter released by the specialists which cannot be taken care of through the mail, or to get information on special problems, personal calls may be made by farmers and homemakers to the specialists concerned. A previous appointment before the call might be helpful in this connection. In fact, it is wise for individuals to be referred by county agents or home demonstration agents to the proper specialist. If individuals desire specialists' information which at the individual's judgment can be taken care of by telephone, the telephone should be used in contacting specialists for information. In fact, contact by office call on the specialist by a farmer or homemaker is quite rare in Montana because of the great distances. Occasionally such a call is made by persons residing in or near Gallatin County where the college is located or those living near the several experimental farms dispersed throughout the State.

Farmers and homemakers may use telephone calls for any information and guidance from the county extension and home demonstration agents.

It is a convenient and relatively economical medium of contact for individuals with problems that can be favorably dealt with through telephone calls.

A total of 89,126 personal calls were made in 1955 to the offices of county extension and home demonstration agents by farmers and homemakers

and a total of 53,512 telephone calls for the same year were made in some offices in the State of Montana.^{45/}

Informational Meetings

Face-to-face discussion is a medium of diffusing information. When it is desired to reach the people by the personal appearance of the informant, a meeting of the local leaders and people may be arranged. Such are called informational meetings.

The county extension and home demonstration agents may call information meetings of the club leaders in the county or community specifying the time and place. The leaders are then recipients of the information and in turn disseminate it to the local members in local meetings.

A total of 9,026 informational meetings among the adult groups and 4-H Clubs were held in Montana by the Extension Service in 1955 with a total attendance of 163,549.^{46/}

Demonstration

Generally, there are two types of demonstrations: (a) the result demonstration and (b) the method demonstration. The first type displays, in some manner, the results of two or more procedures such as varied applications of chemical fertilizers, the presence or absence of certain factors, and the like. The methods are explained, but only the results are shown. An example would be a visit to an Agricultural Experiment Station at the end of the growing season to demonstrate the effects of varied application of fertilizers.

^{45/} Ibid.

^{46/} Ibid.

The second type, method demonstrations, are concerned with how to do or make something. That something may be the adjustment of a tractor plow, the making of an article of clothing, or some other skill involved in farming or homemaking. The extension worker or leader shows step-by-step the procedure in the operation, explaining each succeeding step as he proceeds. The farmers, homemakers and others who are interested watch the process, look at the illustrations, listen to the oral explanation, and may ask questions during or at the end of the demonstration period. When it is practicable, some members of the group may repeat the demonstration in the presence of the others to help fix the process in the minds of the learners. Seeing and hearing combined, followed by practice through participation in the demonstration, make strong impressions in the learner's mind.

The guide set by Kelsey and Hearne, with regard to location, adaptability and economic importance of demonstration is being adopted in Montana. It is as follows:

1. "The demonstration should be located in a community where there is a problem for which the practice or practices to be demonstrated offer a practical solution. The farm or home where the demonstration is to be located should have a very definite problem with reference to this particular demonstration. The recommended practices and equipment must be practical under that farm or home set-up.
2. "If possible the demonstration should be located so as to be easy to reach for a majority of the people concerned.
3. "A farm selected for a demonstration should be as nearly typical of the community as possible. Some of the considerations in selecting a typical farm are: soil fertility level; degree of erosion; soil type; drainage; equipment; kind, number and

quality of livestock; homestead; financial background; and other pertinent facts."

A total of 185 adult result demonstrations were held by the Montana Extension Service throughout the State in 1955.^{47/}

Indirect Method

The indirect method utilized the effective use of both the printed and the spoken word which may be classified as mass media. It has less of the personal element and relationship. It uses the techniques involved in the:

Press

The principal function of the press is one of expanding coverage. It is the chief means of getting information about extension activities and better farm and home practices to the rural and urban people of Montana who are not contacted individually, do not attend meetings, or do not participate in other extension activities.

A well-planned meeting to discuss the problem of control of a disease or pest may be extended to 25 farmers. The new story account of the meeting giving definite directions for controlling the disease or pest will be read by many times that number of farmers and others who may wish to check the occurrences of such a disease or pest. The large coverage of the extension news story is made possible by the universal practice of reading newspapers, a practice which can be used and promoted by the staff personnel of the extension service.

The Montana Extension Service uses the services of the Publications Department of the Montana State College. The first obligation is to

^{47/} Ibid.

Montana, so that all Montana's daily, weekly and periodical papers such as The Montana Farmer-Stockman, The Montana Stockgrower and The Montana Woolgrowers magazines, Associated Press, International News Service and others who have readers in agriculture are served first. Then it prepares publicity for out-of-state sources on request. It also keeps a mailing list of many out-of-state papers that fall into this category as well as other information offices and the various agricultural organizations to which it sends copies of materials prepared for Montana use. Very few stories are prepared for national magazines because of the duties of taking care of Montana's needs and demands.^{48/}

The county extension and home demonstration agents of the Montana Extension prepared a total of 6,379^{49/} news articles and stories for the year 1955. These news articles and stories covered a variety of subject-matter on agricultural industry and home economics in the State.

Bulletins and Circulars

The Montana Extension Service is concerned with diffusing information to aid in improving farming and homemaking while the Agricultural Experiment Station is involved in research in these areas. The findings of the research personnel of the Experiment Station are published in bulletins and circulars, which Experiment Station personnel prepared. Subject-matter specialists may write additional circulars and articles in their fields. The Publications Department prints bulletins and circulars for both divisions.

^{48/} True, L., Job Description, Publications Department, Montana State College, Bozeman, Montana, July 23, 1956.

^{49/} Beers, N. E., op. cit., p. 3.

Prior to the passage of the Smith-Lever Act, agricultural bulletins and circulars were the principal papers employed by the Farmers Institutes, fairs and the Chambers of Commerce to inform the public of findings of scientific research.

Today bulletins, circulars, pamphlets and leaflets dealing with agricultural and home economics subjects continue to play an important role as a means of mass media diffusing of information to the people by the extension workers.

The bulletins and circulars are distributed in connection with office calls, farm and home visits, telephoned and mailed inquiries, and extension meetings. They serve as a means of answering numerous requests. They are supplied to local extension leaders, clubs, cooperating organizations and commercial agencies. They amplify and reinforce the subject matter of radio and television programs.

The Montana Extension Service, through the county and home demonstration agents, distributed a total of 129,812 bulletins in 1955 to the people of Montana and outside.^{50/}

Comparatively, the radio is a new means of communication, but it is the most widely accessible of all mass media. The Montana Extension Service uses it as a mass medium for diffusing information. More than any other medium, it has the ability to disseminate information to the largest number of people in the shortest time. It is unrivaled as a means of getting emergency or timely information to rural people because of the presence of many radios in farm homes.

^{50/} Ibid.

Extension workers use the radio to disseminate timely information on market conditions of interest to both producers and consumers of agricultural products, to inform the public regarding the function and activities of the Extension Service, to advertise meetings, tours, field demonstrations and other scheduled activities, and to teach improved farm and home practices. In connection with the presenting of information over the radio, listeners are frequently invited to write for extension literature which supplies information in greater detail and may be kept for reference use.^{51/}

The Montana Extension Service, through the Publications Department of Montana State College, plans radio programs. There is weekly written service to all radio stations located where there is a county agent. These weekly programs generally run 10 minutes of agriculture and 10 minutes of home economics material. These are given by the county agent who has instructions to "localize" all these prepared talks.

In addition to this written radio material, the department has one 10-minute and two 15-minute weekly programs which are put on tape and sent to a series of stations. Another service is to meet special requests from radio stations or news services.^{52/}

The newest extension service medium is the television. In the urbanized section of the county, television is rapidly becoming available to the extension agents. It is more personal than the radio. The viewer meets the speaker in a simulated face-to-face situation. Opportunity is

^{51/} Wilson, M. C. and Gallup, G., op. cit., p. 63.

^{52/} True, L., op. cit., p. 2.

afforded the members of the audience to both see and hear, which greatly strengthens interest and therefore the likelihood of learning.^{53/}

Through television, the extension agent can give a "how-to-do-it" demonstration and reach an audience many times larger than attendance at meetings will allow.

As yet, the Montana Extension Service, through the Publications Department, uses television as a means of diffusing information in a limited capacity. The Department prepares television programs, directs them and presents them alive.^{54/} In the near future, it hopes to do some programming by means of motion pictures.

A total of 131 television programs were produced in 1955 wherein the county extension and home demonstration agents of Montana participated.

Special Methods

This category involves special and thorough preparation of the information desired to be conveyed or diffused. It calls for time and skills to achieve the goal. This method uses the skills and techniques involved in:

Fairs, Exhibitions and Contests

It is good for the general public to be given some insight into the agricultural industry and home economics in the county and the state. Usually, county and state fairs are held annually. The extension's exhibits

^{53/} Wilson, M. C. and Gallup, G., op. cit., p. 64.

^{54/} True, L., op. cit., p. 2.

are helpful means of acquainting the public with extension work and its accomplishments. The best crops, livestock and articles made in the county and state in the agricultural industry and home economics are exhibited at the fairs.

Fairs are commonly held in the counties throughout Montana. At the fairs, the usual sections are livestock, grain crops, machinery, home industries, household equipment and appliances. Demonstrations are carried on by the personnel especially trained for the purpose in the extension service.

During the fair, days are allocated to the different divisions or sections of the extension service to demonstrate new practices. Often contests are held. The home demonstration day, for example, features exhibits and contests by the organized units of the county. The 4-H Club day features the exhibits and contests, where articles made, crops produced or livestock raised by the individual 4-H members in the projects are shown.

The fair or extension service exhibits require considerable expenditure of extension agents' time in planning and preparing exhibits and explaining.

PART IV

REVIEW OF RESEARCH LITERATURE EVALUATING AGRICULTURAL EXTENSION METHODS OF INFORMATION DIFFUSION

The current methods and techniques of diffusing information have been briefly described as they are being used by the Extension Service in Montana. They are not new. They have been in use for a number of years without having been objectively evaluated by way of research in order to know their relative effectiveness as they are employed in Montana. Their evaluation would meet a long-felt need in order to promote the development, improvement and growth of a more effective Extension Service in Montana. The absence of an objective research evaluation of the methods and techniques undoubtedly is caused by several factors involved in an evaluating task. Of the several factors, the lack of know-how, involving knowledge and skills of procedures particularly suited to research in attitudes and group behavior, has been one of them.

Following is a review of research literature concerning the effectiveness of Extension methods of teaching as done in various counties and states in the United States. Particular emphasis in the following review of research literature was focused on the methods and techniques evaluated in other places and which are currently being used in Montana. It is hoped that some research will be done in Montana. The purpose of their consideration here is to suggest some of which may be of help in future research in this area of the Montana Extension Service's work.

Findings or results are outlined here. They may not be applicable to Montana's situation. Nevertheless, they may give some insight on

the problems involved and suggest hypotheses helpful to the carrying forward of research work on these matters.

The writer would caution that the reviewed research literature included here is far from being complete. Further exploration and review of research literature will be necessary for anyone undertaking to evaluate the effectiveness of Montana Extension teaching methods and techniques. Sources included here are bibliographies published by Federal Extension and the new Agrisearch Bulletins reviewing studies in diffusion media.^{55/}

Direct Methods

Office Calls

"Complete records of 657 office calls were kept over a period of 2 to 4 weeks by a cross section of Minnesota County Agricultural Agents in 14 counties. The purpose and length of the calls and their relationships to other Extension methods were recorded. Within a 2 to 3 month period following the office calls, a random sample of 149 farmers who had made the office calls, were interviewed to learn the results of these calls.

"Of the 149 farmers, 95 percent said they got the information they wanted from the agent when they called at the office, 92 percent discussed their problems with the agent, nearly one-third talked their problem over with the agent and also received printed material, and 91 percent said their calls involved specific farm practices. Of those whose calls involved farm practices, 76 percent had already used the practice and 17 percent more said they would do so as soon as they had an opportunity.

"Of the farmers who got information at the office, more than one-third had already passed it on to a neighbor and a few more said they would do so later."^{56/}

^{55/} Bibliography on Extension Research, U. S. Dept. of Agr., Ext. Serv. Cir. 489. (January 1949 through December 1953).

^{56/} McNelly, C. L., Individual Teaching by Agriculture Agents, University Farm, St. Paul, Minn. University Agricultural Extension, 1950, p. 12.

Informational Meetings

"The data were obtained by personal interview from 60 randomly selected homemakers in three parishes who had attended the home furnishing clinics. Conferences were held with the home demonstration agents in the five parishes where the clinics were held and with the owners of the furniture stores in which the clinics were held.

"The homemakers, agents, and merchants agreed that the clinic had been effective means of extension teaching.

"Teaching home furnishings and buying from an actual 'set-up room' situation followed by a folder of material emphasizing the points brought out in the meeting made a definite impression on those who attended. Greater use of the material on room arrangement, use of color and accessories was made than of the material on buying. This was probably true because much of the former could be done within the home without much or any expenditure of money. All of the women interviewed said they were more conscious of labels than they had been before the clinics.

"The folder of material given at the end of the meetings seemed to be an effective means of clinching the information demonstrated at the meeting. It was taken home by 56 of the 60 women, 53 had read it, and 32 had used some of the information.

"The agents reported that the clinics had good public relations value and that they provided an opportunity for follow-up work with the home demonstration and 4-H Clubs."^{57/}

Meetings

"Virtually all of the potato growers in Aroostook County, Maine, favor a price support program of some kind for potatoes. Seventy-six percent knew about the proposed marketing agreement. Forty-four percent had attended meetings where the agreement had been discussed while 56 percent had not. If the growers were to have voted on the agreement at the time of the survey was made 70 percent indicated they would vote 'yes', 12 would vote 'no' and 18 percent were undecided as to how they would vote.

^{57/} Cooley, E., The Effectiveness of Home Furnishing Clinics, Mimeo Cir., Baton Rouge, La. Agr. Col. Ext., 1950, p. 21.

"Meetings apparently assisted growers who attended to make up their minds as only 7 percent were undecided compared with 27 percent being undecided among those who did not attend meetings.

"Among those who attended the meetings 97 percent indicated they knew about the agreement compared with 60 percent of those who did not attend the meetings.

"In the large grower group (over 60 acres) 57 percent attended the meetings and 10 percent knew about the agreement. Of the 43 percent in the group that did not attend meetings only 62 percent said they knew about the agreement."^{58/}

Indirect Methods

Press - (News stories)

"Forty-one daily newspapers covering 39 counties in New York State and totaling 1,548 issues were read during the six-week period from June 1 to July 15, 1950. All the agricultural information in these papers, 24,973 column inches, was read thoroughly and classified according to type, source, method of presentation and length. In addition, 2,779 column inches of photographs and cartoon illustrations were classified similarly.

"Of the four major classifications of agricultural news, rural life with 36 percent of the total was the highest single group. Production information made up 22 percent, economic news 8 percent, and marketing information 33 percent of the total. The economic and marketing groups were treated as one in the analysis.

"Investigation of the sources of the agricultural information showed that 22 percent was prepared by the newspaper staff. County extension contributed 20 percent and wire services and syndicates 15 percent. The State Department of Agriculture and Markets originated 15 percent, and the Grange contributed 10 percent of the news. Cornell University prepared 6 percent, farm organizations and associations were responsible for 5 percent, and Washington, D. C., State and county agencies added 3 percent of the total."^{59/}

^{58/} Lord, G. E., Report of Study of Grower Opinion, Regarding Proposed Marketing Agreement in Aroostook County, Mimeo Cir. Orono, Maine Agr. Col. Ext., 1948, p. 6.

^{59/} Schwartz, A. N., "An Agricultural News Survey of 41 Daily Newspapers in New York State," Ithaca, N. Y. Agr. Col. Ext., Dept. of Ext. Teaching and Information, Cornell U., 1951, Abstract of M.S. Thesis, p. 29.

Bulletins

"During the summer of 1951, the Publication Office of the College of Agriculture at the University of Minnesota, set out to determine how its services to agents could be improved. Two steps were taken: (1) An eight-page questionnaire with sections on radio, press, visual aids, bulletins and home economics, radio and press was sent to county extension offices. About 75 out of 91 county offices completed the questionnaire and returned it at district extension conferences. (2) Members of the Publications Office attended district conferences and were given time on the program. Agents were invited to give their suggestions for improved service. This material was included in the results of the questionnaire.

"The conclusions reported here have been taken from a more complete compilation of results.

"The stated policy of the University of Minnesota is that vocational and veteran agriculture teachers pay for bulletins in quantity. Nevertheless, about half of the students get them free. Forty-three percent of the agents fill requests from available supplies only about one-fourth order bulletins and pass them to the instructors, and one-third inform them that they must order and pay for quantity lots.

"To meet reduced publications budgets 70 percent of the agents would prefer more brief folders, 21 percent would prefer a small variety but larger quantities of bulletins, and 9 percent would prefer fewer of all kinds.

"The agents considered outlook folders, economics bulletins, and rural sociology publications to be of little value. In their opinion the Extension Service lags behind commercial firms in publishing useful material on new developments. They think economic material is dry reading and needs to be made more appealing; that research material isn't published rapidly enough; and that extraneous material background and history should be left out of bulletins. They want a synopsis with every bulletin and recommend current bulletins be reviewed and brought up-to-date."^{60/}

Circular Letters

"Ninety-three letters, or 76 percent of the subject-matter letters, show a rating of "Excellent" and 27 or 22 percent, rate

^{60/} Information Services Survey, Minnesota University Farm, St. Paul, Minn. University Agr. Ext., 1951, p. 4.

"Good". Only two letters rate "Fair" and "Poor". The average rating is "Excellent".

"Under the readability heading, 158, or 45 percent, of the 351 letters rate "Poor" and 78, or 22 percent, "Fair". This gives a total of 67 percent that rate below "Good". The average grade of all letters under this heading is 47, and the average rating is "Fair". This rating is on a school grade level of about 7 1/2. The median school grade level of farm people in Louisiana about 25 years of age is 4 1/2. The level average readability of these letters is, therefore, approximately 3 grades above what makes easy reading for Louisiana farm people.

"These two items seem to show definitely that the agents who wrote these letters rate higher in their knowledge of subject matter than in their skill to impart it through circular letters.

"The total percentage of letters carrying illustrations is low, and the average rating of the letters under this heading is low. Of the 351 letters in the sample only 124, or 35.3 percent carried illustrations. In rating, 36.4 percent rated "Fair", and 35.4 "Poor", making a total of 71.8 percent that rated below "Good".

"Letters included in the study: Individual circular letters on file in the State office which had been written by agents who were in Extension Service January 1, 1946 and still there March 1, 1947.

"Number of letters in the sample graded and rated under the different headings:

Number classed as "subject matter"	122
Number classed as "announcement"	229
Total	351 ^{61/}

Radio

"To get the data for this study the County Extension Agents in Vermont were asked to have 100 farmers and homemakers in each county fill out a questionnaire in regularly planned Extension meetings. A total of 742 homemakers and 493 farmers filled out the questionnaire in the late fall of 1950.

^{61/} Burleson, G. L., A Brief Report on Study of Circular Letters Prepared and Sent to Farm People by Parish Extension Agents in Louisiana, La. Agr. Col. Ext., Mimeographed. University Station, Baton Rouge, 1947, p. 3.

"Most of the listeners were in the 36-50 age group. There were more occasional listeners to farm-home programs than regular listeners, but 74 percent of all surveyed listeners heard farm-home programs either regularly or occasionally.

"Nearly every family questioned had at least two radios.

"A 30-minute weekday broadcast in the period between noon and 1 p.m. or between 7 a.m. and 8 a.m. would attract most listeners.

"Weather reports, farm and home news, talks by county extension agents, and news of what other Vermont farmers, homemakers, and 4-H Club members are doing were the most desired subjects for broadcasts.

"Practically every listener wants music with a farm-home program. Old-time familiar tunes are first choice, with band music and popular numbers next in popularity. Hillbilly music was low compared to those top three."^{62/}

"Personal interviews were held in 1951 with a random sample of 328 farm and non-farm families in Barton and Montgomery Counties, Kansas.

"Of all those interviewed in the two counties, 57 percent said they listened to the radio broadcasts of the county agent, 53 percent those of the home demonstration agent, and 45 percent those of 4-H Club agent. The individual clubs in Montgomery County put on a special 4-H Club radio program on Saturday which was heard by 57 percent of the families in that county. Many families have their radios tuned all day to the local station on which the agents broadcast. Participators in Extension activities showed a higher percentage of listeners than did non-participators. Farmers in Barton County said the time of the agents' broadcast, 6:45 in the morning was too early in winter, but satisfactory for other seasons.

"Many more said how-to-do-it information was important for agents' broadcasts than those who said: things to do, where to get information and meeting notices.

"Ideas obtained from the broadcasts of the county agent or home agent were recalled by 15 percent of the families, from the 4-H Club broadcasts by 21 percent.

^{62/} Spaven, V. and Wallerius, M. S., What Vermont Farm People Want from Radio, Burlington, Vt. Agr. Col. Extension, 1951, p. 30.

"The media from which the respondents as a whole got the most helpful information were, in the order given, magazines, radio and newspaper. The local leaders placed radio first, magazines second, and newspaper third. They were asked about these three methods only."^{63/}

Television

"The bases for expressions in this report were derived solely from research conducted under the Research and Marketing Act Television Research Project conducted June 1, 1951, through May 31, 1953, at the Iowa Agricultural Experiment Station. Only a few selections from the ten-page summary are included here:

"It is possible to present one or two ideas for general, practical understanding in five minutes. This is an appropriate unit for almost any length of television program. Several short, specific films are more usable than longer, more general, or all-inclusive films. Each film production must have a definite objective, it must be emotive, and it must answer a paramount question in the minds of the audience.

"The criterion should not be "How much visual material can you get in?" but rather, "How much can you keep out?" and still present the subject matter clearly.

"All film productions should be completely scripted and the script should be adhered to. Scripts for films of tabletop demonstrations should provide for continuous filming, if possible, and not for shooting by sequence.

"The best and cheapest method of producing the demonstration or illustrated lecture on film is either through closed-circuit kinescope recording or the use of single-systems, sound-on-film cameras. Motion picture film production has an advantage over the kinescope recording in quality of picture."^{64/}

Special Methods

Exhibits

"The show was sponsored by the Iowa Extension Service in 30 counties of the State. It consisted of a caravan of 13

^{63/} Jaccard, C. R., The County Extension Radio Program, Manhattan, Kansas State Col. Agr. Ext., 1954, p. 19.

^{64/} Cech, R. J. and Kern, K. R., Presenting Economic Information to Consumers by Television, Ames, Iowa Agr. Expt. Stat., 1953, p. 74.

exhibits showing and demonstrating 99 different recommended practices. Eighty thousand persons attended the show in the State.

"The study was made in 78 sample areas in the Atlantic, Cass County, Iowa, trading area. Two hundred twenty-eight families were interviewed. Three thousand six hundred attended the show held in Atlantic, Cass County. The survey was divided into three sets of interviews. A pre-show series dealt with farmers' attitudes toward changing practices and other factors, such as mobility, sociability, familiarity with the services offered by the Extension Service, the use of such services in the past, and the current practices that were to be recommended at the show. A second series of interviews were taken after the show to learn what families attended, their attitudes toward the things they saw, and what ideas they intended to adopt. A third series of interviews were taken six months later to determine if the practices were actually adopted and to what extent these practices had filtered through to other families who did not attend the show.

"Ninety-four percent of the farm families in the study who attended the show planned to adopt some of the recommended practices when interviewed following the show.

"An average of six intended adoptions of new practices were indicated by homemakers. Farm operators indicated an average of four intended adoptions of new practices.

"Eighty percent or four out of every five of the farm families who attended the show adopted an average of three new practices per family. Sixty-four percent of the families attending the show requested bulletins and other educational information regarding new practices. Twenty-three percent of these families who ordered bulletins did it for the first time.

"Fifty percent of the farm operators and homemakers who attended the show discussed some of their specific problems with specialists in charge of the exhibits. Of the farm operators and homemakers who talked with the Extension specialists, 31 percent of them did it for the first time. Nineteen percent of the farm operators interviewed who attended the show did not acknowledge previous help from the Extension Service. Twenty-seven percent of the homemakers who attended made this same acknowledgment."^{65/}

^{65/} Raudubaugh, J. N., et al, The Cass County Study: An Evaluation of the Extension Service and Farm and Home Labor-Saving Show in the Atlantic, Cass County, Iowa, Trading Area, 1948. Iowa State College, Agricultural Extension, ST-105, Ames, Iowa, 1949, p. 55.

Exhibits

"The grass-legume show consisted of 10 large educational exhibits which toured 32 Illinois counties during 1951 and 1952. The farm advisers and some of the farmers in these 32 counties were questioned regarding the effectiveness of this type of exhibit.

"Attendance was estimated at 8,832 persons. Twenty-nine bulletins on eight subjects were offered. About 17 percent of those attending requested an average of six bulletins each. Bulletins requested most often were on feeding and management of livestock, pasture yield, soil erosion, hay yield, and soil fertility, in that order. From 729 to 2,268 copies of each of these were requested.

"Farmers were asked to indicate by ballot which exhibit they thought was most effective. Their answers indicate that they were impressed by color, motion, and any unusualness of an exhibit. 'The exhibit shows how to . . .' was frequently heard.

"Seven farm advisers voted for a four-hour show, eight preferred it to be shorter, and seven wanted it longer.

"The advisers voted 20 to 3 in favor of having a specialist in attendance at each booth. They voted 15 to 8 for assigning previously trained local farmers to explain some of the booths."^{66/}

General Effectiveness of Extension Work

Agriculture

"This is the first phase of a five-year study of the way in which farmers decide to adopt new farm practices. In 1952, interviews were held with both husband and wife in 170 families in Sauk County, Wisconsin. Only farm operators were included who had owned their present farm for three years or longer, had at least one child 12 to 19 years of age, made three-fourths or more of their income from farming in 1951, and together with wife had no disabling physical affliction.

"Data on the initial adoption of, and obtaining information about, selected practices suggest that acceptance is a process with certain uniformities.

^{66/} Hall, D. M., An Evaluation of the Legume-Grass Show, Urbana, U. of Ill., 1952, p. 5.

"The rate of adoption of both alfalfa-brome seeding and grass silage proceeded slowly at first and then increased at a more rapid rate.

"Alfalfa-brome seeding increased in three years from about 1 percent to 10 percent of the farmers interviewed while putting in grass silage increased from 1 percent to 10 percent of the sample farmers in 6 years.

"One of the mass media (farm magazines, radio, or newspapers) or one of the agricultural agencies was given more frequently than other farmers as the contact for first knowledge about 2,4-D weed control and grass silage. On the other hand, other farmers were given relatively more frequently as the source of most information than as the source of first knowledge for both practices.

"One of the educational agencies was given more frequently as the source of most information by the sample operators who had adopted the highest proportion of 18 improved farm practices than by those who had adopted the lowest proportion.

"The idea is presented that acceptance is a process in which one (1) hears about the practices, (2) accepts the practice as a generally "good idea", (3) accepts the practice on a trial basis, and (4) adopts the practice completely. This process occurs over a varying period of time for different individuals.

"The findings support in general the idea that family and farm influence each other. But, there are qualifications of this mutual influence which must be taken into account.

"High adoption of improved farm practices is associated with high adoption of housing and home equipment items and of other selected home practices. Likewise, low adoption of farm practices is associated with low adoption of these family living practices.

"Adoption of improved farm practices is not significantly associated with adoption of preventive health practices by the family.

"Adoption of improved farm practices was lower on those farms on which almost all labor was provided by the family than on those on which a substantial part of labor was hired. This relationship is significant only for those farms with 100 acres or more of cropland.

"Operators having had one or more children in farm projects (4-H, vocational agriculture, or individual) had adopted significantly more of the 18 improved farm practices than had those with no children in such projects.

"The extent to which family decision-making in general is centered in the father is not significantly associated with the adoption of improved farm practices.

"Operators with sons 12 years of age or over reporting new practices encouraged by their sons had adopted significantly more improvements in farming than had those reporting no such influence.

"Operators favoring share arrangements as the 'best method of paying sons remaining on the farm' had adopted significantly more improved practices than had those favoring wages, separate projects, or other forms of compensation.

"The extent of familism (interdependence between generations and between relative) is not consistently associated in either direction with the adoption of improved farm practices. However, those operators reporting having learned most about farming from their fathers had adopted fewest improvements in farming.

"High value placed upon education for children is positively associated with the adoption of improved farm practices. There is some evidence that value placed upon education is more highly associated with adoption of those practices regarded as innovations than those regarded as improvements in existing farm operations.

"High value placed upon owning one's farm free of debt in comparison with other goals is negatively associated with the adoption of improved farm practices.

"Formal social participation of the families interviewed is positively associated with the adoption of improved practices on their farms. Participation in farm organizations is most highly associated with the adoption of improved farm practices.

"Extent of informal social contact is not significantly associated with the adoption of new practices on the farm."^{67/}

^{67/} Wilkening, E. A., Adoption of Improved Farm Practices as Related to Family Factors, Wis. Agr. Expt. Sta. Res. Bul. 183, Madison, 1953, p. 48.

PART V

PROBLEMS OF THE NEW PHILIPPINES EXTENSION SERVICE

Introduction

The Philippines is composed of 7,085 islands with an area of 115,600 square miles comprising three big geographical divisions namely: Luzon, Visayas, and Mindanao. The population in 1954 was 21,237,000. It is a country with basically a tropical agricultural economy.

This land has been ruled by Spain for almost four centuries and by the United States for about fifty years. The influence of colonial rules is strong among the people as evidenced by the existing ways of life which may partly account for the difficulties being met in the program to transform the current ways of life to the modern ways.

On July 4, 1946, at 9:15 a.m., Paul V. McNutt, then United States High Commissioner to the Philippines, read the Proclamation of Philippine Independence by the President of the United States of America.^{68/} Thereafter, the Philippines became an independent nation, a member of the free world and a strong democratic partner of the United States.

In January, 1949, the Point Four Program of the United States was launched by the President in his inaugural address. The Philippines was a recipient of the benefits envisaged in the program for the underdeveloped areas of Southeast Asia.^{69/}

^{68/} Building Toward Economic Stability, National Economic Council Industrial Development Center, the Tenth Year, 1946 - 1956, p. 4.

^{69/} Solo, Robert A., Economics and the Public Interest, Rutgers University Press, New Brunswick, N. J., 1955, pp. 248 - 249.

Mutual Security Agency

After the establishment of the office of the Mutual Security Agency, now the International Cooperative Administration in the Philippines in July, 1951, studies and surveys were made to determine projects for the improvement and growth of the living standard of the people of the young Republic. One of the projects was the establishment of the National Agricultural Extension Service.^{70/}

The Bureau of Agricultural Extension Service under the Department of Agriculture and Natural Resources, Philippines, was created and established by the Legislative Act of the Congress of the Philippines, April, 1952. The Extension Service was patterned after that of the United States Extension Service and continues to grow through its own experience, observations, and studies of the United States Extension Service, adjusted, of course, to Philippine conditions. The new Bureau is beset with a multitude and variety of problems.

Organization

National Level

The office of the Bureau of Agricultural Extension is in the City of Manila, Philippines. It is headed by a director with assistant director and chiefs of sections such as administrative, records, finance, and publications.

Provincial Level

There are 52 provinces (states) in the Philippines. Every province has a Provincial Agricultural Extension Supervisor whose office is usually

^{70/} Ibid., p. 309.

located in the capital of the province. Under this office is at least one District Agricultural Extension Supervisor and a District Home Economics Demonstration Supervisor. The number of District Supervisors depends on the size and population of the province, hence, there are provinces with more than one District Supervisor.

Municipal Level

The larger municipality should have a Municipal Agricultural Extension and a home economics demonstration agent. There are, however, some small municipalities in the provinces that are combined together under one agent.

4-H Club

The 4-H Club is a part of the Bureau without separate officials and personnel. Its organization and functions are carried by the Provincial and Municipal Agricultural Extension agents.

Some Problems

To begin with, there is a lack of sufficient technical personnel to operate the Bureau of Agricultural Extension Service of the Philippines. Men of training and experience in agriculture were chosen with the assistance of the technical specialists of the then Mutual Security Agency to organize and operate the Bureau. The training of men for the Extension Service was almost simultaneous with the establishment of the Bureau.

Indications are still to the effect that the new Bureau of Agricultural Extension lacks qualified technicians for the service.

"In the field of education, the main emphasis has been on a nationwide rehabilitation and equipping of agricultural and trade schools. The technical colleges of the University of the Philippines are also receiving aid for training and preparing highly qualified technicians to meet the expanding needs of agricultural and industrial development."^{71/}

Second, the organization and operation of the Extension Service groups is quite cautious and slow. The population of the Philippines in 1954 was 21,237,000. Three-fourths of the population depend upon agriculture which is carried on upon the 1,634,726 farms.^{72/}

The Agricultural Extension Service has organized 2,468 barrio (village) self-held councils, 268 4-H Clubs, 425 rural improvement clubs and 441 farmers' associations. Its personnel has assisted 1.5 million farmers.^{73/} In spite of these achievements of the Extension Service during its three years of operation, there is considerable room for improvement and expansion in order to render desired services to farms and farm homes.

Third, there is an inadequate number of reliable sources of information to be diffused to farms and farm homes for the improvement of better living of the people especially in the more rural areas.

"The research work in the Central Experiment Station in Los Banos has been boosted considerably by assistance from Cornell University and the employment of additional personnel . . .

^{71/} Building Toward Economic Stability, op. cit., p. 30.

^{72/} Philippine Land Tenure Reform Special Technical and Economic Mission, Mutual Security Agency, USA, Manila, 1952.

^{73/} Building Toward Economic Stability, op. cit., p. 25.

"Under this project the Division of Agricultural Economics has conducted two general crop and livestock sampling surveys, and published a report on the survey area and production of rice . . .

"The Office Agricultural Information has printed and disseminated over 4,000,000 copies of informational and educational materials."^{74/}

The Central Experiment Station is a part of the College of Agriculture, University of the Philippines, in Los Banos, Laguna, Philippines and the fact that there are very few colleges of agriculture both public and private may indicate that research work will be a long time expanding.

There are few private companies dealing with farms and farm homes that have the necessary equipment and facilities to conduct research on the use of their merchandise in order to adapt them to local geographical and financial conditions. These few private concerns dealing in agricultural equipment get their materials from supply origins great distances away, hence private companies as source of information based on local research is inadequate.

Fourth, there is the lack of suitable and adapted media and techniques for diffusing information to the farms and farm homes. There are very few radio and even less television stations. The latter serve as yet, only the cities. The majority of the farmers operate on a subsistence level of production, hence they are unable to own radio and television sets necessary to receive information from the Extension Service personnel who may broadcast in the city stations.

^{74/} Ibid.

The most common and probably the best technique of diffusion of information is the farm and home visit which is, of course, dependent upon transportation and communication facilities. The increase in number and the improvement of roads is still a prime objective of the government, and this will in time improve potentialities of the farm and home visit.

"A total of 3,690 kilometers (2,806.2 miles) of feeder and barrio (village) roads were constructed throughout the country from January 1, to May 30, of the current year. Some of this was accomplished by self-help projects. Total expenditure incurred so far amounted to ₱23,029,950 (\$11,514,975) an average of ₱6,241.18 a kilometer (\$3,120.59 per mile) from the various public works, acts, and from provincial and municipal funds."^{75/}

"Bureau of Telecommunications allotted ₱2,445,000 (\$1,222,500) for the installation of additional phones and conversion of government telephones into automatic systems."^{76/}

The improved roads, transportation and communication facilities undoubtedly have already greatly aided the use of farm and farm-home visits by the Extension personnel in the Philippines, especially in the rural areas.

Fifth, there is the problem of coordination of functions within the organization, its various units or agencies of the Bureau of Agriculture Extension Service and with the other agencies of the different departments of the government which have something to do with Extension work.

"The joint economic development program's major contributions to the Philippine economy are increased production and work opportunities, promotion of and assistance to small and medium sized

^{75/} Ibid., p. 10.

^{76/} Ibid., p. 13.

industries and tremendous headway in social justice among the farmer-tenants and landowners of the Philippines. The program had enhanced public health by providing improved domestic water facilities, malaria control and health education mainly through Extension work."^{77/}

The Extension Service is quite conscious that it deals with many agencies dealing with similar problems. Achievement of proper and smooth coordination is one of the functions of the Extension personnel.

Assumptions and Conclusions

The Bureau of Agricultural Extension of the Department of Agriculture and Natural Resources, Philippines, have been started directly under the assistance of the technical personnel of the Point Four Program. It will likely proceed under locally and foreign trained men utilizing knowledge and experience both from local and foreign studies adapted to Philippine conditions. The local problems can be solved with less complexity by an understanding and use of suitable precedents abroad. Much is owed to the Point Four Program of the United States.

Just as the United States Extension Service grew out of the needs and conditions peculiar to its farming environment, the Philippines Extension Service must be careful to gear its development to its own peculiar needs and conditions, relying on foreign experience and example only as a source of a number of suggested alternatives. This gives the Philippines an advantage in that it may profit by the successes and mistakes of other Extension Systems where they are applicable to the Philippines' problems.

^{77/} Ibid., p. 25.

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