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ABSTRACT

The first of a series of surveys initiated by Montana as part of a statewide study to determine employment and educational inequities which plague rural youth and adults, this report presents the results of the first phase of a long-range agricultural manpower project. To delineate the extent and nature of existing agri-business employment opportunities so that effective vocational programs in the high schools could be developed, data were obtained from agribusiness firms throughout the State. Information collected from questionnaires, telephone conversations, and personal interviews resulted in these findings: (1) The greatest need for agricultural employees will emerge over the next 3 years; (2) The greatest demand for workers came from businesses dealing in agricultural supplies and services, and farm mechanics; and (3) Vacancies existed only in service, skilled labor, and sales positions. Implications and recommendations are included. (SN)

Agri-business Manpower Report

AGRICULTURAL EDUCATION DEPARTMENT · MONTANA STATE UNIVERSITY, BOZEMAN

AGRI-BUSINESS MANPOWER REPORT

by

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The work presented herein was performed by the Montana Agricultural Experiment Station and supported by the Office of Superintendent of Public Instruction, Division of Vocational and Occupational Skills

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PREFACE

In the Spring of 1971, the Staff of the Department of Agricultural Education initiated a statewide study to determine the nature and extent of rural youth and adult education and employment opportunities uniquely associated with agriculture. This study is the first in a series of studies planned to fulfill the purpose of this research effort.

Data relating to employment opportunities must be made available in order to plan future educational programs that will assure Montana Agri-business employers that adequately trained workers will be available. The results of this study provide an insight into the current and anticipated employment needs of agri-businesses in Montana and constitute a necessary first step in the process of determining those competencies needed by agri-business employees of the future.

This publication was prepared by the Department of Agricultural Education, Montana State University, in the hope that this material will be of value in the further development of Montana agricultural education programs.

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The research effort was planned and carried out by the Montana State University Agricultural Education Department with the cooperation of the Director of Vocational and Occupational Skills, Helena, Montana.

Special acknowledgment is extended to the staff members from the Vocational and Occupational Skills Component and the Research, Planning, Development and Evaluation Component of the Office of the Superintendent of Public Instruction.

The Montana Chamber of Commerce and the members of the Agricultural Education Agri-business Committee were of great assistance in identifying the agri-businesses to be surveyed and in serving as an Advisory Committee during the developmental stages of the project.

Special appreciation is extended to the Montana Vocational Agricultural Teachers who assisted in identifying and soliciting responses from agri-businesses in their communities.

To all these people, special appreciation is extended.

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SUMMARY

Purpose and Objectives

The purpose of this survey was to determine the nature and extent of rural youth and adult employment opportunities uniquely associated with agri-businesses in Montana. Specific objectives of the study were:

1. To determine the number of employees currently employed in agri-business firms.
2. To determine the number of current positions, the number of positions one year from now and the number of positions three years hence among agri-business firms.
3. To determine the skill levels in which vacancies exist among agri-business firms.
4. To determine the need for agricultural experience as a pre-requisite for satisfactory employment with agri-business firms.
5. To determine why current vacancies exist among Montana's agri-business firms.

Methods and Procedures

During the Spring of 1971, the Montana State University Department of Agricultural Education in cooperation with the Superintendent of Public Instruction and the Montana Agricultural Experiment Station began a long range agricultural manpower project. Phase I-A of the research project involved a determination of the extent and nature of agri-business employment opportunities in Montana.

Vocational Agricultural Instructors were asked to identify agri-business firms in their area. Additional firm names were obtained from

local Chambers of Commerce, County Extension Agents and the yellow pages of the telephone directories. These efforts produced the names and addresses of 2,213 businesses from which information could be obtained. It was impossible to conclude that the master list included all of the agri-businesses in Montana but for purposes of this survey the 2,213 agri-businesses identified were considered to be the survey population.

A preliminary survey instrument was developed and presented to the State Agricultural Agri-business Education Committee from the State Chamber of Commerce for their consideration. The revised survey instrument was field-tested in the Bozeman, Montana area.

Montana teachers of vocational agriculture were asked to participate in contacting those agri-businesses in their community which did not respond to the second mailing. Incomplete surveys from communities where there was a vocational agriculture department were sent to the instructor with an explanation of why the survey was incomplete. He in turn contacted the business managers to request he complete the survey. An Additional effort was made to correct incomplete surveys and obtain additional responses by sending an interviewer into the Great Falls and Billings area. The data obtained by the end of the fifth week were coded and keypunched.

A random sample of those who had not responded to either mailing was selected and contacted by telephone and personal interviews to increase the number of returns.

General Findings

A total of 2,213 agri-businesses were identified and asked to complete a mailed survey instrument indicating existing and anticipated employment needs. Of the 1,045 businesses who replied, 188 indicated they had existing openings for 352 employees.

Of the 188 agri-businesses which reported, 88 were in agricultural supplies and services, 42 in agricultural mechanics, 43 in agricultural products, 3 in ornamental horticulture, 6 in agricultural resources and 6 in forestry.

Seventy-nine of the 352 current vacancies were in service positions, while 72 skilled, 55 sales, 43 unskilled, 32 technical, 27 managerial, 25 office and 19 supervisory positions were distributed among the 6 agri-business classifications.

Based on responses from 1,045 agri-businesses there will be a 7 percent increase in agri-business positions over the next three years. Within some specific business classifications the percent of increase will be much larger. Businesses fitting the agricultural resources classification were the only agri-businesses showing a predicted overall decrease in employee numbers over the next three years.

A comparison of current and predicted employment in management positions indicated a slight loss over the next three years due largely to predicted losses among agri-businesses categorized in agricultural resources area. For the same reason the aggregate number of technical positions and office positions showed a decline over the next three years.

Overall, it appeared that agri-businesses associated with agricultural supplies and services, agricultural mechanics and agricultural products will have need for the greatest number of employees over the next three years. Businesses in the area of forestry and ornamental horticulture showed some promise for present and future employment in Montana. However, it was difficult to project an accurate employment picture in either area because so few agri-businesses in these two classifications replied to the survey.

Seventy-six percent or 267 of the 352 current job vacancies were in those agri-businesses which employed five or more persons. Businesses dealing in agricultural supplies and services and those engaged in farm mechanics activities had need for the greatest number of employees. In the aggregate, the greatest number of current vacancies were among the service, skilled and sales positions. According to the 1,045 respondents, 60 percent of their employees needed some agricultural experience to perform satisfactorily on the job.

Fifty-two percent of the employers indicated that no trained workers were available to fill current vacancies. Thirty-seven percent of the respondents gave normal turnover as one reason for vacancies while 32 percent said their business was expanding and they had not yet filled all of their positions.

I

INTRODUCTION

Data from research conducted throughout the United States indicate a growing need for employees to fill agriculturally-related employment positions. In urban as well as rural communities there is a growing demand for people to fill positions associated with the production, processing and marketing of agricultural products. If this is the case across the United States one can assume that Montana's employment picture is somewhat similar. The past decade has witnessed a maelstrom of change in production agriculture in the state. Farm and ranch numbers continue to decrease and the size of the remaining units continues to increase, largely because of technological advances and concomitant outside economic forces. But despite this fact production agriculture remains the number one income-producing industry in the State.

In agriculture, as in other industries, technological advancement has created many new jobs and completely changed the nature of those that remain. Farm and ranch workers are becoming specialists. Their counterparts in agri-business have had to develop a complete new repertoire of competencies, many of which relate directly to production agriculture.

What is the nature of the changing employment picture in Montana's agri-business? The very rapid change within the agriculture sector of the economy from a "goods-producing" industry to one dominated by "service-producing" activities has resulted in a growing list of opportunities for gainful employment in agri-related occupations.

The modern farmer and rancher relies heavily on technicians to assist him in a wide array of tasks from mixing a formula fertilizer to developing and appropriate fattening ration for a pen of livestock to analyzing his farm records on a sophisticated computer.

Producing farm products is only one part of the total agricultural picture. The food products require handling, storage, processing and packaging before they are acceptable to the consumer.

This survey represents the first step in a long range program to identify current and existing employment opportunities in agri-business and to identify those competencies needed by the employees in this burgeoning sector of the agricultural economy.

Rationale for the Study

Much has been written about the change in the nature of agricultural employment. In Montana this change has been evidenced by a reduction in the number of workers who work directly on the farms and ranches and a sharp increase in the number of service-oriented jobs that require some level of competency in agriuclture. At different times, attempts have been made to gather data on the Montana agri-business employment picture under varying conditions and in different geographic areas. Valuable as these efforts have been, they have not adequately projected the number and kinds of jobs related to agriculture that will exist in the future in Montana. In short, specific facts about agriculturally-related jobs and potential jobs in Montana have been unknown.

The Montana Employment Service has recognized the need for detailed occupational projections. They point out that "manpower planners have, in the past, been forced to plan manpower and vocational education programs with a minimum of reliable data on occupational needs in the future." (22) The initial step in coordinating the efforts of all agencies interested in matching potential employees and their interests with potential jobs and job competencies must be the conduct of a detailed and systematic manpower study.

Existing and future training programs at the secondary level will be more effective if Montana's educational planners are able to match the student and his interests with the job and its required competencies. Any training program conceived to be more than pseudo in nature must allow

students to gain actual experience in the occupations of their choice. An educational program that calls for an occupational experience must evolve around manpower projections.

Similar data are needed in the development of post-secondary vocational-technical and baccalaureate degree programs designed to train prospective employees for agriculturally-related occupations. These program planners must have accurate reliable figures on the numbers and kinds of employees needed in the various areas if they are to initiate programs consistent with the concepts of effectiveness and efficiency.

Assumption

The assumption accepted by the investigators at the beginning of the study was that agri-business employers would be able to classify their employees under one or more of the eight position classifications identified for use within this study.

Limitations

The limitations for this project are those that are inherent with survey research utilizing a mailed questionnaire and the ability to locate and categorize agricultural businesses in the state.

No special effort was made to quantify part-time employees since an earlier Montana agri-business study concluded that there were no effective means of training persons for such employment.

Definitions of Terms

The need for a common set of acceptable definitions which would be meaningful to the businessman was deemed essential to the conduct of the survey. Thus, the definitions were prepared to describe six types of agri-businesses and eight job positions to insure common understanding among the participants in the study.

Types of Agri-Businesses

Ag Supplies/Services: Businesses which provide supplies to farmers and ranchers and provide services needed to utilize these supplies. (e.g., Hardware, Feed Store, Fertilizer Plant)

Ag Mechanics: Businesses which sell and service agricultural units, machinery and related equipment. (e.g., Farm Implement Dealer, Agricultural Mechanic Shop)

Ag Products: Businesses which assemble, sort, test, grade, store, and market farm and ranch products. (e.g., Elevator, Feed Mill, Dairy Processing Plant)

Ornamental Horticulture: Businesses which produce, distribute and utilize ornamental crops principally for ornamental or aesthetic purposes. (e.g., Nursery, Landscaping, Lawn and Turf Management)

Ag Resources: Businesses concerned with the principles and practices necessary to conserve and improve our natural resources. (e.g., ASCS, SCS, FHA, Banks)

Forestry: Businesses involved in the production, processing, management, marketing, and utilization of forest products. (e.g., Tree Farm, Sawmill, Wood Product Plant)

Job Positions Within Agri-Businesses

To assure continuity in assigning employees to an appropriate job classification, the following eight types of positions were identified:

Managerial: Individuals responsible for the overall direction of the business and its goals. (e.g., General Managers)

Supervisor: Individuals who have the responsibility of supervising tasks completed by others. (e.g., Area Supervisor, Shop Foreman, Farm Loan Officer)

Technical: Individuals capable of performing duties and/or services which require a knowledge of science, mathematics, manufacturing and constructing process. (e.g., Surveyor, Soil Conservationist)

Sales: Individuals who perform the sales function within the business and who might travel to the consumer to provide other needed related functions. (e.g., Salesman)

Office: Individuals responsible for the business's paper work and communications. (e.g., Typists, Clerks, Receptionists)

Service: Individuals who deliver, setup, demonstrate, maintain and/or do major repairs upon the products handled by the business. (e.g., Partsmen, Welders, Mechanics)

Skilled: Individuals who perform certain manipulative operations beyond that required by a laborer or beginning apprentice connected with a given trade. (e.g., Electrician, Painter)

Unskilled: Individuals who perform tasks for which there is little need for previous educational training. (e.g., Cleaning, Minor Servicing, Hauling, Delivery, Light Truck Drivers)

II

REVIEW OF RESEARCH AND RELATED LITERATURE

Agricultural Educators have viewed the development of appropriate models for accurately predicting agri-business employment opportunities as the key to the development of viable programs to meet the needs of a rapidly changing agricultural industry. The review of pertinent literature and research revealed an increased interest on the part of agricultural educators in gathering more complete data about employment opportunities prior to developing high school, post-secondary and adult education programs in agriculture.

It was clearly evident from the review that farm employment is declining but that the need for highly trained employees in the non-farm sector of agriculture has increased. However, to identify a single model for gathering data about agri-business employment which would be applicable to any set of circumstances was virtually impossible. The literature revealed that a wide array of studies ranging from local to state surveys have been conducted. To date no concentrated effort has been made to consolidate the many useful techniques for gathering employment data and develop a single system which would enable educators to make meaningful summarizations.

Secondary School Enrollment Trends

Numerous definitions of agri-business occupations can be found in the related literature but one which seems to best synthesize the thinking of most agricultural educators is the following:

> Occupations which evolve out of a blend of agriculture and business and encompass a variety of services associated with the manufacturing

and distribution of farm equipment, fertilizers and supplies; the processing, storage, marketing and distribution of farm equipment, fertilizers and supplies; the processing, storage, marketing and distribution of farm commodities including food and fiber; and the conservation, preservation and use of our natural resources.

The conclusions from studies reviewed and the figures assembled by the U. S. Office of Education support the assumption that there are an increased number and diversity of jobs available in the agri-business sector. Figures in Table 1 show a decline in the number of persons enrolled in the production phase of the high school program and a steady growth in enrollment in the agri-related occupational areas.

TABLE I

SECONDARY SCHOOL ENROLLMENT TRENDS IN AGRI-BUSINESS

Occupational Area	Enrollment 1966-67	Enrollment 1967-68	Enrollment 1968-69
Agricultural Production (Farming)	403,600	388,400	374,566
Agricultural Mechanics	39,359	56,662	72,873
Agricultural Products (Processing)	8,652	8,423	8,498
Ornamental Horticulture	17,695	27,153	28,690
Agricultural Resources	6,527	10,317	12,284
Agricultural Supplies/Services	18,107	14,901	15,138
Forestry	6,517	12,683	14,648
Other	8,580	9,458	9,657
Grand Total Enrollment in Secondary	509,037	528,997	536,354

These secondary enrollment figures assembled by the U.S. Office of Education imply a continued increase in enrollment in vocational agriculture programs. Recent reports indicate the number of students enrolled

in the vocational agriculture program is increasing and that a large percentage of the increase is distributed over the six agri-related areas. Recent research indicates there is a need to continue gathering information which will help establish occupational trends prior to the design of occupational training programs.

The Identification of Present and Emerging Off-Farm Agriculture Occupations

In 1966, Warmbrod and Phipps stated that "No facet of agricultural education has been more widely and throughly investigated during the past five years than that pertaining to manpower needs and employment opportunities in the non-farm occupations which involve knowledge and skill in agriculture." (17, p.13)

In 1970, Carpenter and Rodgers, after reviewing research relating to off-farm agricultural occupations stated, "The scope of these studies has ranged from local communities to statewide with some national effort and from single occupations in agriculture through the off-farm agricultural complex to the total occupational structure." (4, p.9)

It can be concluded from the review of literature and research that the exact nature and extent of agri-business employment varies considerably from state to state and region to region. Although data collected by the various state surveys point to an overall increase in the number of jobs in the agri-business sector, there appears to be sufficient differences in the nature of agri-business employment in each state to warramt individual employment surveys.

Early Studies From Other States

The many studies conducted throughout the United States have firmly established the need for education for persons employed in both farm and agriculturally related occupations. Early studies have shown a definite need for instruction in agricultural practices for those engaged in agribusiness. Persons and Copa concluded that:

> One of the tasks of vocational educators, and particularly those responsible for planning vocational programs on a state or regional level, is to estimate the work force population for which persons should be trained. (15, p.1)

Agan (1) reported that 41.59 percent of the employees needed in the next five years in Kansas would be the result of anticipated growth. Barwich, (2) was interested in the identification of off-farm agricultural occupations in Delaware and the education needed for employment in these occupations. He found that approximately 20 percent of the state's labor force was in agri-related employment, excluding farmers. He reported that 3.1 percent of the total number of employed workers in the state, excluding farmers, need training in agriculture. Barwich's research also indicated that the number of workers needing agricultural competencies would increase by 17.1 percent over the next five years.

Hoover, McClay and Stevens (11) conducted research in Pennsylvania to identify agricultural occupations and job titles in 1965. They attempted to list job competencies needed for entry and advancement while determining job characteristics. It was determined that approximately 50 percent of the employees needed agricultural competencies.

Judge (12) studied the employment opportunities and needed competencies in off-farm agricultural occupations in Massachusetts. The purpose of his

research was to determine the number of employees and the annual entry opportunities in off-farm agricultural occupations. In addition, he studied the competencies needed by workers while ascertaining the instructional needs of those individuals seeking entry and advancement. Horticulture, farm machinery and equipment and food distribution and processing were found to be the three major areas identified from his work.

Brum, in his work in Ohio, identified 57 different kinds of non-farm agriculture firms. He found a need for 165,262 non-farm agriculture workers who need agricultural competencies in order to be productive workers. He also determined there was a need for 15,890 workers for annual replacement. Brum found that 90 percent of the workers were at the sales, skilled and semiskilled and service levels. (3)

Dillon and Cain interviewed 284 business firms to: (1) determine the total number of workers currently employed in agriculturally-oriented jobs, (2) determine the total number of agricultural technicians currently employed, (3) determine the functions of businesses studied, (4) determine the additional number of employees needed, and (5) determine the educational requirements, work experience requirements and age limitations for agricultural technician jobs. They were able to identify 736 positions in the 284 businesses, 306 of which were defined as agriculturally-oriented jobs. Five major conclusions were made from their findings.

1. Forty percent of all workers employed in non-farm agricultural businesses need some knowledge and skills in agriculture.
2. Sixteen percent of all workers employed in non-agricultural businesses need some knowledge and skills in agriculture.

3. Of the ten potential job opportunities for agricultural workers, six were in the Kentucky and four were in the Ohio region of study.
4. Two and one-half times more agricultural workers with high school vocational level training will be needed than agricultural technicians with post-high school training to take entry level positions in the next five years.
5. Most of the business firms interviewed were multi-functional.
6. Purchasing, service and retailing were the predominant functions among the businesses studied.
7. Employers reported that they expected a 40 percent increase in the number of employees needing technical competencies in agriculture in the next five years. (5)

Recent Studies From Other States

Horner, (10) in a Nebraska study, found that the number of jobs in agricultural occupations was second only to the broad Trades and Industrial Area. He concluded that this group represented 18 percent of the total employment in the state with substantial increases expected over the next two years. At the time of the survey the largest groups were employed in off-farm clusters found in agricultural production processing and professional and managerial; however, the projected need was in the area of agricultural supplies and agricultural mechanics.

Mitchell, (14) in the Oklahoma agri-business survey, found the largest number of employees in agricultural finance, insurance and real estate. The second and third largest employers were agricultural supply, service and distribution and agricultural building and construction respectively.

Thompson, (16) in reporting from the California agricultural manpower study disclosed an optimistic future for persons interested in agri-business. The findings indicated the largest number of year-round jobs and the largest increase in jobs would be in the category of managerial, supervisorial and foreman type jobs. Similar to the Nebraska findings, California data pointed up a need for additional personnel in jobs associated with equipment operations, maintenance and repair. However, Nebraska data further showed that the category involving sales personnel was expected to grow about twice as fast as the mechanics area.

Loreen, (13) studying Washington's agricultural employment needs, projected a 10 percent increase in the number of employees who would need agricultural competencies in the next five years. The researcher concluded that the greatest number of trained employees would be needed in the farm supplies and equipment sales, farm machinery sales and service and in ornamental horticulture occupations.

Hamilton (8) asked Arizona agri-business employers in Maricopa County to indicate the number of persons they felt would be employed in each of the job titles in their firm five years into the future. The resultant data revealed the greatest percentage increase would be in the ornamental horticulture cluster while the second greatest percentage increase was anticipated in the agricultural mechanization cluster.

Selected Montana Studies

Three studies have been conducted in Montana which were designed to identify employment in agriculturally-related businesses. A survey of the

horticulture, floriculture and nursery industries was conducted. The replies from 56 firms accounted for 506 full-time employees and 219 part-time employees. Specific job titles were identified but no effort was made to determine the number of new and replacement workers that would be needed to satisfy the demands. The researchers concluded that a limited number of trained employees would be needed for entry positions in the horticultural, floriculture and nursery industries in Montana.

Heaney (9) studied off-farm agricultural occupations in Montana. He identified 337 off-farm job titles with 56 percent of the employers interviewed needing agricultural competencies. The agri-business areas from which he gathered his data were farm supplies and equipment, farm services and livestock and poultry industries. He found 1,127 service businesses in the 10 communities needing agricultural competencies. These businesses employed 21,854 workers. The employers expected to employ an additional 2,114 persons in 5 years. An additional 6,314 persons would be expected as a result of expected turnover during that period. That would allow for a total of 8,428 new jobs in 5 years or 1,261 new jobs in a year.

Fritz (6) conducted a study in 1970 to identify agri-business educational needs of employees in the Billings, Montana, trade area. Among other things the data were gathered to show the number of persons currently employed in the area, existing vacancies and future expectations. He found that the number of full-time employees was expected to increase by 14.89 percent by 1975.

Greer, (7) studying the organization and structure of farm supply firms in Montana, found that about one-half of all employees were service personnel

Sales personnel made up the second largest group. The researcher concluded that there will be fewer dealerships in the future but that the sales volume of those remaining will be higher. Those remaining will need more highly trained and more specialized service personnel to handle the increased volume of business. This study indicated a rather small number of management personnel among those firms.

Conclusions

The review of related research and literature indicated that: (1) the need for agri-business employees will continue to increase as agriculture strives to meet the new demand for food and fiber, (2) in the future, employees in agri-business positions will need to be more specialized, (3) agricultural background will continue to be an asset to most agri-business employees, and (4) although there will be more specialization, the number of competencies within a speciality will continue to increase.

The tenor of the recommendations made by researchers seemed to indicate that individual states will need to continue to conduct statewide manpower studies because of the variety of unique situations within individual states.

Researchers should conduct manpower research on a regular basis in order to maintain current employment data suitable for reorganizing old programs as well as planning and implementing new ones.

III

ANALYSIS OF DATA

The central purpose of Phase I-A of the agri-business manpower study was to provide data to accomplish a comprehensive assessment of the number and type of agriculturally related employment opportunities in Montana. Therefore, every effort will be made to present the findings in a manner that is interesting as well as useful to program planners faced with the problem of re-designing old and organizing new programs to train prospective agri-business employees.

Note that data reported herein deal only with the number and the identification of current and anticipated employment opportunities. No conclusions will be drawn or recommendations made as to the character of future vocational programs designed to train the employees needed to fill anticipated position vacancies. Further study, to be completed in Phase I-B of the manpower study, will provide data upon which program objectives can be based. The tabular data and written explanation presented should be viewed as a means of identifying trends in the employment pattern among agri-business in Montana.

Initial data were obtained from owners or managers of agri-businesses in Montana with a mailed survey instrument (Appendix A) and a limited number of personal interviews. Additional data were collected by telephone from a random sample of agri-businessses who had not responded as the result of earlier contacts. Thus, employment data were collected from a total of 1,045 agri-businesses throughout Montana.

Each agri-business that responded was placed into one of six U.S.O.E. Standard Classifications: agricultural supplies and services, agricultural mechanics, agricultural products, ornamental horticulture, agricultural resources or forestry. A further division of the employees within the businesses so classified was accomplished by asking each employer to identify each of his employees with one of eight employment positions: managerial, supervisory, technical, sales, office, service, skilled and unskilled.

The following symbols are used throughout Chapter Three when current and anticipated employment data are being summarized.

E - Current
V - Vacancies
1 - Expected employees in one year
3 - Expected employees in three years

All percentages reported in the tables presented in Chapter 3 have been rounded to the nearest whole percent.

The Nature of the Survey Population

The study population consisted of 2,213 agri-businesses throughout Montana. It was the intent of the researchers to seek employment information from the largest population that could be identified with the resources available.

The names and addresses of Montana agri-buinesses were assembled with the help of the vocational agricultural instructors, community chambers of commerce, selected company representatives and the yellow pages of the telephone directories.

The tabulation presented in Table 2 indicates that 1,262 or 57 percent of the 2,213 instruments sent were returned as the result of all efforts to solicit responses. Eight hundred fifty seven responses were from businesses that reported "no" to the question of vacancies and 188 responses came from businesses that reported "yes" to the question of whether or not vacancies existed in their business. The "yes" and "no" responses from 265 respondents contacted by telephone are included in these two figures. The remaining 217 surveys were considered invalid.

TABLE 2

SUMMARY OF RESPONSE TO AGRI-BUSINESS SURVEY

Breakdown	Response	*Percentage
Businesses reporting no current vacancies	857	68
Businesses reporting current vacancies	188	15
Invalid surveys	217	17
Total	1,262	100

*Percentage rounded to the nearest whole number

The 1,045 agri-businesses who completed the survey are arrayed in Table 3 under the six U.S.O.E. Classifications according to the nature of the service provided by each agri-business. It was not surprising to find that a large number, 579, of the businesses were classified under agricultural supplies and services. This fact is easily understood when one considers the variety of services demanded by today's farmers and ranchers.

TABLE 3

DISTRIBUTION OF "YES" AND "NO" RESPONSES TO THE AGRI-BUSINESS SURVEY BY USOE AGRI-BUSINESS CLASSIFICATION

USOE Classification	No. Reporting	Businesses Reporting			
		Vacancies-No		Vacancies-Yes	
		No.	*PCT	No.	*PCT
Ag Supplies/Services	579	491	85	88	15
Ag Mechanics	147	105	71	42	29
Ag Products	209	166	79	43	21
Orn. Horticulture	22	19	86	3	14
Ag Resources	50	44	88	6	12
Forestry	38	32	84	6	16
Total	1,045	857	--	188	--

*Percentages rounded to the nearest whole percent

The summary of data reported in Table 3 indicates that businesses associated with agricultural supplies and services represented the largest number of agri-businesses reporting. Those businesses dealing with agricultural products accounted for the second largest number of agri-businesses. The third highest number of agri-businesses reporting vacancies were associated with agricultural mechanics.

Present and Projected Job Vacancies

Employers were asked to indicate the number of existing vacancies in the agri-business they represented. The distribution of the 188 agri-businesses with current vacancies is arranged in Table 4 to show the

number of agri-businesses in each classificiation reporting vacancies and the percentage of the total vacancies which this number represents.

TABLE 4

A BREAKDOWN OF CURRENT AGRI-BUSINESS VACANCIES
BY USOE CLASSIFICATIONS

Classifications	Number	*Percent
Ag Supplies/Services	88	47
Ag Mechanics	42	22
Ag Products	43	23
Orn. Horticulture	3	2
Ag Resources	6	3
Forestry	6	3
Total	188	100

*Percentages rounded to nearest whole percent

Of the 188 agri-businesses reporting vacancies, 88 or 47 percent were in businesses dealing in agricultural supplies and services. The number of vacancies in agri-businesses related to agricultural mechanics and agricultural products was about equal. Although businesses associated with agricultural mechanics and agricultural products indicate they have about the same number of current vacancies it should be noted in Table 3, page 24, that a greater number of surveys were returned by agri-businesses related to agricultural products than to agricultural mechanics.

The data presented in Table 5 show the total number of current vacancies by position among the six agri-business classifications.

TABLE 5

A COMPARISON OF CURRENT VACANCIES BY POSITIONS WITHIN THE SIX USOE AGRI-BUSINESS CLASSIFICATIONS

Positions	Agri-Business Classifications						
	Ag Supplies/ Services	Ag Mech	Ag Prod	Orn Hort	Ag Res	Forestry	Total
Managerial	14	7	4	0	2	0	27
Supervisory	7	5	4	1	1	1	19
Technical	11	9	3	1	8	0	32
Sales	35	15	5	0	0	0	55
Office	14	3	5	0	3	0	25
Service	21	41	11	0	0	6	79
Skilled	31	17	8	3	1	12	72
Unskilled	17	4	15	0	0	7	43
Total	150	101	55	5	15	26	352

Businesses associated with agricultural supplies and services, agricultural mechanics and agricultural products accounted for 150, 101 and 55 of the current vacancies, respectively. Among the agri-business classifications, there were 79 current vacancies for people in service positions, 72 current vacancies for people in the skilled positions and 55 current vacancies for sales personnel in the agri-business responding.

Current and Anticipated Employment

The respondents were asked to identify their current position vacancies and predict their anticipated employment level into the future, one and three years. Table 6 was prepared to reflect the current employment level and current vacancies as well as any anticipated increase or decrease in the expected level of employment.

Table 6 is a summary of all employment data derived from the 1,045 surveys. The data were categorized according to the six agri-business classifications and eight position classifications.

Each potential employer was asked to project his employment needs ahead, based on his best judgement, one and three years. Various data from Table 6 are presented in Tables 7 through 16 to further clarify the current and anticipated employment picture for each of the eight positions categories within the six agri-business classifications.

TABLE 6

MONTANA AGRICULTURAL OCCUPATIONAL OPPORTUNITIES CATEGORIZED BY USOE CLASSIFICATIONS AND SKILL LEVELS

N=1,045

Positons	Ag Supplies/Service				Ag Mechanics				Ag Products			
	E	V	1	3	E	V	1	3	E	V	1	3
Managerial	636	14	616	627	154	7	154	154	171	4	180	187
Supervisory	310	7	309	325	61	5	68	75	84	4	93	103
Technical	136	11	145	161	44	9	48	50	47	3	47	50
Sales	597	35	637	702	160	15	185	204	156	5	164	173
Office	635	14	612	630	126	3	132	137	216	5	220	226
Service	545	21	552	574	477	41	550	580	158	11	165	177
Skilled	556	31	542	567	111	17	140	159	550	8	574	583
Unskilled	581	17	623	650	47	4	49	56	507	15	506	515
Totals	3996	150	4036	4236	1180	101	1326	1415	1889	55	1949	2014

Positions	Orn. Horticulture				Ag Resources				Forestry			
	E	V	1	3	E	V	1	3	E	V	1	3
Managerial	16	0	16	16	156	2	142	143	36	0	38	37
Supervisory	2	1	2	2	112	1	76	80	51	1	52	54
Technical	6	1	6	6	311	8	267	268	10	0	10	12
Sales	8	0	8	9	4	0	3	3	26	0	27	30
Office	7	0	7	7	380	3	303	321	50	0	53	55
Service	1	0	2	3	151	0	129	162	103	6	110	115
Skilled	9	3	14	16	47	1	30	39	261	12	329	311
Unskilled	26	0	26	26	24	0	32	41	205	7	277	259
Totals	75	5	81	85	1185	15	982	1057	742	26	896	873

The employment figures arrayed in Table 7 present an overview of the agri-business employment picture for the next three years as predicted by 1,045 agri-business employers. The percentages are based on the anticipated increase or decrease from the number of employees currently employed by the 1,045 agri-businesses who reported.

TABLE 7

CURRENT AND ANTICIPATED LEVELS
OF EMPLOYMENT BY AGRI-BUSINESS CLASSIFICATION

N=1,045

Business Classification	Current and Producted Employment				
	E	1		3	
		No.	*PCT. Change	No.	*PCT. Change
Ag Supplies & Services	3996	4036	+ 1	4236	+ 6
Ag Mechanics	1180	1326	+12	1415	+20
Ag Products	1889	1949	+ 3	2014	+ 9
Orn. Horticulture	75	81	+ 8	85	+13
Ag Resources	1185	982	-17	1057	-11
Forestry	742	896	+21	873	+18
Total	9067	9270	...	9680	...
PCT. Change	...	...	+ 2	...	+ 7

* Percents rounded to the nearest whole number

With the exception of businesses identified with agricultural resources, all other types of agri-businesses anticipate increasing their work force during the next three year period. With a total of 1,185 employees in the agricultural resources classification, the 17 percent loss in one year and

the somewhat smaller loss, 11 percent, over the next three years represent a sizeable decrease which will measurably affect the total employment picture in the agri-business sector.

Anticipated increases ranging from a low of 6 percent for agricultural supplies and services to a high of 20 percent for agricultural mechanics account for an overall increase of 7 percent among agri-businesses over the next three years.

The presentation of data in Table 8 shows a decrease in the number of management positions in three years among agri-businesses associated with agricultural supplies and services and agricultural resources, with no change in agricultural mechanics and ornamental horticulture. A 9 percent increase in managerial positions is anticipated in agri-businesses related to agricultural products and a 3 percent increase is expected in forestry.

TABLE 8

CURRENT EMPLOYMENT VACANCIES AND ANTICIPATED NEEDS IN MANAGERIAL POSITIONS

Business Classification	Number of Positions					
	*E	**V	*1		*3	
			No.	PCT Change	No.	PCT Change
Ag Supplies & Services	636	14	616	- 3	627	- 1
Ag Mechanics	154	7	154	0	154	0
Ag Products	171	4	180	+ 5	187	+ 9
Orn. Horticulture	16	0	16	0	16	0
Ag Resources	156	2	142	- 9	143	- 8
Forestry	36	0	38	+ 5	37	+ 3
Total	1169	27	1146	...	1164	...
PCT Change	...	..	...	- 2	...	- 1

* N=1,045 Agri-businesses
** N= 188 Agri-businesses

Even though there were 27 current vacancies listed, the total number of management personnel is expected to decrease over the next three years. Several reasons can be suggested to explain this decrease: (1) continued business consolidation, (2) owners not considering themselves as being managers, (3) dispersion of duties among several people, therefore no one is considered as "the manager." Greer's study of "The Organization and Structure of Farm Supply Firms in Montana" seemed to support these conclusions. (8, p.75)

By contrast Thompson (17, p.75) reported that the largest increase in jobs in California's agriculture sector, as well as the largest number of year round jobs, were in managerial, supervisory and foreman type jobs, respectively.

It would appear, from a review of data in Table 9, that the number of supervisory positions will continue to increase except in agricultural resources where a reduction from the current employment level of 112 to 80 in three years is expected. This 29 percent reduction is large enough to offset most of the gain anticipated by agricultural mechanics, agricultural products, forestry and agricultural supplies and services. However, third year predictions for all other classifications indicate that the overall gain in anticipated employment level will balance the loss and result in a 3 percent gain over the current number of employees in supervisory positions.

TABLE 9

CURRENT EMPLOYMENT, VACANCIES AND ANTICIPATED NEEDS IN SUPERVISORY POSITIONS

Business Classification	Number of Positions					
	*E	**V	*1		*3	
			No.	PCT Change	No.	PCT Change
Ag Supplies & Services	310	7	309	0	325	+ 5
Ag Mechanics	61	5	68	+11	75	+23
Ag Products	84	4	93	+11	103	+23
Orn. Horticulture	2	1	2	0	2	0
Ag Resources	112	1	76	-32	80	-29
Forestry	51	1	52	+ 2	54	+ 6
Total	620	19	600	...	639	...
PCT Change	...	..	...	- 3	...	+ 3

* N=1,045 Agri-businesses
** N= 188 Agri-businesses

The number of positions reported in Table 10 which can be embraced in the definition of the technical positions are expected to increase except in the area of agricultural resources. Although the five remaining agri-business classifications show increases or remain at the same level of employment over the next three years, the predicted reduction in management personnel among agriculture resource businesses will lead to a slight reduction in total employment.

TABLE 10

CURRENT EMPLOYMENT, VACANCIES AND ANTICIPATED NEEDS IN TECHNICAL POSITIONS

Business Classification	Number of Positions					
	*E	**V	*1		*3	
			No.	PCT Change	No.	PCT Change
Ag Supplies & Services	136	11	145	+ 7	161	+18
Ag Mechanics	44	9	48	+ 9	50	+14
Ag Products	47	3	47	0	50	+ 6
Orn. Horticulture	6	1	6	0	6	0
Ag Resources	311	8	267	-14	268	-14
Forestry	10	0	10	0	12	+20
Total	554	32	523	...	547	...
PCT Change	...	..	...	- 6	...	- 1

* N=1,045 Agri-businesses
** N= 188 Agri-businesses

As reported in Table 10, the anticipated 18 percent increase in technical positions among agricultural supply and service businesses and the 14 percent increase among agricultural mechanics from the current employment level reflect the greatest increase in technical level employees. The 20 percent increase in technical positions in forestry could be misleading because of the very low number of forestry businesses reporting.

The need for people in sales positions is evidenced by figures reported in Table 11. This may be due to three factors: (1) agri-businesses seem to be operating over a wider trade area, (2) higher

turnover among salesman is evident, or (3) a good salesman, if available, can be an asset to almost any business.

TABLE 11

CURRENT EMPLOYMENT, VACANCIES AND ANTICIPATED NEEDS IN SALES POSITIONS

Business Classification	Number of Positions					
	*E	**V	*1		*3	
			No.	PCT Change	No.	PCT Change
Ag Supplies & Services	597	35	637	+ 7	702	+18
Ag Mechanics	160	15	185	+16	204	+28
Ag Products	156	5	164	+ 5	173	+11
Orn. Horticulture	8	0	8	0	9	+13
Ag Resources	4	0	3	-25	3	-25
Forestry	26	0	27	+ 4	30	+15
Total	951	55	1024	...	1121	...
PCT Change	...	..	...	+ 8	...	+18

* N=1,045 Agri-businesses
** N= 188 Agri-businesses

The data in Table 11 indicates that, in total, agri-businesses will be increasing their sales force over the next three years. The exception to this trend is in agri-resources where a lose of only one sales position out of the four recorded resulted in a predicted 25 percent reduction. Increases range from a predicted 11 percent increase among agricultural products businesses to a 28 percent increase among those businesses related to agricultural mechanics.

The anticipated increase or decrease in office personnel, is shown by data included in Table 12.

TABLE 12

CURRENT EMPLOYMENT, VACANCIES AND ANTICIPATED NEEDS IN OFFICE POSITIONS

Business Classification	Number of Positions					
	*E	**V	*1		*3	
			No.	PCT Change	No.	PCT Change
Ag Supplies & Services	635	14	612	- 4	630	- 1
Ag Mechanics	126	3	132	+ 5	137	+ 9
Ag Products	216	5	220	+ 2	226	+ 5
Orn. Horticulture	7	0	7	0	7	0
Ag Resources	380	3	303	-20	321	-16
Forestry	50	0	53	+ 6	55	+10
Total	1414	25	1327	...	1376	...
PCT Change	...	..	...	- 6	...	- 3

* N=1,045 Agri-businesses
** N= 188 Agri-businesses

The data reflect a 3 percent decrease in the aggregate number of office positions over the next three years among all agri-businesses reporting. Much of this decrease can be attributed to the 16 percent predicted decrease among agricultural resource businesses. Increases of 10 percent, 9 percent and 5 percent were anticipated in businesses associated with forestry, agricultural mechanics and agricultural products respectively; however, these increases fail to offset the expected reduction in agricultural resources.

TABLE 13

CURRENT EMPLOYMENT, VACANCIES AND ANTICIPATED NEEDS IN SERVICE POSITIONS

Business Classification	Number of Positions					
	*E	**V	*1		*3	
			No.	PCT Change	No.	PCT Change
Ag Supplies & Services	545	21	552	+ 1	574	+ 5
Ag Mechanics	477	41	550	+ 15	580	+ 22
Ag Products	158	11	165	+ 4	177	+ 12
Orn. Horticulture	1	0	2	+100	3	+200
Ag Resources	151	0	129	- 15	162	+ 7
Forestry	103	6	110	+ 7	115	+ 12
Total	1435	79	1508	...	1611	...
PCT Change	...	..	...	+ 5	...	+ 12

* N=1,045 Agri-business
** N= 188 Agri-business

Data in Table 13 show that during the next three years agri-businesses in all six classifications anticipate that additional service personnel will be employed. The only anticipated reduction will occur in agricultural resources within one year. However, data show a predicted increase in three years in this catagory. The anticipated 12 percent increase in service personnel during the next three years from 1,435 to 1,611 employees reflects a need for 176 additional employees in service positions.

Businesses engaged in agricultural mechanics activities found they would need 22 percent more service employees in three years while both agricultural products and forestry anticipate 12 percent increases. Smaller

increases are expected in agricultural resources, 7 percent, and in agricultural supplies and services, 5 percent.

Note that the inordinate percentage increase in ornamental horticulture is due to the low number of service positions now existing in this area.

TABLE 14

CURRENT EMPLOYMENT, VACANCIES AND ANTICIPATED NEEDS IN SKILLED POSITIONS

Business Classification	Number of Positions					
	*E	**V	*1		*3	
			No.	PCT Change	No.	PCT Change
Ag Supplies & Services	556	31	542	+ 3	567	+ 2
Ag Mechanics	111	17	140	+26	159	+43
Ag Products	550	8	574	+ 4	583	+ 6
Orn. Horticulture	9	3	14	+ 6	16	+ 8
Ag Resources	47	1	30	-36	39	-17
Forestry	261	12	329	+26	311	+19
Total	1534	72	1629	...	1675	...
PCT Change	...	..	...	+ 6	...	+ 9

* N=1,045 Agri-businesses
** N= 188 Agri-businesses

The data in Table 14 show an expected 9 percent increase in the total number of skilled positions in three years. Businesses associated with agricultural mechanics predicted they would be employing 43 percent more skilled workers in three years than they now employ, while forestry businesses expected a 19 percent increase over the same period.

With the exception of businesses associated with agricultural resources, which predicted a 17 percent decrease in skilled workers over the

next three years, all agri-business classifications show anticipated increases ranging from a low of 2 percent for agricultural supplies and services to a high of 43 percent for agricultural mechanics.

TABLE 15

CURRENT EMPLOYMENT, VACANCIES AND ANTICIPATED NEEDS IN UNSKILLED POSITIONS

Business Classification	Number of Positions					
	*E	**V	*1		*3	
			No.	PCT Change	No.	PCT Change
Ag Supplies & Services	581	17	623	+ 7	650	+12
Ag Mechanics	47	4	49	+ 4	56	+19
Ag Products	507	15	506	0	515	+ 2
Orn. Horticulture	26	0	26	0	26	0
Ag Resources	24	0	32	+33	41	+71
Forestry	205	7	277	+35	259	+26
Total	1390	43	1513	...	1547	...
PCT Change	...	..	...	+ 9	...	+11

* N=1,045 Agri-businesses
** N= 188 Agri-businesses

The data in Table 15 indicate there will be a need for 11 percent more unskilled workers over the next three years. The data also show that businesses related to agriculture resources will increase their current level of employment by 71 percent. All other business classification show varying degrees of increase which together account for the 11 percent overall increase.

The data in Table 16 present a numerical picture of the relationship of current employment to predicted employment in all agri-business

classifications and in all employment positions. A negative (-) figure represents a reduction in the number of employees from the present level of employment, a (+) positive figure represents an increase and a zero (0) indicates there is no anticipated change in position numbers.

TABLE 16

PROJECTED VARIATIONS FROM CURRENT EMPLOYMENT NUMBERS, 1973 and 1975

Positions	Agri-Business Classifications											
	Ag Supplies/ Services		Ag Mechanics		Ag Products		Orn Hort		Ag Resources		Forestry	
	1	3	1	3	1	3	1	3	1	3	1	3
Managerial	-20	- 9	0	0	+ 9	+16	0	0	- 14	- 13	+ 2	+ 1
Supervisory	- 1	+ 15	+ 7	+ 14	+ 9	+19	0	0	- 36	- 32	+ 1	+ 3
Technical	+ 9	+ 25	+ 4	+ 6	0	+ 3	0	0	- 44	- 43	0	+ 2
Sales	+40	+105	+25	+ 44	+ 8	+17	0	1	- 1	- 1	+ 1	+ 4
Office	-23	- 5	+ 6	+ 11	+ 4	+10	0	0	- 77	- 59	+ 3	+ 5
Service	+ 7	+ 29	+73	+103	+ 7	+19	+1	+2	- 22	+ 11	+ 7	+12
Skilled	-14	+ 11	+29	+ 48	+24	+33	+5	+7	- 17	- 8	+ 68	+50
Unskilled	+42	+ 69	+ 2	+ 9	- 1	+ 8	0	0	+ 8	+ 17	+ 72	+54
Totals	+40	+240	+146	+235	+60	+125	+6	+10	-203	-128	+154	+13

As would be expected from data already presented, agricultural resource type businesses expect to reduce the number of employees in all but two job positions over the next three years. Only the service and unskilled positions showed increases.

In the aggregate all agri-business classifications except agriculture resources plan to add additional employees over the next three years. In terms of employee numbers the 240 employees needed by businesses engaged in agricultural supplies and services and the 235 employees needed in agricultural mechanics account for a large percentage of the expected increase.

Agri-businesses associated with agricultural products expect to increase the size of their work force. In contrast to other types of agri-businesses, increases in managerial and supervisory positions are anticipated. All positions except unskilled indicate an increase in one year and a further increase in three years.

Ornamental horticulture employers predict only small gains in employee numbers, all of which are in the skilled and semi-skilled positions. However there was no anticipated decrease in employees in any of the job positions.

Agricultural resources, with possibly the greatest number of baccalaureate degree personnel and highest utilization of employees with more sophisticated training, show losses in all positions except for an expected increase of 17 unskilled and 11 service positions.

Forestry businesses predicted some increase in all job positions with the greatest increase expected in the skilled and unskilled positions.

Table 17 presents the distribution of employment positions within each of six business classifications. The distribution was compiled by comparing the total number of employees in the different positions with the total number of employees in the respective business classification. For example, 16 percent of all positions among the businesses associated with agricultural supplies and services are managerial in nature.

TABLE 17

PERCENT OF POSITIONS BY U.S.O.E.
OCCUPATIONAL CLASSIFICATION

Positions	Ag Supplies/ Services	Ag Mechanics	Ag Products	Orn Hort	Ag Resources	Forestry
Managerial	16	13	9	21	13	5
Supervisory	8	5	4	3	9	7
Technical	3	4	2	8	26	1
Sales	15	14	8	11	1	44
Office	16	11	11	9	32	7
Service	14	40	8	1	10	14
Skilled	14	9	29	12	4	35
Unskilled	15	4	27	35	2	28

* Rounded to the nearest whole percent

From these figures one can quickly compare the numerical importance of each position within a specific business classification or compare the similarities among business classifications and specific positions.

Vacancies in Businesses With Five or More Employees

It is usually assumed that larger businesses will have a greater number of existing vacancies as well as a greater need for employees in the future. It can be observed from Table 18 that 267 vacancies or 76 percent of the 352 current vacancies identified were in agri-businesses hiring five or more employees.

There appeared to be little change in the overall employment pattern among the different business classifications or within the job positions in

TABLE 18

SUMMARY OF CURRENT VACANCIES IN BUSINESSES
WITH 5 OR MORE EMPLOYEES

N-267

Business Classification	Current Vacancies	PCT Total	Managerial		Supervisory		Technical	
			No.	*PCT	No.	*PCT	No.	*PCT
Ag Supplies/Services	106	40	11	10	7	7	5	5
Ag Mechanics	74	28	4	5	4	7	7	9
Ag Production	39	15	1	3	3	8	1	3
Orn. Horticulture	4	1	0	0	1	25	1	25
Ag Resources	12	4	1	8	1	8	8	66
Forestry	32	12	0	0	1	3	0	0
Total	267	100	17	**6	17	**6	22	**8

Business Classification	Sales		Office		Service		Skilled		Unskilled	
	No.	*PCT	No.	*PCT	No.	*PCT	No.	*PCT	No.	*PCT
Ag Supplies/Services	24	23	12	11	17	16	19	18	11	10
Ag Mechanics	14	19	2	3	35	47	6	8	2	3
Ag Production	5	13	3	8	7	18	5	13	14	36
Orn. Horticulture	0	0	0	0	0	0	2	50	0	0
Ag Resources	0	0	2	17	0	0	0	0	0	0
Forestry	0	0	0	0	6	19	15	47	10	31
Total	43	**16	19	**7	65	**24	47	**18	37	**14

* Rounded to nearest whole percent
** Represents the percent of the total current vacancies

each of the areas except that these businesses accounted for the greatest percent of the employees. The 106 or 40 percent of the current vacancies in businesses dealing in agricultural supplies and services represent the largest single need. Farm mechanic businesses were in second position with 74 or 28 percent of the total. In the aggregate, service, skilled and sales positions, in that order, have the greatest number of current vacancies.

The Need for Agricultural Experience

Respondents were asked whether or not they felt their employees needed agricultural experience to perform satisfactorily. The simple "yes" and "no" response of the 1,045 respondents are tabulated in Table 19.

TABLE 19

THE NEED FOR AGRICULTURAL EXPERIENCE

Response	Number	*Percent
Yes	631	60
No	414	40

* Rounded to nearest whole percent

Why Vacancies Exist

Each respondent who reported a current vacancy in his business was asked to give the reason or reasons why such a vacancy existed. The results are reported in Table 20. In many cases, employers listed more than one reason for having existing vacancies.

TABLE 20

WHY CURRENT VACANCIES EXIST

N=188

Reasons for Vacancies	Number	*Percent
Expansion	59	32
Retirement	15	8
Normal Turnover	70	37
Merger	2	1
New Services Added	35	19
Trained Workers Unavailable	97	52

* Percentages not mutually exlusive, rounded to nearest whole percent

The fact that 97 or 52 percent of those reporting current vacancies indicated that at least one position vacancy existed in their business because of a lack of trained people is significant. It suggests that further efforts should be made to determine how workers can be more appropriately trained.

Projected Manpower Data

A population of 2,213 agri-businesses was identified in Montana. All efforts to solicite responses resulted in usable returns from 1,045 businesses, 45 percent of the entire population.

It was felt that some effort should be made to project employment needs and anticipated opportunities to the entire population. The process of projecting to the total survey population of 2,213 agri-businesses was complicated by the fact that agri-business, when surveyed, placed themselves

in one of the six USOE Classifications. Therefore, when identifying the population no effort was made to categorize each business. Because of the procedure followed, it was impossible to assertain exactly how many of the agri-businesses not responding were in each of the agri-business classifications.

The employment figures shown in Table 21 resulted from the application of a ratio-proportion procedure based on 1,045 usable returns, thus, the data represent an estimate. Because every effort was made to maintain randomization throughout the study it was felt that such a projection would represent a reasonable estimate of the total employment picture among Montana's agri-businesses.

TABLE 21

MONTANA AGRICULTURAL OCCUPATIONAL OPPORTUNITIES CATEGORIZED
BY USOE CLASSIFICATIONS AND SKILL LEVELS
PROJECTED TO THE TOTAL POPULATION

N=2,213

	Ag Supplies/Services				Ag Mechanics				Ag Products			
	E	V	1	3	E	V	1	3	E	V	1	3
Managerial	1347	30	1304	1328	326	15	326	326	326	8	382	396
Supervisory	656	13	654	667	129	11	144	159	178	8	193	218
Technical	288	23	307	340	93	19	102	106	100	6	100	106
Sales	1264	74	1349	1486	339	32	391	432	331	11	348	367
Office	1345	30	1295	1334	267	6	279	290	458	10	466	479
Service	1154	44	1169	1215	1009	87	1164	1227	335	23	350	375
Skilled	1177	65	1148	1201	235	36	296	336	1166	17	1217	1236
Unskilled	1230	34	1319	1376	99	8	104	118	1075	32	2073	1092
Total	8461	313	8545	8947	2497	214	2806	2994	3969	115	5129	4269

	Orn. Horticulture				Ag Resources				Forestry			
	E	V	1	3	E±	V	1	3	E	V	1	3
Managerial	34	0	34	34	331	4	301	303	76	0	80	78
Supervisory	4	2	4	4	237	2	161	170	107	2	109	114
Technical	13	2	13	13	659	17	566	568	21	0	21	25
Sales	17	0	17	19	8	0	6	6	55	0	57	63
Office	15	0	15	15	653	6	642	680	105	0	112	116
Service	2	0	4	6	320	0	273	343	217	13	232	242
Skilled	19	6	30	34	100	2	64	83	549	25	693	655
Unskilled	56	0	56	56	51	0	68	87	432	15	583	545
Total	160	10	173	181	2359	31	2081	2240	1562	55	1887	1838

Summary of Findings

This section is a partial summary of findings. A careful review of data arrayed will reveal many findings which have implications for program planners. The following are the major findings regarding the number of vacancies within each agri-business classification at the time the survey was taken, the level of employment predicted within each agri-business classification in three years and the expected change among the various employee positions within each agri-business classification in three years.

Agricultural Supplies and Services

Within this agri-business classification, 597 businesses replied to the survey. The percentage increase or decrease in employment levels was based on a current employment level of 3,996.

1. One hundred fifty (150) of the 352 vacancies were in the agri-business classification.
2. Agri-business employers expect a 6 percent increase in the aggregate number of employees.
3. There will be a 1 percent reduction in the number of managerial positions.
4. A 5 percent increase in the number of supervisory positions is expected.
5. Employers predicted an 18 percent increase in the number of technical positions.
6. The number of sales positions is expected to increase by 18 percent. Numerically this represents the largest anticipated increase within the classification.

7. The number of office positions is expected to be reduced by 1 percent.
8. A 5 percent increase was expected in the number of service positions.
9. Employers predicted a 2 percent increase in the number of skilled positions.
10. A 12 percent increase is expected in the number of unskilled positions. This represents the second highest expected increase in the classification.

Agricultural Mechanics

Within this agri-business classification 147 businesses replied to the survey. The percentage increase or decrease in employment levels was based on a current employment level of 1,180.

1. One hundred one (101) of the 352 vacancies were in the agri-business classification.
2. Agri-business employers expect a 20 percent increase in the aggregate number of employees.
3. Agri-business employers in this classification expect no increase in the number of managerial positions.
4. A 23 percent increase in the number of supervisory positions is expected.
5. Employers predicted a 14 percent increase in the number of technical positions.
6. The number of sales positions is expected to increase by 28 percent. This represents the second largest anticipated increase within the classification.

7. The number of office positions is expected to be increased by 9 percent.
8. A 22 percent increase is expected in the number of service positions. Numerically, this represents the largest anticipated increase within this classification.
9. Employees expect a 43 percent increase in the number of skilled positions.
10. A 19 percent increase is expected in the number of unskilled positions.

Agricultural Products

Within this agri-business classification 209 businesses replied to the survey. The percentage increase or decrease in employment levels was based on a current employment level of 1,889.

1. Fifty-five (55) of the 352 vacancies were in the classification.
2. Agri-business employers expect a 3 percent increase in the aggregate number of employees.
3. Agri-business employers in this classification expect a 7 percent increase in the number of managerial positions.
4. A 23 percent increase in the number of supervisory positions is expected.
5. Employers predicted a 6 percent increase in the number of technical positions.
6. The number of sales positions is expected to increase by 11 percent.

7. The number of office positions is expected to increase by 5 percent.
8. A 12 percent increase is expected in the number of service positions.
9. Employers expect a 6 percent increase in the number of skilled positions. Numerically, this represents the largest anticipated increase in the classification.
10. A 2 percent increase is expected in the number of unskilled positions.

Ornamental Horticulture

Within this agri-business classification, 22 businesses replied to the survey. The percentage increase or decrease in employment levels was based on a current employment level of 75 employees.

1. Only five (5) of the 352 vacancies were in the agri-business classification.
2. Agri-business employees expect a 3 percent increase in the aggregate number of employees
3. There will be no gain or loss in the number of managerial staff.
4. No increase or decrease is expected in the number of supervisory positions in the next three years.
5. Employers predicted no increase or decrease in the number of technical positions.
6. The number of sales positions is expected to increase by 13 percent.

7. No change was predicted in the office positions.
8. It was predicted there would be two additional service positions added.
9. Employers expect a 7 percent increase in the number of skilled positions. Numerically, this represents the largest anticipated increase within the classification.
10. No increase or decrease is expected in the number of unskilled positions.

Agricultural Resources

Within this agri-business classification, 50 businesses replied to the survey. The percentage increase or decrease was based on a current employment level of 1,185.

1. Fifteen (15) of the 352 vacancies were in this agri-business classification.
2. Agri-business employers expect an 11 percent reduction in the aggregate number of employees.
3. There will be an 8 percent reduction in the number of managerial positions.
4. A 29 percent reduction in supervisory positions is expected.
5. Employers predicted a 14 percent reduction in the number of technical positions.
6. The number of sales positions is expected to decrease by 3 percent.
7. The number of office positions is expected to be reduced by 16 percent.

8. A 7 percent increase was expected in the number of service positions.
9. Employers expect a 17 percent decrease in the number of skilled positions.
10. A 70 percent increase is expected in the number of unskilled positions. This represents the largest expected increase in this classification.

Forestry

Within this agri-business classification, 38 businesses replied to the survey. The percentage increase or decrease was based on a current employment level of 742 employees.

1. Twenty six (26) of the 352 vacancies were in the agri-business classification.
2. Agri-business employers in the classification expect a 17 percent increase in the aggregate number of employees.
3. Agri-business employers in this classification expect a 3 percent increase in the number of managerial positions.
4. A 6 percent increase in the number of supervisory positions is expected.
5. Employers predicted a 20 percent increase in the number of technical positions.
6. The number of sales positions is expected to increase by 15 percent.
7. The number of office positions is expected to increase by 10 percent.

8. A 12 percent increase is expected in the number of service positions.

9. Employers expected a 19 percent decrease in the number of skilled positions.

10. A 26 percent increase was expected in the number of unskilled positions.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this section is to present general conclusions and recommendations which are based upon the analysis and summerization of data collected.

Conclusions

A review and interpretation of the survey findings prompted the formulation of the following conclusions:

Conclusions

1. As evidenced by the report, the total number of jobs in agri-businesses in Montana will continue to increase during the next three years.
2. The greatest need for agri-business employees is in those businesses engaged in the areas of agricultural supplies and services, agricultural mechanics and agricultural products.
3. The greatest number of vacancies were found in those businesses with five or more employees.
4. Workers classified as "service personnel" will be in the greatest demand over the next three years.
5. The greatest need for workers in agricultural products businesses will be in skilled positions.
6. The data indicate a rather limited opportunity for employment in the ornamental horticulture area.

7. As a group, businesses associated with agricultural resources expected a general reduction in the number of employees over the next three years.
8. The greatest need for workers in the forestry businesses will be for unskilled, skilled and service personnel.

Recommendations

On the basis of employment predictions obtained from the survey, general recommendations are as follows:

1. Phase I - B of the agri-business survey should be completed before major changes are made in current agricultural education programs and their attendant objectives.
2. A systematic method should be established whereby agri-business employment data can be updated on a regular basis.
3. Research priority should be given to the conduct of a detailed analysis to determine those competencies needed by employees in the agricultural supplies and services, agricultural mechanics and agricultural products agri-business classifications.
4. No major effort should be made to develop new programs to train ornamental horticulture or forestry employees until a more detailed study is made of the nature and extent of each industry in Montana.
5. A careful study should be made of the agricultural resources agri-business classification before major training adjustments are made.

CHAPTER V

IMPLICATIONS

1. The number and diversity of agri-business employment opportunities in Montana will continue to increase. As agri-business employment opportunities increase, employers will demand a wider range of competencies, many of which will be directly related to a working knowledge of production agriculture.
2. Because agri-business is so much a part of the Montana employment picture, agricultural education should be maintained as an intergal part of career education.
3. There is a hierarchy of job positions among agri-businesses. Therefore, there will be a continued need to have specific programs to train agri-business employees at the secondary, post-secondary and university level. Further, articulation should be achieved among the programs at each level to avoid duplication of effort and assure that potential employees are properly trained to enter at a level most appropriate to their interests and abilities.
4. Educational programs to train prospective agri-business employees will continue to become more specialized as employers find greater need for employees in technical, sales, service and skilled positions. It can be further implied that future programs will be planned around a series of competencies uniquely associated with selected positions.

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APPENDIX A

Agri-Business Manpower Survey Instrument

MONTANA AGRICULTURAL OCCUPATIONAL OPPORTUNITIES

Please indicate the percent of your business which is derived from one or more of the following areas:

____ Ag. Supplies/Services: Furnishing production supplies to farmers and provide services needed to utilize these supplies.
____ Ag. Mechanics: Sale and service of agricultural power units, machinery and related equipment.
____ Ag. Products: Assembling, sorting, testing, grading, storing and marketing farm and ranch products.
____ Ornamental Horticulture: Producing, distributing and utilizing horticultural plants.
____ Ag. Resources: Conservation and improvement of natural resources.
____ Forestry: Management of trees, forest protection, logging and wood utilization.

Should any of your employees have agricultural experience to be satisfactorly employed? Yes__ No__

Number of employees currently employed. ____

Estimated percent of gross income from Ag. Sales or Service. ____

Are there job vacancies in your business? Yes__ No__

Please indicate why these vacancies exist:

__ Business expansion
__ Retirement
__ Normal turnover
__ Business merger
__ Implementing additional service
__ Trained employees not available

Please complete the following by placing the number of employees in the appropriate space provided. For each employee select the position which most nearly describes the nature of his work.

Positions	Ag. Supplies/Services 1				Ag. Mechanics 2				Ag. Products 3				Ornamental Horticulture 4				Ag. Resources 5				Forestry 6			
	E	V	1	3	E	V	1	3	E	V	1	3	E	V	1	3	E	V	1	3	E	V	1	3
Managerial																								
Supervisory																								
Technical																								
Sales																								
Office																								
Service																								
Skilled																								
Unskilled																								

E=No. of employees currently on the job
V=Current job vacancies

1=Expected no. of employees on the job one year from now
3=Expected no. of employees on the job three years from now