

AGRICULTURAL EXTENSION AGENT ROLES IN CANADA AND  
THE UNITED STATES

by

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## ABSTRACT

Modern societies make various provisions for the education of adults engaged in agriculture. Individual adult educators involved in such educational work are known by different titles depending upon the country. How these adult educators (agricultural extension workers) perceive their role and carry it out appears to be affected by the characteristics of their employing agency and the clientele whom they serve.

The purpose of this investigation is to compare the role perception and role performance of local extension workers employed by either a university or a governmental department of agriculture. Role theory was selected as the conceptual framework for this study because of its capacity to accommodate an extension worker's perceptions of expectations regarding his duties held by his employer and his clientele.

The provision of agricultural extension service in Canada (government model) is primarily a responsibility of provincial Ministries of Agriculture. In comparison, the Cooperative Extension Service in the United States (university model) involves the Federal Department of Agriculture, the Land-Grant Universities, and county governments.

The following aspects of extension workers and their roles were investigated: personal characteristics, professional development, attitude toward regulatory responsibilities, use of methods and sources of information, choice of methods and techniques and extension role functions. Data were obtained

through a mail questionnaire completed by 69 district agriculturalists in Alberta and British Columbia, and 84 county extension agricultural agents in Idaho and Washington.

The results of this research, within the limitations of the study, indicate that there were statistically significant differences between the agricultural extension workers employed in the two kinds of organizational models on most of the variables investigated. The most striking finding was the belief of the two groups that performing regulatory duties has a negative effect on extension workers' performance as extension educators. Implications and recommendations for further research are discussed.



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## CHAPTER I

### INTRODUCTION

[Agricultural] development...is not a matter of isolated plans and statistics, targets and budgets, technology and method, material and professional staff, or administrative agencies and organizations. Rather, it is an effective use of these educational means for changing the minds and actions of people so they help themselves. Hence, the process is one of working with people, not for them; of helping people become self-reliant, not dependent; of making people the actors in the drama, not the spectators; in short, of helping people put useful knowledge to work for them [linking action problems with knowledge resources or technology transfer]. This is the essence of [agricultural] extension... (Leagans, 1963 : 6)

An agricultural extension service is an agency for change and a catalyst for individual and group action (Mulcahy, 1979). Extension's fundamental characteristic has been to adapt programs and methods to meet ever-changing conditions and demands. One of its values centers in its philosophy, to assist people to help themselves. This assistance can be delivered (1) as an economic and technical service; (2) as a social and educational service; or (3) both. However, Brunner and Yang (1949 : 176) caution that "there is no greater mistake than to assume that technical 'know-how' unaided by social and educational 'know-how' will solve the problems of the farmers of the world."

Agricultural extension services in the world have commonly

been provided either directly by government departments of agriculture or by colleges and universities in co-operation with a government department of agriculture. These two prominent organizational models for agricultural extension exist in North America (1). They may be described as the government and the university models.

The Government Model : the agricultural extension service is provided directly by a department of agriculture. The model incorporates the extension function with other government inspection and regulatory activities. These responsibilities involve establishing appropriate professional relations between the extension service and research and teaching institutions. Williams (1968 : 130), who studied the agricultural extension services in Australia, Britain and the United States, argues that regulatory activities may contribute substantially to innovations, but "if extension's purpose is primarily an educational one, there may well be a more limited range of regulatory activities which contribute to these educational purposes." He suggests that studies are needed to determine the effects of regulatory activities on agricultural extension services (p.131). Some adult educators have also questioned the effect of regulatory activities on agricultural extension work.

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(1) In this study, North America means Canada and the United States of America.



Brunner and Yang (1949 : 182) asserted that:

The Extension worker is an educator. He should have no regulatory or police duties. These functions are utterly incompatible. When for purposes of economy they are combined...education always suffers.

The University Model : The Cooperative Extension Service is provided in a cooperative financial arrangement in which the federal department of agriculture, the land-grant universities and the county government are sponsors. The model has intentionally excluded the performance of regulatory functions from the list of responsibilities of extension personnel. In this model the extension organization is a part of the land-grant universities system concept, which is a United States innovation. It grew out of the need for the application of scientific knowledge in agriculture in the 19th century.

Distinguishing Factors : The absence of regulatory responsibilities has been regarded as one of the distinguishing factors between the university and the government models. Another distinguishing factor between the two models is the fact that one is land-grant university based and the other is based in an executive department of government. Of primary concern to the field of adult education is the effect of these two distinct forms of organization on the role perception and performance of the individual adult educators who are working directly with the agricultural producers of the nation.

### Statement of the Problem

The agricultural extension service is an adult education institution which provides informal, non-credit education conducted primarily beyond the formal classroom. It has been conceptualized as educational in program content and methodology; and it is typically research-based with a free flow of communication between individuals engaged in research and those engaged in agricultural production. The process by which these functional links is operationalized is the crucial component of an extension system for effective dissemination of knowledge and information of agricultural practices in any country. The guiding principle of extension is "helping people to help themselves", and it strives to serve as a conduit for client needs to be translated into research priorities. The philosophy of Agricultural Extension Service has been implemented in North America under two organizational models. It has been widely reported that effective agricultural extension work is conducted by the agricultural extension workers employed in both government and university models. Prior studies of agricultural extension service have also dealt with a variety of problems related to agricultural extension work within systems based on each model. However, at least one important aspect of the agricultural extension service has gone unexplored: the differential effect of the two forms of organization on the role perception and role performance of the individual agricultural extension worker.

Most developing nations' economic conditions depend on their agriculture. Their total economy is made up of a large traditional sector and very small modern sector. The effort to increase productivity in agriculture requires the extension of new ideas and practices. In establishing the appropriate extension system to disseminate the knowledge (information) for promoting the development of agriculture, some developing nations choose between these two models, in the absence of any rigorous analysis of their differential effects on the performance and role perception of the field level agricultural extension worker.

The purpose of this dissertation is to explore the differences in role perceptions and role performance of agricultural extension workers employed in the two kinds of organizational models.

#### Significance of the Study

The establishment of an agricultural extension service laid the foundation for adult education in agriculture to-day. According to Boone (1970 : 266), extension denotes the "process of extending education resources" and service stands for "educational role". To be effective, rural adult educators must be concerned with the adoption of new agricultural practices in serving their clientele. The generation of new knowledge in itself is not particularly valuable to the farmers; it is the application of this new knowledge and the integration of these

new findings into the operational aspects of agriculture which has its impact on farmers. The problem, however, is how to choose between the two organizational mechanisms that have been established for agricultural extension so as to produce the desired role perception and performance of the individual agricultural extension worker.

This study is a modest effort towards understanding of the differences between the two North American organizational models for agricultural extension in terms of their impact on role perception and performance of the individual agricultural extension worker. The findings of this study may serve several purposes.

1. They will make available some perspectives by which agricultural extension work can be organized.
2. They will identify and analyze the roles that agents perform and may assume in extension work.
3. The findings can also be used as a guide in developing and conducting training programs to help extension workers better understand their roles. Such training may ultimately contribute to increased effectiveness and efficiency in extension work.

#### Design of the Study

The researcher used role theory as a theoretical foundation for examining differences in role perception and performance of agricultural extension workers employed within the government

and the university models. The relevant literature and studies which were reviewed to develop the framework for the study are discussed in Chapter III.

Six major variables were selected as potentially distinguishing factors in role perception and role performance of agricultural extension workers employed within the government and the university models. The variables selected for study include: personal characteristics, professional development, methods and sources of information, regulatory functions, methods and techniques, and extension role functions. The questionnaire designed to collect the data on these variables is described in Chapter IV.

#### Site and Population

The research was conducted in Canada and the United States of America. The data were obtained in Alberta, British Columbia, Idaho and Washington. The researcher assumed the characteristics of the clientele and the general agricultural circumstances to be similar for the two provinces and the two adjacent states. Thus, these conditions generate similar needs of services by the clientele as well as similar responses to the needs by the extension workers. These provinces and states were selected in order to:

1. take into account the geographical proximity to the researcher who is located in Vancouver, British Columbia,
2. minimize the cost and time to conduct the research, and

3. take into account any differences in administration of agricultural extension services between provinces and between states.

To obtain as broad and comprehensive a picture as possible of the agricultural extension systems and to reduce the influence of factors beyond the scope of this study, the data were obtained from the agricultural extension workers, known as district agriculturalists in Canada, and county extension agricultural agents in the United States. Home Economics and 4-H agents were excluded from this study. However, the services performed by these agents are part of agricultural extension's functions in Alberta, Idaho, and Washington, though not in British Columbia. The British Columbia Regional Extension Service had eliminated the services of home economics agents; and the 4-H function is performed as part of the Youth Development Branch under the Specialist and Regulatory Service Division (British Columbia Ministry of Agriculture and Food, Annual Report, 1980).

District agriculturalists and county extension agricultural agents who satisfied the following criteria were selected for this study:

1. were employed as district agriculturalists and county extension agricultural agents; and
2. had had two or more years of experience as district agriculturalists or county extension agricultural agents.

These criteria served as a basis for eliminating the less

experienced agents from the study.

### Organization of the Dissertation

The background of extension services in Canada and the United States of America is discussed in Chapter II. Chapter III is concerned with the theoretical foundation for this study. Chapter IV describes the research design adopted, while Chapters V and VI discuss the findings from the study. A summary of findings, conclusions, and implications are set forth in Chapter VII.

## CHAPTER II

### BACKGROUND OF AGRICULTURAL EXTENSION SERVICES

As a first step in the study of the role perception and role performance of the agricultural extension workers employed within the two models for agricultural extension service, this chapter will review the scope and purpose, and the structure and organization of agricultural extension services in Canada, the government model, and in the United States, the university model. The chapter is divided into two sections. Because of the two different organizational models for agricultural extension service, the format of the two sections differs. In the first section (1) the agricultural extension service in Canada is reviewed briefly; (2) the scope and purpose, and the structure and organization of the Alberta Agriculture Extension Service are discussed; and (3) the scope and purpose, and the structure and organization of the British Columbia Agriculture Extension Service are presented. In the second section (1) the scope and purpose of the Cooperative Extension Service in the United States are discussed; and (2) the structure and organization of the Federal Extension Service; and the Cooperative Extension Service, in particular, the Idaho Cooperative Extension Service and the Washington Cooperative Extension Service are presented. This background will be useful in understanding how the two models developed in North America.



### Agricultural Extension Service in Canada

The Canadian Federal Department of Agriculture was formed in 1867, the year of Confederation, with limited powers (Canada Agriculture Publication No. 1123, 1975). In 1906, the department organized and inaugurated a special extension campaign consisting of trains equipped with materials for demonstration, travelling across Canada, and stopping at specified points to explain wheat smut and its control, and to exhibit samples of good seeds to farmers (Parliament of Canada, 1906 and Keesing, 1965). The Federal Government Agricultural Instruction Act of June 6, 1913 was a milestone in the development of Canadian Agriculture. The Act was passed for "aiding and advancing the farming industry by instruction in agriculture..." The purpose of the Act was to give encouragement "to agriculture in all provinces [so that] great and permanent benefit will result through education, instruction and demonstration carried on along lines well devised and of a continuous nature" (Statutes, 1913, c.5 : 135). The Act granted financial assistance to the provinces for a period of ten years "for the purpose of supplementing and extending the work of agricultural education and for the improvement of agriculture" (Report on Agricultural Instruction Act, 1915 : 5). Confronted with a lack of relevant source material, the investigator was not able to establish the status of the Act after the ten year period to his satisfaction. However, after searching and inquiring of possible sources, such as the University of British

Columbia Law Library and Faculty of Agricultural Sciences, British Columbia Regional Extension Service in Victoria, Agriculture Canada Pacific Regional Office in Vancouver, Agriculture Canada Regional Office in Victoria, and Agriculture Canada Library in Ottawa, the investigator concluded that the Act expired and was not extended at the end of the ten year period for reasons which have not been clearly established.

The Constitution of Canada (Constitution Acts, 1867 to 1982) allocates the responsibility for agricultural extension to the provinces. In practice, both levels of government are sharing the work in agricultural development. Both the Federal and Provincial Departments of Agriculture also have responsibilities for inspection and regulatory activities in agriculture.

An Experimental Farms System had been established by the Federal Department of Agriculture "in 1886 as a means of discovering the agricultural possibilities of various regions, and to assist farmers in making the best use of their resources" (Canada Agriculture Publication No. 1123, 1975 : 5). The Federal Department of Agriculture conducts 51 percent of the agricultural research program and is involved "in extension work because it is difficult to break the cycle between research, its transfer to farmer and his application of it" (Task Force Report, 1977 : 210-215). A Canada Agriculture Task Force (1977) reported that the Federal Research Branch devotes about 5 percent of its activities to extension. The link between research and extension as being a necessary condition for the

application and adoption of improved agricultural technology has also been emphasized in that same Task Force report by Agriculture Canada (1977 : 222):

...until research is applied through effective extension, it has no actual economic significance. On the other hand, extension, without the backup afforded by the scientists and engineers, has very limited potential.

The Federal Department of Agriculture performs a limited extension role at each experimental farm or research station. Its main role in agricultural extension has been "in the appraisal of the whole extension system, and identification of deficiencies. Where such deficiencies exist,...to indicate solutions" (Task Force Report, 1977 : 215).

In 1932, the Federal government established the Canadian Agricultural Services Coordinating Committee (CASCC) as the major federal-provincial coordination mechanism in agricultural matters (Task Force Report, 1977). CASCC (Task Force Report, 1977 : 252) is primarily responsible to:

coordinate the total national effort toward the economic and social development of the agricultural industry and to promote the optimum utilization of manpower and financial resources within and between the various operational agencies.

Since 1964 the CASCC has been sponsoring provincial and regional Agricultural Services Coordination Committees.

The provincial Departments of Agriculture are responsible for agricultural extension services and provide the necessary

link between the research agencies and the farmer (Allin, 1964). The departments also assume responsibility for research of particular interest to a province and the efforts vary among provinces accordingly.

The Canadian universities, in particular faculties of agriculture, are responsible only for residential instruction and research. Some of them, such as the University of British Columbia Faculty of Agricultural Sciences, do conduct a limited amount of extension work as an auxiliary activity. The universities conduct about 30 percent of the national research program (Task Force Report, 1977). Their involvement in research and the amount of research grants they receive from provincial and federal sources vary from province to province.

The government model incorporates regulatory activities. Extension functions originate in all Divisions of Ministry of Agriculture, as an adjunct to their primary functions (Job, 1965; Akinbode, 1969; Tradition and Transition, 1970; and Alberta Agriculture Annual Report, 1979-80). Akinbode (1969 : 5), in his study of the relationships between the socio-economic characteristics of farmers in British Columbia and their contacts with district agriculturalists, asserted that "the policing function which the field worker in these branches must perform is undoubtedly a barrier to educational activities." An Alberta Government Study of all Agricultural Extension Services in Alberta (Tradition and Transition, 1970 : 5-65) recommended that:

A conscious effort has to be made to consolidate all extension activities within the Extension Division [so that] other Divisions would be freed to concentrate upon regulatory and non-extension functions.

The District Agriculturalist has also been given additional duties, such as planning and granting farm credit, ensuring that land clearing or draining has been done in compliance with regulations, and implementing provincial and federal programs and policy administration (Task Force Report, 1977; Winter and Associates, 1979; and Extension Perspectives, n.d.). Winter and Associates (1979 : 4) believed that:

These regulatory activities may occasionally impair the image of the district agriculturalist in the farm community. Instead of being regarded as a source of help and information, he is sometimes considered to be a 'programme policeman'.

Lamble (1980 : 133), in his study of role conflict and role ambiguity in the Extension Division of Alberta Agriculture, has also found out that "[District Agriculturalists] are especially concerned with conflicts between the educational and service aspects of their job". He (1980 : 133,139) identified and recommended that:

Program and policy administration ... can and does conflict with the educational aspect of extension and the self-improvement of the extension agents; [and] consideration [should] be given to reassigning District Agriculturalist duties which are primarily of a service or administrative nature to other personnel [appropriate division].

Since the provision of agricultural extension service in Canada is a provincial responsibility, the scope and purpose, and the structure and organization of the agricultural extension services of Alberta and British Columbia, where the data for the study were obtained, are presented next.

### Alberta Agricultural Extension Service

This section is concerned with the scope and purpose, and the structure and organization of the Alberta Agricultural Extension Service.

#### Scope and Purpose

The Alberta Department of Agriculture, now known as Alberta Agriculture, in the early years was extension oriented though those doing the work were primarily responsible for administration and inspection matters. The first reference to 'Agricultural Education Work' dates back to the Department's first annual report of 1905. The educational activities, sponsored by agricultural societies, covered agricultural and related subjects, and were provided by various lectures, meetings, and demonstrations. In 1906 the Department's philosophy of agricultural education work was expressed as to instruct the farmer in "the latest and most improved methods of pursuing his work and of preparing and marketing his products. Having this knowledge he then is in a position to make the best of the situation" (Annual Report, 1906 : 105). Extension was

provided through various meetings and lectures, demonstration trains, summer fairs, agricultural societies, women's institutes, and stock judging schools.

Although the agricultural extension service was not established as a branch of Alberta Agriculture until 1938, the first district agriculturalist had been appointed in 1920. He was employed full-time and was responsible to the Livestock Branch. Agents' duties include visiting farmers, making personal contact, finding and solving problems, holding meetings, and assisting in boys' and girls' work (Tradition and Transition Report, 1970). Its long term objective is to improve agricultural and rural life. The function of the extension service as stated in the 1938 Annual Report (p. 62) was:

to co-ordinate the extension program of every branch of the Department of Agriculture and insofar as possible to cooperate with all other extension agencies to effect the most economical and effective application of the efforts of all workers in this field.

Its main purpose was "the distribution of information pertaining to agriculture and home economics and...the improvement of agricultural and rural life." The 1961 Annual Report of Alberta Agriculture extended the responsibility of the agent to include the interpretation of agricultural research and experimental work results and guidance. By 1970 five extension functions had emerged. These were (Tradition and Transition Report, 1970: 5-21 to 5-44):

1. distribution of information,

2. interpretation of results,
3. guidance to farm families,
4. service function, and,
5. program achievement evaluation.

The district agriculturalists were also expected "to serve as lines of communication between farmers, the Department of Agriculture, and research institutions..." (Annual Report, 1961 : 137). They also performed a liaison role which involves:

the farm families on the land and the source of reliable information including the Alberta Department of Agriculture, the Faculty of Agriculture at the University of Alberta and the Canada Department of Agriculture (Annual Report, 1959 : 149).

The 1970 Annual Report of Alberta Agriculture stated a broader purpose of the Extension Service Division. The Division's (Annual Report, 1970 : 55) main purpose was "to help people help themselves, through programs of continuing education, to achieve their economic and social goals." The 1971 Annual Report (p.53) has clarified and redefined this purpose of the division to emphasize the following goals for the extension programs:

1. The self-sufficiency of farm families and operators as managers, in all aspects of agricultural enterprises...
2. The promotion and maintenance of community and individual self-determination among rural people...
3. Extension programs attempted to foster systematic education in agriculture and associated technical and business skills at the vocational level for both youths and adults.



The Extension Service Division continued to assume "increased responsibilities in agricultural development, farm labor, farm credit, farm management, consumer education, nutrition, housing, market education and rural counselling" (Annual Report, 1973 : 10). Its education and service functions became "agricultural production and management; home economics and home management; and rural resources and community development" (Annual Report, 1974 : 18).

In 1976 Alberta Agriculture defined a basic concept for its agricultural development. Its definition of the basic concept of agricultural development (Annual Report, 1976 : 11) was:

to improve human, land and capital resources through physically increasing the productive capability of land, adding financial inputs to farm and related enterprises, and advancing individual and family management, all of which contribute to the building of independent farm family units which integrate mutually to support viable communities and a strong and stable agricultural industry.

The Extension Service Division continued to maintain its role as the delivery system and offered intensified extension of technical, production and management information. John G. Calpas, Director of Alberta Agriculture Extension Division, (Extension Information Bulletin, 1981 : 19) describes the district agriculturalist:

as a specialist in the process of extension and as a general practitioner in the full range agricultural technology, is well backed by the resources of the Department [Alberta Agriculture], Agriculture Canada,

universities and agribusiness.

He sees the present and future roles of the Extension Division to be the following four main functions (Extension Information Bulletin, 1981 : 20):

1. information transfer,
2. inducement to change,
3. information validation, and,
4. helping groups and individuals throughout the agricultural community to develop a rationale for sound decision-making.

In summary, the scope and purpose of the Alberta Extension Service are the efficient delivery of technical information and professional services dealing with agriculture to farmers, in order to help them to achieve their economic and social goals.

### Structure and Organization

This section covers how the agricultural extension work is organized in Alberta so as to deliver the intended services to farmers. Discussion is on organizational structures, responsibilities of the regional directors and district agriculturalists, and the coordination structure for overall agricultural development programs, including agricultural extension work.

In 1916, the 'District Agents' division was formed and agents were appointed and carried out their work. By 1920 the agents were employed full-time and were responsible to the Livestock Branch of Alberta Agriculture. In 1942 the responsibility for the district agriculturalists was transferred

from the Livestock Branch to the newly created Agricultural Extension Service Branch whose main function was the distribution of agricultural information.

In 1966, Alberta Agriculture was reorganized into seven divisions. The Agriculture Extension Service Branch was raised to divisional level, adopted the concept of regionalization, and began to decentralize extension activities by dividing the Province into six regions. The Agricultural Extension Service Division is directly sponsored by the Provincial Government through the Minister of Alberta Agriculture. The Deputy Minister, senior public servant, is the executive officer of Alberta Agriculture and has five assistant deputy ministers who are responsible for production; economic and marketing services; development; research and operation; and international marketing. The Assistant Deputy Minister for Development has responsibility for several divisions, including Extension, that are concerned with the delivery of information and services to farms and communities. Several divisions which are primarily service oriented provide the subject matter specialist expertise for the Extension Service Division.

Each regional office is administered by a Regional Director who is responsible to the Director of the Extension Service Division. Some of the responsibilities of the regional director (Memorandum, 1977 : 1) include:

1. [being] senior regional department representative responsible for regional planning, administration and coordination,

2. [taking] initiative in coordination and ensuring cooperation in the implementation of programs in a region,

3. [being] senior regional spokesman and arbiter for staff in the region in their involvement with other agencies.

The regional staff consists of the district agriculturalists and regional specialists. While the regional specialists represent and are responsible for their division's programs and policies, the regional director coordinates their services as resource specialists within the region. The focal point and the delivery system through which extension programs reach the clientele is the district office. Each of 64 district offices throughout the Province services an average of 1000 farm families. The district agriculturalist is the agricultural extension worker at the district level. The district agriculturalist carries the responsibility of keeping abreast of a wide range of scientific and technical knowledge of agricultural development as well as of federal, provincial and local government policy. In the process of farm management counselling he interprets the implication of these policies and findings for the district and individual farm situations. In addition, he is responsible for conducting an extension education program. Some of the position duties of a district agriculturalist (Position Description for Agrologist II) include:

1. provides professional counsel to farmers and agri-business in the area of agricultural production, management, marketing, credit, and the implications of

government policy.

2. participates and carries out projects within the technical and agricultural educational program uniquely suited to the district.

3. independently interprets policy and expedites provincial and federal programs in a defined geographical area.

4. represents the Department and advises various commissions, boards, agri-business, etc., and reports to superiors.

5. reviews legislation, policies, agricultural and extension literature and research.

The senior district agriculturalist (Position Description for Agrologist III) has the added position responsibility of managing staff and programs within a defined geographical region. This responsibility involves the provision of leadership in extension program development and delivery to staff in his defined area.

The other organization structure in agricultural matters, including agricultural extension services, is the Alberta Agricultural Coordinating Committee (AACC). The AACC (Terms of Reference, 1976) was established primarily to coordinate the provincial effort toward economic and social development of the agricultural industry and to promote the optimum utilization of manpower and financial resources among the various operational agencies in Alberta. This coordination structure (Terms of Reference, 1976 : 1) shall:

1. provide a forum for discussion of policy and program areas of interest to Alberta agriculture,

2. on matters related to agriculture programs and policies, advise the Alberta

Minister of Agriculture and where necessary, through him advise the Federal Minister of Agriculture; Presidents of Universities and other agencies,

3. keep under regular review the broad aspects of agricultural research, extension and education in Alberta with the object of:

a. facilitating inter-group communication and coordination management levels,

b. assessing immediate and future needs and developing proposals to meet them,

c. advising on joint uses of available facilities and personnel,

d. contributing information and ideas bearing on regional and national policies affecting agriculture,

e. carry out special assignments on behalf of Canadian Agricultural Services Coordinating Committee (CASCC) appropriate to the above objectives.

The AACC (Terms of Reference, 1976), consists of the Deputy Minister of Alberta Agriculture (Chairman); the Dean and another member of the Faculty of Agriculture and Forestry of the University of Alberta; the Assistant Ministers of Production, Economic and Marketing Services, and Development of Alberta Agriculture; the Directors of the Agriculture Canada Research Stations at Lethbridge, Lacombe, and Beaverlodge; and an ex officio member as Secretary. The quorum of AACC consists of three voting members representing each of Agriculture Canada, University, and Alberta Agriculture. The AACC is supported by Advisory Committees which are structured on a commodity or subject matter basis. Each Advisory Committee may establish ad hoc committees as required to deal with specific problems.

In summary, the agricultural extension service in Alberta is organized under six regional offices. Each regional office

is administered by a regional director who is responsible to the Director of the Extension Service Division. The Alberta Agricultural Coordinating Committee was established to coordinate the provincial programs of economic and social development of the agricultural industry and to utilize effectively the manpower and financial resources among the various operational agencies in Alberta.

The next section deals with another example of the government model for agricultural extension service, the British Columbia Extension Service.

#### British Columbia Agricultural Extension Service

This section of this chapter focuses on the scope and purpose, and the structure and organization of the British Columbia Agricultural Extension Service.

##### Scope and Purpose

The British Columbia Department of Agriculture, now known as British Columbia Department of Agriculture and Food, was established in 1893 (Wales, 1964). Its primary objective was to ascertain the needs of the farming population, and to advise, consult and guide farmers. The scope of the Department was to work towards the development and extension of agriculture (Annual Report, 1913/14). The extension work was organized under the Livestock Branch. The first recorded appointment of a district agriculturalist appears in the 1913/14 Annual Report of

the Department. The Livestock Branch (Annual Report, 1913/14 : 66) has reported that the work conducted by the district agriculturalists was of great importance and "essential that educative work be carried out in order to show farmers how they may most profitably carry out their work."

In 1947 the Development and Extension Branch was created (Annual Report, 1947). The scope of the Branch was enlarged to include extension work, agricultural engineering, land clearing, and farm labor. Extension has been the fundamental role of the Branch, providing the major delivery system and public relations. The Branch has provided "advice and guidance in the production of a greater diversity of farm commodities..." (Annual Report, 1959 : 50). Its primary purposes were "to encourage improved farm practices and to help rural people to help themselves" (Annual Report, 1961 : 45). Extension work was also performed by several branches of the Department of Agriculture and Food, but only as an adjunct to the several roles performed by each branch (Job, 1965). Job (1965 : 3) stated the function of each branch to be "a combination of regulatory and educational work". The Development and Extension Branch "is the branch whose function is primarily educational, and is responsible for extension work of a general nature..." (Job, 1965 : 3).

The extension methods and techniques used by the district agriculturalists include personal contacts, meetings, field-days, demonstrations, bulletins, and newsletters (Annual Report, 1951). The district agriculturalist has been described as the



'key' man in extension and the public relations representative of the Department in his district. His jobs are to coordinate the agricultural activities in his district; to pass on the findings of research and experiments to the farmers; to plan programs with local agricultural committees; and to represent the Department in his community (Annual Report, 1954/1957). The 1957 Annual Report of the Department has linked extension activities with planned programs in each district designed to emphasize the problems of production and marketing in each community. During the 1960's the Agricultural Extension Branch expanded its scope of extension programs, with increasing emphasis on farm management and the development of economic units. The 1965 Annual Report of the Department (1965 : 16) stated that:

Recognition of the need for extension programmes to be more closely interrelated with economic examination of the total farm enterprise produced changes in the application of the [Development and Extension] Branch's policies...initial moves were made toward the development of package-style farm recommendations affecting management decisions at the total farm operations level. As a part of this shift, greater emphasis was placed upon closer cooperation with other agencies, particular the Canada Department of Agriculture and the University of British Columbia...the changes will represent an adjunct to rather than a replacement of previous practices.

The Branch has implemented this approach of agricultural development through a multiplicity of educational and service programs. The Branch (Annual Report, 1977 : 20-21) has acted

as:

1. coordinator for integrated resource planning in concert with other resource ministries at the provincial, regional, and local levels;
2. facilitator for extension programs in dealing with farmers;
3. coordinator for a number of special projects and studies related to agricultural development; and
4. local reference point for agricultural legislation and department programs.

As part of the Department's reorganization in 1980, the Agricultural Extension Service adopted a regional approach to program delivery (Annual Report, 1980). The scope and purpose of the 'Regional Extension Service' is to ensure a more balanced development of the province's agriculture and food industry with direct involvement of farmers (Annual Report, 1980 : 5). Extension program planning will occur at provincial, regional and district levels. The district agriculturalist will constitute the basic staff of the regional structure and will continue to provide the major extension contact with farmers (A New Mandate, 1980). The primary purpose of reorganizing the extension service will be to facilitate effective extension program planning, delivery and evaluation at the regional level; and to accommodate other services of the department to the farming public (Guidelines for Extension Programming, 1980 : iii).

In summary, the scope and purpose of the Regional Extension

Service of the Ministry of Agriculture and Food is to facilitate effective extension program planning, delivery and evaluation at the regional level, and to ensure a more balanced development of the province's agriculture and food industry with direct involvement of farmers. The district agriculturalist continues to be the major extension link with farmers.

### Structure and Organization

This section is concerned with the organizational structure of the agricultural extension service; duties of the regional directors and district agriculturalists; and the coordination mechanism for overall agricultural programs, including the agricultural extension service, all within the Province of British Columbia.

The British Columbia Agricultural Extension Service was organized as a division of the Livestock Branch in the Ministry of Agriculture. In 1947 a separate Extension Branch was created under the name 'Development and Extension'. By 1966 the Extension Service was reorganized as a division under Production Services in the Ministry of Agriculture. This organizational structure continued up to 1980, when the Ministry of Agriculture and Food implemented a new regional structure for the Extension Service in the province.

The major reasons given by the Ministry for the reorganization of the Extension Service (A New Mandate, 1980 : 4-5; and Guidelines for Extension Programming, 1980 : 1-2) were:

1. to ensure effective delivery of the ministry's program and services to farmers;
2. to encourage participation of producers in the designing of specific commodity-related programs of a region; and
3. to encourage greater cooperation and coordination among agencies in providing services.

The Ministry decentralized its extension services with increasing emphasis on regionalization of its program development and delivery. The Regional Extension Service is directly under an Assistant Deputy Minister for Field Operations (Annual Report, 1980). Five administrative regions have been established based on agricultural cropping areas and natural boundaries (A New Mandate, 1980). Each regional office is administered by a Regional Director who is responsible for his region's district offices and who directs extension program development and implementation in the region (Annual Report, 1980). Each Regional Director reports directly and is accountable to the Assistant Deputy Minister for Field Operations, who has the responsibility for production and regulatory services, including Extension. Some of the responsibilities of the Regional Director (Guidelines to Extension Programming, 1980:6-7) include:

1. serve as the senior Ministry spokesman in the region.
2. give . . . direction to staff serving a region relative to the development and implementation of regional extension programs.
3. coordinate regional program planning

in consultation with regional and specialist staff; commodity groups and agricultural organizations.

4. represent, or arrange for the representation of, agriculture on regional interagency resource committees.

5. evaluate the cost and effectiveness of regional programs.

The delivery system through which extension programs reach the primary producers are 18 district offices throughout the province. The district agriculturalists continue to provide the major extension link with farmers and reports to one of five Regional Directors. His primary role is to provide information for improvement of general farm management skills and technical knowledge of production factors to primary producers. He (Licensed Science Officer Position Description: District Agriculturalist, 1981) acts as an advisor, educator and organizer in the planning and delivery of agricultural extension/education programs at the district and regional level. The district agriculturalist's position functions include:

1. organize and conduct a district agricultural extension/education program;
2. advise individual or groups of primary producers in matters pertaining to general farm business management and technical production skills intended to improve efficiency and profitability of production;
3. participate in regional extension programming activities;
4. protect the public interest in agricultural resources;
5. promote sound agricultural development.

The other organizational structure in agricultural matters, including agricultural extension service, is the British

Columbia Agricultural Services Coordination Committee (BCASCC) (Task Force Report, 1977). The Committee was established primarily to coordinate the provincial effort toward development of the agricultural sector and to promote the optimum utilization of manpower and financial resources among the various operational agencies in British Columbia (Task Force Report, 1977).

The British Columbia ASCC (Task Force Report, 1977) consists of the Deputy Minister of Agriculture and Food (Chairman); the Dean and another member of the Faculty of Agricultural Sciences of the University of British Columbia; and the Directors of the Agriculture Canada Research Stations at Agassiz and Vancouver. The British Columbia ASCC is supported by lead committees on animal science, engineering science, food science, plant science, soils science, and social science. Each lead committee can establish ad hoc committees as required to deal with specific problems.

In summary, the Regional Extension Services in British Columbia is directly under an Assistant Deputy Minister for Field Operations. There are five extension administration regions. Each regional office is administered by a Regional Director who reports directly and is accountable to one of the Assistant Deputy Ministers. The other organizational structure in agricultural matters, including agricultural extension service, is the British Columbia Agricultural Services Coordination Committee. The Committee is responsible to coordinate the provincial effort toward development of the

agricultural industry sector and to promote the optimum utilization of manpower and financial resources among the various operational agencies in British Columbia.

In viewing Canada as whole, the provision of agriculture extension service in Canada is a provincial responsibility. The Federal Department of Agriculture performs a limited extension role at experimental farms or research stations. Its main role is the evaluation of the whole extension service and indication of solutions. The Canadian universities, particularly faculties of agriculture, have responsibilities only for residential instruction and research.

The provincial Agricultural Extension Service's scope and purpose are the delivery of technical and economic information and professional services on agriculture to farmers. It is organized under regional offices within an executive branch of the Government, the Ministry of Agriculture. Each regional office is administered by a Regional Director who is responsible to the Director of Extension Service or to an Assistant Deputy Minister who has responsibility for several divisions, including Extension, that are concerned with production and regulatory services. The District Agriculturalist is the major link with farmers and reports to one of the Regional Directors. The District Agriculturalist has been given additional duties, such as planning and granting farm credit, ensuring that land clearing or draining has been done in compliance with regulations, and implementing provincial and federal programs and policy administration.

Although Alberta and British Columbia have similar scope and purpose for their agricultural extension services, they differ some on their organizational structure. The Director of the Extension Service Division of Alberta Agriculture is solely responsible for extension matters in the province. Each Regional Director reports directly and is accountable to the Director of Extension Service. The Director, in turn, is responsible to the Assistant Deputy Minister for Development who has no responsibility for regulatory service but directs several divisions, including Extension, that are concerned with the delivery of information and services to farms and communities. The British Columbia Regional Extension Services, however, is directly under the Assistant Deputy Minister for Field Operations who has responsibility for several divisions, including Regional Extension Services, that are concerned with production and regulatory services. All the Regional Directors report directly and are responsible to the Assistant Deputy Minister.

#### Cooperative Extension Service in the United States

The Cooperative Extension Service, university model, is an American innovation. Williams (1968:21) noted that:

Much of what has happened in the United States has been used as guidelines for the review, reconstruction, and redevelopment of extension services in other countries. . . . It is important to recognize that the United States experience applies many principles



bearing on federal-state relations and on the administration of a professional extension service.

This section focuses on the development of the Cooperative Extension Service in the United States. The discussion includes (1) the development and scope and purpose of the Cooperative Extension Service as a nationwide institution, and (2) the structure and organization of the Federal Extension Service, the Idaho Cooperative Extension Service and the Washington Cooperative Extension Service.

The Cooperative Extension work in agriculture and home economics is an integral part of the Land-Grant Universities system. The Land-Grant Universities system resulted from a gradual but steady revolution reflecting the needs of the nation. It was the product of many forces, economic, political and social (Eddy, 1957). The industrial classes which included farmers, mechanics, artisans and labourers, became class conscious and wanted to share the educational wealth. Edward D. Eddy, Jr. (1957 : 9) has noted that "utilitarianism found no satisfaction in existing patterns of education. 'Progress' was a practical concept and needed a practical education to help realize its aims." Everywhere, the industrial classes began to voice dissatisfaction with their economic plight, their social inequality, and their political infirmity. The political gospel of the period was "the worth and dignity of the individual and the right of the common man to be ruled by his representatives and not by 'gentlemen-statesman' " (Riley, 1965 : 19). One of

the most significant outcomes of the movement was the emergence of a unique philosophy of university service, which is the tripod of instruction, research and extension (i.e., the Land-Grant Universities system) (Eddy, 1957). The institutions prescribed by the legislation were not only new in concept, but also very different in scope of responsibilities from the classical institutions of that time which were involved almost exclusively with the preparation of "the needed men of learning: schoolmasters, doctors, lawyers, and occasional men of business and commerce" (Eddy, 1957 : 3). The new institutions were committed to the concept that the nation and state prosper in proportion to the development of the common people. Riley (1965 : 19) has stated that it was "higher education for the masses,... thus a nation had set its stamp of approval on the idea that one aim of higher education should be the practical..."

### Scope and Purpose

Several basic legislative acts were important to the establishment of the Cooperative Extension Service: the Morrill Act of 1862, the Hatch Act of 1887, and the Smith-Lever Act of 1914 which, respectively, established the Land-Grant Universities, the Agricultural Experiment Stations (research) and the Cooperative Extension Service.

The Morrill Act of 1862 was an educational revolution, marking the first milestone in the growth of an idea, the

democratization of higher learning fitted to an emerging social order. The Act established the Land-Grant Universities for the purpose of providing liberal and practical education for farmers and workers in the industries and mechanical trades, without excluding other scientific and classical studies. The Morrill Act marks the beginning of systematic agricultural education and serves as a landmark in the development of scientific as distinguished from classical and liberal arts education (Baker, 1939). In spite of the national origin and character, the Land-Grant Universities are integral institutions of the state government. Thus the intent of the Morrill Act was in keeping with the Constitution for local control of education (Eddy, 1957). This was the first stage where formal and informal agricultural education was provided to farmers and agricultural scientists

The second stage of the agricultural development was the addition of research to instruction. As the subject-matter became more formalized, the faculty found many questions without answers. Their own dilemmas were compounded by the number of requests from farmers who wanted answers to agricultural production questions. To respond to this demand, the Hatch Act of 1887 was passed in order to set up a nation-wide system of agricultural experiment stations in connection with the Land-Grant Universities (Eddy, 1957). Under this act, funds were appropriated:

to conduct original and other researches,  
investigations and experiments bearing

directly on and contributing to the establishment and maintenance of a permanent and effective agriculture industry (24 Stat. 440).

The role first identified for the experiment stations was "the compiling...and the dissemination...of the subject matter of science and its practical application to the vocations of rural society" (Riley, 1956 : 117). Baker (1939 : 3) stated that "this experimental work in agriculture later served as the basis for the county agents' adult education programs."

The third stage of the movement was the addition of agricultural extension as an integral part of the Land-Grant institutions and of the United States Department of Agriculture (USDA). By the turn of the century the experiment stations had been well established and on their way toward an eventual accumulation of a vast body of essential information. It became desirable to find a method of providing the information to the farmers. In 1903, the USDA started the Farmers' Cooperative Demonstration Work under Seaman A. Knapp's supervision, and employed agricultural agents to conduct demonstrations of recommended practices to the farmers in the Southern States (Simons, 1962 : 5-8). This early demonstration work was strictly a Federal project and was a forerunner of Cooperative Extension Service. Although there were some cooperative efforts in early Agricultural Extension Work in the United States, the services rendered from 1862 until 1914 were strictly under a government model and "the Land-Grant Colleges not only did not cooperate officially but in a few cases were either indifferent

to or critical of it" (Simons, 1962 : 8). Riley (1965 : 268) also stressed that "the adult education work of Knapp and his agents was not connected with the land-grant institutions in these beginning years". Nevertheless several colleges of agriculture had begun offering formal classes for farmers in response to the farmers' expressed interests.

The County Farm Bureau has played a larger part in the development of the agricultural extension programs than all other organizations combined (Eddy, 1957). The County Farm Bureau was first sponsored as local farmers' organizations. The extension and the Farm Bureau movement grew up together. The primary purpose of the Farm Bureau was to provide leadership and additional funds for extension work on a county basis (Lancaster, 1966). The Smith-Lever Act recognizes "contributions from private individuals as a legitimate part of state matching funds" (Baker, 1939 : 16). Many state governments promoted the Farm Bureaus as a part of their extension organization and made the organization of a Farm Bureau a prerequisite condition for installation of a county extension agent (Baker, 1939). The County Farm Bureaus were federated into state organizations to plan and carry on a state agricultural program. In 1919 these state Farm Bureaus were again federated to become the American Farm Bureau Federation, a general farm organization. The American Farm Bureau Federation was established to (Baker, 1939 : 19):

1. correlate and strengthen the state farm bureaus and similar state organizations

of the several states in the national federation;

2. promote, protect, and represent the business, economic, social, and educational interests of the farmers of the nation; and

3. develop agriculture.

Because of these broad objectives, many states have changed their emphasis in the program of the Farm Bureau from education to legislative and business activities (Baker, 1939). This brought a new relationship between the farmer and the county, state and federal governments. And the county extension agents discontinued their administrative relations with the county Farm Bureaus "because they believed that such a relationship would interfere with the educational nature of their work" (Baker, 1939 : 96). Thus, the county extension agent emerged as an educational agent uniting the services of the federal, state, and county governments. The agent provides "direct service to [farmers] , answering requests for information and providing instruction to groups and individuals" (Darkenwald and Merriam, 1982 : 165). As pressures on the need to diffuse practical information to farmers developed, the U.S. Congress acted by passing the Smith-Lever Act in 1914, creating the Cooperative Extension Service as an integral part of the Land-Grant Universities and of the U.S. Department of Agriculture. According to Malone and Flowers (1980 : 134), the passage of the Smith-Lever Act in 1914 was the result of "subsequent rapid discovery and accumulation of research-based knowledge related to agriculture and rural living, coupled with some pressing problems being faced by the rural population". The Cooperative

Extension Service Act, as amended in 1977, listed the purposes of the Extension Service as to:

aid in diffusing among the people of the United States useful and practical information on subjects relating to agriculture, uses of solar energy with respect to agriculture, and home economics, and to encourage the application of the same (91 Stat. 1011).

This marks "the beginning of organized, non-formal university education efforts and the beginning of a trend towards bringing the university into the public domain as a social actor accountable to the social system it helps to produce" (Fox, 1982 : 163).

As noted in the 1958 report on Scope and Responsibility of the Cooperative Extension Service, known as Scope Report (1958), this broad charter clearly identifies Extension's function as education for action directed towards helping people to help themselves. In performing this function, four general objectives for the Cooperative Extension Service are described in relation to the needs of the people (Scope Report, 1958 : 3):

1. Greater ability in maintaining more efficient farms and better homes.
2. Greater ability in acquiring higher incomes and levels of living on a continuing basis.
3. Increased competency and willingness, by both adults and youth, to assume leadership and citizenship responsibilities.
4. Increased ability and willingness to undertake organized group action when such action will contribute effectively to improving their welfare.

These objectives are achieved through:

giving of instruction and practical demonstrations in agriculture, uses of solar energy with respect to agriculture, and home economics and subjects relating thereto to persons not attending or resident in said colleges...and imparting information on said subjects through demonstrations, publications, and otherwise ... (91 Stat. 1011).

The Scope Report (1958) has identified the hard core of an adequate program of informal education, to be given high priority attention by the Cooperative Extension Service. The nine areas so identified in the Scope Report (1958) were:

1. Efficiency in agricultural production
2. Efficiency in the marketing, distribution, and consumption of agricultural products
3. Conservation, development, and use of natural resources
4. Management on the farm and in the home
5. Family living
6. Youth development
7. Leadership development
8. Community improvement and resource development
9. Public affairs

The Scope Report (1958 : 8) has recommended that:

although the degree of emphasis with respect to each of these areas may vary from one county or one state to another, the total effort of extension work in the United States should fully recognize these areas of emphasis.

The Smith-Lever Act was a part of the pattern of previous Land-Grant Universities legislation. And the Cooperative Extension



Service is the only nationwide adult education institution that has at least one representative in essentially every county in the United States. "Its unique characteristics are diversity, comprehensiveness, and its academic base" (Greenwood, 1981-82 : 6).

The university model does not incorporate regulatory activities. This distinction has been firmly established by two separate agreements reached in 1919 and 1938. The conference between the committees of the Land-Grant Association and representatives of the National Association of Commissioners of Agriculture reached an agreement in 1919 that "the colleges should be responsible for research and extension work and the state departments for regulatory work and law enforcement" (Baker, 1939 : 9). This agreement was formally accepted by the United States Department of Agriculture in a letter sent by the Secretary of Agriculture to all state governors in 1923 outlining the policy of the Department in its cooperative arrangements with the colleges and the state departments. The letter written by the Secretary of Agriculture as quoted by Baker (1939 : 9-10) was as follows:

'In all regulatory work and matters of law enforcement, we cooperate with the State department of agriculture, or such law enforcement agencies as the State may have created.

Our research work, if done in cooperation with the States, is carried on with the experiment stations of the land-grant colleges.

Our extension work in agriculture and home economics is carried on with the extension divisions of the agricultural

colleges . . .

I am informed that the National Association of Commissioners, Secretaries, and Departments of Agriculture and the Association of Land-Grant Colleges have endorsed and recommended the general plan of administration and that it is spreading rapidly. General development along this line, it appears, will enable the Federal government to cooperate with different State agencies without confusion of functions.'

The second agreement was established because of the United States' experience in its agricultural development during the 1930's. The severe droughts and dust storms of 1934 helped to focus public attention in dramatic ways on natural resources and regulatory problems. The development of various forms of relief assistance as well as conservation and rehabilitation programs had brought the U.S.D.A. into important relationships with other departments. Since these activities of the different units are so sensitively interdependent, provision was needed for new arrangements and overall planning to guide the integration of all efforts. In 1936, the Association of Land-Grant Universities appointed a Committee to study new arrangements of Federal-State Relations (Gaus and Walcott, 1940 : 157). An agreement was reached on July 8, 1938 at Mt. Weather, Virginia, to establish a system of co-ordination as well as collaboration between the Department of Agriculture and state agencies, particularly the Land-Grant Universities (Gaus and Walcott, 1940 : 156-157). In the Mt. Weather Agreement many realignments were made in order to bring related functions together, particularly to keep extension purposes separate from regulatory activities, and to provide unified planning as a

guide to action, integration and collaboration. The agreement has also reaffirmed that the relationships in the field of research and extension have been clearly established in memoranda and are mutually satisfactory (Gaus and Walcott, 1940 : 463).

These agreements clearly established the understanding that Cooperative Extension personnel would not be required to perform inspection and other regulatory activities. Accordingly, the most widely recognized difference between the government and the university models was established formally in 1923, some 9 years after the establishment of the Cooperative Extension Service.

In summary, three legislative acts influenced the establishment of the Cooperative Extension Service in the United States. However, the Smith-Lever Act of 1914 was the basic legislation which created this nationwide Cooperative Extension Service in the United States. The scope and purpose of the Cooperative Extension Service is to diffuse useful and practical information on subjects relating to agriculture and to encourage their application.

### Structure and Organization

The Cooperative Extension Service is a joint undertaking including the Land-Grant Universities and federal and local governments. The organization structure has been established by a 'Memorandum of Understanding' between the USDA and the various Land-Grant institutions in line with the basic federal extension

legislation, the Smith-Lever Act. In addition to the memorandum of agreement, there is also an understanding between each state and its counties. In some states this understanding is informal; in others it is in the form of a definite memorandum. The agreement defines each partner's responsibility and joint obligations.

### Federal Extension Service

The USDA has agreed to maintain a central administrative unit, Federal Extension Service. The Federal Extension Service, under the direction of the Secretary of Agriculture, is responsible for the administration of the Smith-Lever Act and of other laws and regulations involving cooperative extension work (Williams, 1968). According to the memorandum of understanding all extension work in agriculture and home economics is conducted through the land-grant institutions. The Federal Extension Service's major responsibilities (Kelsey and Hearne, 1963; Clark, 1966; Williams, 1968) are as follows:

1. provide national leadership and stimulation;
2. examine and approve the annual plans of work and budgets submitted by the directors of extension at the Land-Grant institutions, to release federal grants-in-aid for the approved plans, and to receive reports on the year's work;
3. conduct such activities as are of a national nature, or can better be done on a nationwide basis;
4. serve as the educational arm of the USDA; and

5. assist state extension services in program development and implementation.

### The Cooperative Extension Service

As stated in the memorandum of understanding, the Land-Grant institutions have agreed to organize and maintain a distinct administrative division for the conduct and management of extension work in agriculture and home economics with a director selected by the institution and acceptable to the USDA.

This section focuses on the distinct administrative machinery established by the Land-Grant Universities, in particular, the structure and organization of the Idaho Cooperative Extension Service and the Washington Cooperative Extension Service for providing agricultural extension work.

#### Idaho Cooperative Extension Service

The Cooperative Extension Service is the off-campus educational arm of the College of Agriculture of the University of Idaho, the state's land-grant institution, as well as an affiliate of the Federal Extension Service. (Guide to Extension Program Development in Idaho, 1976).

The formal organizational structure for the University of Idaho Cooperative Extension Service (Organization, 1977) may be described in terms of 'line' and 'staff'. The Extension Director is responsible to the Dean of the College of Agriculture and to the Administrator of the Federal Extension

Service. The line organization consists of the Director, four district supervisors, and county staff. The line organization handles the administration and supervision functions of the organization; the staff organization provides specialized assistance through the various staff units. The county extension offices are the basic program units of the Cooperative Extension Service. There are agreements between the University and the individual boards of county commissioners for the conduct of extension work in the various counties. The Idaho Cooperative Extension Service (Organization, 1977) has four kinds of extension workers:

1. District Supervisors
2. County Extension Staff Chairmen
3. County Extension Agricultural Agents
4. Specialists

The four District Supervisors are responsible to the Extension Director for managing groups of county units. They are also responsible to assist in coordinating programs within their district (Organization, 1977).

The county Extension Staff Chairman provides leadership to the staff in order to develop an effective coordinated county Extension program. The Chairman is responsible for other county staff with respect to coordinating county programs, office management, and official relations with the board of county commissioners (Job Description: County Extension Staff Chairman, 1971).

The County Extension Agricultural Agent is responsible to a District Supervisor for administration, and for overall supervision of program development and training. In particular, the agent plans, conducts, reports and evaluates extension educational programs in the assigned geographic area (Job Description: County Extension Agent, 1971).

The specialists perform a staff function and are responsible to the Extension Director through department heads or program leaders. The program leaders have coordinating responsibility and report to the Extension Director (Organization, 1977).

#### Washington Cooperative Extension Service

The general administrative machinery for the Washington Cooperative Extension Service was "set forth in the federal Smith-Lever Act of 1914 and the state law passed in 1913" (Turner, 1961 : 102).

The formal organizational structure of Washington State University Cooperative Extension Service may also be described in terms of 'line' and 'staff'. The Extension Director (Job Description, 1977) is responsible to the:

1. Dean of the College of Agriculture and through him to the President of the University; and
2. Secretary of Agriculture, USDA, through the Administrator of the Federal Extension Service.

The line organization consists of the Director, Associate

Director, Extension Supervisors (six districts) and county staff. The Associate Director (Job Description, 1977) is responsible to the Extension Director. In particular, he is responsible for administrative management, including the personnel, operation, and financial management phases of the Extension Service. The line organization undertakes the administration and supervision functions of the organization; the staff organization provides specialized assistance through the various staff units. The county extension offices are the basic program units of the extension work. The University has signed agreements with the individual boards of county commissioners for the conduct of Extension work in the various counties.

The Washington Cooperative Extension Service has four kinds of extension workers:

1. Extension Supervisor
2. County or Area Extension Chairperson
3. County or Area Extension Agent
4. Extension Specialist

The Extension Supervisor (Job Description, 1977) is named by and is responsible to the Extension Director. His general responsibilities include:

1. represent the Extension Director on personnel and fiscal matters at the county or area level;
2. represent the county or area chairpersons and staff to the Extension Director; and



3. work with county or area extension chairpersons and staff to insure a balanced county or area Extension education effort that reflects appropriate audience and societal needs.

The county or area extension chairperson (Job Description, 1977) is named by the Extension Director in consultation with the board of county commissioners to service as staff chairperson for a specific county or area. He is responsible to the Extension Supervisor assigned to that district. The three major responsibilities of the chairperson (Job Description, 1977) are:

1. insure that staff members are effective extension educators;
2. develop a process to insure that the county extension educational effort reflects appropriate audience and societal needs; and
3. effectively integrate program inputs from the state program leader(s), specialists and supervisors.

The county chairperson is a team-builder and the team-building responsibility extends beyond the county.

The county extension agent is responsible to the Chairperson of the county. The Area Extension Agent is responsible to the:

1. county chairperson for administrative matter; and
2. all county chairpersons in the area for program.

The county or area extension agent's responsibilities (Job

Description, 1977) include:

- A. developing and carrying out county or area educational program(s) consistent with clientele needs and extension programs and policies;
- B. developing materials to support educational programs where needed; and
- C. understanding and demonstrating the following five phases of program development process:
  - (1). audience needs assessment
  - (2). objective setting
  - (3). educational plan development
  - (4). implementation strategies and methods
  - (5). evaluation

The extension specialist (Job Description, 1977) is responsible to the state program leader through the appropriate department chairman. The extension specialist (Job Description, 1977) has the responsibility to:

- 1. evaluate, appraise, and interpret subject-matter information, physical and social environment, and clientele needs as a basis for effective programing;
- 2. provide leadership by:
  - a. combining their educational efforts with county extension agents, other specialists, and research workers in accomplishing joint projects.
  - b. extending educational programs directly to clientele--professional and nonprofessional.

3. provide county extension agents assistance in project planning, determining indicators of progress, and measuring results; and
4. prepare and stimulate preparation of teaching materials and publications relevant to subject-matter assignment for both youth and adults.

In summary, the Cooperative Extension Service is a cooperative financial arrangement in which the Federal Department of Agriculture, the Land-Grant Universities, and county governments are sponsors. The organization structure has been established by a 'Memorandum of Understanding' between the USDA and the various land-grant institutions. In addition, there is also an understanding between each state and its counties. The Federal Extension Service is responsible for the administration of the Smith-Lever Act and of other laws and regulations involving Cooperative Extension Work. The University of Idaho and Washington State University, as land-grant institutions, undertake the responsibility to organize and maintain a distinct administrative division for the conduct and management of extension work. Extension work is organized on district basis, but having the county extension office as the basic program unit. The scope and purpose of the Cooperative Extension Service is to diffuse useful and practical information on subjects relating to agriculture and to encourage their application.

### Summary

Agricultural extension services in North America are provided either directly by government departments of agriculture, or by colleges and universities in cooperation with government departments of agriculture.

The provision of Agricultural Extension Service in Canada is a provincial responsibility. The scope and purpose of the Agricultural Extension Service are the delivery of technical and economic information and professional services on agriculture to farmers. It is organized under regional offices within an executive branch of the Government, the Ministry of Agriculture. The district agriculturalist is the major link with farmers. In addition to his normal extension duties, the district agriculturalist has been given other duties, such as planning and approving farm credit grants, ensuring that land clearing or draining has been in compliance with regulations, and implementing provincial and federal programs and policy administration.

In comparison, the Cooperative Extension Service is a cooperative arrangement in which the Federal Department of Agriculture, the Land-Grant Universities, and county governments are participants. It is a nationwide adult education institution and is an integral part of the Land-Grant Universities system. Its unique characteristic is its academic base. Its scope and purpose is to diffuse useful and practical information on subjects relating to agriculture and encourage

their application. The Extension work is organized on district basis, but having the county extension office as the basic program unit. The county extension agricultural agent is the main link with farmers. The agent is not required to perform any regulatory activities, a policy that has been established by two separate agreements reached in 1919 and 1938.

## CHAPTER III

### THEORETICAL FOUNDATION

It has been widely reported that effective agricultural extension work is conducted by the agricultural extension workers employed in both government and university models. Prior studies in agricultural extension service have also dealt with a variety of problems related to agricultural extension work within systems based on each model. However, the researcher is interested in the effect of these two major forms of organizing agricultural extension work on the way the individual extension worker performs his role. It seems reasonable to assume that how an extension worker carries out his responsibilities is influenced by his understanding of what his employing organization expects him to do and by what the people he seeks to serve expect of him. The study of such variables has been dealt with by role theory researchers. The theoretical frame of reference for this study is based on role theory.

This chapter will (1) discuss role theory as it pertains to this study; (2) review investigations which used role theory to study various positions in the agricultural extension service; and (3) present the research questions for the study.

#### Role Theory

An agricultural extension service as an organization can be

considered a social system encompassing many positions, statuses, and roles which are influenced by the organization as well as by its clientele (Abdullah, 1964). An extension worker must take account of the perceptions and the often conflicting expectations of his employer and his clientele vis a vis the extension worker's role and determine how much weight he will give them in deciding his own role performance. A theory which explicitly recognizes these facts and gives emphasis to them was required to provide an appropriate conceptual framework. Role theory as conceived by Parsons seemed very appropriate for present purposes given these considerations.

Parsons (1956/57 : 63-85; 1968 : 24-67) has suggested that the structure of an organization may be analyzed from a 'role' point of view which focuses on social subsystems and the roles of individuals participating in the functioning of the organization. The system of the agricultural extension organization consists of three subsystems: the extension agent, the administration, and the clientele. The last two subsystems, which Parsons refers to as the 'alters', influence the behaviour of the extension worker, who is referred to by Parsons as 'actor', ego. According to Wilkening (1957) each of the subsystems may have different expectations of the role of the agricultural extension worker, and these expectations influence the activities of the extension worker. Parsons (1951 : 38) refers to the role expectations as two-fold. The actor has a set of self expectations which must be met, and the persons he is interacting with also have a set of expectations for him.

The extension worker fills a role position in the extension service. He has his self-role expectations which conform to his own standards of beliefs and values, which Parsons refers to as 'ego'. Alter, as used by Parsons, is the probable reaction of others, and if these role expectations are in accord with ego's perceptions of the expectations of alter, alter will sanction ego and these expectations become gratification, thus rewarding ego. If, on the other hand, ego does not receive the sanction of alter, 'role-conflict' arises.

Gross, Mason and McEachern (1958) carried out a study of the school superintendency role in Massachusetts; they dispelled the notion that there is a complete consensus on role expectations among the incumbents of positions in a social system. Rather, they saw the concept of consensus on role definition as a variable among sets of role definers where perceptions are focused on single role definition items.

According to Rogers and Burdge (1972 : 329-330) the extension worker's social position is located between his organization and clientele. The extension worker "has mainly primary-group relationships with his clientele and mainly secondary-group relationships with his [organization]". They (1972) also stated that the extension worker is often expected to engage in certain behavior by his employing organization subsystem, and at the same time, he is expected to carry out quite different actions by his client subsystem. It seems apparent that the agricultural extension workers have



impressions or perceptions rather than complete knowledge of the expectations of their employing organization and of the clientele they serve. These perceptions may influence the extension worker's performance. At least they provide the basis on which he compares his actual performance with what he believes others expect of him. So far as his behavior is concerned, his perceptions of alters' expectations rather than alters' actual expectations are what he can use to compare his perception of his own role performance with the expectations of others concerning what he should be doing.

The concepts used in this study within the role theory framework are defined as follows:

1. role perception: the perception which one has of the normative expectations of a position as well as the perception of the way others expect one to perform (Martin and Macdonell, 1978 : 69).

2. role performance: the actual enactment of behaviors in the situation (Ibid., p. 70).

3. role conflict: any situation in which the incumbent of a focal position perceives that he is confronted with incompatible expectations (Gross, Mason and McEachern, 1965 : 248).

4. inter-role conflict: an individual perceives that others hold different expectations for him as the incumbent of two or more positions (Ibid., p. 249).

5. intra-role conflict: [an individual] perceives that others [within and outside the organization] hold different expectations for him as the incumbent of a single position (Ibid., p. 248-249).

6. role expectations: the prescriptions and proscriptions held [for the behavior of an

individual who occupies a particular position] (Kahn, et al., 1964 : 14).

Based upon the foregoing considerations, this study focuses on the role perceptions and role performance of agricultural extension workers employed in the two kinds of organizational models. The study assumes that the agricultural extension workers are located in both the organization subsystem which employs them and the clientele subsystem which they serve. Role theory provides a theoretical basis for this study. It would have been possible to interview the individual extension workers' supervisors within the extension organization and the clientele served by the workers to obtain testimony on their expectations of the workers. Although such a process would have required a considerable amount of time, this factor was not the basis for using an alternate approach. Because the extension worker acts in terms of his perception of others' expectations, whether or not his perceptions are accurate, and because it was not essential to the study to determine the accuracy of his perceptions, no provisions were made for collecting data on expectations from the extension workers' supervisors or clientele.

#### Utility of Role Theory

The application of role theory to the study of various positions in agricultural extension service has been used increasingly in recent years to gain an understanding of the organizational structure and function. A few studies which used

role theory to analyze the Agricultural Extension Service were reviewed to develop a theoretical framework appropriate to this research.

Wilkening (1957 : 2), in his study of the county extension agent's role, stated that "The concept role can be used in a general sense as the role of the extension agent, referring to the functions and relationships of the agent in the community...". In his analysis, role definition becomes a matter of identifying what extension specialists do and what they should do in planning, executing, and evaluating the extension program. Wilkening (1957) used role theory and studied the self-perception of county extension agents in Wisconsin in an attempt to determine how the agents had performed their roles in the past and how they feel they should be performed. Comparisons were made among the agricultural agents, home economics agents, and 4-H Club agents with respect to role definition, consensus, and fulfillment. His findings suggest that:

the degree of role fulfillment of the individual agent varies with his own personal orientation, whether with those with whom he works or with those in superior positions, and with the degree of control over his activities, as indicated by his status in the organization. An hypothesis is suggested that persons in intermediate positions such as county extension workers will tend to conform to the expectations of those with whom they work at the local level or with those at higher levels, depending upon the nature of rewards they are seeking and upon their control of relationships at the respective levels (Wilkening, 1957 : 49).

In other words, each of the subsystems may have different expectations of the role of the agricultural extension worker, and these expectations presumably influence the activities of the extension worker.

Brown and Deekens (1958) studied the role of the subject matter specialists in the Pennsylvania Cooperative Extension Service. The study is similar in approach to the present research. It focused on the role of extension specialists as conceived by themselves and the perceptions of role expectations held by the alters. They (1958 : 263) reported that:

Little evidence was found that specialists define their job as communicators of problems to the researcher; predominant interest is in communicating knowledge of subject matter to counties. Specialists perceive alter groups as having differential role expectations but are oriented primarily to county agents and are motivated to conform to their expectations.

Wilkening and Smith (1958) studied the role of extension agents working on Farm and Home Development in Wisconsin. Their study was concerned with the problem of role definition of county extension agents appointed to give greater emphasis to intensive work with farm families. Wilkening and Smith identified at least four aspects of role which can be studied. These are:

1. the functions performed by the role occupant,
2. the nature of the interaction between the role occupant and others,
3. consensus with respect to expected behavior and the conformance or deviance

from this expected behavior (norms), and  
 4. the situational context involving  
 persons and resources available to the role  
 occupant (Wilkening and Smith, 1958 :19).

Their study was most concerned with the functions performed by  
 the extension agents. Wilkening and Smith (1958 : 26) concluded  
 from their study of the extension agents' role definition that:

role definition with a system of  
 professional service is a process which  
 involves commitment to the job... selective  
 orientation toward the clientele or to the  
 'system'...

They (1958 :26) have also found evidence that:

the performance of certain functions  
 requires an orientation toward the  
 hierarchical system, while the performance  
 of others is consistent with an orientation  
 toward the 'clientele', or at least to the  
 local level of the system.

In the case of functions performed by the Extension Service,  
 Wilkening and Smith (1958 : 27) suggested that:

the performance of the 'teaching' function,  
 strictly speaking, requires a system of  
 rewards and controls above the client or  
 local level...the performance of functions  
 such as providing technical advice and  
 information and consulting in the problems  
 of management of the farm and home have  
 their immediate rewards to the individual,  
 hence, require a minimum of control of state  
 and national levels. This is evident in the  
 general lack of supervision of the extension  
 program on the part of the federal office  
 and the high degree of autonomy on the part  
 of the county offices within the state.

Bible and Brown (1963) have used role theory to assess the  
 extent of role consensus (on expectations and performances)

among and between extension advisory committee members and extension agents in Pennsylvania. The investigation is similar in theoretical formulation to the present study, but the data were collected from two groups. They (1963 : 81) reported that:

consensus on role definition and role performance was relatively low among committee members and among county extension agents. . . . Both committee members and extension agents had higher consensus on perception of role expectations than on perception of role performance.

Job (1965) studied the roles of selected district agriculturalists in British Columbia. His data indicated that the majority of the district agriculturalists identified their major extension role functions as 'consultant', 'source of information', and 'student'.

Bible and McNabb (1966) examined both the relationship of position to consensus on role definition, and the role performance of county extension directors in Missouri as perceived by directors and their county extension staff. They found that the county extension directors had greater agreement on perception of role expectations and role performances than did their county staff. Bible and McNabb (1966 :14) suggest that:

where there exists a dual structural arrangement for administrative purposes like the state and county organizations, adequate communication in role definition to all concerned is doubly important...for effective...role performance...

Morehouse (1968 : ii), in his study of role perception and

performance among agricultural extension personnel in Nova Scotia, found that agents "are conforming to their expected roles but there are certain areas within the general scope of their work where they would like to change emphasis."

McNaughton (1970) studied the educational role of a district agriculturalist in the Peace River Extension District in northern Alberta. He found that about half of the clientele contacts of the district agriculturalist were educational.

Recently, Lamble (1980 : 16) viewed organization as a social system and explored "the potential utility of role theory in understanding organizational behavior phenomena" in relation to role-conflict and role ambiguity at the functional levels for district agriculturalists in the Extension Division of Alberta Agriculture. Lamble (1980 : 117) conceptualized the district agriculturalist's position as "the focal point for client-agency contact and the delivery agent for the programs and services of the agency."

These investigators used role theory to study a variety of problems related to extension work within systems based in each model. However, no researcher had attempted to assess the effect of performing regulatory duties on the extension worker's educational effectiveness, a limitation which was also encountered in the present study. The next section of this chapter deals with the research questions which the study will attempt to answer.

### Research Questions

In this research role theory as conceived by Parsons was selected to study the functions of agricultural extension workers in the government and university models. The research questions which follow have been formulated and will be answered to determine the differences between the two models.

1. What are the differences between the positions of agricultural extension workers in the government and the university models?

Agricultural extension services were born out of recognition of the fact that research based knowledge in agriculture and other related disciplines has broad applications, and out of a concern that research findings should be extended to potential users along with encouragement to adopt such information. Agricultural extension serves not only to extend these resources but also to help relate the teaching and research programs of the institution to the needs of the people (Kellogg and Knapp, 1966). It is based on the philosophy of helping people to improve themselves through action-oriented and problem-solving types of educational programs. Because the two models have different organizational patterns, there are likely to be differences in extension workers' positions.

2. What is the relative importance of different kinds of professional development in the two models?



Agricultural extension is an adult education program. The extension worker is "an adviser, a teacher of farm technology, and an organizer" (Kellogg and Knapp, 1966 : 187). The process of carrying out an extension program consists of four related stages: knowing the community, program planning, instruction and evaluation. These responsibilities require particular skills and competencies. This fact emphasizes the importance and need for sound professional development.

3. What effects does an extension worker's responsibility for performing regulatory functions have on his role performance?

The agricultural extension agent's influence has not been one of formal authority but rather one of persuasion. His main responsibility is the communication of information, as an educator, free of any stigma that might be attached to some other official functions. This educational approach fosters a desire for change among people and motivates them to action that leads to desirable change (Leagans, 1963). Since regulatory activities are the function of an organization which has control of the administration of laws and implements them by legal authority rather than through educational leadership, some observers believe they might be incompatible with extension educational strategy. Therefore, the performance of the regulatory function within the government model may be expected to have an effect on the agent's educational performance. Such

an influence might be absent from the university model.

4. What are the differences between government and university models with regard to extension workers':

- a. selection of adult education methods and techniques?
- b. scope of educational responsibilities?
- c. interest in research?
- d. interest in kinds of professional upgrading?
- e. membership in professional societies?
- f. reading interests?

The triple responsibility for resident instruction, research and extension has given the Land-Grant Universities a key role in development of the Cooperative Extension Service. One expects a strongly based professional development and close links of research and extension practices in the university model more than in the government model. Therefore, the behavior of the extension workers can be expected to be different between government and university models with regard to these six variables.

These research questions were established to explore the differences in role perceptions and role performance of extension workers employed in the government and university models. The research design for the study will be developed in the next chapter.

## CHAPTER IV

### RESEARCH DESIGN

In the pervious chapter the theoretical framework and the research questions for this study were developed and related literature were reviewed. This chapter describes the research design used in the study. It is comprised of two sections: data collection and analysis procedures. The first section of the chapter discusses the development, pre-testing and administration of the questionnaire, and field visits. The second section describes the statistical procedures used to analyze the data.

The study was designed to collect data from the district agriculturalists in Alberta and British Columbia, and from the county extension agricultural agents in Idaho and Washington so as to explore the differences in role perceptions and role performance of these adult educators working in systems which are represented by government and university models.

#### Data Collection Procedures

The basic data collection method of this study is a mail questionnaire. The mail questionnaire was chosen due to the distance, expense and time involved with using any face-to-face interview methods. This survey method is sometimes criticized as not being as exact as other methods, but Kerlinger (1973 : 410-411) states that "survey research studies large and small

populations to discover the relative incidence, distribution and interrelationships of...variables." He continues:

although the approach and the techniques of survey research can be used on any set of objects that can be well-defined, survey research focuses on people, the vital facts of people, and their beliefs, opinions, attitudes, motivations, and behavior.

Dillman (1978) notes that mail questionnaire has been one of the stepchildren of survey research, and data collected by this method have always been considered suspect. However, according to Dillman (1978 : 2) recent developments "have brought it [mail questionnaire] to the point of being competitive with face-to-face interviews for many kinds of studies." Dillman (1978) also reports that return rates for mail questionnaire can be increased by incorporating rewards, trust and some measure to minimize the costs for respondents.

The researcher, following Dillman's insights, took the following three approaches to insure high return rates for the questionnaires.

1. The confidentiality of the extension worker's answers was explicitly stated at the beginning of the questionnaire in order to develop trust between the respondents and the researcher.

2. A stamped self-addressed return envelope was sent to facilitate ease of responding and to avoid postage cost to the respondents.

3. Cover letters from the heads of extension divisions and

the researcher explaining the study were sent so as to indicate the purpose and potential value of the investigation.

This section is focused on the questionnaire used to obtain data pertaining to the variables of the study. Specifically, the following information is presented: (1) development of questionnaire, (2) pre-testing of questionnaire, (3) administration of questionnaire, and (4) field visits.

### Development of Questionnaire

A questionnaire was designed to collect information on six major variables selected for study. These variables were selected because they were expected to be distinguishing factors between the government and the university models. For some questions the Likert-type rating scale is used because it is "the most useful [and widely used method of attitude measurement] in behavioral research" (Isaac and Michael, 1979 : 100). The nine-page questionnaire (Appendix I) consisted of the following six parts:

Personal characteristics: The following items of personal characteristics were asked: age, years of extension experience, and years of experience in current position (employment). This part of the questionnaire was designed to secure demographic information to describe the population studied.

Age was selected because it is a common variable asked in almost all survey research questionnaires for descriptive purposes.

Years of extension was selected to describe the years of service of agricultural extension workers in each country.

Years of experience in current position was selected to describe the number of years agricultural extension workers have been in their current employment in each country.

Professional development: The items include: (a) academic qualifications when agricultural extension workers started working in agricultural extension, major field of study, and colleges and universities from which diplomas or degrees were obtained; and (b) further formal study after the extension workers had started working in agricultural extension, diploma received, study specialization, colleges and universities attended, field of interest for professional competence and in-service training programs, and opinion on various professional development ideas. The eight items of the opinion question were measured on a five-point Likert-type scale which respondents were to reply to as 'Always', 'Often', 'Seldom', 'Never', and 'Uncertain' for each item. This part of the questionnaire was designed to secure data on academic qualifications and professional development of extension workers in the two countries. It is assumed that a university, as an institution of higher learning, maintains a certain level of academic qualifications and continuous professional development of its personnel more than a government institution. Thus, it is reasonable to expect differences between the extension workers employed in the university model and their counterparts employed

in the government model on these variables.

Academic qualification was selected to indicate the general requirements for employing extension workers. It was expected that the university model might require higher academic qualifications than the government model at the time of employment.

Field of specialization, at the time of employment, was selected because it has a bearing upon the kinds of training extension workers had at the time they started work in agricultural extension. It was expected that extension workers employed in the university model specialize in extension, whereas their counterparts employed in the government model major in specialized agriculture.

Colleges and universities attended were selected because they indicate the universities which are the major suppliers of extension workers. Since extension is an integral part of the land-grant universities, it is reasonable to assume that the universities establish both undergraduate and graduate programs in extension for the extension workers' needs. In the government model this may not exist, because the university and the department of agriculture are two separate institutions where the university may not assume the responsibility to develop programs which the department of agriculture needs for its extension workers. Thus, it is reasonable to assume that extension workers employed in the government model may be more likely to attend universities which have established programs in extension outside their country than their counterparts employed

in the university model do.

Further formal study was selected because it is one of the indications for continuing attitude toward learning of the extension personnel. Extension work cannot wholly depend upon the knowledge and skills obtained in prior years to meet the demands of today. Since a university, as an institution of higher learning, may be expected to have more of constant stimulus for professional development than a department of agriculture, it was expected that the extension workers employed in the university model would undertake more further formal study than their counterparts employed in the government model.

Diploma received was selected as an indicator because it has a bearing upon the level of qualification attained. Because of higher academic expectations in the university than in the department of agriculture, the extension workers employed in the university model would be expected to earn higher qualifications than the extension workers employed in the government model.

Study specialization was selected because it indicates areas of interest in which an agent felt he needed to possess competence. Because of greater professionalism expectations in the university than in the department of agriculture, extension workers employed in the university model may specialize in extension for their role as adult educators, while their counterparts employed in the government model may specialize in agriculture or related fields for their role as information providers.

Colleges and universities which the respondents attended



for further formal study were selected because they indicate institutions which are sources of extension professional upgrading programs. It is expected that more extension workers employed in the government model may attend universities outside their country than those extension workers employed in the university model, because in the land-grant universities extension is an integral part of residential instruction which necessitates the establishment of professional upgrading programs for extension workers more than the government model.

Field of interest for professional competence and in-service training programs were selected because they indicate self-perceived training needs of extension workers. It was expected that the extension workers employed in the university model would express an interest in professional competence and in-service training programs in extension, whereas their counterparts employed in the government model would express an interest in specialized agriculture because they may assume their role as providers of information more than adult educators.

Opinions on various professional development ideas were selected because they have a bearing upon the type of policies or guidelines the Agricultural Extension Service might have in providing opportunities for extension workers to continuously up-date their professional competence. A university, as an institution of higher learning, is expected to provide more opportunities for continuous professional development of its extension workers than a department of agriculture does, in order to maintain its high academic expectations.

Methods and sources of information: The items include: membership in professional societies, reading of research journals or other research publications, and sources of research information. These items were asked to determine how extension workers in the two models update their information. The extension service is a link between research and the farmers. In the university, extension and research are within the university system, whereas this situation may not exist in the provincial department of agriculture. Thus, for the extension workers employed in the university model their main source of information was expected to be the university, while for their counterparts employed in the government model their main source of information was expected to be the provincial department of agriculture. In addition, a university, as an institution of higher learning, may have higher expectations for its extension workers to have membership in professional societies and to read research publications so as to remain up to date in their specialties, than those expectations held by a department of agriculture.

Membership in professional societies was selected to reflect an interest in professional improvement and up-dating of information. It was expected that more extension workers employed in the university model will be members of professional societies than their counterparts employed in the government model.

Reading of research journals or other research publications was selected because it indicates the extent of continuous

interest in the profession as well as the level of concern for remaining up to date in their specialties. Because of the university expectation of higher professional competence for its personnel, it was expected that more of the extension workers employed in the university read research publications than their counterparts employed in the government model.

Sources of research information were selected because they have a bearing upon the primary link of the agriculture extension service workers for research data. It was expected that the main source of research information for extension workers employed in the government model would be Provincial Department of Agriculture, and for their counterparts employed in the university model, the Land-Grant University.

Regulatory functions: The question to assess attitude toward performing regulatory duties had five positive and five negative statements. A Likert-type rating scale (Strongly Agree = SA; Agree = A; Undecided = U; Disagree = D; and Strongly Disagree = SD) was used for responses to the question. Values of 5 = SA; 4 = A; 3 = U; 2 = D; and 1 = SD were assigned to the five positions in that order for positive statements; and the values were reversed ( 1 = SA; 2 = A; 3 = U; 4 = D; and 5 = SD) for negative statements. The reason for reversing the scoring of negative statements was to provide a total score that reflects the respondent's degree of positiveness toward the performing of regulatory duties. Scores above 3.0 indicate a positive opinion and those below show a negative opinion. This

part of the questionnaire was designed to secure scores on each agent's attitudes toward regulatory duties. The literature on extension indicates that extension workers employed in the government model do perform regulatory activities, while their counterparts employed in the university model do not. The regulatory functions are selected because they may have a bearing upon the extension worker's performance of his extension duties.

Methods and techniques: Attitudes toward eighteen methods and technique were assessed to determine the frequency and efficiency of each method and technique used by agents in the two models. The frequency of use of each method and technique was asked on a four-point scale which respondents were to answer to as 'Often', 'Sometimes', 'Rarely', and 'Never'. A four-point scale ('Very Efficient', 'Efficient', 'Somewhat Efficient', and 'Inefficient') was also used to measure the extension worker's opinion regarding how efficient each method and technique is in persuading farmers to adopt recommended practices. Methods and techniques were selected because they indicate the instructional methods and techniques which the extension workers might use in a way that will most likely result in the adoption of new ideas by their clientele. It was expected that the extension workers employed in the university model use a wider variety of methods and techniques than their counterparts employed in the government model because the university, more than the provincial department of agriculture, expects the extension

workers to perform as adult educators, and thus, they can be expected to know more methods and techniques to teach their clientele to adopt new practices.

Extension role functions: Fourteen extension role functions were included in this section. The respondents were requested to (1) rate various extension role functions in order of importance to their organization, their clientele and to themselves, and (2) indicate how much time they spent on each role function. The first question was rated on a five-point Likert-type scale ranging from 'Not Applicable' to 'Very Important' function of extension service. The question on how much time is spent on each extension role function was indicated on a four-point scale which respondents were to respond to as 'Much', 'Some', 'Little', and 'None' for each. This part of the questionnaire was designed to secure data on agents' extension role. Extension role functions were selected because they indicate how extension workers employed in each model saw their professional role as agricultural extension workers.

An alternative way of gathering information to study extension role functions is to collect data from the agricultural extension organizations and clientele on the expected behavior of the agricultural extension workers. This approach was not selected because the researcher was interested in studying the agricultural extension workers' perceptions of demensions of their role which may affect the role performance.

Before the questionnaire was pretested, the members of the

researcher's supervisory committee were requested to examine it for face validity. The committee evaluated the questionnaire and suggested some major revisions, and minor rearrangement and rewording of items. The investigator had divided the final questionnaire into six sections because he found that to be a convenient way to organize the information. The six sections were: Section I : 'Personal Characteristics'; Section II : 'Professional Development'; Section III : 'Methods and Sources of Information'; Section IV : 'Regulatory Function'; Section V : 'Methods and Techniques'; Section VI : 'Extension Role Functions'. A total of twenty questions appear in the revised questionnaire. The amended questionnaire was approved by the researcher's supervisory committee for field pre-testing.

#### Pre-testing of Questionnaire

The questionnaire was pre-tested for content and face validity with ten district agriculturalists in Alberta who were selected by the investigator in collaboration with the Director of the Extension Division of Alberta Agriculture from four of the six agricultural extension regions. The selected district agriculturalists were located in ten district offices within the four extension regions. The researcher set prior appointments by telephone with each district agriculturalist in order to conduct a pre-test field interview and to visit the district office. The investigator personally presented the questionnaire to each district agriculturalist and requested each respondent

to complete the questionnaire.

After each respondent had completed the questionnaire he was then interviewed to identify questions which he considered to be ambiguous, irrelevant to his work situations, or unclear. The respondents felt that some of the pre-tested questions: (1) did not clearly indicate choices, (2) were restricted, or (3) were not specific. On the basis of the suggestions and comments some major modifications were made in some of the questions. The major changes made in the questionnaire between the pre-testing and final administration were the following:

Pre-tested Question

If you were given study leave at full salary to improve your professional competence and qualifications, how would you rank the following in order of their interest to you in this regard.

If you could arrange in-service training for yourself how would you rank the following in order of their usefulness to you.

Are you a subscriber to any research journals or publications?

An agent who secures an advanced degree is offered a better position in the organization.

Question Finally Administered

If you were given study leave at full salary to improve your professional competence and qualifications, how would you rank the following in order of their interest to you in this regard. Use an X to indicate those choices which are of no interest whatsoever to you.

If you could arrange in-service training for yourself how would you rank the following in order of their usefulness to you. Use an X to indicate those choices which are of no interest whatsoever to you.

Do you read or look over any research journals or other research publications regularly?

An agent who secures an advanced degree is offered a better position within the Agricultural Extension Service.

An agent with an advanced degree is paid a higher salary than an agent without an advanced degree if both have the same experience.

An agent with an advanced degree is paid a higher salary than an agent without an advanced degree if both have the same experience and job responsibilities.

One will recognize readily that the ambiguity was reduced in the final form.

A reliability coefficient was calculated on the question of attitudes toward performing the regulatory function, because many researchers recommend the calculation of reliability evidence on attitude measurement in questionnaires (Hill and Kerber, 1967; Borg and Gall, 1971). The split-half reliability coefficient based on the Spearman-Brown formula was 0.85, a level that indicates a good degree of internal consistency on the question of attitudes toward the regulatory function. In addition the computation of Cronbach's alpha and standardized item alpha coefficients were 0.88 and 0.89, respectively, which again confirm the reliability of the question of attitudes toward performing regulatory function.

#### Administration of Questionnaire

As has been stated previously, the subjects were the district agriculturalists and county extension agricultural agents from Alberta, British Columbia, Idaho and Washington. The names and addresses were obtained from the provincial Departments of Agriculture and the Land-Grant Universities. A total of 192 questionnaires were sent out and 153 were completed and returned. The effective participation rate was 79.7 percent



(Table 1). This was an excellent rate of return, considering the six-week postal strike which delayed the return of the questionnaires.

Table 1  
Survey Participation Rates

<u>Provinces/States</u>	<u>Sample Size</u>	<u>Returned</u>	<u>%Return</u>
Alberta	63	52	82.5
British Columbia	21	17	80.9
Sub-total	84	69	82.1
Idaho	49	34	69.4
Washington	59	50	84.7
Sub-total	108	84	77.8
Grand-total	192	153	79.7

Each district agriculturalist and county extension agricultural agent who satisfied the criteria, except those ten district agriculturalists who participated in the pilot study, was sent the questionnaire with cover letters (Appendix III) from the researcher and the heads of extension divisions explaining the study, along with a stamped self-addressed return envelope. The questionnaire was xeroxed in four different colors for return identification from the two provinces and two states while maintaining the anonymity of individual questionnaires.

#### Field Visits

The researcher conducted field visits to Alberta Agriculture during the pre-testing of questionnaire, and to the British Columbia Ministry of Agriculture and Food as well as to the Universities of Idaho and Washington State during the data

collection period. During the field visits, the researcher interviewed several staff at headquarters; met with several Regional Directors and District Supervisors; and spent a good deal of his time in the libraries collecting additional information for the study. The field study also provided the researcher the opportunity to become fairly knowledgeable about the agricultural extension services in the two provinces and two states.

### Analysis Procedures

Questionnaire data were analyzed using the UBC Statistical Package for the Social Sciences, UBC : SPSS (1980). The following programs from UBC : SPSS package were used for computer analysis:

SPSS procedure FREQUENCIES was used to obtain the distributional characteristics of each of the variables under study. This procedure provided the common descriptive statistics of central tendency and of dispersion.

The CROSSTABS procedure was used to produce two-way joint frequency distribution. The degree of association of each of the variables: age, academic qualifications, years of extension experience, years of current employment, further formal study, diploma received, membership in professional societies, reading of research journals or other research publications, methods and techniques, and time spent on extension role functions, based on distribution of frequency counts in the tables, was measured by

the chi-square statistic.

SPSS procedure ONEWAY ANOVA was used to examine relationship among independent groups with options for contrasts of group means, and multiple comparisons of group means. This procedure was used on the variables of professional development ideas, sources of research information, regulatory functions, and extension role functions.

The T-TEST procedure was used for testing differences of the group means between Canada and the United States on the variables of professional development ideas and regulatory functions.

SPSS procedure ANOVAR was used to examine relationships among dependent (within group) factors (variables). The procedure provides a design for analyzing factors involving repeated measures. This procedure was used to determine relationships among the three ratings on the variables of extension role functions.

The procedures used in developing and refining the questionnaire for the research have been described in the first section of this chapter and the procedures for the analysis of the data are described in the second section. The analyses of the data, findings and discussion are presented in the following two chapters.

## CHAPTER V

### DESCRIPTIVE CHARACTERISTICS AND REGULATORY DUTIES

The purposes of this and the succeeding chapter are to present and discuss the findings of the study. Strictly speaking, the findings may only be applicable to two provinces in Canada and two states in the United States. Although, the two provinces and the two states operate under the government and the university models, respectively, generalization of the findings requires precaution because the district agriculturalists and the county extension agricultural agents of these provinces and states may not be representative of other extension workers in Canada and the United States. This chapter present a discussion of the findings on three of the variables investigated in the study: agents' personal characteristics, agents' professional development and agents' attitude toward regulatory responsibilities.

#### Personal Characteristics

In this section of the questionnaire, the respondents were asked to declare their age, years of extension experience and years of current employment.

The age ranged from 24 to 65 years with the mean age for district agriculturalists being 38.9 years and for the county extension agricultural agents 42.1 (Table 2). There was a statistically significant difference in the age distribution

Table 2  
Distribution of Respondents by Age

Age in Years	Alberta (N=51) Percent	British Columbia (N=17) Percent	Canada (N=68) Percent	Idaho (N=33) Percent	Washington (N=50) Percent	United States (N=83) Percent
21-35	64.7	52.9	61.8*	36.4	38.0	37.3*
36-50	23.5	17.6	22.1*	33.3	38.0	36.1*
51-65	11.8	29.4	16.2*	30.3	24.0	26.5*
mean(yrs)	35.7	40.4	38.9	42.7	41.7	42.1
s.d.	10.7	12.3	11.2	11.0	11.0	11.0

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\*A chi-square value of 8.9 was obtained.  
This is significant at the 0.01 level.

between the agricultural extension workers employed in the two kinds of organizational models for agricultural extension services. The district agriculturalists were significantly younger than the county extension agricultural agents. Because in the university model there is a tendency to employ agents with a master's degree and earning a master's degree takes time, the American agents tend to be older when hired than the Canadian agents. In addition the investigator learned during his conversations with extension administrators in Edmonton that Alberta Agriculture Extension Division has been experiencing a relatively high turnover rate among its younger district agriculturalists who are moving to other divisions of the organization.

The respondents were asked to report how many years they had been working in agricultural extension as well as how long they had been employed by their current extension organizations.

Table 3  
Distribution of Respondents  
by Years of Extension Experience

<u>Years</u>	<u>Alberta (N=52) Percent</u>	<u>British Columbia (N=17) Percent</u>	<u>Canada (N=69) Percent</u>	<u>Idaho (N=34) Percent</u>	<u>Washington (N=50) Percent</u>	<u>United States (N=84) Percent</u>
1-5	36.5	23.5	33.3	20.6	40.0	32.1
6-10	38.5	29.4	36.2	20.6	16.0	17.9
11-15	15.4	5.9	13.0	26.5	8.0	15.5
16-20	-	11.8	2.9	14.7	16.0	15.5
21-25	3.8	23.5	8.7	5.9	10.0	8.3
26-30	3.8	5.9	4.3	8.8	4.0	6.0
31-35	1.9	-	1.4	2.9	6.0	4.8
mean(yrs)	8.4	12.6	9.5	13.1	11.7	12.3
s.d.	6.7	8.5	7.4	7.8	9.6	8.9

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A chi-square value of 12.6 was obtained.  
This is significant at the 0.05 level.

Table 4  
Distribution of Respondents  
by Years of Employment in Current Position

<u>Years</u>	<u>Alberta (N=51) Percent</u>	<u>British Columbia (N=17) Percent</u>	<u>Canada (N=68) Percent</u>	<u>Idaho (N=33) Percent</u>	<u>Washington (N=49) Percent</u>	<u>United States (N=82) Percent</u>
1-5	60.8	58.8	60.3	30.3	57.1	46.3
6-10	29.4	23.5	27.9	42.4	14.3	25.6
11-15	2.0	5.9	2.9	12.1	14.3	13.4
16-20	2.0	5.9	2.9	3.0	14.3	9.8
21-25	3.9	5.9	4.4	6.1	-	2.4
26-30	-	-	-	6.1	-	2.4
31-35	2.0	-	1.5	-	-	-
mean(yrs)	6.1	6.9	6.3	9.2	7.1	8.0
s.d.	6.3	6.3	6.2	6.8	5.6	6.2

---

A chi-square value of 12.6 was obtained.  
This is significant at the 0.05 level.

As shown in Table 3, the number of years of work ranged from 2 to 35 years with the mean year for county extension agricultural agents being 12.3 years and for district agriculturalists 9.5. One-half of the county extension agricultural agents and about seven-tenth of the district agriculturalists had fewer than 10 years of service. There was a statistically significant difference in the distribution of district agriculturalists and county extension agricultural agents by years of extension experience. Overall, the county extension agricultural agents had relatively longer tenure than the district agriculturalists.

The data in Table 4 show that 60.3 percent of the district agriculturalists and 46.3 percent of the county extension agricultural agents had been with their current organizations for five or fewer years. The number of years of work with their current organizations ranged from 2 to 34 years with the mean year for district agriculturalists being 6.3 years and for the county extension agricultural agents 8.0. There was a statistically significant difference between the Canadian and American agents in the distribution by years of current employment with the Canadian agents tending to be newer to extension service employment.

#### Professional Development

The respondents were asked to declare their highest academic qualifications when they started working in agricultural extension; their major fields of study; and the

institutions from which their diplomas or degrees were obtained.

The data as reported in Appendix II, Table 16 show that all the county extension agricultural agents have a bachelor's degree and for 36.9 percent this was their highest academic degree. The majority of the agents have master's degrees and very few have doctor's degrees. In contrast, 98.6 percent of the district agriculturalists have a bachelor's degree and for 85.4 percent this was their highest academic qualification. Few of the district agriculturalists have a master's degree. The agricultural extension workers employed in the university model possess higher academic qualifications than their counterparts in the government model at the time of employment, which was statistically significant. These differences in education might be a possible factor to produce an impact on their extension role performance.

The distribution as reported in Appendix II, Table 17 shows that the majority of the district agriculturalists specialized in animal science while 36.8 percent of the county extension agricultural agents majored in the same field. General agriculture and agricultural education were the next most frequently reported majors by the district agriculturalists and the county extension agricultural agents, respectively. No respondents had specialized in agricultural extension in either country at the time they had started working in extension service. This result indicates that the two kinds of organizational models for agricultural extension hired their extension workers from all areas of specialization in



agriculture rather than restricting their employment policy only to those applicants who had specialized in agricultural extension or closely related areas.

The data in Table 18 in Appendix II show that most of the district agriculturalists in Alberta and British Columbia received their diplomas or degrees in their respective provinces or from other institutions in Canada. Few of the district agriculturalists in Alberta have taken their training in the United States; one individual from British Columbia was trained in Britain. All the county extension agricultural agents in Idaho and Washington had received their degrees from institutions in the United States. Most of the agents in Idaho had been trained at the University of Idaho, while most of the agents in Washington had earned their degrees outside of the state, although none had done so in Canada.

The respondents were requested to report whether or not they had pursued further formal study after they had started working in agricultural extension service.

Table 5  
Distribution of Respondents  
by Further Formal Study

Formal Study	Alberta (N=51) Percent	British Columbia (N=16) Percent	Canada (N=67) Percent	Idaho (N=34) Percent	Washington (N=50) Percent	United States (N=84) Percent
No	56.9	56.3	56.7	47.1	58.0	53.6
Yes	43.1	43.7	43.3	52.9	42.0	46.4

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A chi-square value of 0.15 was obtained.  
This is not significant at the 0.05 level.

The data in Table 5 show that less than 50 percent of the agricultural extension workers employed in the two kinds of organizational models have pursued further formal study. There was no a statistically significant difference between the two groups who reported that they had pursued further studies. Table 19 in Appendix II indicates the types of diplomas and degrees they received after their training programs. All the county extension agricultural agents had completed programs of graduate studies; most of them had earned their master's degree and a few their doctoral degree. In contrast, approximately 55 percent of the district agriculturalists had completed graduate programs and received their master's degrees. There was a statistically significant difference between the agricultural extension workers employed in the government and university models in their study qualifications. Agricultural extension workers employed in the university models had completed more graduate programs than their counterparts employed in the government models.

The respondents who had expressed an interest in further formal study were also asked to indicate their major field of specialization for such program. The data as reported in Appendix II, Table 20 revealed that most of the district agriculturalists in British Columbia and one-quarter in Alberta have specialized in Adult Education and Extension Education, respectively. Fewer county extension agents in Idaho and Washington have specialized in the same areas. While the tasks of the respondents appear to be clearly associated with

education, most of the respondents in both models were interested in areas of specialized agriculture because it appears that they saw their primary function not as educators, but as providers of technical services to their clientele. According to Metcalfe (1965: 163), some agricultural extension workers employed in the university model do not identify themselves as informal adult educators, because (1) "their education orientation [toward extension work]" and (2) "the breadth of their education concepts" have been limited only to the formal instructional settings. He (1965: 163) continued, "in order to gain a broader view of education adult educators [extension workers] must conceive of education as taking place outside the traditional classroom settings." The finding in this study suggests that the same phenomenon identified by Metcalfe (1965) is also apparent in the government model for agricultural extension service.

The institutions respondents have attended for further formal study are reported in Table 21 in Appendix II. The district agriculturalists in Alberta and British Columbia have attended institutions outside their respective provinces in Canada and in the United States. However, both the University of Alberta and the University of British Columbia do offer graduate programs in Adult and Extension Education (Blackburn, 1981). Most of the district agriculturalists took their further training in the United States, and the University of Arizona was the major source of extension education. The University of Idaho provides extension training for most of its county

extension agricultural agents, and again the next most popular source of extension education for Idaho agents was the University of Arizona. Most of the agents in Washington took their training in institutions in the United States. No agents from Washington have attended the University of Arizona for further specialization.

Respondents who were interested in graduate studies were asked to rank their major areas of interest for such a program. These areas of interest are shown in Tables 6a and 6b. The district agriculturalists were more interested in studying extension education than the county extension agricultural agents. They ranked extension education as their second area of interest for both professional competence and in-service training programs. The county extension agricultural agents were most interested in areas of specialized agriculture. They ranked specialized agriculture higher than extension education or adult education as areas of interest for their professional competence and in-service training programs. It is interesting to note that the highest interest in pursuing graduate studies in extension came from the agents employed in the government model.

Eight statements were presented in the questionnaire and respondents were asked to give their opinion on how frequently these professional development ideas occur in their agricultural extension organizations. This question was asked because it was felt that the responses might be a reflection of the type of policies the Agricultural Extension Service has in providing

Table 6a  
District Agriculturalists' Rankings of Field of Interest  
for Professional and In-Service Training Programs

<u>Field of Study</u>	Alberta				British Columbia				Canada			
	<u>Professional Competence</u>		<u>In-Service Training</u>		<u>Professional Competence</u>		<u>In-Service Training</u>		<u>Professional Competence</u>		<u>In-Service Training</u>	
	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>
Adult Education	5.7	6	6.1	6	6.2	5	5.5	4	5.8	6	6.0	6
Agricultural Economics	5.1	5	5.3	5	4.0	4	5.8	5	4.8	4	5.4	5
Agricultural Mechanics	10.8	8	9.9	8	15.1	10	15.3	10	11.8	8	11.2	8
Animal Science	4.8	3	4.9	3	3.2	2	3.4	2	4.4	3	4.5	3
Extension Education	3.8	2	4.1	2	2.8	1	3.1	1	3.5	2	3.9	2
Forestry	16.3	10	16.0	10	14.7	9	13.6	9	15.9	10	15.4	10
Plant Science	3.5	1	3.2	1	3.6	3	3.8	3	3.5	1	3.3	1
Poultry Science	14.6	9	14.2	9	13.4	8	13.0	8	14.3	9	13.9	9
Rural Sociology	8.4	7	8.2	7	9.4	7	9.6	7	8.6	7	8.6	7
Soil Science	5.1	4	4.9	4	6.2	5	6.9	6	5.4	5	5.4	4

Table 6b  
County Extension Agricultural Agents' Rankings of Field of Interest for Professional and In-Service Training Programs

<u>Field of Study</u>	Idaho				Washington				United States			
	<u>Professional Competence</u>		<u>In-Service Training</u>		<u>Professional Competence</u>		<u>In-Service Training</u>		<u>Professional Competence</u>		<u>In-Service Training</u>	
	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>
Adult Education	9.1	6	8.9	6	10.1	6	9.9	6	9.7	6	9.5	6
Agricultural Economics	5.1	3	4.5	3	5.0	1	5.6	2	5.0	2	5.1	2
Agricultural Mechanics	13.9	8	11.5	7	12.2	8	10.9	7	12.8	8	11.1	7
Animal Science	3.9	1	3.9	2	7.6	5	7.7	5	6.1	3	6.1	4
Extension Education	6.2	4	5.7	5	7.0	3	6.6	4	6.7	4	6.2	5
Forestry	12.7	7	11.6	8	12.0	7	13.2	8	12.2	7	12.5	8
Plant Science	4.2	2	3.8	1	5.1	2	4.7	1	4.7	1	4.3	1
Poultry Science	16.1	10	14.2	10	17.2	10	15.9	9	16.7	10	15.2	9
Rural Sociology	15.0	9	14.1	9	15.6	9	16.1	10	15.3	9	15.3	10
Soil Science	6.6	5	5.6	4	7.3	4	6.2	3	7.0	5	6.0	3

opportunities for agents to continuously up-date their professional competence.

The responses are presented in Table 7. In order to determine if there was a statistically significant difference between the agricultural extension workers employed in the two kinds of organizational models for agricultural extension works, a t-test analysis was performed on each statement. In addition, the data were subjected to one-way ANOVA analysis for contrasts and multiple comparisons of group means on each statement.

Statement 1 : An agent who secures an advanced degree is offered a better position within the agricultural extension service.

Most of the district agriculturalists and the county extension agricultural agents perceived that their agricultural extension organizations offer a better position for an agent who secures an advanced degree. There was no a statistically significant difference between the agricultural extension workers employed in the two organizational models for extension on their opinions of this statement (Tables 23 and 38, in Appendix II).

Accordingly, this suggests that both organizations for agricultural extension services offer better positions to those extension workers who secured advanced degrees.

Statement 2 : Earning an advanced degree is considered by the organization as the most important method an agent can use to improve his competence.

As indicated in Table 7, 95.1 percent of the county

Table 7  
Distribution of Respondents by Frequency  
of Occurrence of Various Professional  
Development Ideas

<u>Professional Development Ideas</u>		<u>Always</u>	<u>Often</u>	<u>Seldom</u>	<u>Never</u>	<u>Uncertain</u>
1. An agent who secures an advanced degree is offered a better position within the agricultural extension service.	Alberta (N=51)	-	56.9	31.4	2.0	9.8
	British Columbia (N=17)	-	29.4	58.8	5.9	5.9
	Canada (N=68)	-	50.0	38.2	2.9	8.8
	Idaho (N=34)	8.8	50.0	29.4	-	11.8
	Washington (N=48)	6.3	45.8	27.1	4.2	16.7
	United States (N=82)	7.3	47.6	28.1	2.4	14.6
2. Earning an advanced degree is considered by the organization as the most important method an agent can use to improve his competence.	Alberta (N=51)	-	35.3	47.1	5.9	11.8
	British Columbia (N=17)	5.9	29.4	35.3	23.5	5.9
	Canada (N=68)	1.5	33.8	44.1	10.3	10.3
	Idaho (N=34)	26.5	58.8	11.8	-	2.9
	Washington (N=48)	10.4	56.3	27.1	2.0	4.2
	United States (N=82)	17.1	57.3	20.7	1.2	3.7
3. An agent who returns for an advanced degree is paid well enough through fellowships, scholarships, or sabbatical leave to almost equal his regular annual salary.	Alberta (N=48)	-	35.4	25.0	22.9	16.7
	British Columbia (N=17)	-	11.8	35.3	29.4	23.5
	Canada (N=65)	-	29.2	27.7	24.6	18.5
	Idaho (N=32)	3.1	37.5	21.9	31.3	6.3
	Washington (N=48)	-	4.2	45.8	35.4	14.6
	United States (N=80)	1.2	17.5	36.2	33.7	11.2
4. An agent with an advanced degree is paid a higher salary than an agent without an advanced degree if both have the same experience and job responsibilities.	Alberta (N=50)	4.0	36.0	20.0	30.0	10.0
	British Columbia (N=16)	-	18.8	18.8	62.4	-
	Canada (N=66)	3.0	31.8	19.7	37.9	7.6
	Idaho (N=34)	47.1	44.1	5.9	-	2.9
	Washington (N=48)	39.6	41.7	6.3	2.1	10.4
	United States (N=82)	42.7	42.7	6.1	1.2	7.3

Table 7-- Continued

<u>Professional Development Ideas</u>		<u>Always</u>	<u>Often</u>	<u>Seldom</u>	<u>Never</u>	<u>Uncertain</u>
5. An agent who returns for an advanced degree will continue to be entitled to salary increases despite his absence.	Alberta (N=50)	4.0	24.0	8.0	6.0	58.0
	British Columbia (N=17)	-	29.4	-	5.9	64.7
	Canada (N=67)	3.0	25.4	6.0	6.0	59.7
	Idaho (N=33)	30.3	18.2	6.1	3.0	42.4
	Washington (N=48)	4.2	16.7	20.8	6.3	52.1
	United States (N=81)	14.8	17.3	14.8	4.9	48.1
6. An agent who earns an advanced degree gets a higher position than an agent of similar professional experience who does not have an advanced degree.	Alberta (N=50)	2.0	32.0	38.0	8.0	20.0
	British Columbia (N=17)	-	29.4	41.2	11.8	17.6
	Canada (N=67)	1.5	31.3	38.8	9.0	19.4
	Idaho (N=34)	11.8	58.8	20.6	-	8.8
	Washington (N=48)	8.3	58.3	12.5	4.2	16.7
	United States (N=82)	9.8	58.5	15.9	2.4	13.4
7. When an agent's work begins to decrease in quantity and/or quality, the organization will suggest graduate study.	Alberta (N=47)	-	4.3	46.8	29.8	19.1
	British Columbia (N=17)	-	-	23.5	64.7	11.8
	Canada (N=64)	-	3.1	40.6	39.1	17.2
	Idaho (N=33)	-	21.2	39.4	12.1	27.3
	Washington (N=47)	-	8.5	36.2	17.0	38.3
	United States (N=80)	-	13.7	37.5	15.0	33.7
8. Considering both the costs and benefits of obtaining an advanced degree an agent makes a financial gain by getting an advanced degree.	Alberta (N=51)	-	33.3	39.2	9.8	17.7
	British Columbia (N=17)	-	35.3	23.5	35.3	5.9
	Canada (N=68)	-	33.8	35.3	16.2	14.7
	Idaho (N=34)	14.7	38.2	32.4	2.9	11.8
	Washington (N=48)	12.5	37.5	35.5	4.2	10.4
	United States (N=82)	13.4	37.8	34.1	3.7	11.0



extension agricultural agents, and 79.4 percent of the district agriculturalists perceived that their agricultural extension organizations consider the earning of an advanced degree to be the most important method to improve competence. The t-test analysis for this statement revealed that there was a statistically significant difference between the responses of the agricultural extension workers employed in the two models (Table 38, in Appendix II). The results of the one-way ANOVA analysis also indicated that there were statistically significant differences between agricultural extension workers of the two provinces and between the two states (Table 23, in Appendix II).

Accordingly, almost all the agents employed in the university model perceived that their extension organization considers an advanced degree as the most important way to improve competence and encourages the agents to obtain advanced degrees by offering better positions within the organizations. Although most of the agents employed in the government model have the same perception as that of their counterparts that their organization offers better positions for agents who secured advanced degrees, a lesser percent of the agents believed that their organizations consider an advanced degree to be the most important method agents can use to improve their competence.

Statement 3 : An agent who returns for an advanced degree is paid well enough through fellowships, scholarships, or sabbatical leave to almost equal his regular annual salary.

Most of the district agriculturalists and county extension agricultural agents perceived that this statement occurs 'often or seldom' in their agricultural extension organizations (Table 7). The t-test analysis showed that there was no a statistically significant difference between the agricultural extension workers employed in the two models on their responses (Table 38, in Appendix II).

The one-way ANOVA revealed that there were statistically significant differences between the responses of the county extension agricultural agents in Washington and Idaho; between the county extension agents in Idaho and the district agriculturalists in British Columbia; and between the district agriculturalists in Alberta and the county extension agricultural agents in Washington (Table 23, in Appendix II).

Most of the district agriculturalists in Alberta indicated that the statement occurs 'often or seldom' in their extension organizations; while most of the district agriculturalists in British Columbia expressed that this statement 'never' occurs or that they were 'uncertain' about the occurrence in their extension organization. The Washington agents were equally divided on their responses to this statement. Fifty percent of the agents perceived that this statement 'never' occurs or were 'uncertain' about the occurrence; the remainder of the agents indicated that the statement occurs 'often or seldom' in their extension organization. Most of the Idaho agents, however, perceived that this statement does occur 'always, often or seldom' in their extension organization. These analyses show

that over fifty percent of the agricultural extension workers employed in both models perceived that their extension organization encouraged agents to get advanced degrees by providing fellowships, scholarships, or sabbatical leave. However, the agricultural extension workers in each province and each state seem to vary in their perception of this professional development incentive.

Accordingly, the agricultural extension organizations in Alberta and Idaho seem to encourage their agricultural extension workers by implementing this incentive more than the extension organizations in British Columbia and Washington, indicating that differences within the models are greater than between the models.

Statement 4 : An agent with an advanced degree is paid a higher salary than agent without an advanced degree if both have the same experience and job responsibilities.

As indicated in Table 7, 85.4 percent of the county extension agents, and 34.8 percent of the district agriculturalists perceived that this statement occurs 'always or often' in their agricultural extension organizations. The t-test analysis clearly indicated that there was a statistically significant difference between the agricultural extension workers employed in the two models on their perception of this professional development idea (Table 38, in Appendix II). Similarly, the one-way ANOVA analysis also showed that there were statistically significant differences on the perceived responses between the states and the provinces (Table 23, in

Appendix II).

One notes that 62.4 percent of the district agriculturalists in British Columbia perceived that this statement 'never' occurs in their extension organization (Table 7). Although both the agricultural extension organizational systems provide incentives, such as fellowships, scholarships or sabbatical leave, and better positions to their agricultural extension workers who work for an advanced degree, the university model for agricultural extension work seems to provide more encouragement by paying higher salaries to agents who earn advanced degrees and by giving recognition of improved competence.

Statement 5 : An agent who returns for an advanced degree will continue to be entitled to salary increases despite his absence.

The data in Table 7 show that 65.7 percent of the agricultural extension workers employed in the government model and 53.0 percent of those employed in the university model perceived that an agent who returns for an advanced degree is not entitled to salary increases during his absence. The t-test analysis indicated that there was no a statistically significant difference on the perception between the two models (Table 38, in Appendix II). But the one-way ANOVA analysis showed that there were statistically significant differences on the responses between the respondents in Alberta and British Columbia and those in Idaho and Washington (Table 23, in Appendix II). Idaho's county extension agricultural agents

differ on their responses from the respondents in Washington, Alberta and British Columbia. Most of the county extension agricultural agents in Idaho perceived that an agent who returns for an advanced degree continues to be entitled to salary increases despite his absence. However, most of the respondents in Washington, Alberta and British Columbia were uncertain if an agent who returns for an advanced degree will continue to be entitled to salary increases despite his absence.

The analyses indicate that most of the agricultural extension workers employed in the two extension organizational systems perceived that extension workers who are pursuing full time graduate programs are not entitled to salary increases during the time they are off the job. However, there were more differences within the university model than within the government model.

Statement 6 : An agent who earns an advanced degree gets a higher position than an agent of similar professional experience who does not have an advanced degree.

The data in Table 7 show that 68.3 percent of the county extension agents, and 32.8 percent of the district agriculturalists have expressed their perceived opinion that this statement occurs 'always or often' in their extension organizations, a difference which was statistically significant (Table 38, in Appendix II). The one-way ANOVA analysis indicated that there were statistically significant differences on these responses between the respondents in the provinces and in the states (Table 23, in Appendix II).

Agricultural extension workers employed in the university models are encouraged to get advanced degrees by being offered higher positions for their qualifications. There were 70.6 percent of the respondents in Idaho, 34.0 percent in Alberta and 29.4 percent in British Columbia who have indicated that the statement occurs 'always or often' in their organization. This result indicates that Idaho's agents are encouraged more than the district agriculturalists in Alberta and British Columbia to earn advanced degrees by being offered higher positions for their qualifications. There were 66.6 percent of the county extension agricultural agents in Washington and 34.0 percent of the district agriculturalists in Alberta who have indicated that this statement occurs 'always or often' in their extension organizations. Similarly, the agents in Washington are encouraged more than the district agriculturalists in Alberta to earn advanced degrees by being offered higher positions which recognize for their increased qualifications.

Overall, the university model for organizing agricultural extension service appears to consider the earning of an advanced degree to be the most important way to improve the agricultural extension worker's competence. In order to accomplish this objective, the organization provides fellowships, scholarships, or sabbatical leave for further studies, and rewards those who have earned the advanced degree by offering better and higher positions and higher salaries. The government model for organizing agricultural extension service also provides

fellowships, scholarships, or sabbatical leave for those agricultural extension workers who desire to get advanced degrees, and rewards them by offering better positions. It seems, therefore, that the recognition of an advanced degree as the most important way to improve agricultural extension workers' competence, and the provision of other perceived incentives are greater in the university model than in the government model.

Statement 7 : When an agent's work begins to decrease in quantity and/or quality, the organization will suggest graduate study.

The district agriculturalists and the county extension agricultural agents were equally divided on their responses to this statement. The data in Table 7 show that 43.7 percent of the district agriculturalists and 51.3 percent of the county extension agricultural agents indicated that this statement occurs 'often or seldom' in their extension organization. The remainder of these respondents have expressed the view that this statement 'never' occurs or that they were 'uncertain' about the item. There were no statistically significant differences on these responses between the agricultural extension workers employed in the two models or between agents employed in the provinces or in the states as reported in Appendix II, Tables 23 to 28.

Accordingly, if most of the agricultural extension workers employed in the university model perceived that their extension organizations considers an advanced degree as the most important

way for improving competency, then one expects at least the same number of extension workers to perceive quantity and/or quality of work to be associated with competency. But, the results indicate that agricultural extension workers in both extension organizational systems were equally divided on the idea that extension organizations use quantity and/or quality of work as one of the criteria for advising the extension worker to update his competency in extension work. Apparently graduate study is not seen by a majority of extension workers as a means employed by their organization as a remedy for unsatisfactory performance of extension workers.

Statement 8 : Considering both the costs and benefits of obtaining an advanced degree an agent makes a financial gain by getting an advanced degree.

As indicated in Table 7, 85.3 percent and 69.1 percent of the agricultural extension workers employed in the university and government models, respectively, reported that considering the costs and benefits, a financial gain results from getting an advanced degree. The t-test showed that there was a statistically significant difference on the responses between the agricultural extension workers employed in the two models (Table 38, in Appendix II). More of the agricultural extension workers employed in the university model responded that there is a financial gain by getting an advanced degree than those employed in the government model.

The district agriculturalists in Alberta and the county extension agricultural agents in Idaho and Washington indicated



different opinions on this item. Over 85 percent of the respondents in Idaho and Washington, and about 72 percent in Alberta have expressed that the statement occurs in their extension organizations 'always, often, or seldom', differences which were statistically significant (Table 23, in Appendix II). Accordingly, the county extension agricultural agents in Idaho and Washington are convinced more than the district agriculturalists in Alberta that there is a financial gain which results from getting an advanced degree.

In summary, agricultural extension workers in the university model believe their organization 'considers an advanced degree as the most important way to improve the agricultural extension worker's role performance. To accomplish this, the extension workers perceive their organization encourages its agricultural extension workers by providing fellowships, scholarships, or sabbatical leave for those interested in acquiring an advanced degree, and rewarding those extension workers who secure an advanced degree with better and higher positions, as well as higher salaries. Although the idea of considering the earning of an advanced degree as the most important way to improve an extension worker's role performance, and the idea of rewarding the extension worker who obtains an advanced degree with a higher position and salary are less pronounced in the government model for agricultural extension service, the organization, however, encourages its extension workers to obtain an advanced degree by providing fellowships, scholarships, or sabbatical leave and offering a better position

within the extension organization. Individuals working in each model perceived that their organizations do not make allowances for extension workers to get salary increases during the training period as an incentive to return for an advanced degree. Agricultural extension workers employed in both models were equally divided on the opinion that the organization will suggest graduate study for an extension worker when his role performance decreases in quantity and/or quality. The agricultural extension workers employed in the university model are convinced, more than their counterparts employed in the government model, that there is a financial gain which results from obtaining an advanced degree.

### Regulatory Functions

Respondents were requested to indicate their agreement with ten statements describing possible effects of an extension worker's performing regulatory duties as part of his extension role on his effectiveness as an educator, by circling the appropriate response to each statement. These responses are presented in Tables 8a and 8b. To determine if there was a statistically significant difference between the agricultural extension workers employed in the two organizational models on their attitude towards regulatory duties, a t-test analysis was performed on each regulatory statement. In addition, one-way ANOVA analysis was calculated for contrasts and multiple comparisons of group means of the responses on each regulatory

Table 8a  
Distribution and Mean Scores of District Agriculturalists'  
Agreement with Various Statements on Attitude  
towards Regulatory Functions

<u>Statements</u>	<u>Alberta</u>			<u>British Columbia</u>			<u>Canada</u>		
	<u>Agree</u>	<u>Disagree</u>	<u>Mean</u>	<u>Agree</u>	<u>Disagree</u>	<u>Mean</u>	<u>Agree</u>	<u>Disagree</u>	<u>Mean</u>
1. An agent who has regulatory duties is not as free to examine all problems objectively as he would be without such duties.	82.0	14.0	2.16	62.5	25.0	2.31	77.3	16.7	2.20
2. Performing the educational aspect of regulatory functions for another office or agency has a positive effect on the agent's ability to carry out his other extension duties.	48.0	28.0	3.16*	50.0	18.8	3.31*	48.5	25.7	3.20*
3. Regulatory duties may discourage participation of people in a program which the agent organizes.	82.0	10.0	2.16	62.5	31.3	2.31	77.3	15.1	2.20
4. Regulatory duties which provide for specified control of stocking, or of land improvement and land use, or for the control of pests or weeds may facilitate an agent's effort to persuade his clientele to adopt the required information.	44.0	32.0	3.12*	50.1	31.3	3.25*	45.4	31.8	3.15*
5. Regulatory duties may decrease the agent's influence on his clientele.	70.0	12.0	2.34	68.8	25.0	2.44	69.7	15.1	2.36

Table 8a-- Continued

<u>Statements</u>	Alberta			British Columbia			Canada		
	<u>Agree</u>	<u>Disagree</u>	<u>Mean</u>	<u>Agree</u>	<u>Disagree</u>	<u>Mean</u>	<u>Agree</u>	<u>Disagree</u>	<u>Mean</u>
6. Regulatory duties may increase the agent's status in his farm community, thus can facilitate his effort to influence his clientele to accept the appropriate innovations.	16.0	74.0	2.30	25.0	62.5	2.38	18.2	71.2	2.32
7. An agent's regulatory duties may facilitate his efforts to perform the other duties associated with his position.	36.7	42.9	2.88	31.3	62.5	2.44	35.3	47.7	2.77
8. Regulatory duties which prescribe specified grades of commodities or inspection of premises may facilitate an agent's educational performance by providing a teachable moment for his clientele to acquire a given information.	61.2	20.4	3.35*	33.3	33.3	2.87	54.7	23.4	3.23*
9. Regulatory duties may interfere with an agent's ability to motivate his clientele to adopt new knowledge or skill.	71.4	18.3	2.39	62.5	31.3	2.38	69.2	21.5	2.39
10. An agent needs to remain clear of any type of regulatory duties in order to be effective in his extension work.	59.6	29.8	2.55	62.5	25.0	2.38	60.3	28.6	2.51

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\*Mean scores above 3.00 indicate a positive attitude towards Regulatory Functions.

The distribution of "Agree" equals the responses of Strongly Agree and Agree; and "Disagree" equals the responses of Disagree and Strongly Disagree. The missing distribution is the responses of the Undecided.

Table 8b  
Distribution and Mean Scores of County Extension  
Agricultural Agents' Agreement with Various Statements  
on Attitude towards Regulatory Functions

<u>Statements</u>	<u>Idaho</u>			<u>Washington</u>			<u>United States</u>		
	<u>Agree</u>	<u>Disagree</u>	<u>Mean</u>	<u>Agree</u>	<u>Disagree</u>	<u>Mean</u>	<u>Agree</u>	<u>Disagree</u>	<u>Mean</u>
1. An agent who has regulatory duties is not as free to examine all problems objectively as he would be without such duties.	84.8	9.1	1.79	93.8	4.2	1.54	90.1	6.1	1.64
2. Performing the educational aspect of regulatory functions for another office or agency has a positive effect on the agent's ability to carry out his other extension duties.	60.6	21.2	3.46*	40.4	46.8	2.87	48.7	36.2	3.11*
3. Regulatory duties may discourage participation of people in a program which the agent organizes.	84.8	9.1	1.88	84.8	6.5	1.85	84.8	7.6	1.86
4. Regulatory duties which provide for specified control of stocking, or of land improvement and land use, or for the control of pests or weeds may facilitate an agent's effort to persuade his clientele to adopt the required information.	57.6	27.3	3.39*	30.4	45.7	2.80	41.8	38.0	3.05*
5. Regulatory duties may decrease the agent's influence on his clientele.	78.8	12.1	2.06	82.6	8.7	1.94	81.0	10.1	1.99

Table 8b-- Continued

<u>Statements</u>	<u>Idaho</u>			<u>Washington</u>			<u>United States</u>		
	<u>Agree</u>	<u>Disagree</u>	<u>Mean</u>	<u>Agree</u>	<u>Disagree</u>	<u>Mean</u>	<u>Agree</u>	<u>Disagree</u>	<u>Mean</u>
6. Regulatory duties may increase the agent's status in his farm community, thus can facilitate his effort to influence his clientele to accept the appropriate innovations.	15.6	71.9	2.22	6.4	85.1	1.96	10.2	79.7	2.06
7. An agent's regulatory duties may facilitate his efforts to perform the other duties associated with his position.	18.2	60.6	2.39	8.5	78.7	2.15	12.5	71.2	2.25
8. Regulatory duties which prescribe specified grades of commodities or inspection of premises may facilitate an agent's educational performance by providing a teachable moment for his clientele to acquire a given information.	39.4	42.4	2.85	21.2	48.9	2.64	28.7	46.2	2.73
9. Regulatory duties may interfere with an agent's ability to motivate his clientele to adopt new knowledge or skill.	81.8	9.1	2.03	74.5	8.5	2.06	77.5	8.7	2.05
10. An agent needs to remain clear of any type of regulatory duties in order to be effective in his extension work.	72.7	15.2	2.03	83.0	6.4	1.68	78.7	10.0	1.83

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\*Mean scores above 3.00 indicate a positive attitude towards Regulatory Functions.

The distribution of "Agree" equals the responses of Strongly Agree and Agree; and "Disagree" equals the responses of Disagree and Strongly Disagree. The missing distribution is the responses of the Undecided.

statement. The analyses for each regulatory statement were discussed (a) if there was a difference between the two countries, and (b) if there were differences among the four groups.

Statement 1 : An agent who has regulatory duties is not as free to examine all problems objectively as he would without such duties.

There were 77.3 percent of the district agriculturalists, and 90.1 percent of the county extension agricultural agents who agreed with statement 1 (Tables 8a and 8b). There was a statistically significant difference between the agricultural extension workers employed in the two models on this statement with those employed in the university model tending to believe more than their counterparts in the government model that performing regulatory duties may create role-conflict (Table 39, in Appendix II). This result indicates that more extension workers employed in the university model have negative attitudes towards regulatory duty than the extension workers who were employed in the government model.

The one-way ANOVA analysis results as reported in Appendix II, Table 25 indicate that the responses of county extension agricultural agents in Washington differ from those of the district agriculturalists in Alberta and British Columbia. There were statistically significant differences between Washington and Alberta; and between Washington and British Columbia on their responses. These findings indicate that Washington agents believe, more than the district

agriculturalists of Alberta and British Columbia, that an extension worker who performs regulatory duties may not be as free to examine all problems as objectively as he might be without such duties, thus creating role-conflict. The Washington agents' attitude did not differ significantly from that of their counterparts in Idaho.

Statement 2 : Performing the educational aspect of regulatory functions for another office or agency has a positive effect on the agent's ability to carry out his other extension duties.

Agricultural extension workers employed in both models indicate a positive attitude towards this regulatory duty (Tables 8a and 8b). There was no statistically significant difference between extension workers in the two countries on their responses (Table 39, in Appendix II).

However, the one-way ANOVA analysis indicates that Idaho agents differ in their responses from the agents in Washington (Table 25, in Appendix II). There was a statistically significant difference between the agents in the two states, with Idaho agents tending to have a more positive attitude towards this regulatory duty than Washington agents. Overall, these findings indicate that within the government model more than the university model there seems to be consensus on the positive effect of this function on agents' role performance.

Statement 3 : Regulatory duties may discourage participation of people in a program which the agent organizes.

There were 84.8 percent of the county extension



agricultural agents, and 77.3 percent of the district agriculturalists who agreed with statement 3 (Tables 8a and 8b). There was a statistically significant difference between the agricultural extension workers employed in the two organizational models on this item, with the extension workers employed in the university model expressing a higher level of agreement than the agents employed in the government model (Table 39, in Appendix II). Although over three-fourths of the respondents agreed with the statements, extension agents employed in the university model have a more negative attitude towards this regulatory duty than their counterparts in the government model.

The one-way ANOVA analysis results as reported in Appendix II, Table 25 indicate that there were no statistically significant differences between any two of the four groups on this item. They all agreed that regulatory duties may discourage participation of people in a program which the agricultural extension worker organizes. So, the conditions for intra-role conflict appear to be present for the role performance of the agricultural extension worker who is obligated to conduct regulatory functions and who perceives the educational and regulatory functions conflict.

Statement 4 : Regulatory duties which provide for specified control of stocking, or of land improvement and land use, or for the control of pests or weeds may facilitate an agent's effort to persuade his clientele to adopt the required information.

The data in Tables 8a and 8b indicate that agents employed

in both organizational models for agricultural extension services have a positive attitude towards this regulatory duty. There was no a statistically significant difference between agricultural extension workers in the two countries in their responses on this item (Table 39, in Appendix II). Extension workers employed in both extension organizational models believe that this specific regulatory duty may have a positive effect on the extension worker's role performance.

However, the one-way ANOVA analysis results as reported in Appendix II, Table 25 shows that Idaho's agents differ in their responses from Washington's agents. There was a statistically significant difference between the agents employed in the two states with Washington agents tending to disagree more than than Idaho agents. Accordingly, Washington's agents seem to believe that this specific regulatory duty may have a negative effect on the extension worker's role performance.

Statement 5 : Regulatory duties may decrease the agent's influence on his clients.

There were 81.0 percent of the county extension agricultural agents and 69.7 percent of the district agriculturalists who agreed that performing regulatory duties may decrease the agricultural extension worker's influence on his clients (Tables 8a and 8b). There was a statistically significant difference between the extension workers employed in the two organizational models, with those employed in the university model tending to agree more with this statement than

did those employed in the government model (Table 39, in Appendix II). This indicates that extension workers employed in the university model believe that regulatory duties may result in intra-role conflict on the extension worker's role performance.

The one-way ANOVA analysis indicates that the district agriculturalists in Alberta differ in their responses from the county extension agricultural agents in Washington. Agents in Washington have indicated a statistically significant stronger negative attitude towards regulatory responsibility than their counterparts in Alberta and they appear to believe that regulatory duties may decrease an agent's communication with his clientele.

Statement 6 : Regulatory duties may increase the agent's status in his farm community, thus can facilitate his effort to influence his clientele to accept the appropriate innovations.

There were 71.2 percent of the district agriculturalists and 79.7 percent of the county extension agricultural agents who disagreed with statement 6 (Tables 8a and 8b). There were no statistically significant differences between the Canadian and American agents, or between any two of the four groups in their attitude towards performing regulatory duties (Tables 25 and 39, in Appendix II). This finding, that majority of the agricultural extension workers employed in both models believe performing regulatory duties may decrease the extension worker's ability to influence his clientele to accept innovations, indicates that the performance of regulatory duty may lead to

intra-role conflict for the extension worker.

Statement 7 : An agent's regulatory duties may facilitate his effort to perform the other duties associated with his position.

The data in Tables 8a and 8b show that 47.7 percent of the district agriculturalists and 71.2 percent of the county extension agricultural agents disagreed with statement 7. There was a statistically significant difference in the responses between the agricultural extension workers employed in the two models, with the extension workers employed in the university model tending to disagree more than the extension workers employed in the government model (Table 39, in Appendix II). The result may lead to intra-role conflict which is more pronounced in the case of the extension workers employed in the university model.

The one-way ANOVA analysis, as reported in Appendix II, Table 25 showed Alberta's district agriculturalists differ in their responses from the county extension agricultural agents in Idaho and Washington. There were statistically significant differences between the opinions of district agriculturalists in Alberta and the county extension agricultural agents in Idaho, and between the opinions of district agriculturalists in Alberta and the county extension agents in Washington. The district agriculturalists in Alberta tended to have a more positive attitude toward this advantage of performing regulatory duties than did the agents employed in the two states. This finding suggests that the county extension agricultural agents in the

two states believe that performing regulatory functions may lead to inter-role conflict with other duties associated with the extension worker's position.

Statement 8 : Regulatory duties which prescribe specified grades of commodities or inspection of premises may facilitate an agent's educational performance by providing a teachable moment for his clientele to acquire given information.

There were 28.7 percent of the county extension agricultural agents, and 54.7 percent of the district agriculturalists who agreed with statement 8 (Tables 8a and 8b). There was a statistically significant difference between the agricultural extension workers employed in the two organization models, with the extension workers employed in the government model having a positive attitude and those employed in the university model having a negative attitude towards this regulatory duty (Table 39, in Appendix II). Accordingly, the agricultural extension workers employed in the university model believe that these specific regulatory duties may not facilitate the extension worker's educational role performance, but may result in intra-role conflict. The agricultural extension workers employed in the government model were more inclined to see positive benefits from performing this regulatory duties.

The one-way analysis of variance results revealed that the opinions of the district agriculturalists in Alberta were different from those of the county extension agricultural agents in Idaho and Washington. There were statistically significant differences on their responses between the district

agriculturalists in Alberta and the county extension agricultural agents in Idaho and Washington. The district agriculturalists in Alberta indicated a positive attitude while the county extension agricultural agents in Idaho and Washington indicated a negative attitude toward this regulatory duty (Table 25, in Appendix II). These findings indicate that the district agriculturalists in Alberta expressed their view that regulatory duties, such as grading of commodities, or inspection of premises, may provide a teachable moment, and, thus, may facilitate the district agriculturalist's educational role performance. This view was not expressed by the county extension agricultural agents in Idaho and Washington, thus one may conclude that extension workers employed in the university model believe that these regulatory duties may lead to inter-role conflict with the agent's educational role performance. The district agriculturalists in British Columbia were equally divided on their attitude toward this regulatory duty.

Statement 9 : Regulatory duties may interfere with an agent's ability to motivate his clientele to adopt new knowledge or skill.

The data in Tables 8a and 8b show that 69.2 percent of the district agriculturalists, and 77.5 percent of the county extension agricultural agents agreed with statement 9. There was a statistically significant difference between the opinions of the agents working under the two models, with the agents employed in the university model tending to have a more negative attitude towards this regulatory duty than did the agents

employed in the government model (Table 39, in Appendix II).

The one-way ANOVA results as reported in Appendix II, Table 25 indicated that there were no statistically significant differences between any of the four groups. However, all the four groups have expressed a negative attitudes towards this duty. The results clearly show that agents employed in both models believe that performing regulatory duties may interfere with an agent's ability to motivate his clientele to adopt new knowledge or to develop a new skill.

Statement 10 : An agent needs to remain clear of any type of regulatory duties in order to be effective in his extension work.

There were 78.7 percent of the county extension agricultural agents, and 60.3 percent of the district agriculturalists who have agreed with statement 10 (Tables 8a and 8b). The extension workers employed in the university model have indicated a statistically significant more negative attitude towards performing regulatory duties than the extension workers employed in the government model (Table 39, in Appendix II).

The one-way ANOVA analysis indicated that the district agriculturalists in Alberta differ in their attitude toward this item from the county extension agricultural agents in Idaho and Washington. The district agriculturalists in British Columbia also differ in their attitudes from the county extension agricultural agents in Washington. There were statistically significant differences on these findings (Table 25, in Appendix

II). The district agriculturalists in Alberta tended to have less negative attitudes towards performing this regulatory duty than did the county extension agricultural agents in Idaho and Washington. Similarly, the district agriculturalists in British Columbia tended to have less negative attitudes than the county extension agricultural agents in Washington. These findings suggest that agricultural extension workers employed in the university model perceive role conflicts between the educational and regulatory aspects of extension work. In particular, the county extension agricultural agents in Washington have strongly expressed their concern with role conflicts between the performing of regulatory duties and the agent's effectiveness in extension work.

In summary, perceptions of responsibilities for performing regulatory functions suggest that the agricultural extension workers' educational responsibilities may be in conflict with such regulatory functions and hence be affected by them. The agricultural extension workers employed in the government and the university models expressed the following opinions on various regulatory statements.

Opposite views: There was disagreement between the agricultural extension workers employed in the government model and their counterparts employed in the university on the following items.

The agricultural extension workers employed in the government model believe that specific regulatory duties, such as grading of commodities or inspecting of premises, may provide



a teachable moment, thus facilitating the extension worker's educational role performance. Whereas, the opposite view was expressed by their counterparts employed in the university model, who apparently believe that the extension worker's educational role function may be in conflict with regulatory function, the source of intra-role conflict.

Different views: The agricultural extension workers employed in the university model expressed statistically significant stronger positive views on the following six statements dealing with the effects of performing regulatory functions than did the district agriculturalists. Their responses may suggest role conflict which may affect role performance and hence some evidences to support the separation of the functions. Both groups expressed the opinions that regulatory duties may:

1. decrease agent's objectivity in examining all problems in extension work.

2. discourage participation of clientele.

3. decrease the agricultural extension worker's influence on his clientele.

4. not facilitate the agricultural extension worker's efforts to perform the other duties associated with his position.

5. interfere with the agricultural extension worker's ability to motivate his clientele.

6. decrease the agricultural extension worker's effectiveness in his extension work.

Similar views: Agricultural extension workers employed in both models agreed that:

1. performing the educational aspect of regulatory functions for another agency, and performing regulatory duties which provide for specified control of stocking, or of land improvement and land use, or for the control of pests or weeds may not lead to role conflict.

2. regulatory responsibilities may decrease the agricultural extension worker's status in his farm community, thus may lead to a source of conflict with the expectations the clientele may have with regard to the position. This conflicting expectation is the source of intra-role conflict.

### Summary

#### Personal Characteristics

The district agriculturalists were younger, had shorter tenure and were newer to extension work than the county extension agricultural agents.

#### Professional Development

The agricultural extension workers employed in the university model possessed higher academic qualifications than their counterparts in the government model at the time of employment. No respondents had specialized in agricultural extension in either country at the time they had started working

in extension service. So, the two organizational models did not restrict their employment policy only to those extension workers who had specialized in extension or closely related areas.

All the county extension agricultural agents have completed programs of graduate studies; most of them have received their master's degree and a few their doctoral degrees. In contrast, 55.6 percent of the district agriculturalists have completed graduate programs and received their master's degrees.

The district agriculturalists were more interested in studying extension education than the county extension agricultural agents who were most interested in areas of specialized agriculture.

The agricultural extension workers employed in the university model believe more than those employed in the government model that their organization considers an advanced degree as the most important way to improve their role performance and encourages its extension workers by providing various types of assistance and rewards those extension workers who secure an advanced degree with better and higher positions, as well as higher salaries.

### Regulatory Functions

Even though it had been anticipated that all extension workers in the university model would have negative views of the effects of performing regulatory functions on their educational work, it had been thought that extension workers in the government model would regard the performance of regulatory

functions as having either a neutral or a positive influence on their educational work. The interesting finding is that even though those who have little or no regulatory duties to perform have strong negative views on the effects of performing such duties as would be expected, those who have routine responsibilities for carrying out such regulatory duties also perceive that performing such duties has a negative effect on their educational efforts though they do not feel as strongly about this effect as do the former group.

## CHAPTER VI

### METHODS AND EXTENSION ROLE FUNCTIONS

In this chapter, the findings on agents' use of methods and sources of information, agents' choice of methods and techniques and agents' extension role functions are presented and discussed.

#### Methods and Sources of Information

Respondents were asked to declare their membership in professional societies, and also whether they read or look over any research journals or other publications. In addition, they were requested to rank various suppliers of research information in terms of their usefulness as sources for the latest research results.

The data in Table 9 show that 62.7 percent of the district agriculturalists have membership in professional societies. Less than 25.0 percent of the district agriculturalists are members of the Canadian Society of Extension, and 53.7 percent have memberships in the Agricultural Institute of Canada (Table 26, in Appendix II). When asked to list their professional societies 31.1 percent of the district agriculturalists in British Columbia and 9.8 percent in Alberta listed their respective Institutes of Agrologists. The Institute of Agrologists is a professional society established as a corporation in each province, which encompasses all disciplines

in agriculture, which is unique to Canada. In contrast, 96.3 percent of the county extension agricultural agents have memberships in professional societies (Table 9).

Table 9  
Distribution of Respondents as Members  
in Professional Societies

	Alberta (N=51)	British Columbia (N=16)	Canada (N=67)	Idaho (N=33)	Washington (N=49)	United States (N=82)
<u>Member</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>
No	49.0	-	37.3	3.0	4.1	3.7
Yes	51.0	100.0	62.7	97.0	95.9	96.3

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A chi-square value of 27.4 was obtained.  
This is significant at the 0.01 level.

There are 82.9 percent of the agents who are members of the National Association of County Agricultural Agents (Table 26, in Appendix II). There was a statistically significant difference between the distribution for district agriculturalists and county extension agricultural agents by membership in professional societies. More of the county extension agricultural agents tended to be members in professional societies than the district agriculturalists. However, when one observes the data of each province and state, one notes that all district agriculturalists from British Columbia have membership in professional societies. The British Columbia situation may be explained by the fact that only applicants who are members of British Columbia Institute of Agrologists are eligible for employment in the extension work of the Ministry of Agriculture

and Food, a condition which may lead some of them to regard the institute as something other than professional societies.

As indicated in Table 10, 58.2 percent of the district agriculturalists and 85.4 percent of the county extension agricultural agents have reported that they read or look over research journals or other research publications. There was a statistically significant difference between the distribution for district agriculturalists and county extension agricultural agents by reading interest, with more county extension agricultural agents tending to read research journals or other research publications than the district agriculturalists. It is not determined the extent to which the organization provided such research publications or reimbursed if purchased by the extension workers.

Table 10  
Distribution of Respondents by  
Reading of Research Journals

<u>Read</u>	<u>Alberta (N=51) Percent</u>	<u>British Columbia (N=16) Percent</u>	<u>Canada (N=67) Percent</u>	<u>Idaho (N=33) Percent</u>	<u>Washington (N=49) Percent</u>	<u>United States (N=82) Percent</u>
No	45.1	31.3	41.8	21.2	10.2	14.6
Yes	54.9	68.7	58.2	78.8	89.8	85.4

A chi-square value of 13.8 was obtained.  
This is significant at the 0.01 level.

The respondents' rankings of sources of research information are reported in Table 27 in Appendix II. The data

show that the district agriculturalists have ranked Provincial Ministry of Agriculture first; Federal Ministry of Agriculture second; Universities third; and Business or Industry fourth. In contrast, the county extension agents have ranked Universities first; Business or Industry second; Federal Department of Agriculture third; and State Department of Agriculture fourth. There were statistically significant differences in the rankings of sources of research information between the district agriculturalists and county extension agricultural agents (Tables 29 and 40, in Appendix II). These findings are consistent with the models. For the agricultural extension workers in the government model, the main source of research information is the Provincial Department of Agriculture; and the university is of appreciably less important as a source of research information for them. In comparison, in the university model the agricultural extension worker's main source of research information is the land-grant university; and the State Department of Agriculture has low status as a source of research information.

#### Extension Methods and Techniques

A list of eighteen extension methods and techniques was presented in the questionnaire. Respondents were asked (a) to indicate how frequently they use each method and technique as well as (b) to rate how efficient each method and technique was in persuading farmers to adopt recommended practices. These



questions were asked because they indicate the instructional methods and techniques which agents use in a way that will most likely result in the adoption of new ideas by their clientele. The responses were tabulated in Table 11 and in Appendix II in Table 42. A chi-square statistic was computed to determine the degree of association between the responses of agricultural extension workers employed in the government model and those employed in the university model on each method and technique.

As indicated in Table 11, telephone calls, farm visits and newspaper articles were the three leading methods and techniques used 'often' by the district agriculturalists. Telephone calls, farm visits and bulletins were the three leading methods and techniques used by the county extension agricultural agents with the same frequency.

There was a statistically significant difference (Table 42, in Appendix II) between the agricultural extension workers employed in the two extension organization models in their frequency of use of bulletins, circular letters, extension newsletters, group discussions, newspaper articles, posters, process demonstrations, and radio. The extension workers employed in the university model tended to make more frequent use of bulletins, circular letters, extension newsletters, group discussions and process demonstrations than did their counterparts employed in the government model. More frequent use of newspaper articles, poster and radio was reported by agents in the government model than in the university model. The findings indicate that the extension workers employed in the

Table 11  
Distribution of Respondents by  
Frequency of Use of Various  
Methods and Techniques

Alberta

<u>Methods and Techniques</u>	<u>Often</u>	<u>Sometimes</u>	<u>Rarely</u>	<u>Never</u>
Agricultural Fairs	2.0	14.0	78.0	6.0
Agricultural field days	-	36.5	63.5	-
Bulletins	39.2	25.5	23.5	11.8
Circular Letters	8.0	42.0	34.0	16.0
Extension newsletters	8.2	34.7	40.8	16.3
Farm visits	92.0	8.0	-	-
Group discussions	18.0	48.0	34.0	-
Lectures	4.0	54.0	38.0	4.0
Meetings	31.4	64.7	3.9	-
Messages and announcements	26.5	46.9	22.4	4.1
Newspaper articles	71.2	21.2	7.7	-
Posters	10.0	48.0	40.0	2.0
Process demonstrations	-	29.2	50.0	20.8
Radio	13.5	57.7	25.0	3.8
Result demonstrations	4.0	24.0	64.0	8.0
Telephone calls	96.1	2.0	2.0	-
Television	-	8.0	20.0	72.0
Workshops	9.8	39.2	47.1	3.9

British Columbia

<u>Methods and Techniques</u>	<u>Often</u>	<u>Sometimes</u>	<u>Rarely</u>	<u>Never</u>
Agricultural Fairs	5.9	17.6	76.5	-
Agricultural field days	35.3	23.5	41.2	-
Bulletins	29.4	35.3	35.3	-
Circular Letters	6.3	50.0	43.8	-
Extension newsletters	23.5	41.2	29.4	5.9
Farm visits	58.5	41.2	-	-
Group discussions	17.6	29.4	35.3	17.6
Lectures	-	11.8	88.2	-
Meetings	41.2	41.2	17.6	-
Messages and announcements	17.6	64.7	17.6	-
Newspaper articles	11.8	41.2	47.1	-
Posters	-	17.6	58.8	23.5
Process demonstrations	-	29.4	52.9	17.6
Radio	23.5	23.5	52.9	-
Result demonstrations	17.6	17.6	58.8	5.9
Telephone calls	88.2	5.9	5.9	-
Television	-	5.9	35.3	58.8
Workshops	11.8	41.2	47.1	-

Table 11-- ContinuedIdaho

<u>Methods and Techniques</u>	<u>Often</u>	<u>Sometimes</u>	<u>Rarely</u>	<u>Never</u>
Agricultural Fairs	5.9	20.6	67.6	5.9
Agricultural field days	8.8	47.1	44.1	-
Bulletins	66.7	27.3	6.1	-
Circular Letters	29.4	55.9	11.8	2.9
Extension newsletters	24.2	60.6	12.1	3.0
Farm visits	94.1	5.9	-	-
Group discussions	30.3	54.5	15.2	-
Lectures	9.1	48.5	36.4	6.1
Meetings	32.4	61.8	5.9	-
Messages and announcements	47.1	38.2	14.7	-
Newspaper articles	38.2	52.9	5.9	2.9
Posters	6.5	16.1	58.1	19.4
Process demonstrations	8.8	29.4	61.8	-
Radio	32.4	35.3	17.6	14.7
Result demonstrations	9.4	31.3	56.3	3.1
Telephone calls	94.1	2.9	2.9	-
Television	3.1	9.4	28.1	59.4
Workshops	8.8	55.9	35.3	-

Washington

<u>Methods and Techniques</u>	<u>Often</u>	<u>Sometimes</u>	<u>Rarely</u>	<u>Never</u>
Agricultural Fairs	10.0	12.0	74.0	4.0
Agricultural field days	10.0	44.0	44.0	2.0
Bulletins	69.4	26.5	4.1	-
Circular Letters	26.5	51.0	12.2	10.2
Extension newsletters	28.6	65.3	4.1	2.0
Farm visits	74.0	26.0	-	-
Group discussions	38.8	51.0	10.2	-
Lectures	8.2	59.2	30.6	2.0
Meetings	36.7	55.1	8.2	-
Messages and announcements	25.0	66.7	8.3	-
Newspaper articles	27.7	66.0	6.4	-
Posters	2.1	14.6	52.1	31.3
Process demonstrations	4.2	18.8	64.6	12.5
Radio	27.7	27.7	27.7	17.0
Result demonstrations	8.0	28.0	58.0	6.0
Telephone calls	94.0	4.0	4.0	-
Television	2.2	10.9	30.4	56.5
Workshops	16.3	36.7	44.9	2.0

Table 11-- ContinuedCanada

<u>Methods and Techniques</u>	<u>Often</u>	<u>Sometimes</u>	<u>Rarely</u>	<u>Never</u>
Agricultural Fairs	3.0	14.9	77.6	4.5
Agricultural field days	8.7	33.3	58.0	-
Bulletins	36.8	27.9	26.5	8.8
Circular Letters	7.6	43.9	36.4	12.1
Extension newsletters	12.1	36.4	37.9	13.6
Farm visits	83.6	16.4	-	-
Group discussions	17.9	43.4	34.3	4.5
Lectures	3.0	43.4	50.7	3.0
Meetings	33.8	58.8	7.4	-
Messages and announcements	24.2	51.5	21.2	3.0
Newspaper articles	56.5	26.1	17.4	-
Posters	7.5	40.3	44.8	7.5
Process demonstrations	-	29.2	50.8	20.0
Radio	15.9	49.3	31.9	2.9
Result demonstrations	7.5	22.4	62.7	7.5
Telephone calls	94.1	2.9	2.9	-
Television	-	7.5	23.9	68.7
Workshops	10.3	39.7	47.1	2.9

United States

<u>Methods and Techniques</u>	<u>Often</u>	<u>Sometimes</u>	<u>Rarely</u>	<u>Never</u>
Agricultural Fairs	8.3	15.5	71.4	4.8
Agricultural field days	9.5	45.2	44.0	1.2
Bulletins	68.3	26.8	4.9	-
Circular Letters	27.7	53.0	12.0	7.2
Extension newsletters	26.8	63.4	7.3	2.4
Farm visits	82.1	17.9	-	-
Group discussions	35.4	52.4	12.2	-
Lectures	8.5	54.9	32.9	3.7
Meetings	34.9	57.8	7.2	-
Messages and announcements	34.1	54.9	11.0	-
Newspaper articles	32.1	60.5	6.2	1.2
Posters	3.8	15.2	54.4	26.6
Process demonstrations	6.1	23.2	63.4	7.3
Radio	29.6	30.9	23.5	16.0
Result demonstrations	8.5	29.3	57.3	4.9
Telephone calls	94.0	3.6	2.4	-
Television	2.6	10.3	29.5	57.7
Workshops	13.3	44.6	41.0	1.2

university model were more inclined to use formal instructional techniques than were their counterparts employed in the government model, as stipulated in the Smith-Lever Act of 1914.

Telephone calls have been rated as 'efficient' techniques by 50.7 percent of the district agriculturalists and by 45.8 percent of the county extension agricultural agents (Table 45, in Appendix II). As reported in Table 43 in Appendix II, there was a statistically significant difference between the agricultural extension workers employed in the government and university models on their ratings of efficiency of bulletins, farm visits and result demonstrations. Extension workers employed in the university model tended to give higher ratings for bulletins and result demonstrations than did their counterparts employed in the government model. On the other hand, the agricultural extension workers employed in the government model tended to give higher ratings for farm visits than did their counterparts employed in university model (Table 43, in Appendix II).

In summary, the agricultural extension workers employed in the university model use more various types of methods and techniques to teach their clientele to adopt new practices than their counterparts employed in the government model do.

#### Extension Role Functions

The district agriculturalists and the county extension agricultural agents were requested to (1) rate fourteen

extension role functions in order of importance to their agricultural extension organization, to their clientele (role perception) and to themselves (role performance), and (2) indicate how much time they spent on performing each function. This question was asked to find out what functions agents perform and what they perceive their organization and clientele expect them to perform as occupants of the position. These responses are tabulated in Tables 12 to 15.

The mean scores were calculated to rank order the role functions and determine role agreement among the three ratings on each extension role function.

One-way ANOVA analysis was performed to determine if there were statistically significant differences between the agricultural extension workers employed in the government and university models as well as among the district agriculturalists of the two provinces and the county extension agricultural agents of the two states on each rating of the extension role functions.

ANOVAR analysis was calculated to investigate relationships among the three ratings on each extension role function.

A chi-square test was also calculated to determine if there were significant differences between the amounts of time the district agriculturalists and the county extension agricultural agents said they spent on performing each extension role function.

The findings on agents' role performance, agents' perceptions of the expectations of their organization and

Table 12  
Distribution of Respondents by their Perceived  
Rating of the Importance of Extension Role  
Functions to their Organization

<u>Functions</u>		<u>Very Important</u>	<u>Important</u>	<u>Somewhat Important</u>	<u>Least Important</u>	<u>Not Applicable</u>
Adult educator	Alberta (N=52)	48.1	38.4	13.5	-	-
	British Columbia (N=17)	41.2	41.2	17.6	-	-
	Canada (N=69)	46.4	39.1	14.5	-	-
	Idaho (N=31)	51.6	45.2	3.2	-	-
	Washington (N=48)	75.0	20.8	4.2	-	-
	United States (N=79)	65.8	30.4	3.8	-	-
Adviser/Consultant	Alberta (N=52)	44.2	46.2	9.6	-	-
	British Columbia (N=17)	52.9	41.2	5.9	-	-
	Canada (N=69)	46.4	44.9	8.7	-	-
	Idaho (N=33)	57.6	27.2	9.1	6.1	-
	Washington (N=49)	40.8	28.6	28.6	-	2.0
	United States (N=82)	47.6	28.0	20.7	2.5	1.2
Agricultural credit program administrator	Alberta (N=51)	2.0	9.8	25.5	19.6	43.1
	British Columbia (N=17)	-	17.6	35.3	11.8	35.3
	Canada (N=68)	1.5	11.8	27.9	17.6	41.2
	Idaho (N=33)	3.0	-	27.3	12.1	57.6
	Washington (N=49)	-	10.2	4.1	10.2	75.5
	United States (N=82)	1.2	6.1	13.4	11.0	68.3
Agricultural regulations enforcement officer	Alberta (N=52)	-	11.5	9.6	32.7	46.2
	British Columbia (N=16)	-	12.5	18.7	25.0	43.8
	Canada (N=68)	-	11.8	11.8	30.8	45.6
	Idaho (N=33)	-	-	6.1	21.2	72.7
	Washington (N=49)	2.0	-	10.2	14.3	73.5
	United States (N=82)	1.2	-	8.5	17.1	73.2
Emergency measures program administrator	Alberta (N=52)	3.8	19.3	17.3	19.2	40.4
	British Columbia (N=17)	-	23.5	11.8	17.6	47.1
	Canada (N=69)	2.9	20.3	15.9	18.9	42.0
	Idaho (N=32)	-	15.6	18.8	43.8	21.9
	Washington (N=48)	-	12.5	16.7	33.3	37.5
	United States (N=80)	-	13.7	17.5	37.5	31.3

Table 12-- Continued

<u>Functions</u>		<u>Very Important</u>	<u>Important</u>	<u>Somewhat Important</u>	<u>Least Important</u>	<u>Not Applicable</u>
Facilitator or service agent	Alberta (N=51)	21.6	49.0	21.6	5.8	2.0
	British Columbia (N=17)	17.6	47.1	17.6	5.9	11.8
	Canada (N=68)	20.6	48.5	20.6	5.9	4.4
	Idaho (N=32)	15.6	28.1	34.4	18.8	3.1
	Washington (N=49)	16.3	34.7	34.7	6.1	8.2
	United States (N=81)	16.0	32.1	34.6	11.1	6.2
Inspection acts enforcement officer	Alberta (N=52)	-	7.7	7.7	26.9	57.7
	British Columbia (N=17)	-	5.9	5.9	23.5	64.7
	Canada (N=69)	-	7.2	7.2	26.2	59.4
	Idaho (N=33)	-	-	9.1	18.2	72.7
	Washington (N=49)	2.0	-	-	14.3	83.7
	United States (N=82)	1.2	-	3.7	15.9	79.2
Organizer and supervisor of events	Alberta (N=49)	20.4	46.9	22.5	8.2	2.0
	British Columbia (N=17)	41.2	47.0	11.8	-	-
	Canada (N=66)	25.7	47.0	19.7	6.1	1.5
	Idaho (N=33)	21.2	36.4	24.2	18.2	-
	Washington (N=49)	34.7	38.8	16.3	8.2	2.0
	United States (N=82)	29.3	37.8	19.5	12.2	1.2
Organizer of groups	Alberta (N=52)	13.5	44.2	40.4	1.9	-
	British Columbia (N=17)	35.3	52.9	11.8	-	-
	Canada (N=69)	18.8	46.5	33.3	1.4	-
	Idaho (N=33)	30.3	36.4	24.2	9.1	-
	Washington (N=49)	36.7	49.0	10.2	4.1	-
	United States (N=82)	34.1	43.9	15.9	6.1	-
Program administrator	Alberta (N=52)	36.5	26.9	28.9	7.7	-
	British Columbia (N=17)	23.5	47.1	23.5	5.9	-
	Canada (N=69)	33.3	31.9	27.6	7.2	-
	Idaho (N=33)	21.2	42.4	21.2	12.1	3.0
	Washington (N=47)	21.3	38.3	23.4	8.5	8.5
	United States (N=80)	21.2	40.0	22.5	10.0	6.3



Table 12-- Continued

<u>Functions</u>		<u>Very Important</u>	<u>Important</u>	<u>Somewhat Important</u>	<u>Least Important</u>	<u>Not Applicable</u>
Program planner	Alberta (N=51)	35.3	41.2	17.6	5.9	-
	British Columbia (N=17)	23.5	53.0	23.5	-	-
	Canada (N=68)	32.4	44.1	19.1	4.4	-
	Idaho (N=32)	50.0	28.1	12.5	6.3	3.1
	Washington (N=48)	52.1	37.5	4.1	4.2	2.1
	United States (N=80)	51.3	33.7	7.5	5.0	2.5
Public relations	Alberta (N=51)	43.1	43.1	11.8	2.0	-
	British Columbia (N=17)	64.7	23.5	11.8	-	-
	Canada (N=68)	48.5	38.2	11.8	1.5	-
	Idaho (N=33)	48.5	39.4	6.0	6.1	-
	Washington (N=49)	38.8	46.9	12.2	2.1	-
	United States (N=82)	42.7	43.9	9.7	3.7	-
Sources of information and ideas	Alberta (N=52)	46.2	36.5	17.3	-	-
	British Columbia (N=17)	64.7	29.4	5.9	-	-
	Canada (N=69)	50.7	34.8	14.5	-	-
	Idaho (N=33)	54.5	36.4	9.1	-	-
	Washington (N=49)	57.1	28.6	10.2	2.0	2.0
	United States (N=82)	56.1	31.7	9.8	1.2	1.2
Student	Alberta (N=45)	4.4	15.6	37.8	22.2	20.0
	British Columbia (N=15)	-	20.0	6.7	40.0	33.3
	Canada (N=60)	3.3	16.7	30.0	26.7	23.3
	Idaho (N=32)	15.6	25.0	15.6	9.4	34.4
	Washington (N=45)	8.9	11.1	35.6	17.7	26.7
	United States (N=77)	11.7	16.9	27.2	14.3	29.9

clientele, and time spent, for each extension role function are discussed in the following sections.

Adult educator: The district agriculturalists ranked the importance of this function to their organization as fourth, to their clientele as sixth; and to themselves as fourth. In contrast, the county extension agricultural agents ranked the same function as first to their organization, fifth to their clientele and third to themselves (Table 46, in Appendix II).

The one-way ANOVA analyses indicate that there was no significant difference between the American and the Canadian agents on their ratings of importance of this function to themselves. However, there were statistically significant differences between the district agriculturalists in British Columbia and the county extension agricultural agents in Idaho and Washington (Tables 30 and 37, in Appendix II). The county extension agricultural agents in Idaho and Washington see their extension role as adult educators more than the district agriculturalists in British Columbia do (Table 46, in Appendix II).

The one-way ANOVA analysis on the respondents' perceived importance of this function to their organizations shows that there were statistically significant differences between the Canadian and American agents, as well as between Alberta and Washington, and between British Columbia and Washington (Tables 30 and 33, in Appendix II). The American agents and particularly the county extension agricultural agents in

Washington believed that their extension organization placed greater emphasis on performing as an adult educator than did the Canadian agents in each province (Table 46, in Appendix II). The American agents collectively and the county extension agricultural agents in Washington to a marked degree view their organization as an adult education institution more than the Canadian agents collectively and in each province.

Although the Canadian and American agents did not differ on their ratings of the importance of this function as perceived by their clientele, there were statistically significant differences between the district agriculturalists and the county extension agricultural agents in British Columbia and Idaho; and between those in British Columbia and Washington. There was also a statistically significant difference between the district agriculturalists in Alberta and British Columbia (Tables 30 and 35, in Appendix II). The district agriculturalists in British Columbia did not perceive their clientele expected them to perform as adult educators as much as was the case with their counterparts in Alberta and in each state (Table 46, in Appendix II).

The ANOVAR analysis results indicated that there were statistically significant differences among the three ratings within each country as well as within each province and each state (Table 41, in Appendix II). The results as reported in Appendix II in Table 46 indicate that there was role conflict between the expectations of the agents employed in both models and their perception of their expectations of their clientele.

Table 13  
Distribution of Respondents by their Perceived  
Rating of the Importance of Extension Role  
Functions to their Clientele

<u>Functions</u>		<u>Very Important</u>	<u>Important</u>	<u>Somewhat Important</u>	<u>Least Important</u>	<u>Not Applicable</u>
Adult educator	Alberta (N=52)	25.0	38.5	26.9	9.6	-
	British Columbia (N=16)	-	31.3	31.3	37.4	-
	Canada (N=68)	19.1	36.8	27.9	16.2	-
	Idaho (N=32)	31.3	40.6	18.8	9.3	-
	Washington (N=48)	27.1	29.1	37.5	6.3	-
	United States (N=80)	28.7	33.8	30.0	7.5	-
Adviser/Consultant	Alberta (N=51)	43.1	45.1	11.8	-	-
	British Columbia (N=16)	37.5	62.5	-	-	-
	Canada (N=67)	41.8	49.2	9.0	-	-
	Idaho (N=33)	60.6	33.4	3.0	3.0	-
	Washington (N=48)	75.0	25.0	-	-	-
	United States (N=81)	69.1	28.5	1.2	1.2	-
Agricultural credit program administrator	Alberta (N=49)	2.0	16.4	26.5	18.4	36.7
	British Columbia (N=16)	12.5	18.8	18.8	12.5	37.4
	Canada (N=65)	4.6	16.9	24.7	16.9	36.9
	Idaho (N=32)	3.1	-	25.0	25.0	46.9
	Washington (N=49)	2.0	6.2	12.2	6.1	73.5
	United States (N=81)	2.5	3.6	17.3	13.6	63.0
Agricultural regulations enforcement officer	Alberta (N=51)	-	2.0	27.5	27.5	43.0
	British Columbia (N=16)	-	18.7	12.5	25.0	43.8
	Canada (N=67)	-	6.0	23.9	26.8	43.3
	Idaho (N=32)	-	3.1	9.4	12.5	75.0
	Washington (N=49)	2.0	2.0	8.2	14.3	73.5
	United States (N=81)	1.2	2.5	8.6	13.6	74.1
Emergency measures program administrator	Alberta (N=50)	12.0	16.0	10.0	24.0	38.0
	British Columbia (N=16)	6.3	6.3	6.3	31.1	50.0
	Canada (N=66)	10.6	13.6	9.1	25.8	40.9
	Idaho (N=32)	3.0	18.8	18.8	34.4	25.0
	Washington (N=49)	6.1	14.3	18.4	20.4	40.8
	United States (N=81)	4.9	16.1	18.5	25.9	34.6

Table 13-- Continued

<u>Functions</u>		<u>Very Important</u>	<u>Important</u>	<u>Somewhat Important</u>	<u>Least Important</u>	<u>Not Applicable</u>
Facilitator or service agent	Alberta (N=51)	25.5	39.2	21.6	11.7	2.0
	British Columbia (N=16)	31.2	43.8	18.7	-	6.3
	Canada (N=67)	26.9	40.3	20.9	9.0	3.0
	Idaho (N=31)	16.1	51.6	22.6	9.7	-
	Washington (N=49)	22.4	36.7	28.6	4.1	8.2
	United States (N=80)	20.0	42.5	26.2	6.3	5.0
Inspection acts enforcement officer	Alberta (N=51)	2.0	-	17.6	21.6	58.8
	British Columbia (N=16)	-	12.5	-	18.7	68.8
	Canada (N=67)	1.5	3.0	13.4	20.9	61.2
	Idaho (N=33)	3.0	6.1	3.0	18.2	69.7
	Washington (N=49)	4.1	-	4.1	10.2	81.6
	United States (N=82)	3.7	2.4	3.7	13.4	76.8
Organizer and supervisor of events	Alberta (N=51)	31.4	39.2	21.6	2.0	5.8
	British Columbia (N=16)	37.5	43.7	12.5	6.3	-
	Canada (N=67)	32.8	40.3	19.4	3.0	4.5
	Idaho (N=33)	39.4	45.4	9.1	6.1	-
	Washington (N=47)	34.0	42.6	21.3	2.1	-
	United States (N=80)	36.2	43.8	16.3	3.7	-
Organizer of groups	Alberta (N=51)	11.8	41.1	37.3	7.8	2.0
	British Columbia (N=16)	18.8	18.8	43.6	18.8	-
	Canada (N=67)	13.4	35.8	38.9	10.4	1.5
	Idaho (N=33)	39.4	51.5	6.1	3.0	-
	Washington (N=48)	25.0	43.7	29.2	-	2.1
	United States (N=81)	30.9	46.9	19.8	1.2	1.2
Program administrator	Alberta (N=52)	17.3	21.2	34.6	23.1	3.8
	British Columbia (N=16)	12.4	25.0	31.3	31.3	-
	Canada (N=68)	16.2	22.1	33.8	25.0	2.9
	Idaho (N=33)	21.2	39.4	27.3	9.1	3.0
	Washington (N=47)	12.8	29.8	27.6	21.3	8.5
	United States (N=80)	16.3	33.7	27.5	16.2	6.3

Table 13-- Continued

<u>Functions</u>		<u>Very Important</u>	<u>Important</u>	<u>Somewhat Important</u>	<u>Least Important</u>	<u>Not Applicable</u>
Program planner	Alberta (N=51)	15.7	31.4	43.1	9.8	-
	British Columbia (N=16)	18.8	31.2	31.2	18.8	-
	Canada (N=67)	16.4	31.4	40.3	11.9	-
	Idaho (N=33)	30.3	21.2	39.4	6.1	3.0
	Washington (N=48)	18.8	31.2	33.3	14.6	2.1
	United States (N=81)	23.5	27.1	35.8	11.1	2.5
Public relations	Alberta (N=49)	36.7	34.7	20.4	8.2	-
	British Columbia (N=14)	42.9	21.4	21.4	14.3	-
	Canada (N=63)	38.1	31.7	20.6	9.6	-
	Idaho (N=33)	24.2	45.5	18.2	12.1	-
	Washington (N=48)	16.7	39.5	29.2	12.5	2.1
	United States (N=81)	19.8	42.0	24.7	12.3	1.2
Sources of information and ideas	Alberta (N=50)	54.0	36.0	8.0	2.0	-
	British Columbia (N=16)	75.0	25.0	-	-	-
	Canada (N=66)	59.1	33.3	6.1	1.5	-
	Idaho (N=33)	57.6	42.4	-	-	-
	Washington (N=48)	72.9	22.9	2.1	-	2.1
	United States (N=81)	66.7	30.9	1.2	-	1.2
Student	Alberta (N=43)	9.3	7.0	23.3	30.2	30.2
	British Columbia (N=14)	7.1	7.1	-	50.0	35.8
	Canada (N=57)	8.8	7.0	17.5	35.1	31.6
	Idaho (N=31)	16.1	9.7	22.6	19.3	32.3
	Washington (N=44)	2.3	4.5	25.0	40.9	27.3
	United States (N=75)	8.0	6.7	24.0	32.0	29.3

The American and the Canadian agents both perceived that (a) their extension organizations expect them to place a high priority on performing as adult educators and hence tended to give higher ratings of this function to their organization and that (b) their clientele would give it a lower rating.

Over 53 percent of the agents employed in both models spent 'much' time performing this function. There was no statistically significant difference between the Canadian and American agents on time spent on this function (Table 15 and Table 44, in Appendix II). These findings indicate that there are some agents in both models who do not identify themselves as adult educators.

Overall, it was expected that the agents employed in the university model would identify themselves as adult educators more than their counterparts would who are employed in the government model; however, these results do not support that expectation.

Adviser/Consultant: The county extension agricultural agents rated the importance of this function to their organization as fifth, to their clientele as first, and to themselves as second. In comparison, the district agriculturalists ranked the function as first to their organization and to themselves; and second to their clientele (Table 46, in Appendix II).

The one-way ANOVA analyses results show that there were no statistically significant differences between any groups on

their ratings of the importance of this function to their organization and to themselves (Tables 30, 33, and 37, in Appendix II).

There were statistically significant differences between the Canadian and American agents, and between the county extension agricultural agents in Washington and the district agriculturalists in Alberta and British Columbia on their ratings of the importance of this function to their clientele (Tables 30 and 35, in Appendix II). The extension workers in Canada, collectively, and in each province, singly, did not perceive their clientele expected them to behave as advisers/consultants as much as was the case with their counterparts in America and, in particular, in Washington (Table 46, in Appendix II).

The ANOVAR analysis indicates that there were statistically significant differences among the three ratings in each country; and in each province, and in the state of Washington (Table 41, in Appendix II). The results indicate that there was role conflict, and overall the Canadian agents and in particular both district agriculturalists in Alberta and in British Columbia gave a higher rating of this function to themselves than they gave to their organization and clientele. The American agents and in particular the county extension agricultural agents in Washington perceived that their clientele expect them to behave as advisers/consultants and gave a higher rating to their clientele than they gave to their organization and to themselves (Table 46, in Appendix II). These data suggest that the



Table 14  
Distribution of Respondents by their  
Rating of the Importance of Extension  
Role Functions for Role Performance

<u>Functions</u>		<u>Very Important</u>	<u>Important</u>	<u>Somewhat Important</u>	<u>Least Important</u>	<u>Not Applicable</u>
Adult educator	Alberta (N=50)	46.0	44.0	8.0	2.0	-
	British Columbia (N=17)	47.0	11.8	29.4	11.8	-
	Canada (N=67)	46.3	35.8	13.4	4.5	-
	Idaho (N=33)	48.5	42.4	9.1	-	-
	Washington (N=50)	60.0	32.0	8.0	-	-
	United States (N=83)	55.4	36.2	8.4	-	-
Adviser/Consultant	Alberta (N=50)	68.0	22.0	10.0	-	-
	British Columbia (N=17)	82.4	17.6	-	-	-
	Canada (N=67)	71.6	20.9	7.5	-	-
	Idaho (N=33)	66.7	27.3	3.0	3.0	-
	Washington (N=50)	66.0	28.0	4.0	-	2.0
	United States (N=83)	66.3	27.7	3.6	1.2	1.2
Agricultural credit program administrator	Alberta (N=50)	2.0	10.0	20.0	24.0	44.0
	British Columbia (N=17)	5.9	5.9	17.6	35.3	35.3
	Canada (N=67)	3.0	9.0	19.3	26.9	41.8
	Idaho (N=34)	2.9	5.9	8.8	23.6	58.8
	Washington (N=49)	-	2.0	2.0	20.5	75.5
	United States (N=83)	1.2	3.6	4.8	21.7	68.7
Agricultural regulations enforcement officer	Alberta (N=49)	-	4.1	8.2	36.7	51.0
	British Columbia (N=17)	-	11.9	17.6	17.6	52.9
	Canada (N=66)	-	6.1	10.6	31.8	51.5
	Idaho (N=34)	-	2.9	5.9	20.6	70.6
	Washington (N=49)	-	2.0	2.0	12.3	83.7
	United States (N=83)	-	2.4	3.6	15.7	78.3
Emergency measures program administrator	Alberta (N=50)	4.0	14.0	20.0	22.0	40.0
	British Columbia (N=17)	5.9	5.9	5.9	35.3	47.0
	Canada (N=67)	4.5	11.9	16.4	25.4	41.8
	Idaho (N=34)	-	8.8	20.6	35.3	35.3
	Washington (N=49)	-	6.1	10.2	34.7	49.0
	United States (N=83)	-	7.2	14.5	34.9	43.4

Table 14-- Continued

<u>Functions</u>		<u>Very Important</u>	<u>Important</u>	<u>Somewhat Important</u>	<u>Least Important</u>	<u>Not Applicable</u>
Facilitator or service agent	Alberta (N=50)	24.0	34.0	32.0	6.0	4.0
	British Columbia (N=16)	18.8	43.6	25.0	6.3	6.3
	Canada (N=66)	22.7	36.4	30.3	6.1	4.5
	Idaho (N=33)	15.2	39.4	24.2	18.2	3.0
	Washington (N=49)	16.3	55.1	18.4	6.1	4.1
	United States (N=82)	15.9	48.8	20.7	11.0	3.6
Inspection acts enforcement officer	Alberta (N=50)	-	4.0	8.0	32.0	56.0
	British Columbia (N=17)	-	11.8	11.8	23.5	52.9
	Canada (N=67)	-	6.0	9.0	29.9	55.1
	Idaho (N=33)	-	-	6.1	12.1	81.8
	Washington (N=49)	-	2.0	2.0	8.2	87.8
	United States (N=82)	-	1.2	3.7	9.8	85.4
Organizer and supervisor of events	Alberta (N=50)	18.0	50.0	18.0	10.0	4.0
	British Columbia (N=16)	37.4	50.0	6.3	6.3	-
	Canada (N=66)	22.7	50.0	15.2	9.1	3.0
	Idaho (N=34)	20.6	38.2	32.4	8.8	-
	Washington (N=49)	30.6	49.0	18.4	2.0	-
	United States (N=83)	26.5	44.6	24.1	4.8	-
Organizer of groups	Alberta (N=50)	16.0	36.0	36.0	8.0	4.0
	British Columbia (N=17)	29.4	23.5	35.3	11.8	-
	Canada (N=67)	19.4	32.8	35.8	9.0	3.0
	Idaho (N=34)	23.5	52.9	20.7	2.9	-
	Washington (N=49)	30.6	40.8	24.5	4.1	-
	United States (N=83)	27.7	45.8	22.9	3.6	-
Program administrator	Alberta (N=50)	22.0	32.0	32.0	10.0	4.0
	British Columbia (N=17)	23.5	23.5	41.2	11.8	-
	Canada (N=67)	22.4	29.9	34.3	10.4	3.0
	Idaho (N=34)	20.6	38.2	29.4	8.9	2.9
	Washington (N=49)	12.2	40.9	26.5	8.2	12.2
	United States (N=83)	15.7	39.8	27.7	8.4	8.4

Table 14-- Continued

<u>Functions</u>		<u>Very Important</u>	<u>Important</u>	<u>Somewhat Important</u>	<u>Least Important</u>	<u>Not Applicable</u>
Program planner	Alberta (N=49)	38.8	40.8	18.4	2.0	-
	British Columbia (N=17)	35.3	35.3	23.5	5.9	-
	Canada (N=66)	37.9	39.4	19.7	3.0	-
	Idaho (N=34)	35.3	44.1	11.8	5.9	2.9
	Washington (N=49)	44.9	44.9	8.2	-	2.0
	United States (N=83)	41.0	44.6	9.6	2.4	2.4
Public relations	Alberta (N=50)	56.0	30.0	10.0	4.0	-
	British Columbia (N=17)	58.8	35.3	5.9	-	-
	Canada (N=67)	56.7	31.3	9.0	3.0	-
	Idaho (N=34)	58.8	32.4	-	8.8	-
	Washington (N=48)	41.7	41.7	16.6	-	-
	United States (N=82)	48.8	37.8	9.7	3.7	-
Sources of information and ideas	Alberta (N=50)	74.0	16.0	8.0	2.0	-
	British Columbia (N=17)	70.6	23.5	5.9	-	-
	Canada (N=67)	73.1	17.9	7.5	1.5	-
	Idaho (N=34)	70.6	26.5	2.9	-	-
	Washington (N=50)	76.0	22.0	2.0	-	-
	United States (N=84)	73.8	23.8	2.4	-	-
Student	Alberta (N=43)	7.0	20.9	25.6	11.6	34.9
	British Columbia (N=16)	6.3	31.2	12.5	6.3	43.7
	Canada (N=59)	6.8	23.7	22.0	10.2	37.3
	Idaho (N=31)	19.4	32.2	19.4	9.6	19.4
	Washington (N=45)	15.6	26.7	24.4	11.1	22.2
	United States (N=76)	17.1	28.9	22.4	10.5	21.1

Canadian agents in each province are in conflict with their alters and consider adviser/consultant as one of the functions extension workers perform. The American agents, in general, and the county extension agricultural agents in Washington, in particular, have role conflict with their organization, in that they perceive their organization did not expect them to behave as advisers/consultants.

There was no a statistically significant difference between the American and the Canadian agents on time spent on this function (Table 44, in Appendix II). One notes that over 73 percent of the Canadian and American agents spent 'much' time performing this extension role function (Table 15). Although, almost no agents employed in the university model consider performing as an adviser/consultant as one of their functions, they spent as much time as the agents employed in the government model performing this function.

Agents employed in the university model conform to their perceived expectations of their clientele to behave as adviser/consultant, and spend as much time performing this function as their counterparts employed in the government model, who consider adviser/consultant as one of their extension role functions despite the role conflict with their alters.

Agricultural credit program administrator: The district agriculturalists rated the importance of this function to their organization and to themselves as twelfth, and to their clientele as tenth. In contrast, the American agents rated the

function as twelfth to their organization, their clientele and to themselves (Table 46, in Appendix II).

The one-way ANOVA analyses indicate that there were statistically significant differences between the American and the Canadian agents on the importance of this function to their organization and clientele, and to themselves (Table 30, in Appendix II).

The American agents overall and the county extension agricultural agents in Washington, in particular, rated this function lower than the Canadian agents in each province (Tables 30, 33, 35, and 37, in Appendix II). So, the Canadian agents in each province consider agricultural credit program duties as one of the extension role functions they perform more than the American agents, in general, and the county extension agricultural agents in Washington, in particular, do.

There was also a statistically significant difference between the district agriculturalists in British Columbia and the county extension agricultural agents in Idaho on their perceived ratings of the importance of this function to their clientele (Table 35). The district agriculturalists in British Columbia tended to rate this function higher than the county extension agricultural agents in Idaho (Table 46). The district agriculturalists in British Columbia believe their clientele expect them to perform the role of agricultural credit program administrator more than the agents in Idaho believe their clientele expect them to do so.

The ANOVAR analysis shows that there were statistically

Table 15  
Distribution of Respondents by Time Spent  
on Extension Role Functions

Alberta

<u>Functions</u>	<u>Much</u>	<u>Some</u>	<u>Little</u>	<u>None</u>
Adult educator	62.0	28.0	10.0	-
Adviser/Consultant	78.0	20.0	2.0	-
Agricultural credit program administrator	-	20.0	44.4	35.6
Agricultural regulations enforcement officer	-	6.8	45.5	47.7
Emergency measures program administrator	2.3	18.2	38.6	40.9
Facilitator or service agent	30.0	46.0	18.0	6.0
Inspection acts enforcement officer	-	4.5	40.9	54.5
Organizer and supervisor of events	32.7	53.1	12.2	2.0
Organizer of groups	20.4	49.0	28.6	2.0
Program administrator	26.5	53.1	18.4	2.0
Program planner	41.7	50.0	8.3	-
Public relations	56.0	34.0	10.0	-
Source of information and ideas	77.1	20.8	34.2	23.7
Student	10.5	31.6	34.2	23.7

British Columbia

<u>Functions</u>	<u>Much</u>	<u>Some</u>	<u>Little</u>	<u>None</u>
Adult educator	29.4	35.3	35.3	-
Adviser/Consultant	70.6	29.4	-	-
Agricultural credit program administrator	6.7	20.0	46.7	26.7
Agricultural regulations enforcement officer	-	26.7	26.7	46.7
Emergency measures program administrator	6.7	-	26.7	66.7
Facilitator or service agent	43.8	43.8	12.5	-
Inspection acts enforcement officer	-	7.1	42.9	50.0
Organizer and supervisor of events	47.1	47.1	5.9	-
Organizer of groups	23.5	52.9	23.5	-
Program administrator	23.5	52.9	23.5	-
Program planner	23.5	47.1	29.4	-
Public relations	41.2	35.3	23.5	-
Source of information and ideas	64.7	23.5	11.8	-
Student	-	15.4	53.8	30.8

Table 15-- ContinuedIdaho

<u>Functions</u>	<u>Much</u>	<u>Some</u>	<u>Little</u>	<u>None</u>
Adult educator	47.1	41.2	11.8	-
Adviser/Consultant	70.6	26.5	2.9	-
Agricultural credit program administrator	-	-	39.3	60.7
Agricultural regulations enforcement officer	-	7.1	10.7	82.1
Emergency measures program administrator	-	13.3	50.0	36.7
Facilitator or service agent	23.5	61.8	14.7	-
Inspection acts enforcement officer	-	-	14.8	85.2
Organizer and supervisor of events	38.2	50.0	11.8	-
Organizer of groups	29.4	64.7	5.9	-
Program administrator	20.6	50.0	26.5	2.9
Program planner	29.4	52.9	14.7	2.9
Public relations	52.9	35.3	11.8	-
Source of information and ideas	61.8	35.3	2.9	-
Student	17.9	42.9	21.9	17.9

Washington

<u>Functions</u>	<u>Much</u>	<u>Some</u>	<u>Little</u>	<u>None</u>
Adult educator	68.1	29.8	2.1	-
Adviser/Consultant	75.0	22.9	-	2.1
Agricultural credit program administrator	-	-	12.8	87.2
Agricultural regulations enforcement officer	-	-	5.3	94.7
Emergency measures program administrator	-	2.6	53.8	43.6
Facilitator or service agent	17.8	64.4	15.6	2.2
Inspection acts enforcement officer	-	-	2.6	97.4
Organizer and supervisor of events	34.8	50.0	15.2	-
Organizer of groups	21.7	54.3	23.9	-
Program administrator	18.6	41.9	30.2	9.3
Program planner	36.2	53.2	8.5	2.1
Public relations	19.6	58.7	21.7	-
Source of information and ideas	66.7	33.3	-	-
Student	5.4	32.4	51.4	10.8

Table 15-- ContinuedCanada

<u>Functions</u>	<u>Much</u>	<u>Some</u>	<u>Little</u>	<u>None</u>
Adult educator	53.7	29.9	16.4	-
Adviser/Consultant	76.1	22.4	1.5	-
Agricultural credit program administrator	1.7	20.0	45.0	33.3
Agricultural regulations enforcement officer	-	11.9	40.7	47.4
Emergency measures program administrator	3.4	13.6	35.6	47.4
Facilitator or service agent	33.3	45.5	16.7	4.5
Inspection acts enforcement officer	-	5.2	41.4	53.4
Organizer and supervisor of events	36.4	51.5	10.2	1.9
Organizer of groups	21.2	50.0	27.3	1.5
Program administrator	25.8	53.0	19.7	1.5
Program planner	36.9	49.2	13.9	-
Public relations	52.2	34.3	13.5	-
Source of information and ideas	73.8	21.5	4.6	-
Student	7.8	27.5	39.2	25.5

United States

<u>Functions</u>	<u>Much</u>	<u>Some</u>	<u>Little</u>	<u>None</u>
Adult educator	59.3	34.6	6.1	-
Adviser/Consultant	73.2	24.4	1.2	1.2
Agricultural credit program administrator	-	-	23.9	76.1
Agricultural regulations enforcement officer	-	3.0	7.6	89.4
Emergency measures program administrator	-	7.2	52.2	40.6
Facilitator or service agent	20.3	63.3	15.2	1.2
Inspection acts enforcement officer	-	-	7.7	92.3
Organizer and supervisor of events	36.3	50.0	13.7	-
Organizer of groups	25.0	58.8	16.2	-
Program administrator	19.5	45.5	28.5	6.5
Program planner	33.3	53.1	11.1	2.5
Public relations	33.7	48.7	17.6	-
Source of information and ideas	64.6	34.2	1.2	-
Student	10.8	36.9	38.5	13.8



significant differences among the three ratings of each country and Washington state (Table 41). The results as reported in Appendix II in Table 46 show that there was role conflict in Canada between the agents and their clientele; and in America and, in particular, in Washington state between the agents and their alters. The Canadian agents perceived that their clientele expect them to perform as agricultural credit program administrators to a greater extent than they perceived their organization expects them to perform in this way. The American agents and, in particular, the county extension agricultural agents in Washington, perform as agricultural credit program administrators to a lesser degree than they perceived their organization and clientele expect them to perform. There was role agreement on this function within Alberta, British Columbia and Idaho (Table 41).

There was a statistically significant difference between the Canadian and American agents on the time spent on this function with the Canadian agents tending to spend more time than the American agents (Table 15 and Table 44, in Appendix II). Over 66.0 percent of the Canadian agents and about 24.0 percent of the American agents spent time performing this function.

Although these results again indicate that agents employed in the government model perform administration of agricultural credit programs, the findings also show that their counterparts in the university model and, in particular, over 39.0 percent of the agents in Idaho, reported that they engage in administering

some agricultural credit programs. Overall agricultural credit program administrator has a lower status as an extension role function in the university model than in the government one.

Agricultural regulations enforcement officer: Both the Canadian and American agents gave the same rankings (thirteenth out of fourteenth) to the importance of this function to their organization and clientele, and to themselves (Table 46, in Appendix II).

There were statistically significant differences between the countries, between Washington and Alberta, between Washington and British Columbia, and between British Columbia and Idaho on their ratings of importance of this function to themselves (Table 37, in Appendix II). The Canadian agents tended to rate the importance of this function to themselves higher than the American agents did. The county extension agricultural agents in Washington tended to give lower ratings of the importance of this function to themselves than the district agriculturalists in Alberta or British Columbia did. Similarly, the agents in Idaho tended to give lower ratings of the importance of this function to themselves than the district agriculturalists in British Columbia did (Table 46, in Appendix II). Accordingly, the results indicate that the Canadian agents in each province view the agricultural regulations enforcement function as an extension responsibility more than the American agents, collectively, and in each state.

The one-way ANOVA analyses results show that there were

statistically significant differences between the countries and between provinces and states on their ratings of the importance of this function to their organization and clientele (Tables 33 and 35, in Appendix II).

The Canadian agents in each province tended to give higher ratings of the importance of this function to their clientele than the American agents in each state did (Table 46, in Appendix II). These data indicate that the Canadian agents perceived that their clientele expect them to perform as agricultural regulations enforcement officers more than American agents' clientele expect them to perform in the United States.

As indicated by the ANOVAR analysis results, there were statistically significant differences among the three ratings in Canada, Alberta and Washington, (Tables 41 and 46, in Appendix II). The analyses indicate that there was role conflict between the agricultural extension workers in Canada, in particular, in Alberta, and Washington and their alters. So, the extension workers in Canada and, in particular, the extension workers in Alberta as well as extension workers in Washington do not consider agricultural regulations enforcement duties as the duty of extension workers. There was role agreement on this function in the United States, overall, in Idaho and in British Columbia (Table 41, in Appendix II).

As indicated in Table 15 and in Appendix II in Table 44, there was a statistically significant difference between the time Canadian and American agents spent on this function with the Canadians tending to spend more time than the Americans.

Accordingly, 52.6 percent of the agents employed in the government model and 10.6 percent of the agents employed in the university model model reported spending time performing this function. Although when this study was undertaken it was assumed that no American agents performed regulatory functions and all Canadian agents did, these findings indicate that some agricultural extension workers employed in both models perform regulatory duties. About half of the agricultural extension workers employed in the government model reported that they perform agricultural regulations enforcement duties, such as weed control, livestock regulation (bull control), water control, agricultural land development, as part of their extension role performance. Similarly, about one-tenth of their counterparts employed in the university model verified that they perform some regulatory enforcement responsibilities, such as weed control, animal health requirement checking for local fairs, measuring weaning weights of purebred stock and registering pesticide application, as part of their extension role performance.

In conclusion, these findings indicate that it seems correct to assume that the performance of regulatory responsibilities may not be regarded as one of the distinguishing factors between the university and the government models.

Emergency measures program administrator: Agents employed in both organizational models gave the same rankings (eleventh

out of fourteenth) to the importance of this function to their organization and clientele, and to themselves (Table 46 in Appendix II).

The one-way ANOVA analyses revealed that there was a statistically significant difference between Alberta and Washington extension workers on their ratings of importance of this function to themselves with Albertans rating this function higher than Washingtonians (Tables 37 and 46 in Appendix II). The district agriculturalists in Alberta view this function as part of their extension duties (role performance) more than the county extension agricultural agents in Washington do.

The ANOVAR analysis results indicate that there were statistically significant differences among the three ratings in the United States, Idaho and Washington (Tables 41 and 46 in Appendix II). The results show that there was role conflict between the American agents in each state and their alters. The American agents in each state seem not to consider emergency measures program administrator as one of their extension role functions. There was role agreement on this function in each province and for Canada as a whole.

There were no a statistically significant difference between the two countries on the amount of time spent on this function (Table 43 in Appendix II). These findings indicate that over 40 percent of the agents employed in both models feel this function not to be the responsibility of extension services, and yet the data in Table 15 show that 52.6 percent of the Canadian agents and 59.4 percent of the American agents

spent time performing this function.

Facilitator or service agent: The district agriculturalists rated the importance of this function to their organization as ninth, to their clientele as fifth, and to themselves as seventh. In comparison, the county extension agricultural agents ranked the function as ninth to their organization, seventh to their clientele, and eighth to themselves (Table 46 in Appendix II).

The one-way ANOVA analysis indicates that there were statistically significant differences between extension workers in the two countries, and between extension workers in Alberta and Idaho on their ratings of the importance of performing as facilitator or service agent to their organization (Tables 30 and 33 in Appendix II).

The Canadian agents collectively and the district agriculturalists in Alberta in particular gave higher ratings to the importance of this function to their organization than did the American agents collectively and the extension workers in Idaho in particular. These findings indicate that the Canadian agents and the district agriculturalists in Alberta to a marked degree perceive that their organization expects them to perform as facilitator or service agent more than their counterparts' perceptions of the importance of this function to their organization in America and in the state of Idaho (Table 46, in Appendix II).

The ANOVAR analysis revealed that there were no role

conflicts on this function within each province, state and nation (Table 41, in Appendix II).

The data in Table 15 indicate that 94.5 percent of the Canadian agents and 98.8 percent of the American agents spent time performing as facilitators or service agents. There was no a statistically significant difference between the two countries on time spent on this function (Table 44, in Appendix II).

So, the findings indicate the service function to be one of the functions which agricultural extension workers perform in both models.

Inspection acts enforcement officer: The Canadian and the American agents rated the importance of this function to their organization, clientele and for their role performance as last (fourteenth) (Table 46, in Appendix II).

The One-way ANOVA analyses results indicate that there were statistically significant differences between the two countries on their ratings of importance of this function to themselves and to their organization. There were statistically significant differences between each province and each state on their ratings of importance of this function to themselves (Table 37, in Appendix II). The district agriculturalists in each province gave higher ratings to the importance of this function to themselves than did the county extension agricultural agents in each state (Table 46, in Appendix II). These findings show that the district agriculturalists in each province consider inspection acts enforcement duty to be part of their role.

performance more than the agents in each state do, a finding that is consistent with the original assumptions concerning between the two models.

The Canadian agents and the extension workers in Alberta gave a higher rating to the importance of this function to their organization than the agents in America and in the state of Washington. Accordingly, the Canadian agents and the extension workers in Alberta perceived that their extension organization expects them to perform inspection duties more than their counterparts in America, in general, and in Washington state, in particular, (Tables 30, 33 and 46, in Appendix II).

The ANOVAR analysis results show that there were statistically significant differences among the three ratings in the United States (Tables 41 and 46, in Appendix II). The results indicate that there was role-conflict between the American agents and their clientele who expect them to perform inspection duties. There was role agreement on this function in each province in Canada.

The data in Table 15 and in Appendix II in Table 44 show that there was a statistically significant difference differences between the Canadian and American agents on the time spent on this function with the Canadian agents tending to spend more time than the American agents. These data indicate that 7.7 percent of the American agents, and 46.6 percent of the Canadian agents spent 'some or little' time performing as inspection acts enforcement officers. The agricultural extension workers employed in the government model listed some



inspection duties, such as credit program inspection, shelterbelt program inspection, dairy development loan inspection, weed inspection, native range improvement program inspection, farm inspection, as part of their role performance. However, their counterparts employed in the university model did not list any inspection responsibilities except some agricultural regulations enforcement duties, and hence this suggests that they may have considered agricultural regulations enforcement and inspection as having the same meaning and reported that they performed inspection duties. Nevertheless 92.3 percent of the agents working in the university model did not perceive themselves as performing inspection or enforcement acts, a finding that is in harmony with the assumptions of this study and the literature on extension.

Overall, these findings show that a few extension workers employed in the university model perform inspection duties, and hence this function may not be regarded as one of the distinguishing factors between the government model and the university model.

Organizer and supervisor of events: The district agriculturalists rated the importance of this function to their organization as seventh, to their clientele as fourth, and to themselves as sixth. In contrast, the county extension agricultural agents ranked the function as seventh to their organization and to themselves, and third to their clientele (Table 46, in Appendix II).

There was a statistically significant difference between Washington and Alberta extension workers on their ratings on the importance of this function to themselves, with the agents in Washington tending to rate this function higher than the district agriculturalists in Alberta (Tables 37 and 46, in Appendix II). Accordingly, the county extension agricultural agents in Washington consider 'organizer and supervisor of events' a more important extension function to be performed than do the district agriculturalists in Alberta.

The one-way ANOVA analyses results show that there were statistically significant differences between extension workers in Alberta and British Columbia on their ratings of the importance of this function to their organization and to themselves, with the district agriculturalists in British Columbia tending to rate this function higher than the district agriculturalists in Alberta (Tables 33, 37 and 46, in Appendix II). So, the district agriculturalists in British Columbia perform and they perceive their extension organization expects them to perform as organizers and supervisors of events more than their counterparts in Alberta. There was a statistically significant difference between extension workers in British Columbia and Idaho on their ratings of the importance of this function to their organization with the district agriculturalists in British Columbia tending to rate this function higher than the agents in Idaho (Tables 33 and 46, in Appendix II). The extension organization in British Columbia expects its district agriculturalists to perform as organizers

and supervisors of events more than the extension organization in Idaho.

The ANOVAR analysis shows that there were statistically significant differences among the three ratings in the United States as a whole and in Idaho (Table 41, in Appendix II). The results indicate role-conflict between the extension workers in Idaho and in American as a whole and their clientele (Table 46, in Appendix II). Accordingly, the American agents, as whole, and especially those in Idaho perceived that their clientele expect them to perform as organizers and supervisors of events. There was role agreement on this function in each province in Canada and in Washington state (Tables 41 and 46, in Appendix II).

Over 86 percent of the agents employed in both models spent 'much or some' time performing as organizers or supervisors of events (Table 15). There was no a statistically significant difference between the Canadian and American agents on the time spent on this function (Table 44, in Appendix II).

These findings indicate that 'organizer and supervisor of events' function was considered by the agricultural extension workers employed in both models as one of the responsibilities of extension workers.

Organizer of groups: The county extension agricultural agents rated the importance of this function to their organization and to themselves as sixth, and to their clientele as fourth. In contrast, the district agriculturalists ranked

the function as eighth to their organization and clientele, and as ninth to themselves (Table 46, in Appendix II).

The one-way ANOVA analyses results indicate that there were statistically significant differences between agents in the two countries, and between Alberta and Idaho or Washington on their ratings of importance of this function to themselves (Tables 30 and 37). The American agents in each state gave higher rating to the importance of this function to themselves than the Canadian agents, as a whole, and the district agriculturalists in Alberta (Table 46, in Appendix II). So, the American agents in each state consider performing as an 'organizer of groups' as a more important duty than do their counterparts in Alberta or in Canada as a whole.

There were statistically significant differences between the extension workers in Alberta and British Columbia and Washington on their ratings of importance of this function to their organization (Table 33, in Appendix II). The district agriculturalists in Alberta rated the importance of this function to their organization lower than the extension workers in British Columbia and Washington (Table 32, in Appendix II). Thus, the extension workers in Washington and British Columbia perceive 'organizer of groups' to be a more important extension function in the opinion of their extension organization than is the case for their counterparts in Alberta.

The one-way ANOVA analyses results also show that there were statistically significant differences between the two countries, and between each province and each state, as well as

between Idaho and Washington on their ratings of importance of this function to their clientele (Tables 30 and 35, in Appendix II).

Both within states and analyzed as a single group, the agents in Idaho and Washington tended to rate the importance of this function to their clientele higher than the Canadian agents as a single group or when analyzed on a provincial basis. Thus, the extension agents employed in the university model perceive that their clientele expect them to perform as organizers of groups more than their counterparts employed in the government model (Table 46, in Appendix II).

The ANOVAR analysis indicates that there were statistically significant differences among the three ratings in Canada, British Columbia and Washington, with all tending to give higher ratings to the importance of this function to their organization and lower ratings to their clientele (Tables 41 and 46, in Appendix II). These findings indicate role conflict between the extension workers in British Columbia and in Canada as a whole and their organization. So, the extension workers in British Columbia and in Canada as a whole perceive that their extension organizations expect them to perform as organizers of groups more than their clientele do. Although there was role conflict between the extension workers in Washington and their organization, there were role agreements on this function in Idaho and in the United States as a whole.

The data in Table 15 show that 71.2 percent of the agents employed in the government model and 83.8 percent of those

employed in the university model spent 'much or some' time performing as organizers of groups. There was no a statistically significant difference between the American and the Canadian agents on the time spent on this function (Table 44, in Appendix II).

Program administrator: The district agriculturalists rated the importance of this function to their organization as sixth, to their clientele as ninth, and to themselves as eighth. In contrast, the county extension agricultural agents rated the function as eighth to their organization, and as ninth to their clientele and to themselves (Table 46, in Appendix II).

The one-way ANOVA analyses revealed that there were no statistically significant differences between any groups on their ratings of importance of this function to their organization and clientele, and to themselves (Tables 30, 33, 35, 37 and 46, in Appendix II).

The ANOVAR analysis results indicate that there were statistically significant differences among the three ratings in Canada as a single group and when analyzed on a provincial basis. There was role conflict between the extension workers and their clientele (Tables 41 and 46, in Appendix II). Hence, the extension workers employed in the government model perceive that their clientele expect them to perform as program administrators less than they actually do. There was role agreement on this function in Idaho and for the United States in general.

The data in Table 15 indicate that over 65 percent of the agents employed in the two models spent 'much or some' time performing as program administrator. There was no a statistically significant difference between the Canadian and American agents on the time spent on this function (Table 44, in Appendix II). These findings indicate that what agricultural extension workers employed in the university model perform and what they perceived their organizations and clientele expect them to perform are similar. However, their counterparts in the government model experience role conflict, where they perceive that their clientele expect them to perform less as program administrators.

In conclusion, extension workers employed in the government model have been given the responsibilities to administer provincial as well as federal programs. However, these findings indicate that the clientele are not in agreement with such kind of administrative arrangements with the results that the extension worker can not satisfy both groups.

Program planner: The county extension agricultural agents rated the importance of this function to their organization as third, to their clientele as eighth, and to themselves as fifth. In comparison, the district agriculturalists rated the function as fifth to their organization and to themselves, and seventh to their clientele (Table 46, in Appendix II).

The one-way ANOVA analyses results indicate that there were no statistically significant differences between any groups on

their ratings of importance of program planner function to their organization and clientele, and to themselves (Tables 30, 33, 35, 37 and 46, in Appendix II).

The ANOVAR analysis results show that there were statistically significant differences among the three ratings in Alberta and in Canada as a whole, in Washington and in the United States as a whole. The findings indicate that there were role conflicts between the extension agents employed in both models and their clientele. So, the extension agents employed in both models perceive that their clientele expect them to perform as program planners less than the role expectations from their extension organizations as well as their own role performance (Tables 41 and 46, in Appendix II).

The data in Table 15 show that over 86 percent of the Canadian and American agents spent 'much or some' time performing as program planners. There was no a statistically significant difference between the American and Canadian agents on the time spent on this function (Table 44, in Appendix II).

The overall analyses suggest that the program planning function is one of the important duties which the agricultural extension workers employed in both models perform.

Public relations: The district agriculturalists rated the importance of this function to their organization, to their clientele, and to themselves as third. In contrast, the county extension agricultural agents rated the function as third to their organization, sixth to their clientele and fourth to



themselves (Table 46, in Appendix II).

The one-way ANOVA analyses indicate that there were no statistically significant differences between any groups on their ratings of importance of this function to their organization and to themselves (Table 30, in Appendix II).

However, there was a statistically significant difference between the district agriculturalists in Alberta and the county extension agricultural agents in Washington on their ratings of importance of this function to their clientele with the district agriculturalists tending to give higher ratings than the agents in Washington (Table 35, in Appendix II). Accordingly, the extension workers in Alberta preceived more than those in Washington that 'public relations' as one of the more important functions of extension work, which their clientele expect them to perform.

The ANOVAR analysis revealed that there were statistically significant differences among the three ratings in each country as well as within each province and each state (Tables 41 and 46, in Appendix II). There was role-conflict between the extension workers and their clientele in each country as well as within each province and state. Respondents employed in both models perceive that their organization expects that they perform the function of public relations more than their clientele do.

Over 82 percent of the agents employed in both models spent 'much or some' time performing public relation functions (Table 15). There was no a statistically significant difference

between the American and Canadian agents on the time spent on this function (Table 44, in Appendix II).

In summary, respondents in each country perceived the public relations function as one of the important functions which their organizations expect them to perform.

Source of information and ideas: The county extension agricultural agents rated the importance of this function to their organization and clientele as second, and to themselves as first. In comparison, the district agriculturalists rated this function as second to their organization and to themselves, and first to their clientele (Table 46, in Appendix II).

The one-way ANOVA analyses results revealed that there were no statistically significant differences between any groups on their ratings of importance of this function to their organization, to their clientele and to themselves (Tables 30, 33, 35, 37 and 46, in Appendix II).

The ANOVAR analysis results show that there were statistically significant differences among the three ratings in Alberta and in Canada as a whole, and in Washington and the United States as a whole. There was role-conflict between the extension workers and their organization in Alberta and in Canada as a whole, as well as between the extension workers and their organization in Washington or the United States as a whole. Thus, these suggest that all the respondents perceive that their organizations expect them to perform less as a source of information and ideas than do their clientele (Tables 41 and

46, in Appendix II). There was role agreement on the perceived importance of this function to the organizations, clientele and individual extension workers in British Columbia and Idaho.

Over 95 percent of the Canadian and American agents spent 'much or some' time performing as sources of information and ideas (Table 15). There was no a statistically significant difference between the Canadian and the American agents on the time spent on this function (Table 44).

So, the agricultural extension workers employed in both extension organizational models consider serving as sources of information and ideas as one of their major responsibilities (role performance) and they also believe that their clientele, and to a lesser extent their employers, agree with this assessment, thus almost all the respondents perform the function.

Student: The district agriculturalists rated the importance of this function to their organization and to themselves as tenth, and to their clientele as twelfth. In contrast, the county extension agricultural agents rated the same function as tenth to their organization, clientele, and to themselves (Table 46, in Appendix II).

The one-way ANOVA analyses revealed that there were statistically significant differences between the American and Canadian agents, and between the district agriculturalists in Alberta and the county extension agricultural agents in Idaho on their ratings of importance on this function to themselves. The

county extension agricultural agents in Idaho tended to rate the importance of this function to themselves higher than did the district agriculturalists in Alberta; and the Canadian agents tended to rate the same function to themselves higher than the American agents (Tables 30, 37 and 46, in Appendix II). Accordingly, it appears that the Canadian more than the American agents consider performing the student function as a learning experience useful for acquiring facts for professional improvement. However the extension workers in Idaho to a greater degree appear to consider performing the student function more important than do their counterparts in Alberta.

The ANOVAR analysis results indicate that there were statistically significant differences among the three ratings in Canada, in Idaho, in Washington, and in the United States as a whole. There was role conflict between the extension workers in Idaho, in Washington and in America as a whole and their alters; as well as between the Canadian agents and their clientele. The agricultural extension workers in Idaho, in Washington and in America as a whole perceive that they perform this function more than their alters expect them to perform. Similarly, the Canadian extension workers as a whole gave a higher rating to the same function to their organization and to themselves than they believe their clientele would give. There was role agreement on this function in Alberta and in British Columbia, singly (Tables 41 and 46, in Appendix II).

The data in Table 15 show that over 74.5 percent of the agents employed in both models spent time as students learning

new ideas. There was no a statistically significant difference between the Canadian and American agents on the time spent on this function (Table 44, in Appendix II).

The overall analyses indicate that in the university model extension workers consider performing the student function more important than both their organization and clientele do, and those employed in the government model consider the student function more important than their clientele do.

In summary, the role perception and role performance of the agricultural extension workers employed in the government and university models were explored in this section. The agents employed in both models reported their perceptions of importance of the following extension functions to their organization, to their clientele and to themselves.

In the university model, the American extension workers perform as:

- agricultural credit and emergency measures programs administrators to a lesser degree than their alters expect them to perform.

- student to a greater extent than their alters expect them to perform.

- adviser/consultant and source of information and ideas to a greater extent than their organization expect them to perform.

- adult educator, program planner and public relations officer to a greater extent than their clientele expect them to perform.

- inspection acts enforcement officer and organizer and supervisor of events to a lesser degree than their clientele expect them to perform.

In the government model, the Canadian extension workers perform as:

- adviser/consultant to greater extent than their alters expect them to perform.

- agricultural regulations enforcement officer to a lesser degree than their alters expect them to perform.

- organizer of groups to a lesser degree than their organization expects them to perform.

- source of information and ideas to a greater extent than their organization expects them to perform.

- adult educator, program administrator, program planner, public relations officer and student to a greater extent than their clientele expect them to perform.

- agricultural credit program administrator to a lesser degree than their clientele expect them to perform.

The extension workers employed in both models perceived the same ranking of importance on a few of the extension functions to their organization, their clientele and to themselves, a finding which indicates no role-conflict. These functions for the government model are:

1. emergency measures program administrator
2. inspection acts enforcement officer

3. facilitator or service agents
4. organizer and supervisor of events

And for the university model the functions are:

1. agricultural regulations enforcement officer
2. organizer of groups
3. facilitator or service agent
4. program administrator

One notes that 'facilitator or service agent' seems to be an acceptable extension role function for both organizational models for agricultural extension service.

### Summary

#### Methods and Sources of Information

More of the county extension agricultural agents tended to be members in professional societies and read research journals or other research publications than the district agriculturalists.

The extension workers employed in the government model consider the Provincial Department of Agriculture as their main source of research information, while those employed in the university model consider the Land-Grant University as their main source of research information.

#### Extension Methods and Techniques

The agricultural extension workers employed in the university model use a wider variety of methods and techniques

than their counterparts employed in the government model. The findings indicate that extension workers employed in the university model apparently know more methods and techniques to effectively teach their clientele to adopt new practices.

#### Extension Role Functions

Although extension workers employed in both organizational models perceived role-conflict with their organization, or clientele or both on most of the extension role functions, they seem to agree on their perceptions of no role-conflict on 'facilitator or service agent' function.

The summary and conclusions of this investigation, along with other issues that have been identified in the course of the discussion, will be presented in the next chapter.



## CHAPTER VII

### SUMMARY AND CONCLUSIONS

This chapter draws together the previous six chapters through a summary of the presented material. It covers the purpose of the study, research design, findings and conclusions. An overview, limitations and implications of the study and recommendations for further research as well as a concluding note are also presented.

#### Purpose

Agricultural extension services in North America are provided either directly by government departments of agriculture, or by colleges and universities in cooperation with government departments of agriculture. The organizational structures may be described as the government model, in Canada, and the university model, in the United States. The provision of agricultural extension service in Canada is a provincial responsibility. It is organized within an executive branch of the Government, the Ministry of Agriculture. The Cooperative Extension Service in the United States is a cooperatively funded and managed arrangement in which the Federal Department of Agriculture, the Land-Grant Universities, and county governments are partners. It is an integral part of the Land-Grant Universities system.

The government and the university models for organizing

agricultural extension services have been in use for over half a century in North America. Researchers have investigated a variety of problems related to agricultural extension work within systems based on each model. However, the differential effect of these two forms of agricultural extension organization on the role perception and role performance of the individual agricultural extension worker has gone unexplored. It is assumed that how an extension worker carries out his responsibilities is influenced by his understanding of what his employing organization expects him to do and by what the farmers he seeks to serve expect of him.

The purpose of this study was to explore the differences in role perceptions and role performance of agricultural extension workers employed in the two kinds of organizational models for agricultural extension services. More specifically, the research questions addressed in this study were:

1. What are the differences between the positions of agricultural extension workers in the government and the university models?

2. What is the relative importance of different kinds of professional development in the two models?

3. What effects does an extension worker's responsibility for performing regulatory functions have on his role performance?

4. What are the differences between government and university models with regard to extension workers':

- a. selection of adult education methods and techniques?

- b. scope of educational responsibilities?
- c. interest in research?
- d. interest in kinds of professional upgrading?
- e. membership in professional societies?
- f. reading interests?

### Research Design

This study used role theory as the conceptual framework for examining extension workers' roles in systems which are represented by government and university models. It seems reasonable to assume that an extension worker takes account of the perceptions of the often conflicting expectations of his organization and clientele vis a vis his role and determines how much weight he will give them in deciding his own role performance. Role theory as conceived by Parsons was selected because it explicitly recognizes these multiple expectations and gives emphasis to them.

The variables studied include agents' personal characteristics, agents' professional development, agents' use of methods and sources of information, agents' attitude toward regulatory responsibilities, agents' choice of methods and techniques, and agents' extension role functions.

The data were obtained through a mail questionnaire completed by 69 district agriculturalists in Alberta and British Columbia, and 84 county extension agricultural agents in Idaho and Washington. The effective return rate for the questionnaire

was 79.7 percent. These provinces and states were selected to (a) take into account the geographical proximity to the researcher who is located in Vancouver, British Columbia, (b) take into account any differences in administration of agricultural extension services between provinces and between states, and (c) minimize the cost and time to conduct the research.

The data were analyzed using the UBC Statistical Package for Social Sciences to produce various descriptive statistics; chi-squares to examine the degree of association; t-test for testing differences of group means; one-way ANOVA analysis to examine relationship among independent groups with options for contrasts of group means and multiple comparisons of group means; and ANOVAR analysis to examine relationships among dependent (within group) variables.

### Findings

The extension workers employed in the university model were older than their counterparts employed in the government model. The higher percentages of extension workers in the youngest age category in Alberta and British Columbia may be accounted for by the relatively higher turnover rate of people in this age group in these provinces than in the two states.

The extension workers employed in the government model had shorter tenure and were newer to extension work than the extension workers employed in the university model. These

findings may have been due, at least in part, to the higher turnover rate among the youngest age group in the provinces in comparison to the states. Also the university environment may motivate the extension workers to seek to improve their professional competence to perform their extension role, leading to the situation in which the extension workers employed in the university model had longer tenure and had been associated longer with their current organization than their counterparts employed in the government model.

More of the agricultural extension workers employed in the university model possessed higher academic qualifications than their counterparts in the government model at the time of employment. The university model requires higher academic qualifications than the government model at the time of employment, which is consistent with the investigator's expectation.

No respondents had specialized in agricultural extension in either country at the time they had started working in extension work. Although it was expected that extension workers employed in the university model would have specialized in extension and their counterparts employed in the government model have majored in specialized agriculture, the results in this study support only the assumption that the extension workers employed in the government model would major in other areas of agricultural sciences. The two kinds of organizational models for agricultural extension hired their extension workers from all areas of specialization in agriculture rather than restricting

their employment policy to only those extension workers who had specialized in agricultural extension or closely related areas.

Although there seems to be encouragement for continuous professional development to improve the agricultural extension workers' role performance in extension service in both models, the support appears to be somewhat stronger in the university model. This higher level of support may be due to the fact that a university, in order to maintain its high academic expectations as an institution of higher learning, provides more opportunities and encouragement for continuous professional development of its extension workers than a department of agriculture. The results also indicate that more extension workers employed in the university model have completed programs of graduate studies than the extension workers employed in the government model, which is consistent with the investigator's expectation.

Extension education and specialized agriculture appear to be the primary areas of interest for professional development in the government and university models, respectively, a finding which is inconsistent with the assumption. It was expected that the extension workers employed in the university model would specialize in extension because they might assume their role as adult educators, while their counterparts would major in specialized agriculture in order to assume their role as providers of information. Although the results show that extension workers in the university model were not primarily interested in further training in extension education, the

result may be explained by the fact that extension education is an emerging field of specialization in university programs and thus extension workers employed in the university model might be inclined to pursue graduate studies in the more established areas of agricultural sciences.

Most of the extension workers employed in the government model took further training outside their country, while their counterparts employed in the university took their further training in their own country. This finding is consistent with the assumption that in the land-grant universities extension is an integral part of residential instruction which necessitates the establishment of professional upgrading programs for extension workers more than the government model. Moreover, many of the land-grant universities have established three weeks extension summer school training programs for extension workers. Because such programs are few in Canada, most of the Canadian extension workers tend to take these short courses in the United States.

The extension workers employed in the university model have stronger negative views than do those working in the government model concerning the effects of performing regulatory duties on their educational work. While it had been anticipated that the American agents would be negatively predisposed regarding the performance of regulatory duties because of their tradition of separating regulation and education, it had been anticipated that the Canadian agriculturalists would have perceived their regulatory and educational responsibilities as complementary.

However, members of both groups reported that they saw an incompatibility between performing the two functions, with the American extension workers reporting a stronger negative perception. There were unexpected findings for both the American and the Canadian extension workers regarding the performance of regulatory and inspection duties. About one-tenth of the extension workers employed in the university model claimed that they were performing such duties, a claim which appears to be questionable inasmuch as the national agreements reached in 1919 and 1938 clearly state that they shall not be required to perform such duties. Furthermore it seems highly unlikely that agents would be assigned such official duties without their employing organization becoming involved in the decision. In contrast, almost half of the extension workers employed in the government model said that they spent no time performing such duties, arranging instead to have them performed by various other officials. Accordingly the performance of inspection and regulatory duties is not such a clear cut distinguishing feature between the two models as had been previously reported.

More of the extension workers employed in the university model tended to be members of professional societies and read research journals or other research publications than their counterparts employed in the government model. These findings are consistent with the assumption that a university, as an institution of higher learning, may have higher expectations for its extension workers to have membership in professional



societies and to read research publications so as to remain up to date in their professions than a department of agriculture.

The main source of research information for extension workers employed in the university model is the Land-Grant University, and for their counterparts employed in the government model, the Provincial Department of Agriculture. These findings are consistent with the assumptions for the models.

More of the extension workers employed in the university model tended to use various types of methods and techniques than their counterparts employed in the government model do. The finding is in harmony with the expectation that the university, more than the provincial department of agriculture, expects the extension workers to perform as adult educators, and thus they are expected to know more methods and techniques to teach their clientele to adopt new practices.

The agricultural extension workers are men-in-the-middle, between their organization and clientele, who have to link different worlds, if not reconcile conflicting interests. Their role performances might be affected by the expectations of their alters, thus leading to role-conflict. In this study role-conflict refers to the situation in which the extension worker perceives his job performance is incompatible with his perception of the expectations of either his organization, or clientele or both on any of the extension role functions. The agricultural extension workers employed in the government model perceived role-conflict on ten of the extension functions. Six

of the conflicts were with their clientele, two with their organization and two with both the organization and clientele. In contrast, their counterparts employed in the university model perceived the same number of role-conflicts, but in different proportions. Five of the role-conflicts were with their clientele, two with their organization and three with both groups. Both the American and the Canadian extension workers perceived fewer conflicts with their employing organizations than they did with their clientele, a finding that suggests these adult educators identify with their organizations to a greater degree than they identify with their clientele. No role conflict on four of the extension role functions was perceived by either group of extension workers.

Although, the findings indicate these role-conflicts for both groups, there were statistically significant differences between the extension workers employed in the government and the university models on their role perceptions and role expectations on the following eight extension role functions.

Adult educator: Although the extension workers employed in the university model view their organization as an adult education institution more than their counterparts employed in the government model, they did not identify themselves as adult educators more than the extension workers employed in the government model. The finding is inconsistent with the assumptions of this study; however, it is in harmony with a previous study conducted by Metcalfe (1965).

Adviser/Consultant: Extension workers employed in the university model perceived that their clientele expect them to behave as advisers/consultants more than their counterparts employed in the government model did. The extension workers employed in the university model conform to their perceived expectations of their clientele to behave as adviser/consultant, and spend as much time performing this function as their counterparts employed in the government model.

Agricultural credit program administrator: Agricultural extension workers employed in the government model perform agricultural credit program duties as one of their extension functions more than their counterparts employed in the university model do. This result is consistent with the literature on extension. There were 66.7 percent of the the extension workers employed in the government model who reported spending time performing the function. Whereas, 23.9 percent of their counterpart employed in university model declared that they spent 'little' time performing this function. There was a statistically significant difference between the extension workers employed in the government and university models on the time they spent performing this function. Extension workers employed in the government model perceived that their employers do not expect them to perform agricultural credit program administration, while their counterparts employed in the university model perceived that their employers expect them to perform the same function.

Agricultural regulations enforcement officer: Extension

workers employed in the government model view agricultural regulations enforcement duties as one of their extension functions more than their counterparts employed in the university model. Although the extension workers employed in the government model do experience role-conflicts with their employer and clientele, 52.6 percent of them reported spending 'some or little' time performing agricultural regulations enforcement duties, and the remaining extension workers apparently have found a way of insuring that the regulatory work is done by someone else so that any anticipated conflict with their extension work is eliminated. Similarly, 10.6 percent of the extension workers employed in the university model reported spending 'some or little' time performing agricultural regulations enforcement duties. These findings are inconsistent with the literature on extension. There was a statistically significant difference between the two groups on the time they spent performing this function. As has been alluded to previously, these findings lead the researcher to believe that the performance of regulatory duties may not be such a clear cut distinguishing factor between the university and the government models.

Facilitator or service agent: Extension workers employed in the government model perceive that their organization expects them to perform as facilitator or service agent more than their counterparts employed in the university model do. More of the extension workers employed in the government model have perceived their responsibility as providers of services to their

clientele, a finding that is in harmony with the literature on extension.

Inspection acts enforcement officer: Extension workers employed in the government model consider inspection acts enforcement duty to be part of their role performance more than their counterparts employed in the university model do. There was no perceived role-conflict and 46.6 percent of the extension workers employed in the government model reported spending 'some or little' time performing inspection duties, whereas the remaining extension workers have managed not to assume these functions. Although there was extension workers perceived role-conflict between the American agents and their clientele who expect them to perform inspection duties, 7.7 percent of the extension workers reported spending 'little' time performing inspection duties, a finding that is not in harmony with the assumptions of this study and the literature on extension. There was a statistically significant difference between the two groups on the time they spent performing this function.

Organizer of groups: Extension workers employed in the university model consider performing the organizer of groups function as one of their extension duties more than their counterparts employed in the government model. This finding is consistent with the assumptions of this study and the literature on extension. The extension workers employed in the university model seem to encourage and actively help groups of people organize themselves for collective action as a means of helping people to help themselves and to carry out various phases of

extension work.

Student: The extension workers employed in the government model consider performing the student function as a learning experience, useful for acquiring facts for teaching people, more than their counterparts employed in the university model. The extension workers employed in the government model get most of the research information they disseminate to farmers from outside their organization, whereas their counterparts employed in the university model disseminate research information to farmers from the research stations within the university. This situation may explain the fact that student function is seen as more important for extension workers employed in the government model more than their counterparts employed in the university model.

### Conclusions

The major conclusions of this study were centered around the four research questions that were established.

#### Research Question 1

What are the differences between the positions of agricultural extension workers in the government and the university models?

The study did show differences between the positions of the extension workers employed in the government and university

models on eight of the fourteen extension role functions. The extension workers employed in the government model view agricultural credit programs, regulations, inspections, facilitator or service function, and student function to be important extension role functions more than do their counterparts employed in the university model. Similarly, the extension workers employed in the university model consider adult educator, adviser/consultant, and organizer of groups to be important extension role functions more than do their counterparts employed in the government model. The detailed discussions are presented in Chapter 6 and on pages 185 to 190 in Chapter 7.

#### Research Question 2

What is the relative importance of different kinds of professional development in the two models?

The findings indicate that although there seems to be encouragement for continuous professional development to improve the agricultural extension workers' role performance in extension service in both the university and the government models, the support appears to be somewhat stronger in the university than in the government model. The findings also indicate that extension education and specialized agriculture appear to be important areas of interest for professional development in the government and university models, respectively. Findings and discussions are presented in Chapter

5 and on pages 182 to 183 in Chapter 7.

### Research Question 3

What effects does an extension worker's responsibility for performing regulatory functions have on his role performance?

The findings show that agricultural extension workers employed in the university model tended to believe more than their counterparts employed in the government model that regulatory duties may lead to role conflict and hence affect the extension workers' role performance. The detailed discussions are presented in Chapter 5 and on pages 183 to 184 in Chapter 7.

### Research Question 4

What are the differences between government and university models with regard to extension workers':

- a. selection of adult education methods and techniques?
- b. scope of educational responsibilities?
- c. interest in research?
- d. interest in kinds of professional upgrading?
- e. membership in professional societies?
- f. reading interests?

Extension workers employed in the university model use a wider variety of methods and techniques, read or look over more research journals or other research publications, and have more memberships in professional societies than their counterparts



employed in the government model. The extension workers employed in the university model have a wider scope of educational responsibilities, as stipulated in the Smith-Lever Act of 1914, than their counterparts employed in the government model. The extension workers employed in the university model were primarily interested in specialized agriculture, while their counterparts in the government model show major interest in extension education as a field for further study. The findings and discussions are presented in Chapters 5 and 6 and on pages 184 to 185 in Chapter 7.

### Summary

There were differences between the positions of the extension workers employed in the government and university models on eight of the fourteen extension role functions.

The perceptions of the extension workers employed in the two models indicate that the university model appears to offer greater encouragement than the government model to its extension workers to continue professional development in order to improve their role performance. The extension workers employed in the government and in the university models appear to give importance to extension education and specialized agriculture, respectively, for their professional development.

The extension workers employed in the university model tended to believe more than their counterparts employed in the government model that performing regulatory duties may lead to

role conflict and hence affect role performance.

The extension workers employed in the university model tended to use more various types of methods and techniques than their counterparts employed in the government model do. The extension workers employed in the university model seem to have a wider scope of educational responsibilities than their counterparts employed in the government model.

### An Overview

The government and the university models for organizing agricultural extension services have been in use for over half a century in North America. The researcher was interested in the effect of these two major forms of organizing agricultural extension service on the way the individual extension worker performs his role. The purpose of the study was to explore differences in role perceptions and role performance of the agricultural extension workers employed in two forms of organizational models for agricultural extension services.

Extension workers employed in the government model differed from those employed in the university model with regard to the answers to the four research questions of this investigation. The interesting findings were that about one-tenth of the extension workers employed in the university model reported spending time performing inspection and regulatory duties, which they were not required to perform according to a long established policy of the Cooperative Extension Service.

Similarly, about half of the extension workers employed in the government model reported not performing inspection and regulatory duties. Apparently they were able to find an alternative way of insuring that these duties are done by someone else, a finding which is inconsistent with the literature. These results show that the performance of regulatory responsibilities may not be such a clear cut distinguishing feature between the government and university models for agricultural extension services as has been reported in previous studies of extension workers.

During the field visits, the researcher met with several staff at headquarters, including many of the regional directors and district supervisors, in the two provinces and two states. The two fundamental concepts of extension organization, prevalent in both systems, which struck the researcher most during his field visits were: (1) the decentralization of services at the district or regional levels, and (2) the participation of clientele in their own extension programs. Although, the participation of clientele and the decentralization of agricultural extension service at the district level were the primary mandates and organizational structures in the university extension system since the inception of the Cooperative Extension Service, the principles are being gradually implemented in the government model for agricultural extension service. The primary reasons for the decentralization of extension programs and services at the district or regional levels were to encourage the participation

of clientele in planning and implementation of their own extension programs and to ensure effective delivery of extension services to clientele. The 'participation' concept brings a more people-centered perspective to agricultural development and treats the clientele as subjects who control their own lives, i.e. 'helping people to help themselves', which is the philosophical foundation for agricultural extension service. The concepts of decentralization of services and participation of clientele in their own extension programs may also be a way to minimize or eliminate role-conflicts between an extension worker and his employer and clientele. The decentralization can help to bring together the regional director or district supervisor and the local extension worker so that they have a closer working relationship. This relationship is likely to involve discussion on policies and programs, thereby reducing the likelihood of conflict and enhancing consistent role expectations from the supervisor or regional director for the extension worker. Similarly, participation of clientele in extension program planning and implementation facilitates close cooperation between the extension worker and clientele, and may also reduce the likelihood that they will hold conflicting role expectations for the extension worker.

#### Limitations

The ability to generalize the results of this research is restricted by the following factors.

The first limitation was the use of agricultural extension workers from limited geographical areas. The collection of data from the extension workers in the two adjacent provinces and two adjacent states does not necessarily mean that the respondents were representative of the population of extension workers in other provinces and states. This limits the generalizability of the results.

A further limitation resulted from the instrumentation of the inspection and regulation questions. The extension workers employed in the university model reported that they spent time performing inspection and regulatory duties. However, they did not list any inspection responsibilities except some regulatory enforcement duties, such as animal health requirements checking for local fairs, measuring weaning weights of purebred stock and registering pesticide applications, which may not be strictly considered as regulatory duties. Moreover, the extension workers may have considered agricultural regulations enforcement and inspection as having the same meaning when they did not list any inspection responsibilities. This study also indicates that the extension workers employed in the two organizational models see that performing regulatory duties has a negative effect on their educational effort, which leads the investigator to believe that regulatory responsibilities ought to be divorced from educational work in order to avoid role-conflict. However, the effects of performing regulatory duties on the extension worker's educational effectiveness has not been assessed to determine the most effective ways of facilitating the

performance of the educational and regulatory functions.

In addition, it must be remembered that for most of the extension workers in the United States the performance of regulatory and inspection duties was hypothetical, that is, they had no actual experience in carrying out such duties and hence were only trying to predict the possible influence of such work on their educational role. On the other hand, the extension workers in Canada were acquainted with the impact performing such duties appears to have on their clientele's acceptance of them as educators. Accordingly, although both groups responded to the same set of questions, they did so from different experiential bases, thereby yielding answers that were not perfectly comparable.

### Implications

The findings of this investigation, together with resulting insights, suggest some implications for extension.

While the tasks of the agricultural extension workers appear to be clearly associated with education, most of the respondents were more interested in areas of specialized agriculture than in extension education. It appears that they saw their primary function not as educators, but as providers of technical services to their clientele. According to a previous study (Metcalf, 1965), some extension workers do not identify themselves as informal adult educators because they do not conceive of education as taking place in the natural societal

setting. Such a belief about education may affect the extension workers' job performance. This situation places responsibility on professors of extension education to expand training programs to improve extension workers' conception of adult education. This enlarged conception of adult education might lead to increased effectiveness of extension workers as they carry out their educational responsibilities.

About half of the extension workers employed in the government model have reported that they do not spend time performing regulatory and inspection duties, yet apparently they were able to find ways of insuring that these responsibilities were performed by someone else so that any anticipated role-conflict with their extension work was eliminated. It would be timely that in order to reduce perceived role-conflict for extension workers the Departments of Agriculture in Alberta and British Columbia give priority to studying why half of the extension workers continue to perform regulatory and inspection responsibilities directly even though they see such activity as interfering with their educational duties, especially in light of the finding that the other half of the extension workers have evidently devised alternate means for fulfilling their regulatory functions.

Similarly, one-tenth of the extension workers employed in the university model have reported spending time performing some regulatory and inspection duties, which is not in harmony with a policy that has been established by two separate agreements reached in 1919 and 1938. These agreements clearly established

the understanding that Cooperative Extension personnel would not be required to perform inspection and other regulatory activities. It might be appropriate for the Universities of Idaho and Washington State to investigate the regulatory and inspection activities of their extension workers in order to comprehend why a small percentage of them have apparently assumed responsibility for performing such regulatory duties voluntarily despite the fact that their employers do not require them to do so.

#### Recommendations for Further Research

An effective agricultural extension service is of major importance for progress of agricultural development. Although research studies for each of the agricultural extension organization are numerous, comparative studies of the two models are scarce. There is a need for follow up on this study to substantiate or verify its findings. This study points to needed studies and refinement of procedures to use in conducting them.

Although role-conflict has been identified for extension workers in each model, the impact of such conflict on the performance of their duties has not been documented. Accordingly, before any major efforts are undertaken to ameliorate the documented role-conflict, it would seem judicious to first assess its influence on the workers' effectiveness. Then, when the practical importance of role-conflict has been



ascertained, the appropriate corrective action will become apparent.

The populations selected for this research were not necessarily representative of the extension workers employed in the two kinds of organizational models for agricultural extension services, which thus limits the generalizability of the study findings. It is recommended that further research be done by using larger randomly selected samples of extension workers employed in the government and university models and incorporating measures of effectiveness.

This study has provided some insights on the effects of regulatory duty on the extension workers' role performance in the two models for organizing agricultural extension work. However, the results in this study did not support the assumption that performing regulatory responsibilities is the distinguishing factor between the university and government models for agricultural extension service. About half of the extension workers employed in the government model reported that they did not perform regulatory duties, and also about one-tenth of their counterparts employed in the university model declared that they spent time performing regulatory and inspection duties. The researcher believes that such results might have been produced by inadequacies of instrumentation. It is suggested that further research be conducted by refining the instruments for regulatory functions to include precise definitions of regulation and inspection and specific examples of the duties.

The study of agricultural extension organizations are complex due to the many interrelated variables which act upon each other in time. Consequently it becomes difficult to clarify the differences between the two extension organizations in one research. Continued research on this problem should provide evidence to support or refute the conclusions which have been presented herein and would also contribute to a better understanding of the two adult education organizations for agricultural extension service.

#### A Concluding Note

This study has provided some insights on the effects of regulatory duty, one of the distinguishing factors between the university and the government models, on the extension workers' educational role performance. The results of this research indicate that even though the extension workers employed in the university model, who have little or no regulatory duties to perform, have strong negative views on the effects of performing such duties, their counterparts employed in the government model, who have routine responsibilities for carrying out such regulatory duties also believe that performing such duties has a negative effect on their educational efforts though they do not feel as strongly about this effect as do the former group. So, both groups believe that regulatory responsibilities have a negative effect on educational work. The effects of performing regulatory duties on the extension worker's educational

effectiveness is therefore of considerable interest to those who organize extension services. Until some assessment of relative effectiveness is made, the cost of the existing role-conflict cannot be determined nor recommendations made on the most effective ways of facilitating the performance of the educational and regulatory functions.

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## APPENDIX I

## THE QUESTIONNAIRE

INSTRUCTION

1. Please read the cover letter.
2. Please answer all questions on all sides of the questionnaire.
3. Please check if you have answered all questions on all sides of the questionnaire.
4. Please mail the questionnaire in the addressed and stamped envelope.

THANK YOU

## AGRICULTURAL EXTENSION AGENT ROLES

### QUESTIONNAIRE

I am conducting this study of extension agent roles in the provinces of Alberta and British Columbia, and the states of Idaho and Washington. I appreciate your willingness and consent which is indicated by completing and returning this questionnaire in the addressed and stamped envelope enclosed. Your answers are confidential and no name is required. Thank you for your cooperation. (Please do not abbreviate or initial your answers)

#### Background Information

1. Date of birth. 19 \_\_\_\_\_
2. How many years have been working in agricultural extension? (Please include work in other provinces or states) \_\_\_\_\_
3. How many years have you been working in your current agricultural extension position? \_\_\_\_\_
4. What was your highest academic qualification when you started working in agricultural extension?
  - a. \_\_\_\_\_ Diploma (field or major)  
\_\_\_\_\_
  - b. \_\_\_\_\_ Bachelor's degree (field or major)  
\_\_\_\_\_
  - c. \_\_\_\_\_ Master's degree (field or major)  
\_\_\_\_\_
  - d. \_\_\_\_\_ Doctor's degree (field or major)  
\_\_\_\_\_
5. From which colleges or universities did you receive your diplomas or degrees?  
\_\_\_\_\_  
\_\_\_\_\_

#### Professional Development

6. If you were given study leave at full salary to improve your professional competence and qualifications, how would you rank the following in order of their interest to you in this regard. Use an X to indicate those choices which are of no interest whatsoever to you.

\_\_\_\_\_ adult education  
\_\_\_\_\_ agricultural economics  
\_\_\_\_\_ agricultrual mechanics (engineering)  
\_\_\_\_\_ animal science  
\_\_\_\_\_ extension education  
\_\_\_\_\_ forestry  
\_\_\_\_\_ plant science  
\_\_\_\_\_ poultry science  
\_\_\_\_\_ rural sociology  
\_\_\_\_\_ soil science  
\_\_\_\_\_ others (specify) \_\_\_\_\_

7. Have you pursued any further formal study after you started working in agricultural extension?

\_\_\_\_\_ Yes \_\_\_\_\_ No

If your response for question 7 is yes, please answer the following questions.

- a. What further formal study did you pursue?

\_\_\_\_\_

If you have received a degree:

- b. What degree? \_\_\_\_\_

- c. What was your specialization?

\_\_\_\_\_

- d. Which college or university did you attend?

\_\_\_\_\_

8. If you could arrange in-service training for yourself how would you rank the following in order of their usefulness to you. Use an X to indicate those choices which are of no interest whatsoever to you.

\_\_\_\_\_ adult education  
\_\_\_\_\_ agricultural economics  
\_\_\_\_\_ agricultural mechanics (engineering)  
\_\_\_\_\_ animal science  
\_\_\_\_\_ extension education  
\_\_\_\_\_ forestry  
\_\_\_\_\_ plant science  
\_\_\_\_\_ poultry science  
\_\_\_\_\_ rural sociology  
\_\_\_\_\_ soil science  
\_\_\_\_\_ others (specify) \_\_\_\_\_  
\_\_\_\_\_

Sources of Information

9. Are you a member of any professional societies or associations?

\_\_\_\_\_ Yes \_\_\_\_\_ No

If yes, please check any responses that apply.

- \_\_\_\_\_ Canadian Society of Extension  
\_\_\_\_\_ Canadian Association for Adult Education  
\_\_\_\_\_ Adult Education Association of the USA  
\_\_\_\_\_ Agricultural Institute of Canada  
\_\_\_\_\_ Northwest Adult Education Association  
\_\_\_\_\_ National Association of County Agricultural Agents  
\_\_\_\_\_ National Association of Extension Home Economics  
\_\_\_\_\_ National Association of County 4-H Club Agents  
\_\_\_\_\_ American Association of Agricultural Colleges  
\_\_\_\_\_ Rural Sociological Society  
\_\_\_\_\_ Others (specify) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. In addition to the agricultural extension service, which other agencies do extension work with farmers?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



11. Do you read or look over any research journals or other research publications regularly?

\_\_\_\_\_ Yes \_\_\_\_\_ No

If yes, please list the research journals or other research publications.

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12. In addition to what you listed in no. 11, please list job related publications you read regularly.

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13. If you had a question which you could not answer without knowing the latest research results, where would you look for this information? Please rank the following sources in terms of their usefulness as sources of research information.

\_\_\_\_\_ Business or Industry  
\_\_\_\_\_ Federal Department or Ministry of Agriculture  
\_\_\_\_\_ Provincial or State Department of Agriculture  
\_\_\_\_\_ Universities  
\_\_\_\_\_ Others (specify) \_\_\_\_\_

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Regulatory Function

14. Please list the major kinds of regulatory activities you perform if any.

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15. The following statements describe various ways an agent's performance of regulatory functions might have an effect on his educational performance. Please indicate your opinion on each idea expressed by circling the appropriate response for each statement.

a.	An agent who has regulatory duties is not as free to examine all problems objectively as he would be without such duties.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
b.	Performing the educational aspect of regulatory functions for another office or agency has a positive effect on the agent's ability to carry out his other extension duties.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
c.	Regulatory duties may discourage participation of people in a program which the agent organizes.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
d.	Regulatory duties which provide for specified control of stocking, or of land improvement and land use, or for the control of pests or weeds may facilitate an agent's effort to persuade his clientele to adopt the required information.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
e.	Regulatory duties may decrease the agent's influence on his clientele.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
f.	Regulatory duties may increase the agent's status in his farm community, thus can facilitate his effort to influence his clientele to accept the appropriate innovations.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
g.	An agent's regulatory duties may facilitate his effort to perform the other duties associated with his position.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
h.	Regulatory duties which perscribe specfied grades of commodities or inspection of premises may facilitate an agent's educational performance by providing a teachable moment for his clientele to acquire a given information.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
i.	Regulatory duties may interfere with an agent's ability to motivate his clientele to adopt new knowledge or skill.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
j.	An agent needs to remain clear of any type of regulatory duties in order to be effective in his extension work.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree

# Methods and Techniques

16. How frequently do you use the following methods and techniques to teach or disseminate information to farmers? Please check the one most appropriate column for each method and technique. (Often = at least once per week; Sometimes = at least once per month; Rarely = at least once per year)

	Often	Sometimes	Rarely	Never
Agricultural Fairs				
Agriculture field days				
Bulletins				
Circular letters				
Extension newsletters				
Farm visits				
Group discussions				
Lectures				
Meetings				
Messages and announcements				
Newspaper articles				
Posters				
Process demonstrations				
Radio				
Result demonstrations				
Telephone calls				
Television				
Workshops				
Others (specify)				

17. Please rate each of the following methods and techniques in terms of its effectiveness in persuading farmers to adopt recommended practices? Check the one most appropriate column for each method and technique to indicate your rating.

	Very Efficient	Efficient	Somewhat Efficient	Inefficient
Agricultural Fairs _____	_____	_____	_____	_____
Agricultural field days _____	_____	_____	_____	_____
Bulletins _____	_____	_____	_____	_____
Circular letters _____	_____	_____	_____	_____
Extension newsletters _____	_____	_____	_____	_____
Farm visits _____	_____	_____	_____	_____
Group discussions _____	_____	_____	_____	_____
Lectures _____	_____	_____	_____	_____
Meetings _____	_____	_____	_____	_____
Messages and announcements _____	_____	_____	_____	_____
Newspaper articles _____	_____	_____	_____	_____
Posters _____	_____	_____	_____	_____
Process demonstrations _____	_____	_____	_____	_____
Radio _____	_____	_____	_____	_____
Result demonstrations _____	_____	_____	_____	_____
Telephone calls _____	_____	_____	_____	_____
Television _____	_____	_____	_____	_____
Workshops _____	_____	_____	_____	_____
Others (specify) _____	_____	_____	_____	_____
_____	_____	_____	_____	_____

# Role Perceptions and Role Performance

18. Please rate each of the following extension role functions in order of your perception of their importance to your agricultural extension organization, and your perception of their importance to your clientele. Circle the appropriate response for each role function under each column to indicate your rating. (VI = Very Important; I = Important; SI = Somewhat Important; LI = Least Important; NA = Not Applicable)

	Rate of perceived importance to my organization					Rate of perceived importance to my clientele				
	VI	I	SI	LI	NA	VI	I	SI	LI	NA
Adult educator	VI	I	SI	LI	NA	VI	I	SI	LI	NA
Adviser/Consultant	VI	I	SI	LI	NA	VI	I	SI	LI	NA
Agricultural credit program administrator	VI	I	SI	LI	NA	VI	I	SI	LI	NA
Agricultural regulations enforcement officer	VI	I	SI	LI	NA	VI	I	SI	LI	NA
Emergency measures program administrator	VI	I	SI	LI	NA	VI	I	SI	LI	NA
Facilitator or service agent	VI	I	SI	LI	NA	VI	I	SI	LI	NA
Inspection acts enforcement officer	VI	I	SI	LI	NA	VI	I	SI	LI	NA
Organizer and supervisor of events	VI	I	SI	LI	NA	VI	I	SI	LI	NA
Organizer of groups	VI	I	SI	LI	NA	VI	I	SI	LI	NA
Program administrator	VI	I	SI	LI	NA	VI	I	SI	LI	NA
Program planner	VI	I	SI	LI	NA	VI	I	SI	LI	NA
Public relations	VI	I	SI	LI	NA	VI	I	SI	LI	NA
Source of information and ideas	VI	I	SI	LI	NA	VI	I	SI	LI	NA
Student	VI	I	SI	LI	NA	VI	I	SI	LI	NA
Others (specify) _____	VI	I	SI	LI	NA	VI	I	SI	LI	NA
_____	VI	I	SI	LI	NA	VI	I	SI	LI	NA

19. The following are extension role functions which an agricultural extension agent may perform. Please indicate the importance of each role function to you by circling the appropriate response. (VI = Very Important; I = Important; SI = Somewhat Important; LI = Least Important; NA = Not Applicable). Also indicate how much time you spent on each role function by checking the appropriate column.

	Importance to me					Time spent			
	VI	I	SI	LI	NA	Much	Some	Little	None
Adult educator	VI	I	SI	LI	NA	_____	_____	_____	_____
Adviser/Consultant	VI	I	SI	LI	NA	_____	_____	_____	_____
Agricultural credit program administrator	VI	I	SI	LI	NA	_____	_____	_____	_____
Agricultural regulations enforcement officer	VI	I	SI	LI	NA	_____	_____	_____	_____
Emergency measures program administrator	VI	I	SI	LI	NA	_____	_____	_____	_____
Facilitator or service agent	VI	I	SI	LI	NA	_____	_____	_____	_____
Inspection acts enforcement officer	VI	I	SI	LI	NA	_____	_____	_____	_____
Organizer and supervisor of events	VI	I	SI	LI	NA	_____	_____	_____	_____
Organizer of groups	VI	I	SI	LI	NA	_____	_____	_____	_____
Program administrator	VI	I	SI	LI	NA	_____	_____	_____	_____
Program planner	VI	I	SI	LI	NA	_____	_____	_____	_____
Public relations	VI	I	SI	LI	NA	_____	_____	_____	_____
Source of information and ideas	VI	I	SI	LI	NA	_____	_____	_____	_____
Student	VI	I	SI	LI	NA	_____	_____	_____	_____
Others (specify) _____	VI	I	SI	LI	NA	_____	_____	_____	_____
_____	VI	I	SI	LI	NA	_____	_____	_____	_____

# Professional Development

20. Please read each statement and give your opinion about how frequently the idea expressed occurs in your agricultural extension organization. Circle the most appropriate response for each statement.

In my agricultural extension service:

a.	an agent who secures an advanced degree is offered a better position within the agricultural extension service.	Always	Often	Seldom	Never	Uncertain
b.	earning an advanced degree is considered by the organization as the most important method an agent can use to improve his competence.	Always	Often	Seldom	Never	Uncertain
c.	an agent who returns for an advanced degree is paid well enough through fellowships, scholarships, or sabbatical leave to almost equal his regular annual salary.	Always	Often	Seldom	Never	Uncertain
d.	an agent with an advanced degree is paid a higher salary than an agent without an advanced degree if both have the same experience and job responsibilities.	Always	Often	Seldom	Never	Uncertain
e.	an agent who returns for an advanced degree will continue to be entitled to salary increases despite his absence.	Always	Often	Seldom	Never	Uncertain
f.	an agent who earns an advanced degree gets a higher position than an agent of similar professional experience who does not have an advanced degree.	Always	Often	Seldom	Never	Uncertain
g.	when an agent's work begins to decrease in quantity and/or quality, the organization will suggest graduate study.	Always	Often	Seldom	Never	Uncertain
h.	considering both the costs and benefits of obtaining an advanced degree an agent makes a financial gain by getting an advanced degree.	Always	Often	Seldom	Never	Uncertain

THANK YOU FOR YOUR TIME AND COOPERATION IN COMPLETING THIS QUESTIONNAIRE

## APPENDIX II

## SUPPLEMENTARY TABLES



Table 16  
Distribution of Respondents  
by Academic Qualification

<u>Diploma/Degree</u>	Alberta (N=52) <u>Percent</u>	British Columbia (N=17) <u>Percent</u>	Canada (N=69) <u>Percent</u>	Idaho (N=34) <u>Percent</u>	Washington (N=50) <u>Percent</u>	United States (N=84) <u>Percent</u>
Diploma	1.9	-	1.4	-	-	-
Bachelor's Degree	84.6	88.2	85.4	52.9	26.0	36.9
Master's Degree	13.5	11.8	13.0	44.1	64.0	56.0
Doctor's Degree	-	-	-	2.9	10.0	7.1

A chi-square value of 40.4 was obtained.  
This is significant at the 0.01 level.

Table 17  
Distribution of Respondents  
by Field of Specialization

<u>Major/Field</u>	Alberta (N=47) <u>Percent</u>	British Columbia (N=13) <u>Percent</u>	Canada (N=60) <u>Percent</u>	Idaho (N=31) <u>Percent</u>	Washington (N=45) <u>Percent</u>	United States (N=76) <u>Percent</u>
Agricultural Economics	12.8	7.7	11.7	3.2	8.9	6.6
Agricultural Mechanics (Engineering)	2.1	-	1.7	-	2.2	1.3
Animal Science	44.7	76.9	51.7	51.6	26.7	36.8
Plant Science	10.6	7.7	10.6	3.2	17.8	11.8
Poultry Science	2.1	-	1.7	-	-	-
Soil Science	4.3	-	3.3	-	4.4	2.6
Forestry	-	-	-	3.2	2.2	2.6
General Agriculture	19.1	7.7	16.7	6.5	13.3	10.5
Agricultural Education	2.1	-	1.7	25.8	6.7	14.5
Horticulture	-	-	-	3.2	8.9	6.6
Entomology	2.1	-	1.7	-	2.2	1.3
Plant Pathology	-	-	-	-	4.4	2.6
Range Science	-	-	-	3.2	-	1.3
Business Administration	-	-	-	-	2.2	1.3

Table 18  
Distribution of Respondents  
by Universities Attended

<u>Universities</u>	<u>Alberta (N=51) Percent</u>	<u>British Columbia (N=17) Percent</u>	<u>Canada (N=68) Percent</u>	<u>Idaho (N=34) Percent</u>	<u>Washington (N=49) Percent</u>	<u>United States (N=83) Percent</u>
University of Alberta	51.0	11.8	41.2	-	-	-
University of British Columbia	2.0	58.8	16.2	-	-	-
Simon Fraser University	-	5.9	1.5	-	-	-
University of Saskatchewan	15.7	5.9	13.2	-	-	-
University of Manitoba	15.7	11.8	14.7	-	-	-
University of Guelph	2.0	-	1.5	-	-	-
Brigham Young University	3.9	-	2.9	-	-	-
Utah State University	2.0	-	1.5	2.9	-	1.2
Montana State University	2.0	-	1.5	-	-	-
California State University	2.0	-	1.5	-	-	-
University of Minnesota	2.0	-	1.5	-	2.0	1.2
Pennsylvania State University	2.0	-	1.5	-	-	-
Cambridge University	-	5.9	1.5	-	-	-
University of Arizona	-	-	-	2.9	-	1.2
Oregon State University	-	-	-	8.8	12.2	10.8
Colorado State University	-	-	-	-	2.0	1.2
University of California	-	-	-	-	4.1	2.4
Michigan State University	-	-	-	-	2.0	1.2
Oklahoma State University	-	-	-	-	2.0	1.2
Purdue University	-	-	-	2.9	2.0	2.4
Southern Illinois University	-	-	-	2.9	-	1.2
University of Idaho	-	-	-	76.5	6.1	34.9
Washington State University	-	-	-	-	42.9	25.3
Iowa State University	-	-	-	2.9	2.0	2.4
University of Wyoming	-	-	-	-	2.0	1.2
University of Nebraska	-	-	-	-	4.1	2.4
University of Illinois	-	-	-	-	2.0	1.2
Ohio State University	-	-	-	-	6.1	3.6
University of Wisconsin	-	-	-	-	2.0	1.2
North Dakota State University	-	-	-	-	2.0	1.2
South Dakota State University	-	-	-	-	2.0	1.2
University of Arkansas	-	-	-	-	2.0	1.2

Table 19  
Distribution of Respondents by Diplomas  
or Degrees Received After  
Joining Extension Service

Type	Alberta (N= 6) Percent	British Columbia (N= 3) Percent	Canada (N= 9) Percent	Idaho (N= 7) Percent	Washington (N=11) Percent	United States (N=18) Percent
Diploma	16.7	66.7	33.3	-	-	-
Bachelor's Degree	16.7	-	11.1	-	-	-
Master's Degree	66.6	33.3	55.6	100.0	90.9	94.4
Doctor's Degree	-	-	-	-	9.1	5.6

A chi-square value of 9.6 was obtained.  
This is significant at the 0.05 level.

Table 20  
Distribution of Respondents by Further  
Formal Study Specialization

Subject	Alberta (N= 8) Percent	British Columbia (N= 3) Percent	Canada (N=11) Percent	Idaho (N=10) Percent	Washington (N=16) Percent	United States (N=26) Percent
Adult Education	-	66.7	18.2	-	6.3	3.8
Agricultural Economics	-	33.3	9.1	10.0	6.3	7.7
Animal Science	12.5	-	9.1	30.0	25.0	26.9
Extension Education	25.0	-	18.2	20.0	12.5	15.4
Forestry	-	-	-	-	6.3	3.8
Plant Science	25.0	-	18.2	-	6.3	3.8
Soil Science	-	-	-	-	6.3	3.8
Farm Management	12.5	-	9.1	-	18.8	11.5
Communication Development	-	-	-	10.0	-	3.8
Horticulture	12.5	-	9.1	10.0	6.3	7.7
Plant Pathology	-	-	-	10.0	-	3.8
Wild Life Management	-	-	-	-	6.3	3.8
Urban and Regional Planning	-	-	-	10.0	-	3.8
Rural Sociology	12.5	-	9.1	-	-	-

Table 21  
Distribution of Respondents by Colleges  
and Universities Attended for  
Further Formal Study

Colleges and Universities	Alber <sup>t</sup> a (N=17) <u>Percent</u>	British Columbia (N= 5) <u>Percent</u>	Canada (N=22) <u>Percent</u>	Idaho (N=14) <u>Percent</u>	Washington (N=20) <u>Percent</u>	United States (N=34) <u>Percent</u>
University of Saskatchewan	5.9	20.0	9.1	-	-	-
University of Manitoba	5.9	-	4.5	-	-	-
University of Guelph	5.9	20.0	9.1	-	-	-
University of Arizona	23.5	20.0	22.7	21.4	-	8.8
University of Oregon	-	20.0	4.5	7.1	-	2.9
Oregon State University	5.9	-	4.5	-	25.0	14.7
Colorado State University	11.8	-	9.1	7.1	15.0	11.8
University of California	5.9	-	4.5	-	-	-
University of Minnesota	11.8	-	9.1	-	-	-
University of Colorado	11.8	-	9.1	-	-	-
Red Deer College	5.9	-	4.5	-	-	-
University of Calgary	5.9	-	4.5	-	-	-
Purdue University	-	-	-	-	5.0	2.9
University of Idaho	-	-	-	57.1	15.0	32.4
Washington State University	-	-	-	-	25.0	14.7
Iowa State University	-	-	-	-	5.0	2.9
University of Northern Colorado	-	-	-	7.1	-	2.9
Ohio State University	-	-	-	-	5.0	2.9
Seattle University	-	-	-	-	5.0	2.9
Reading University	-	20.0	4.5	-	-	-

Table 22  
Comparison of District Agriculturalists and  
County Extension Agricultural Agents on  
Professional Development Ideas:  
Level of Significance 1)

<u>Statements</u>	<u>AB vs BC</u> <u>I Prob</u>	<u>AB vs ID</u> <u>I Prob</u>	<u>AB vs WA</u> <u>I Prob</u>	<u>BC vs ID</u> <u>I Prob</u>	<u>BC vs WA</u> <u>I Prob</u>	<u>ID VS WA</u> <u>I Prob</u>	<u>CA vs US</u> <u>I Prob</u>
1. An agent who secures an advanced degree is offered a better position within the agricultural extension service:							
2. Earning an advanced degree is considered by the organization as the most important method an agent can use to improve his competence:		**	**	**	*		**
3. An agent who returns for an advanced degree is paid well enough through fellowships, scholarships, or sabbatical leave to almost equal his regular annual salary:			*	*		**	
4. An agent with an advanced degree is paid a higher salary than an agent without an advanced degree if both have the same experience and job responsibilities:		**	**	**	**		**
5. An agent who returns for an advanced degree will continue to be entitled to salary increases despite his absence:		*		*		*	

Table 22-- Continued

<u>Statements</u>	<u>AB vs BC</u> <u>T Prob</u>	<u>AB vs ID</u> <u>T Prob</u>	<u>AB vs WA</u> <u>T Prob</u>	<u>BC vs ID</u> <u>T Prob</u>	<u>BC vs WA</u> <u>T Prob</u>	<u>ID VS WA</u> <u>T Prob</u>	<u>CA vs US</u> <u>T Prob</u>
6. An agent who earns an advanced degree gets a higher position than an agent of similar professional experience who does not have an advanced degree:		**	*	*			**
7. When an agent's work begins to decrease in quantity and/or quality, the organization will suggest graduate study:							
8. Considering both the costs and benefits of obtaining an advanced degree an agent makes a financial gain by getting an advanced degree:		*	*				**

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\*\*Significant at the 0.01 level

\*Significant at the 0.05 level

AB=Alberta

BC=British Columbia

CA=Canada

ID=Idaho

WA=Washington

US=United States

1) Refer to Tables 23 and 38 for the complete T-Test and Oneway ANOVA analyses.

Table 23  
Comparison of District Agriculturalists and  
County Extension Agricultural Agents on  
Professional Development Ideas: Oneway ANOVA

<u>Statements</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>	<u>T Values</u>	<u>T Prob.</u>
1. An agent who secures an advanced degree is offered a better position within the agricultural extension service:						
Between groups	3	0.60	0.55	0.65		
Within groups	146	1.08				
2. Earning an advanced degree is considered by the organization as the most important method an agent can use to improve his competence:						
Between groups	3	8.38	10.34	0.00**		
Within groups	146	0.81				
Contrast						
AB vs ID	146				-5.02	0.00**
AB vs WA	146				-3.36	0.00**
BC vs ID	146				-3.74	0.00**
BC vs WA	146				-2.39	0.02*
3. An agent who returns for an advanced degree is paid well enough through fellowships, scholarships, or sabbatical leave to almost equal his regular annual salary:						
Between groups	3	3.16	3.25	0.02*		
Within groups	141	0.97				
Contrast						
AB vs WA	141				1.97	0.05*
BC vs ID	141				-2.19	0.03*
ID vs WA	141				2.68	0.01**

Table 23-- Continued

<u>Statements</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>	<u>T Values</u>	<u>T Prob.</u>
4. An agent with an advanced degree is paid a higher salary than an agent without an advanced degree if both have the same experience and job responsibilities:						
Between groups	3	21.13	18.42	0.00**		
Within groups	144	1.15				
Contrast						
AB vs ID	144				-5.81	0.00**
AB vs WA	144				-4.80	0.00**
BC vs ID	144				-5.42	0.00**
BC vs WA	144				-4.58	0.00**
5. An agent who returns for an advanced degree will continue to be entitled to salary increases despite his absence:						
Between groups	3	5.83	2.66	0.05*		
Within groups	144	2.20				
Contrast						
AB vs ID	144				-2.44	0.02*
BC vs ID	144				-2.19	0.03*
ID vs WA	144				2.28	0.02*
6. An agent who earns an advanced degree gets a higher position than an agent of similar professional experience who does not have an advanced degree:						
Between groups	3	5.26	4.09	0.01**		
Within groups	145	1.29				
Contrast						
AB vs ID	145				-3.04	0.00**
AB vs WA	145				-2.16	0.03*
BC vs ID	145				-2.44	0.02*



Table 23-- Continued

<u>Statements</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>	<u>T Values</u>	<u>T Prob.</u>
7. When an agent's work begins to decrease in quantity and/or quality, the organization will suggest graduate study:						
Between groups	3	1.27	1.38	0.92		
Within groups	140	0.25				
8. Considering both the costs and benefits of obtaining an advanced degree an agent makes a financial gain by getting an advanced degree:						
Between groups	3	3.21	2.68	0.05*		
Within groups	146	1.20				
Contrast						
AB vs ID	146				-2.19	0.03*
AB vs WA	146				-2.24	0.03*

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\*\*Significant at the 0.01 level

\*Significant at the 0.05 level

AB=Alberta  
ID=Idaho

BC=British Columbia  
WA=Washington

CA=Canada  
US=United States

Table 24  
Comparison of District Agriculturalists and  
County Extension Agricultural Agents on  
Attitude Towards Regulatory Functions:  
Level of Significance 1)

<u>Statements</u>	<u>AB vs BC</u> <u>I Prob</u>	<u>AB vs ID</u> <u>I Prob</u>	<u>AB vs WA</u> <u>I Prob</u>	<u>BC vs ID</u> <u>I Prob</u>	<u>BC vs WA</u> <u>I Prob</u>	<u>ID VS WA</u> <u>I Prob</u>	<u>CA vs US</u> <u>I Prob</u>
1. An agent who has regulatory duties is not as free to examine all problems objectively as he would be without such duties:			**		**		**
2. Performing the educational aspect of regulatory functions for another office or agency has a positive effect on the agent's ability to carry out his other extension duties:						*	
3. Regulatory duties may discourage participation of people in a program which the agent organizes:							*
4. Regulatory duties which provide for specified control of stocking, or of land improvement and land use, or for the control of pests or weeds may facilitate an agent's efforts to persuade his clientele to adopt the required information:						***	
5. Regulatory duties may decrease the agent's influence on his clientele:			*				**

Table 24-- Continued

<u>Statements</u>	<u>AB vs BC</u> <u>T Prob</u>	<u>AB vs ID</u> <u>T Prob</u>	<u>AB vs WA</u> <u>T Prob</u>	<u>BC vs ID</u> <u>T Prob</u>	<u>BC vs WA</u> <u>T Prob</u>	<u>ID vs WA</u> <u>T Prob</u>	<u>CA vs US</u> <u>T Prob</u>
6. Regulatory duties may increase the agent's status in his farm community, thus can facilitate his effort to influence his clientele to accept the appropriate innovations:							
7. An agent's regulatory duties may facilitate his effort to perform the other duties associated with his position:		*	**				**
8. Regulatory duties which prescribe specified grades of commodities or inspection of premises may facilitate an agent's educational performance by providing a teachable moment for his clientele to acquire a given information:		*	**				**
9. Regulatory duties may interfere with an agent's ability to motivate his clientele to adopt new knowledge or skill:							*
10. An agent needs to remain clear of any type of regulatory duties in order to be effective in his extension work:		*	**		*		**

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\*\*Significant at the 0.01 level

\*Significant at the 0.05 level

AB=Alberta  
ID=Idaho

BC=British Columbia  
WA=Washington

CA=Canada  
US=United States

1) Refer to Tables 29 and 39 for the complete T-Test and Oneway ANOVA analyses.

Table 25  
Comparison of District Agriculturalists and County  
Extension Agricultural Agents on Attitude Toward  
Regulatory Functions: Oneway ANOVA

<u>Statements</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>	<u>T Values</u>	<u>T Prob.</u>
1. An agent who has regulatory duties is not as free to examine all problems objectively as he would be without such duties:						
Between groups	3	4.22	4.89	0.00**		
Within groups	143	0.86				
Contrast						
AB vs WA	143				3.29	0.00**
BC vs WA	143				2.87	0.01**
2. Performing the educational aspect of regulatory functions for another office or agency has a positive effect on the agent's ability to carry out his other extension duties:						
Between groups	3	2.37	2.14	0.10		
Within groups	142	1.11				
Contrast						
ID vs WA	142				2.43	0.02*
3. Regulatory duties may discourage participation of people in a program which the agent organizes:						
Between groups	3	1.46	1.74	0.16		
Within groups	141	0.83				

Table 25-- Continued

<u>Statements</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>	<u>T Values</u>	<u>T Prob.</u>
4. Regulatory duties which provide for specified control of stock, or of land improvement and land use, or for the control of pests or weeds may facilitate an agent's efforts to persuade his clientele to adopt the required information:						
Between groups	3	2.42	2.22	0.09		
Within groups	141	1.09				
Contrast						
ID vs WA	141				2.48	0.01**
5. Regulatory duties may decrease the agent's influence on his clientele:						
Between groups	3	1.84	2.24	0.09		
Within groups	141	0.82				
Contrast						
AB vs WA	141				2.19	0.03**
6. Regulatory duties may increase the agent's status in his farm community, thus can facilitate his effort to influence his clientele to accept the appropriate innovations:						
Between groups	3	1.23	1.43	0.24		
Within groups	141	0.86				
7. An agent's regulatory duties may facilitate his effort to perform the other duties associated with his position:						
Between groups	3	4.39	4.58	0.00**		
Within groups	141	0.96				
Contrast						
AB vs ID	141				2.19	0.03*
AB vs WA	141				3.65	0.00**

Table 25-- Continued

<u>Statements</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>	<u>T Values</u>	<u>T Prob.</u>
8. Regulatory duties which prescribe specified grades of commodities or inspection of premises may facilitate an agent's educational performance by providing a teachable moment for his clientele to acquire a given information:						
Between groups	3	4.24	3.86	0.01**		
Within groups	140	1.10				
Contrast						
AB vs ID	140				2.11	0.04*
AB vs WA	140				3.31	0.00**
9. Regulatory duties may interfere with an agent's ability to motivate his clientele to adopt new knowledge or skill:						
Between groups	3	1.35	1.49	0.22		
Within groups	141	0.90				
10. An agent needs to remain clear of any type of regulatory duties in order to be effective in his extension work:						
Between groups	3	6.40	5.75	0.00**		
Within groups	139	1.11				
Contrast						
AB vs ID	139				2.18	0.03*
AB vs WA	139				4.01	0.00**
BC vs WA	139				2.27	0.02*

\*\*Significant at the 0.01 level

\*Significant at the 0.05 level

AB=Alberta  
ID=IdahoBC=British Columbia  
WA=WashingtonCA=Canada  
US=United States

Table 26  
Distribution of Respondents by Membership  
in Professional Societies

<u>Societies or Associations</u>	<u>Alberta (N=51) Percent</u>	<u>British Columbia (N=16) Percent</u>	<u>Canada (N=67) Percent</u>	<u>Idaho (N=33) Percent</u>	<u>Washington (N=49) Percent</u>	<u>United States (N=82) Percent</u>
Canadian Society of Extension	25.5	18.8	23.9	-	-	-
Agricultural Institute of Canada	43.1	87.5	53.7	3.0	-	1.2
National Association of County Agricultural Agents	-	-	-	93.9	75.5	82.9
National Association of County 4-H Club Agents	-	-	-	9.1	6.1	7.3
British Columbia Institute of Agrologists	-	31.3	4.5	-	-	-
Canadian Society of Range Management	-	25.0	6.0	-	-	-
Canadian Society of Animal Science	2.0	12.5	4.5	-	-	-
Alberta Institute of Agrologists	9.8	-	7.5	-	-	-
American Society of Animal Science	-	-	-	9.1	10.2	9.8
Idaho Association of County Agricultural Agents	-	-	-	6.1	-	2.4
Washington Extension Agents Association	-	-	-	-	8.2	4.9
Others	-	-	-	27.3	81.6	59.8

Table 27  
Respondents' Rankings of Sources  
of Research Information

Sources	Alberta		British Columbia		Canada		Idaho		Washington		United States	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Business or Industry	3.00	4	3.62	4	3.13	4	2.67	2	2.58	2	2.61	2
Ministry or Federal Department of Agriculture	2.58	2	2.29	2	2.52	2	2.80	3	2.73	3	2.76	3
Provincial or State Department of Agriculture	1.28	1	1.13	1	1.25	1	3.10	4	3.20	4	3.16	4
Universities	2.92	3	2.87	3	2.91	3	1.03	1	1.13	1	1.09	1

Table 28  
Comparison of District Agriculturalists and  
County Extension Agricultural Agents on  
Sources of Research Information:  
Level of Significance 1)

Sources	AB vs BC	AB vs ID	AB vs WA	BC vs ID	BC vs WA	ID vs WA	CA vs US
	T Prob	T Prob	T Prob	T Prob	T Prob	T Prob	F Prob
Business or Industry	*		*	**	**		**
Ministry or Federal Department of Agriculture							
Provincial or State Department of Agriculture		**	**	**	**		**
Universities		**	**	**	**		**

\*\*Significant at the 0.01 level

\*Significant at the 0.05 level

AB=Alberta

BC=British Columbia

CA=Canada

ID=Idaho

WA=Washington

US=United States

1) Refer to Tables 27 and 40 for the complete Oneway ANOVA analyses.



Table 29  
Comparison of District Agriculturalists and County  
Extension Agricultural Agents on Sources of  
Research Information: Oneway ANOVA

<u>Sources</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>	<u>T Values</u>	<u>T Prob.</u>
Business or Industry:						
Between groups	3	4.16	5.54	0.00**		
Within groups	120	0.75				
Contrast						
AB vs BC	120				-2.27	0.03*
AB vs WA	120				2.28	0.02*
BC vs ID	120				3.18	0.00**
BC vs WA	120				3.76	0.00**
Ministry or Federal Department of Agriculture:						
Between groups	3	0.89	1.00	0.40		
Within groups	108	0.89				
Provincial or State Department of Agriculture:						
Between groups	3	34.63	76.24	0.00**		
Within groups	111	0.45				
Contrast						
AB vs ID	111				-10.21	0.00**
AB vs WA	111				-12.34	0.00**
BC vs ID	111				-8.54	0.00**
BC vs WA	111				-9.70	0.00**
Universities:						
Between groups	3	39.12	98.48	0.00**		
Within groups	140	0.40				
Contrast						
AB vs ID	140				13.24	0.00**
AB vs WA	140				13.93	0.00**
BC vs ID	140				9.36	0.00**
BC vs WA	140				9.34	0.00**

\*\*Significant at the 0.01 level

\*Significant at the 0.05 level

AB=Alberta  
ID=Idaho

BC=British Columbia  
WA=Washington

CA=Canada  
US=United States

Table 30  
Comparison of District Agriculturalists  
and County Extension Agricultural Agents  
on Their Ratings of Extension Role Functions:  
Oneway ANOVA

Extension Role Functions	Perceived Importance to Their Organization				Perceived Importance to Their Clientele				Importance to The Respondents			
	Degrees of Freedom	Mean Squares	F Ratios	F Prob.	Degrees of Freedom	Mean Squares	F Ratios	F Prob.	Degrees of Freedom	Mean Squares	F Ratios	F Prob.
Adult educator												
Between groups	1	3.35	8.20	0.00**	1	2.28	2.50	0.12	1	1.98	3.54	0.06
Within groups	146	0.41			146	0.91			148	0.56		
Adviser/Consultant												
Between groups	1	1.41	2.13	0.15	1	3.90	10.71	0.00**	1	0.21	0.45	0.50
Within groups	149	0.66			146	0.36			148	0.47		
Agricultural Credit program administrator												
Between groups	1	10.73	9.34	0.00**	1	15.83	11.99	0.00**	1	12.25	12.81	0.00**
Within groups	148	1.15			144	1.32			148	0.96		
Agricultural regulations enforcement officer												
Between groups	1	9.55	12.20	0.00**	1	8.92	10.99	0.00**	1	6.21	10.49	0.00**
Within groups	148	0.78			146	0.81			147	0.59		
Emergency measures program administrator												
Between groups	1	0.33	0.25	0.62	1	0.05	0.03	0.87	1	2.58	2.29	0.13
Within groups	147	1.30			145	1.73			148	1.13		
Facilitator or service agent												
Between groups	1	4.34	3.98	0.05*	1	0.60	0.56	0.45	1	0.07	0.07	0.79
Within groups	147	1.09			145	1.07			146	1.04		
Inspection acts enforcement officer												
Between groups	1	4.40	7.23	0.01**	1	1.48	1.65	0.20	1	7.45	14.30	0.00**
Within groups	149	0.61			147	0.90			147	0.52		

Table 30-- Continued

Extension Role Functions	Perceived Importance to Their Organization				Perceived Importance to Their Clientele				Importance to The Respondents			
	Degrees of Freedom	Mean Squares	F Ratios	F Prob.	Degrees of Freedom	Mean Squares	F Ratios	F Prob.	Degrees of Freedom	Mean Squares	F Ratios	F Prob.
Ogranizer and supervisor of events												
Between groups	1	0.22	0.23	0.64	1	1.24	1.47	0.23	1	0.57	0.69	0.41
Within groups	146	0.96			145	0.84			147	0.83		
Organizer of groups												
Between groups	1	2.07	3.12	0.08	1	11.37	15.29	0.00**	1	6.19	7.61	0.01**
Within groups	149	0.66			146	0.74			148	0.81		
Program administrator												
Between groups	1	3.63	3.32	0.07	1	0.72	0.58	0.45	1	0.57	0.48	0.49
Within groups	147	1.09			146	1.24			148	1.18		
Program planner												
Between groups	1	1.75	2.09	0.15	1	0.12	0.13	0.72	1	0.19	0.25	0.62
Within groups	146	0.84			146	0.98			147	0.75		
Public relations												
Between groups	1	0.25	0.43	0.51	1	3.57	3.70	0.06	1	0.38	0.60	0.44
Within groups	148	0.59			142	0.96			147	0.63		
Sources of information and ideas												
Between groups	1	0.06	0.10	0.75	1	0.50	1.14	0.29	1	0.28	0.80	0.37
Within groups	149	0.60			145	0.44			149	0.35		
Student												
Between groups	1	0.89	0.55	0.46	1	0.10	0.07	0.79	1	11.17	5.81	0.02*
Within groups	135	1.62			130	1.47			133	1.92		

\*\*Significant at the 0.01 level

\*Significant at the 0.05 level

Table 31  
Comparison of the Respondents'  
Three Ratings of Extension Role  
Functions: ANOVAR (F Prob.) 1)

<u>Functions</u>	<u>Alberta</u>	<u>British Columbia</u>	<u>Canada</u>	<u>Idaho</u>	<u>Washington</u>	<u>United States</u>
Adult educator	**	**	**	**	**	**
Adviser/Consultant	*	*	**		**	**
Agricultural credit program administrator			**		*	**
Agricultural regulations enforcement officer	*		**		*	
Emergency measures program administrator				**	**	**
Facilitator or service agent						
Inspection acts enforcement officer						*
Organizer and supervisor of events				**		*
Organizer of groups		**	**		*	
Program administrator	**	*	**		*	
Program planner	**		**		**	**
Public relations	**	**	**	**	**	**
Sources of information and ideas	*		*		**	**
Student			*	*	**	**

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\*\*Significant at the 0.01 level

\*Significant at the 0.05 level

AB=Alberta

BC=British Columbia

CA=Canada

ID=Idaho

WA=Washington

US=United States

1) Refer to Table 41 for the complete ANOVAR analysis.

Table 32  
Comparison of the Respondents' Ratings  
of the Perceived Importance of Extension  
Role Functions to their Organization:  
Level of Significance 1)

Functions	AB vs BC <u>T</u> <u>Prob</u>	AB vs ID <u>T</u> <u>Prob</u>	AB vs WA <u>T</u> <u>Prob</u>	BC vs ID <u>T</u> <u>Prob</u>	BC vs WA <u>T</u> <u>Prob</u>	ID vs WA <u>T</u> <u>Prob</u>	CA vs US <u>F</u> <u>Prob</u>
Adult educator			**		**		**
Adviser/Consultant							
Agricultural credit program administrator			**		**		**
Agricultural regulations enforcement officer		**	*	*	*		**
Emergency measures program administrator							
Facilitator or service agent		*					*
Inspection acts enforcement officer			**				**
Organizer and supervisor of events	*			*			
Organizer of groups	*		**				
Program administrator							
Program planner							
Public relations							
Sources of information and ideas							
Student							

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\*\*Significant at the 0.01 level

\*Significant at the 0.05 level

AB=Alberta

BC=British Columbia

CA=Canada

ID=Idaho

WA=Washington

US=United States

1) Refer to Tables 30 and 33 for the complete Oneway ANOVA analysis.

Table 33  
Comparison of the Respondents' Ratings  
of the Perceived Importance of Extension  
Role Functions to their Organization:  
Oneway ANOVA

<u>Functions</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>	<u>T Values</u>	<u>T Prob.</u>
Adult Educator						
Between groups	3	1.48	3.65	0.01**		
Within groups	144	0.41				
Contrast						
AB vs WA	144				-2.84	0.01**
BC vs WA	144				-2.63	0.01**
Adviser/consultant						
Between groups	3	1.14	1.73	0.16		
Within groups	147	0.66				
Agricultural credit program administrator						
Between groups	3	4.48	3.91	0.01*		
Within groups	146	1.15				
Contrast						
AB vs WA	146				2.75	0.01**
BC vs WA	146				2.86	0.01**
Agricultural regulations enforcement officer						
Between groups	3	3.32	4.20	0.01**		
Within groups	146	0.79				
Contrast						
AB vs ID	146				2.69	0.01**
AB vs WA	146				2.49	0.02*
BC vs ID	146				2.46	0.02*
BC vs WA	146				2.32	0.03*
Emergency measures program administrator						
Between groups	3	0.58	0.44	0.73		
Within groups	145	1.31				

Table 33-- Continued

<u>Functions</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>	<u>T Values</u>	<u>T Prob.</u>
Facilitator or service agent						
Between groups	3	1.89	1.72	0.17		
Within groups	145	1.10				
Contrast						
AB vs ID	145				2.03	0.04*
Inspection acts enforcement officer						
Between groups	3	1.66	2.71	0.05*		
Within groups	147	0.61				
Contrast						
AB vs WA	147				2.75	0.01**
Organizer and supervisor of events						
Between groups	3	2.11	2.63	0.08		
Within groups	144	0.93				
Contrast						
AB vs BC	144				-1.98	0.05*
AB vs ID	144				2.39	0.02*
Organizer of groups						
Between groups	3	2.56	4.05	0.01**		
Within groups	147	0.63				
Contrast						
AB vs BC	147				-2.44	0.02*
AB vs WA	147				-3.10	0.00**
Program administrator						
Between groups	3	1.30	1.18	0.32		
Within groups	145	1.11				
Program planner						
Between groups	3	0.80	0.95	0.42		
Within groups	144	0.85				
Public relations						
Between groups	3	0.40	0.68	0.57		
Within groups	146	0.59				

Table 33-- Continued

<u>Functions</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>	<u>T Values</u>	<u>T Prob.</u>
Sources of information and ideas						
Between groups	3	0.45	0.76	0.52		
Within groups	147	0.60				
Student						
Between groups	3	1.45	0.90	0.44		
Within groups	133	1.61				

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\*\*Significant at the 0.01 level

\*Significant at the 0.05 level

AB=Alberta  
ID=Idaho

BC=British Columbia  
WA=Washington

CA=Canada  
US=United States



Table 34  
Comparison of the Respondents' Ratings  
of the Perceived Importance of Extension  
Role Functions to their Clientele:  
Level of Significance 1)

<u>Functions</u>	<u>AB vs BC</u> <u>I Prob</u>	<u>AB vs ID</u> <u>I Prob</u>	<u>AB vs WA</u> <u>I Prob</u>	<u>BC vs ID</u> <u>I Prob</u>	<u>BC vs WA</u> <u>I Prob</u>	<u>ID vs WA</u> <u>I Prob</u>	<u>CA vs US</u> <u>F Prob</u>
Adult educator	**			**	**		
Adviser/Consultant			**		*		**
Agricultural credit program administrator			**	*	**		**
Agricultural regulations enforcement officer		*	*	*	*		**
Emergency measures program administrator							
Facilitator or service agent							
Inspection acts enforcement officer							
Organizer and supervisor of events							
Organizer of groups		**	*	**	*	*	**
Program administrator						*	
Program planner							
Public relations			*				
Sources of information and ideas							
Student							

\*\*Significant at the 0.01 level

\*Significant at the 0.05 level

AB=Alberta

BC=British Columbia

CA=Canada

ID=Idaho

WA=Washington

US=United States

1) Refer to Tables 30 and 35 for the complete Oneway ANOVA analysis.

Table 35  
Comparison of the Respondents' Ratings  
of the Perceived Importance of Extension  
Role Functions to their Clientele:  
Oneway ANOVA

<u>Functions</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>	<u>T Values</u>	<u>T Prob.</u>
Adult Educator						
Between groups	3	3.89	4.52	0.00**		
Within groups	144	0.86				
Contrast						
AB vs BC	144				3.21	0.00**
BC vs ID	144				-3.52	0.00**
BC vs WA	144				-3.11	0.00**
Adviser/consultant						
Between groups	3	1.67	4.64	0.00**		
Within groups	144	0.36				
Contrast						
AB vs WA	144				-3.61	0.00**
BC vs WA	144				-2.16	0.03*
Agricultural credit program administrator						
Between groups	3	6.18	4.68	0.00**		
Within groups	142	1.32				
Contrast						
AB vs WA	142				3.08	0.00**
BC vs ID	142				1.95	0.05*
BC vs WA	142				3.00	0.00**
Agricultural regulations enforcement officer						
Between groups	3	3.12	3.80	0.01**		
Within groups	144	0.82				
Contrast						
AB vs ID	144				2.33	0.02**
AB vs WA	144				2.39	0.02*
BC vs ID	144				2.37	0.02*
BC vs WA	144				2.35	0.02*
Emergency measures program administrator						
Between groups	3	1.30	0.75	0.52		
Within groups	143	1.72				

Table 35-- Continued

<u>Functions</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>	<u>T Values</u>	<u>T Prob.</u>
Facilitator or service agent						
Between groups	3	0.46	0.42	0.74		
Within groups	143	1.08				
Inspection acts enforcement officer						
Between groups	3	0.78	0.86	0.46		
Within groups	145	0.90				
Organizer and supervisor of events						
Between groups	3	0.71	0.84	0.47		
Within groups	143	0.85				
Organizer of groups						
Between groups	3	4.81	6.57	0.00*		
Within groups	144	0.73				
Contrast						
AB vs ID	144				-3.89	0.00*
AB vs WA	144				-2.13	0.04*
BC vs ID	144				-3.44	0.00**
BC vs WA	144				-2.11	0.04*
ID vs WA	144				1.95	0.05*
Program administrator						
Between groups	3	1.85	1.51	0.21		
Within groups	144	1.22				
Contrast						
ID vs WA	144				1.98	0.05*
Program planner						
Between groups	3	0.30	0.30	0.82		
Within groups	144	0.98				
Public relations						
Between groups	3	1.64	1.69	0.17		
Within groups	140	0.97				
Contrast						
AB vs WA	140				2.19	0.03*

Table 35-- Continued

<u>Functions</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>	<u>T Values</u>	<u>T Prob.</u>
Sources of information and ideas						
Between groups	3	0.64	1.47	0.23		
Within groups	143	0.44				
Student						
Between groups	3	1.66	1.14	0.34		
Within groups	128	1.46				

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\*\*Significant at the 0.01 level

\*Significant at the 0.05 level

AB=Alberta  
ID=Idaho

BC=British Columbia  
WA=Washington

CA=Canada  
US=United States

Table 36  
Comparison of the Respondents' Ratings  
of the Importance of Extension Role  
Functions to themselves:  
Level of Significance 1)

<u>Functions</u>	<u>AB vs BC</u> <u>I Prob</u>	<u>AB vs ID</u> <u>I Prob</u>	<u>AB vs WA</u> <u>I Prob</u>	<u>BC vs ID</u> <u>I Prob</u>	<u>BC vs WA</u> <u>I Prob</u>	<u>ID vs WA</u> <u>I Prob</u>	<u>CA vs US</u> <u>F Prob</u>
Adult educator				*	**		
Adviser/Consultant							
Agricultural credit program administrator			**		**		**
Agricultural regulations enforcement officer			**	*	**		**
Emergency measures program administrator			*				
Facilitator or service agent							
Inspection acts enforcement officer		*	**	**	**		**
Organizer and supervisor of events	*		*				
Organizer of groups		*	**				**
Program administrator							
Program planner							
Public relations							
Sources of information and ideas							
Student		*					*

\*\*Significant at the 0.01 level

\*Significant at the 0.05 level

AB=Alberta

BC=British Columbia

CA=Canada

ID=Idaho

WA=Washington

US=United States

1) Refer to Tables 30 and 37 for the complete Oneway ANOVA analysis.

Table 37  
Comparison of the Respondents' Ratings  
of the Importance of Extension Role  
Functions to themselves: Oneway ANOVA

<u>Functions</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>	<u>T Values</u>	<u>T Prob.</u>
Adult Educator						
Between groups	3	1.44	2.61	0.05*		
Within groups	146	0.55				
Contrast						
BC vs ID	146				-2.04	0.04*
BC vs WA	146				-2.78	0.01**
Adviser/consultant						
Between groups	3	0.32	0.68	0.56		
Within groups	146	0.47				
Agricultural credit program administrator						
Between groups	3	5.19	5.49	0.00**		
Within groups	146	0.95				
Contrast						
AB vs WA	146				3.65	0.00**
BC vs WA	146				2.96	0.00**
Agricultural regulations enforcement officer						
Between groups	3	2.53	4.28	0.01**		
Within groups	145	0.59				
Contrast						
AB vs WA	145				2.76	0.01**
BC vs ID	145				2.06	0.04*
BC vs WA	145				3.04	0.00**
Emergency measures program administrator						
Between groups	3	1.87	1.66	0.18		
Within groups	146	1.13				
Contrast						
AB vs WA	146				2.18	0.03*

Table 37-- Continued

<u>Functions</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>	<u>T Values</u>	<u>T Prob.</u>
Facilitator or service agent						
Between groups	3	0.55	0.53	0.66		
Within groups	144	1.04				
Inspection acts enforcement officer						
Between groups	3	2.72	5.19	0.00**		
Within groups	145	0.52				
Contrast						
AB vs ID	145				2.20	0.03*
AB vs WA	145				2.86	0.01**
BC vs ID	145				2.69	0.01**
BC vs WA	145				3.14	0.00**
Organizer and supervisor of events						
Between groups	3	2.18	2.72	0.05*		
Within groups	145	0.80				
Contrast						
AB vs BC	145				-1.98	0.05*
AB vs WA	145				-2.23	0.03*
Organizer of groups						
Between groups	3	2.21	2.69	0.05*		
Within groups	146	0.82				
Contrast						
AB vs ID	146				-2.24	0.03*
AB vs WA	146				-2.52	0.01**
Program administrator						
Between groups	3	0.88	0.74	0.53		
Within groups	146	1.18				
Program planner						
Between groups	3	0.69	0.92	0.43		
Within groups	145	0.75				
Public relations						
Between groups	3	0.39	0.63	0.60		
Within groups	145	0.63				

Table 37-- Continued

<u>Functions</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>	<u>T Values</u>	<u>T Prob.</u>
Sources of information and ideas						
Between groups	1	0.13	0.35	0.79		
Within groups	147	0.36				
Student						
Between groups	3	3.98	2.04	0.11		
Within groups	131	1.95				
Contrast						
AB vs ID	131				-2.10	0.04*

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\*\*Significant at the 0.01 level

\*Significant at the 0.05 level

AB=Alberta  
ID=Idaho

BC=British Columbia  
WA=Washington

CA=Canada  
US=United States



Table 38  
Comparison of District Agriculturalists  
With County Extension Agricultural Agents  
on Professional Development Ideas: T-Test

<u>Statements</u>	<u>Means</u>	Degrees of <u>Freedom</u>	<u>T</u> <u>Values</u>	<u>T</u> <u>Prob.</u>
1. an agent who secures an advanced degree is offered a better position within the agricultural extension service:				
Canada	3.29	148	-0.06	0.95
United States	3.31			
2. earning an advanced degree is considered by the organization as the most important method an agent can use to improve his competence:				
Canada	3.06	148	-5.19	0.00**
United States	3.83			
3. an agent who returns for an advanced degree is paid well enough through fellowships, scholarships, or sabbatical leave to almost equal his regular annual salary:				
Canada	2.68	143	0.23	0.82
United States	2.64			
4. an agent with an advanced degree is paid a higher salary than an agent without an advanced degree if both have the same experience and job responsibilities:				
Canada	2.85	146	-7.15	0.00**
United States	4.12			

Table 38-- Continued

<u>Statements</u>	<u>Means</u>	Degrees of <u>Freedom</u>	T <u>Values</u>	T <u>Prob.</u>
5. an agent who returns for an advanced degree will continue to be entitled to salary increases despite his absence:				
Canada	2.06			
		146	-1.60	0.11
United States	2.46			
6. an agent who earns an advanced degree gets a higher position than an agent of similar professional experience who does not have an advanced degree:				
Canada	2.87			
		147	-3.34	0.00**
United States	3.49			
7. when an agent's work begins to decrease in quantity and/or quality, the organization will suggest graduate study:				
Canada	2.30			
		142	-0.10	0.92
United States	2.31			
8. considering both the costs and benefits of obtaining an advanced degree an agent makes a financial gain by getting an advanced degree:				
Canada	2.88			
		148	-2.85	0.01**
United States	3.39			

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\*\*Significant at the 0.01 level.

Table 39  
Comparison of District Agriculturalists With  
County Extension Agricultural Agents on Attitude  
towards Regulatory Functions: T-Test

<u>Statements</u>	<u>Means</u>	Degrees of <u>Freedom</u>	<u>T</u> <u>Values</u>	<u>T</u> <u>Prob.</u>
1. An agent who has regulatory duties is not as free to examine all problems objectively as he would be without such duties:				
Canada	2.20	145	3.60	0.00**
United States	1.64			
2. Performing the educational aspect of regulatory functions for another office or agency has a positive effect on the agent's ability to carry out his other extension duties:				
Canada	3.20	144	0.48	0.64
United States	3.11			
3. Regulatory duties may discourage participation of people in a program which the agent organizes:				
Canada	2.20	143	2.22	0.03*
United States	1.86			
4. Regulatory duties which provide for specified control of stocking, or of land improvement and land use, or for the control of pests or weeds may facilitate an agent's effort to persuade his clientele to adopt the required information:				
Canada	3.15	143	0.57	0.57
United States	3.05			

Table 39-- Continued

<u>Statements</u>	<u>Means</u>	Degrees of		
		<u>Freedom</u>	<u>T</u> <u>Values</u>	<u>T</u> <u>Prob.</u>
5. Regulatory duties may decrease the agent's influence on his clientele:				
Canada	2.36	143	2.50	0.01**
United States	1.99			
6. Regulatory duties may increase the agent's status in his farm community, thus can facilitate his effort to influence his clientele to accept the appropriate innovations:				
Canada	2.32	143	1.65	0.10
United States	2.06			
7. An agent's regulatory duties may facilitate his effort to perform the other duties associated with his position:				
Canada	2.77	143	3.16	0.00**
United States	2.25			
8. Regulatory duties which prescribe specified grades of commodities or inspection of premises may facilitate an agent's educational performance by providing a teachable moment for his clientele to acquire a given information:				
Canada	3.23	142	2.88	0.01**
United States	2.73			

Table 39-- Continued

<u>Statements</u>	<u>Means</u>	Degrees of <u>Freedom</u>	T <u>Values</u>	T <u>Prob.</u>
9. Regulatory duties may interfere with an agent's ability to motivate his clientele to adopt new knowledge or skill:				
Canada	2.39	143	2.12	0.04*
United States	2.05			
10. An agent needs to remain clear of any type of regulatory duties in order to be effective in his extension work:				
Canada	2.51	141	3.84	0.00**
United States	1.83			

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\*\*Significant at the 0.01 level

\*Significant at the 0.05 level

Table 40  
Comparison of District Agriculturalists With County  
Extension Agricultural Agents on Sources of  
Research Information: Oneway ANOVA  
(Between Countries)

<u>Sources</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>
Business or Industry:				
Between	1	8.50	11.02	0.00**
Within	122	0.77		
Ministry or Federal Department of Agriculture:				
Between	1	1.65	1.87	0.17
Within	110	0.88		
Provincial or State Department of Agriculture:				
Between	1	103.51	230.34	0.00**
Within	113	0.45		
Universities:				
Between	1	117.17	298.05	0.00**
Within	142	0.39		

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\*\*Significant at the 0.01 level

\*Significant at the 0.05 level

Table 41  
Comparison of the Respondents'  
Three Ratings of Extension Role  
Functions: ANOVAR

<u>Functions</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>
Adult educator				
Alberta				
Between	2	5.25	13.24	0.00**
Within	98	0.40		
British Columbia				
Between	2	6.77	24.01	0.00**
Within	30	0.28		
Canada				
Between	2	10.64	27.64	0.00**
Within	130	0.39		
Idaho				
Between	2	2.41	9.64	0.00**
Within	58	0.25		
Washington				
Between	2	12.22	37.15	0.00**
Within	94	0.33		
United States				
Between	2	13.72	44.74	0.00**
Within	154	0.31		
Adviser/consultant				
Alberta				
Between	2	1.07	4.30	0.02**
Within	96	0.25		
British Columbia				
Between	2	0.90	4.33	0.02**
Within	30	0.21		
Canada				
Between	2	1.87	7.89	0.00**
Within	128	0.24		

Table 41-- Continued

<u>Functions</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>
Idaho				
Between	2	0.51	2.02	0.14
Within	62	0.25		
Washington				
Between	2	6.47	14.32	0.00**
Within	94	0.45		
United States				
Between	2	5.51	14.28	0.00**
Within	158	0.39		
Agricultural credit program administrator				
Alberta				
Between	2	0.88	2.87	0.06
Within	92	0.31		
British Columbia				
Between	2	0.77	1.76	0.19
Within	30	0.44		
Canada				
Between	2	1.50	4.46	0.01**
Within	124	0.34		
Idaho				
Between	2	0.41	1.66	0.20
Within	62	0.25		
Washington				
Between	2	0.92	4.04	0.02*
Within	94	0.23		
United States				
Between	2	1.32	5.67	0.00**
Within	158	0.23		
Agricultural regulations enforcement officer				
Alberta				
Between	2	0.84	3.44	0.04*
Within	94	0.25		



Table 41-- Continued

<u>Functions</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>
British Columbia				
Between	2	0.27	1.49	0.24
Within	30	0.18		
Canada				
Between	2	1.10	4.86	0.01**
Within	126	0.23		
Idaho				
Between	2	0.07	0.69	0.50
Within	62	0.10		
Washington				
Between	2	0.77	3.93	0.02*
Within	94	0.20		
United States				
Between	2	0.33	2.00	0.14
Within	158	0.17		
Emergency measures program administrator				
Alberta				
Between	2	0.42	1.72	0.19
Within	94	0.25		
British Columbia				
Between	2	0.19	0.68	0.52
Within	30	0.28		
Canada				
Between	2	0.38	1.50	0.23
Within	126	0.25		
Idaho				
Between	2	1.63	4.86	0.01**
Within	62	0.34		
Washington				
Between	2	3.71	10.06	0.00**
Within	92	0.37		

Table 41-- Continued

<u>Functions</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>
United States				
Between	2	5.27	15.00	0.00**
Within	156	0.35		
Facilitator or service agent				
Alberta				
Between	2	0.33	0.86	0.43
Within	96	0.39		
British Columbia				
Between	2	0.82	1.25	0.30
Within	28	0.66		
Canada				
Between	2	0.32	0.70	0.50
Within	126	0.46		
Idaho				
Between	2	1.69	2.54	0.09
Within	56	0.67		
Washington				
Between	2	0.67	1.14	0.32
Within	94	0.59		
United States				
Between	2	1.46	2.35	0.10
Within	152	0.62		
Inspection acts enforcement officer				
Alberta				
Between	2	0.06	0.31	0.74
Within	96	0.20		
British Columbia				
Between	2	0.44	1.84	0.18
Within	30	0.24		
Canada				
Between	2	0.02	0.07	0.93
Within	128	0.21		

Table 41-- Continued

<u>Functions</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>
Idaho				
Between	2	0.29	1.42	0.25
Within	62	0.21		
Washington				
Between	2	0.36	2.84	0.06
Within	94	0.13		
United States				
Between	2	0.65	4.16	0.02*
Within	158	0.16		
Organizer and supervisor of events				
Alberta				
Between	2	0.42	1.16	0.32
Within	94	0.37		
British Columbia				
Between	2	0.29	1.20	0.32
Within	28	0.24		
Canada				
Between	2	0.34	1.00	0.37
Within	124	0.34		
Idaho				
Between	2	3.30	5.97	0.00**
Within	64	0.55		
Washington				
Between	2	0.01	0.02	0.98
Within	92	0.38		
United States				
Between	2	1.52	3.23	0.04*
Within	158	0.47		
Organizer of groups				
Alberta				
Between	2	0.50	1.91	0.15
Within	96	0.26		

Table 41-- Continued

<u>Functions</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>
British Columbia				
Between	2	3.15	13.40	0.00**
Within	30	0.24		
Canada				
Between	2	2.19	8.02	0.00**
Within	128	0.27		
Idaho				
Between	2	1.40	2.94	0.06
Within	64	0.48		
Washington				
Between	2	1.40	3.13	0.05*
Within	94	0.45		
United States				
Between	2	0.20	0.42	0.66
Within	160	0.49		
Program administrator				
Alberta				
Between	2	6.13	9.72	0.00**
Within	98	0.63		
British Columbia				
Between	2	1.90	3.66	0.04*
Within	30	1.52		
Canada				
Between	2	8.02	13.48	0.00**
Within	130	0.60		
Idaho				
Between	2	0.01	0.02	0.98
Within	64	0.47		
Washington				
Between	2	1.75	3.57	0.03*
Within	92	0.49		

Table 41-- Continued

<u>Functions</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>
United States				
Between	2	1.05	2.17	0.12
Within	158	0.49		
Program planner				
Alberta				
Between	2	5.80	13.79	0.00**
Within	96	0.42		
British Columbia				
Between	2	1.33	2.73	0.08
Within	30	0.49		
Canada				
Between	2	7.08	16.43	0.00**
Within	128	0.43		
Idaho				
Between	2	1.63	2.60	0.08
Within	62	0.63		
Washington				
Between	2	10.84	28.06	0.00**
Within	94	0.39		
United States				
Between	2	11.13	22.62	0.00**
Within	158	0.49		
Public relations				
Alberta				
Between	2	2.38	7.84	0.00**
Within	94	0.30		
British Columbia				
Between	2	2.00	5.20	0.01**
Within	26	0.39		
Canada				
Between	2	4.10	12.79	0.00**
Within	122	0.32		

Table 41-- Continued

<u>Functions</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>
Idaho				
Between	2	3.16	8.09	0.00**
Within	64	0.39		
Washington				
Between	2	7.72	15.95	0.00**
Within	92	0.48		
United States				
Between	2	10.65	24.04	0.00**
Within	158	0.44		
Source of information and ideas				
Alberta				
Between	2	1.34	4.40	0.02*
Within	94	0.31		
British Columbia				
Between	2	0.06	0.24	0.79
Within	30	0.26		
Canada				
Between	2	1.13	3.84	0.02*
Within	126	0.29		
Idaho				
Between	2	0.37	1.50	0.23
Within	64	0.25		
Washington				
Between	2	2.02	8.65	0.00**
Within	94	0.23		
United States				
Between	2	2.19	9.15	0.00**
Within	160	0.24		
Student				
Alberta				
Between	2	1.34	2.64	0.08
Within	76	0.51		
British Columbia				
Between	2	0.86	1.32	0.29
Within	28	0.65		

Table 41-- Continued

<u>Functions</u>	<u>Degrees of Freedom</u>	<u>Mean Squares</u>	<u>F Ratios</u>	<u>F Prob.</u>
Canada				
Between	2	1.74	3.21	0.05*
Within	104	0.54		
Idaho				
Between	2	3.12	4.11	0.02*
Within	56	0.76		
Washington				
Between	2	6.91	10.09	0.00**
Within	82	0.69		
United States				
Between	2	9.92	14.05	0.00*
Within	140	0.71		

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\*\*Significant at the 0.01 level

\*Significant at the 0.05 level

Table 42  
Comparison of District Agriculturalists With  
County Extension Agricultural Agents by  
Frequency of Use of Various Methods  
and Techniques: Chi-square

<u>Methods and Techniques</u>	<u>Degrees of Freedom</u>	<u>Chi-square Values</u>	<u>Prob.</u>
Agricultural fairs	3	2.00	0.57
Agricultural field days	3	3.66	0.30
Bulletins	3	25.91	0.00**
Circular letters	3	19.01	0.00**
Extension newsletters	3	31.59	0.00**
Farm visits	1	0.05	0.82
Group discussions	3	16.55	0.00**
Lectures	3	5.79	0.12
Meetings	2	0.02	0.99
Messages and announcements	3	6.23	0.10
Newspaper articles	3	19.99	0.00**
Posters	3	17.56	0.00**
Process demonstrations	3	9.99	0.02*
Radio	3	13.62	0.00**
Result demonstrations	3	1.31	0.73
Telephone calls	2	0.09	0.96
Television	3	3.14	0.37
Workshops	3	1.37	0.71

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\*\*Significant at the 0.01 level

\*Significant at the 0.05 level



Table 43  
Comparison of District Agriculturalists With  
County Extension Agricultural Agents  
Based on Rated Efficiency of Various  
Methods and Techniques: Chi-Square

<u>Methods and Techniques</u>	<u>Degrees of Freedom</u>	<u>Chi-Square Values</u>	<u>Prob.</u>
Agricultural fairs	3	6.59	0.09
Agricultural field days	2	4.15	0.13
Bulletins	3	10.19	0.02*
Circular letters	3	6.18	0.10
Extension newsletters	3	5.15	0.16
Farm visits	3	8.79	0.03*
Group discussions	3	5.59	0.13
Lectures	3	0.99	0.80
Meetings	3	6.42	0.09
Messages and announcements	3	1.47	0.69
Newspaper articles	3	0.21	0.98
Posters	3	1.89	0.60
Process demonstrations	3	0.72	0.87
Radio	3	2.81	0.42
Result demonstrations	3	10.79	0.01**
Telephone calls	3	1.83	0.61
Television	3	4.23	0.24
Workshops	2	1.99	0.37

---

\*\*Significant at the 0.01 level

\*Significant at the 0.05 level

Table 44  
Comparison of District Agriculturalists With  
County Extension Agricultural Agents by  
Time Spent on Extension Role Functions:  
Chi-square

<u>Extension Role Functions</u>	<u>Degrees of Freedom</u>	<u>Chi-square Values</u>	<u>Prob.</u>
Adult educator	2	4.01	0.13
Adviser/Consultant	3	0.94	0.81
Agricultural credit program administrator	3	29.05	0.00**
Agricultural regulations enforcement officer	2	25.96	0.00**
Emergency measures program administrator	3	5.89	0.12
Facilitator or service agents	3	5.87	0.12
Inspection acts enforcement officer	2	24.37	0.00**
Organizer and supervisor of events	3	1.52	0.68
Organizer of groups	3	4.01	0.26
Program administrator	3	4.29	0.23
Program planner	3	2.06	0.56
Public relations	2	5.14	0.08
Sources of information and ideas	2	4.00	0.13
Student	3	3.09	0.38

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\*\*Significant at the 0.01 level

Table 45  
Distribution of Respondents Based on  
Rated Efficiency of Various  
Methods and Techniques

Alberta

<u>Methods and Techniques</u>	<u>Very Efficient</u>	<u>Efficient</u>	<u>Somewhat Efficient</u>	<u>Inefficient</u>
Agricultural Fairs	2.0	4.1	65.3	28.6
Agricultural field days	19.2	51.9	28.8	-
Bulletins	8.0	28.0	48.0	16.0
Circular letters	3.9	31.4	54.9	9.8
Extension newsletters	11.8	45.1	33.3	9.8
Farm visits	70.6	29.4	-	-
Group discussions	31.4	41.2	25.5	2.0
Lectures	12.2	30.6	53.1	4.1
Meetings	17.6	47.1	33.3	2.0
Messages and announcements	5.9	23.5	49.0	21.6
Newspaper articles	9.6	32.7	51.9	5.8
Posters	2.0	12.0	46.0	40.0
Process demonstrations	18.8	43.8	33.3	4.2
Radio	7.7	28.8	51.9	11.5
Result demonstrations	23.1	53.8	21.2	1.9
Telephone calls	36.5	48.1	15.4	-
Television	4.3	25.5	53.2	17.0
Workshops	21.6	56.9	21.6	-

British Columbia

<u>Methods and Techniques</u>	<u>Very Efficient</u>	<u>Efficient</u>	<u>Somewhat Efficient</u>	<u>Inefficient</u>
Agricultural Fairs	5.9	5.9	52.9	35.3
Agricultural field days	43.8	37.5	18.8	-
Bulletins	11.8	58.8	23.5	5.9
Circular letters	12.5	31.3	43.8	12.5
Extension newsletters	17.6	58.8	23.5	-
Farm visits	76.5	23.5	-	-
Group discussions	23.5	41.2	29.4	5.9
Lectures	5.9	35.3	52.9	5.9
Meetings	11.8	29.4	58.8	-
Messages and announcements	6.3	31.3	62.5	-
Newspaper articles	11.8	41.2	41.2	5.9
Posters	-	11.8	64.7	23.5
Process demonstrations	35.3	29.4	29.4	5.9
Radio	6.3	43.8	50.0	-
Result demonstrations	41.2	47.1	11.8	-
Telephone calls	29.4	58.8	5.9	5.9
Television	6.3	31.3	37.5	25.0
Workshops	47.1	41.2	11.8	-

Table 45-- ContinuedIdaho

<u>Methods and Techniques</u>	<u>Very</u> <u>Efficient</u>	<u>Efficient</u>	<u>Somewhat</u> <u>Efficient</u>	<u>Inefficient</u>
Agricultural Fairs	3.2	22.6	58.1	16.1
Agricultural field days	28.1	53.1	18.8	-
Bulletins	12.1	39.4	45.5	3.0
Circular letters	12.5	34.4	43.8	9.4
Extension newsletters	12.1	48.5	33.3	6.1
Farm visits	63.6	33.3	3.0	-
Group discussions	18.2	48.5	33.3	-
Lectures	9.1	27.3	54.5	9.1
Meetings	21.2	57.6	21.2	-
Messages and announcements	12.1	33.3	42.4	12.1
Newspaper articles	9.4	50.0	37.5	3.1
Posters	-	15.2	45.5	39.4
Process demonstrations	30.3	39.4	27.3	3.0
Radio	9.4	43.8	40.6	6.3
Result demonstrations	59.4	31.3	6.3	3.1
Telephone calls	42.4	45.5	12.1	-
Television	11.5	46.2	34.6	7.7
Workshops	27.3	57.6	15.2	-

Washington

<u>Methods and Techniques</u>	<u>Very</u> <u>Efficient</u>	<u>Efficient</u>	<u>Somewhat</u> <u>Efficient</u>	<u>Inefficient</u>
Agricultural Fairs	2.0	12.0	66.0	20.0
Agricultural field days	34.0	56.0	10.0	-
Bulletins	14.3	53.1	32.7	-
Circular letters	10.9	54.3	30.4	4.3
Extension newsletters	34.0	46.0	20.0	-
Farm visits	62.0	20.0	14.0	4.0
Group discussions	18.0	54.0	28.0	-
Lectures	6.0	32.0	56.0	6.0
Meetings	10.2	63.3	26.5	-
Messages and announcements	6.5	30.4	50.0	13.0
Newspaper articles	14.3	24.5	53.1	8.2
Posters	-	4.4	51.1	44.4
Process demonstrations	22.9	43.8	31.3	2.1
Radio	8.3	29.2	39.6	22.9
Result demonstrations	44.9	49.0	6.1	-
Telephone calls	34.0	46.0	20.0	-
Television	9.5	33.3	35.7	21.4
Workshops	34.7	57.1	8.2	-

Table 45-- ContinuedCanada

<u>Methods and Techniques</u>	<u>Very Efficient</u>	<u>Efficient</u>	<u>Somewhat Efficient</u>	<u>Inefficient</u>
Agricultural Fairs	3.0	4.5	62.1	30.3
Agricultural field days	25.0	48.5	26.5	-
Bulletins	9.0	35.8	41.8	13.4
Circular letters	6.0	31.3	52.2	10.4
Extension newsletters	13.2	48.5	30.9	7.4
Farm visits	72.1	27.9	-	-
Group discussions	29.4	41.2	26.5	2.9
Lectures	10.6	31.8	53.0	4.5
Meetings	16.2	42.6	39.7	1.5
Messages and announcements	6.0	25.4	52.2	16.4
Newspaper articles	10.1	34.8	49.3	5.8
Posters	1.5	11.9	50.7	35.8
Process demonstrations	23.1	40.0	32.3	4.6
Radio	7.4	32.4	51.5	8.8
Result demonstrations	27.5	52.2	18.8	1.4
Telephone calls	34.8	50.7	13.0	1.4
Television	4.8	27.0	49.2	19.0
Workshops	27.9	52.9	19.1	-

United States

<u>Methods and Techniques</u>	<u>Very Efficient</u>	<u>Efficient</u>	<u>Somewhat Efficient</u>	<u>Inefficient</u>
Agricultural Fairs	2.5	16.0	63.0	18.5
Agricultural field days	31.7	54.9	13.4	-
Bulletins	13.4	47.6	37.8	1.2
Circular letters	11.5	46.2	35.9	6.4
Extension newsletters	25.3	47.0	25.3	2.4
Farm visits	62.7	25.3	9.6	2.4
Group discussions	18.1	51.8	30.1	-
Lectures	7.2	30.1	55.4	7.2
Meetings	14.6	61.0	24.4	-
Messages and announcements	8.9	31.6	46.8	12.7
Newspaper articles	12.3	34.6	46.9	6.2
Posters	-	9.0	48.7	42.3
Process demonstrations	25.9	42.0	29.6	2.5
Radio	8.7	35.0	40.0	16.2
Result demonstrations	50.6	42.0	6.2	1.2
Telephone calls	37.3	45.8	16.9	-
Television	10.3	38.2	35.3	16.2
Workshops	31.7	57.3	11.0	-

Table 46  
Distribution of Respondents by Extension  
Role Functions As ranked by Mean Scores

Alberta

<u>Functions</u>	<u>Perceived Importance to Organization</u>		<u>Perceived Importance to Clientele</u>		<u>Role Performance</u>	
	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>
Adult educator	4.35	1	3.79	5	4.34	4
Adviser/Consultant	4.35	1	4.31	2	4.58	2
Agricultural credit program administrator	2.08	12	2.29	12	2.02	12
Agricultural regulations enforcement officer	1.87	13	1.88	13	1.65	13
Emergency measures program administrator	2.27	11	2.40	10	2.20	11
Facilitator or service agent	3.82	7	3.75	6	3.68	6
Inspection acts enforcement officer	1.65	14	1.65	14	1.60	14
Organizer and supervisor of events	3.76	8	3.88	4	3.68	6
Organizer of groups	3.69	9	3.53	7	3.52	9
Program administrator	3.92	6	3.25	9	3.58	8
Program planner	4.06	5	3.53	7	4.16	5
Public relations	4.27	4	4.00	3	4.38	3
Sources of information and ideas	4.29	3	4.42	1	4.62	1
Student	2.62	10	2.35	11	2.53	10

British Columbia

<u>Functions</u>	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>
Adult educator	4.24	5	2.94	9	3.94	6
Adviser/Consultant	4.47	3	4.38	2	4.82	1
Agricultural credit program administrator	2.35	10	2.56	10	2.12	11
Agricultural regulations enforcement officer	2.00	13	2.06	11	1.88	12
Emergency measures program administrator	2.12	12	1.88	13	1.88	12
Facilitator or service agent	3.53	9	3.94	4	3.63	8
Inspection acts enforcement officer	1.53	14	1.56	14	1.82	14
Organizer and supervisor of events	4.29	4	4.13	3	4.19	4
Organizer of groups	4.24	5	3.38	7	3.71	7
Program administrator	3.88	8	3.19	8	3.59	9
Program planner	4.00	7	3.50	6	4.00	5
Public relations	4.53	2	3.93	5	4.53	3
Sources of information and ideas	4.59	1	4.75	1	4.65	2
Student	2.13	11	2.00	12	2.50	10

Table 46-- ContinuedIdaho

<u>Functions</u>	<u>Perceived Importance to Organization</u>		<u>Perceived Importance to Clientele</u>		<u>Role Performance</u>	
	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>
Adult educator	4.48	1	3.94	5	4.39	4
Adviser/Consultant	4.36	3	4.52	2	4.58	2
Agricultural credit program administrator	1.79	12	1.88	12	1.71	12
Agricultural regulations enforcement officer	1.33	14	1.41	14	1.41	13
Emergency measures program administrator	2.28	11	2.41	11	2.03	11
Facilitator or service agent	3.34	9	3.74	7	3.45	9
Inspection acts enforcement officer	1.36	13	1.55	13	1.24	14
Organizer and supervisor of events	3.61	8	4.18	4	3.71	7
Organizer of groups	3.88	6	4.27	3	3.97	6
Program administrator	3.67	7	3.67	9	3.65	8
Program planner	4.16	5	3.70	8	4.03	5
Public relations	4.30	4	3.82	6	4.41	3
Sources of information and ideas	4.45	2	4.58	1	4.68	1
Student	2.78	10	2.58	10	3.23	10

Washington

<u>Functions</u>	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>
Adult educator	4.71	1	3.77	5	4.52	3
Adviser/Consultant	4.06	6	4.75	1	4.56	2
Agricultural credit program administrator	1.49	12	1.57	12	1.31	12
Agricultural regulations enforcement officer	1.43	13	1.45	13	1.22	13
Emergency measures program administrator	2.04	11	2.24	10	1.73	11
Facilitator or service agent	3.45	9	3.61	6	3.73	8
Inspection acts enforcement officer	1.22	14	1.35	14	1.18	14
Organizer and supervisor of events	3.96	7	4.09	3	4.08	6
Organizer of groups	4.18	5	3.90	4	3.98	7
Program administrator	3.55	8	3.17	9	3.33	9
Program planner	4.33	3	3.50	8	4.31	4
Public relations	4.22	4	3.56	7	4.25	5
Sources of information and ideas	4.37	2	4.65	2	4.74	1
Student	2.58	10	2.14	11	3.02	10

Table 46-- ContinuedCanada

<u>Functions</u>	<u>Perceived Importance to Organization</u>		<u>Perceived Importance to Clientele</u>		<u>Role Performance</u>	
	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>
Adult educator	4.32	4	3.59	6	4.24	4
Adviser/Consultant	4.38	1	4.33	2	4.64	1
Agricultural credit program administrator	2.15	12	2.35	10	2.04	12
Agricultural regulations enforcement officer	1.90	13	1.93	13	1.71	13
Emergency measures program administrator	2.23	11	2.27	11	2.12	11
Facilitator or service agent	3.75	9	3.79	5	3.67	7
Inspection acts enforcement officer	1.62	14	1.63	14	1.66	14
Organizer and supervisor of events	3.89	7	3.94	4	3.80	6
Organizer of groups	3.83	8	3.49	8	3.57	9
Program administrator	3.91	6	3.24	9	3.58	8
Program planner	4.04	5	3.52	7	4.12	5
Public relations	4.34	3	3.98	3	4.42	3
Sources of information and ideas	4.36	2	4.50	1	4.63	2
Student	2.50	10	2.26	12	3.53	10

United States

<u>Functions</u>	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>	<u>Mean</u>	<u>Rank</u>
Adult educator	4.62	1	3.84	5	4.47	3
Adviser/Consultant	4.18	5	4.65	1	4.57	2
Agricultural credit program administrator	1.61	12	1.69	12	1.47	12
Agricultural regulations enforcement officer	1.39	13	1.43	13	1.30	13
Emergency measures program administrator	2.14	11	2.31	11	1.86	11
Facilitator or service agent	3.41	9	3.66	7	3.62	8
Inspection acts enforcement officer	1.28	14	1.43	13	1.21	14
Organizer and supervisor of events	3.82	7	4.13	3	3.93	7
Organizer of groups	4.06	6	4.05	4	3.98	6
Program administrator	3.60	8	3.38	9	3.46	9
Program planner	4.26	3	3.58	8	4.19	5
Public relations	4.26	3	3.67	6	4.32	4
Sources of information and ideas	4.40	2	4.62	2	4.71	1
Student	2.66	10	2.32	10	3.11	10



## APPENDIX III

## CORRESPONDENCE

June 19, 1981

Dear Fellow Extension Agent:

I am doctoral candidate in adult education at the University of British Columbia. I am conducting a study of "Extension Agent Roles in Canada and the United States". To obtain the information I am sending the attached questionnaire to district agriculturalists and county extension agents in Alberta, British Columbia, Idaho and Washington.

I need your help because your experience in extension will contribute significantly toward understanding the roles of extension agents in the two extension systems.

I will certainly appreciate if you will answer all questions and return the questionnaire in the addressed and stamped envelope enclosed. Other phases of this research cannot be carried out until I complete analysis of the questionnaire data. I will be pleased to send you a summary of the questionnaire results if you desire it. Thank you for your participation in this study.

Sincerely,

Ayele YesheWalul  
Doctoral Candidate

## ALBERTA AGRICULTURE

## MEMORANDUM

From John G. Calpas  
Director  
Extension Division

To ALL DISTRICT AGRICULTURALISTS Date June 12, 1981  
REGIONAL DIRECTORS Telephone

Subject Extension Research Project-U.B.C.  
(Agricultural Agent's Role)

Our Department and the Extension Division in particular, are giving strong support to a Doctorate research project being undertaken by a graduate student from Ethiopia, at the University of British Columbia.

Mr. Ayele YesheWalul's study project focuses on an examination and comparison of District Agriculturalist and County Agent roles in the provinces of Alberta and B.C. and the states of Idaho and Washington. An abstract of the research to be undertaken is attached. Mr. Ayele (as he prefers to be called by first name) has interviewed several staff at headquarters; has had the opportunity to meet and briefly outline his proposal with Regional Directors and has already conducted pre-test field interviews with about ten of our District Agriculturalists. Mr. Ayele has been most impressed with the attitude and the interest shown by all those contacted to date. On his behalf, and for myself, I wish to thank you for this and for the courtesies you have extended him, since I'm well aware of this busy period and the short notice.

Very shortly, all District Agriculturalists with two or more years of service with our Department, will receive his field study questionnaire. Please give this questionnaire some priority and thoughtful input as requested. (It might be useful to have some dialogue with other D.A.'s after you have completed yours and also retain a file copy of your responses, for later comparison with the provincially aggregated data and that from our neighbours.)

Since external objective research on extension is so rare, here is an opportunity for some insights on ourselves with very little cost and effort to ourselves. The other dimension is, that at least in some indirect way, we may have some impact and influence on the shape of extension and agriculture in a third world country.

Thank you for your consideration. All participants will receive some report of the results and findings of this research project.

JOHN G. CALPAS  
JGC/sw

Att'd

cc C.J. McAndrews  
Randy Meeks  
Wally Klatt  
Gabe Boulet

June 29, 1981

To: District Agriculturalists  
B.C. Ministry of Agriculture  
and Food

Our Ministry is giving support to a Doctorate research project being undertaken by a graduate student, Ayele Yeshewalul, at the University of British Columbia.

Mr. Yeshewalul's research focuses on an examination of District Agriculturalists' roles in the province of British Columbia and Alberta, and County Agents' roles in the states of Idaho and Washington. Within the next few weeks, all District Agriculturalists with two or more years of service with our Ministry, will receive a field study questionnaire.

Please give this questionnaire thoughtful input as requested. Since external objective research on extension is so rare, here is an opportunity for some insights on ourselves with very little cost and effort on our part.

All participants will receive a report of the results and findings of this project.

Thank you for your co-operation.

Yours very truly,

E.M. King  
Assistant Deputy Minister  
Field Operations

EMK/bl

cc: W.E.A. Wickens  
B.A. Hodge  
R.N. Kohlert  
A.N. Isfeld  
B.E. Baehr  
W. Wiebe-6/7/81

COOPERATIVE EXTENSION SERVICE  
University of Idaho  
College of Agriculture  
In Cooperation with the  
U.S. Department of Agriculture  
Moscow, Idaho 83843

July 1, 1981

TO: Ext Agric Agents with 2 or more years experience  
FROM: Fred E. Kohl  
SUBJECT: Participation in Agricultural Extension Agent  
Role Study

Mr. Ayele YesheWalul, a graduate student at the University of British Columbia, is conducting a study of Extension Agricultural Agent roles in Washington, Idaho, Alberta and British Columbia. I have given him permission to ask your assistance in completing a questionnaire. It will require about 25 minutes of your time.

Mr. YesheWalul has held a position in Extension in Ethiopia and has a keen interest in the differences in Extension work as conducted in various areas. I am sure that he will very much appreciate your assistance. The results should also be of value to us here in Idaho.

I urge your cooperation in completing and returning the questionnaire as soon as possible.

jp

COOPERATIVE EXTENSION  
WASHINGTON STATE UNIVERSITY

AGRICULTURAL SCIENCES BUILDING, PULLMAN, WASHINGTON 99164

Room 411C

June 29, 1981

TO: Selected County/Area Extension Agents

Mr. Ayele YesheWalul is conducting a doctoral study to compare Extension agent roles in a land-grant college system with Extension agent roles in a Ministry of Agriculture setting. To carry this out, he is surveying county/area Extension agents in Washington, Idaho, and Canada.

Since Washington State University is involved in three large international programs which have Extension services within the Ministry of Agriculture we are quite interested in Mr. YesheWalul's doctorate study and hope it will assist us in our international program effort.

His survey includes only county/area Extension agents who have a program assignment in agriculture.

We would encourage you to complete his questionnaire and return it to him as requested.

Sincerely,

Wayne Bath  
Associate Director

dno  
Enclosures  
cc: District Supervisors