CORNELL
AGRICULTURAL ECONOMICS
STAFF PAPER

A CONCEPTUAL FRAMEWORK FOR

THE MANAGEMENT OF FARM BUSINESSES

Robert A. Milligan*

Guy K. Hutt

August 1990 No. 90-15

*Professor and Agricultural Economics and Extension Associate at Cornell University.
Selected Paper presented at the American Agricultural Economics Association Annual Meetings, Vancouver, British Columbia, August 4-8, 1990.

Department of Agricultural Economics
Cornell University Agricultural Experiment Station
New York State College of Agriculture and Life Sciences
A Statutory College of the State University
Cornell University, Ithaca, New York, 14853

A CONCEPTUAL FRAMEWORK FOR THE MANAGEMENT OF FARM BUSINESSES

Robert A. Milligan and Guy K. Hutt

Numerous articles have appeared in the agriculture economics literature formulating a conceptual framework for the marketing of agricultural products, resource economics and agricultural policy (Carman and de Janvry, French, Just, Kofi, Saliba, Vantreese, Vitaliano, Wohlgenant 1984, Wohlgenant 1989; and Wong). Similar articles have not, however, appeared to formulate a conceptual framework for the management of agricultural businesses. One possible reason for this contrast is that the development of a conceptual framework for farm management requires a broader disciplinary base than economics. In this paper we develop a conceptual framework for the management of farm and other agricultural businesses that utilize the management literature while recognizing the nature of farm businesses.

REVIEW OF MANAGEMENT LITERATURE

Records show that the desire to understand how to best organize and control trade and activities has been with us as early as ancient Rome when Diocletian implemented changes in the Roman hierarchy in an attempt to manage more effectively. Also, the Roman Catholic Church began compulsory staff service and staff independence to improve the decision making process of the Church (Mooney and Reiley). Despite these early trials with management, the field of management did not get off the ground until the intense, production-oriented times of the industrial revolution.

The first recognized management school of thought is known as the Quantitative or Scientific Management School which arose to find the most scientific, rational principles for handling people, machines, material and money. The objective of this school was to increase output and productivity per person by making work easy to perform. Attention to the needs of workers was minimal. Workers were considered only the additions to machines that were necessary to make them run. An engineer, Frederick W. Taylor, is often considered the father of scientific management. His major contribution was to define the concept of a task as a specific set of activities that instruct a laborer what to do, how to do it and the time frame in which to accomplish it. Taylor's philosophies about consistently maximizing output led to the development of time and motion studies.

Taylor also began scientific decision-making processes and cost accounting (Taylor).

The second major school of management thought is called the process school or classical school and is based on the work of Henri Fayol, who is thought of as the father of modern management theory. Fayol first introduced the administrative operations of planning, organization, command, coordination and control. Fayol was the first to suggest that management could be taught in a scholastic setting, using a conceptual framework with principals derived from research and experience. Fayol's original fourteen principals of management included such familiar ones as division of work, authority and responsibility, unity of command, subordination of individual interests to the common good, centralization, hierarchy, and esprit de corps (Fayol).

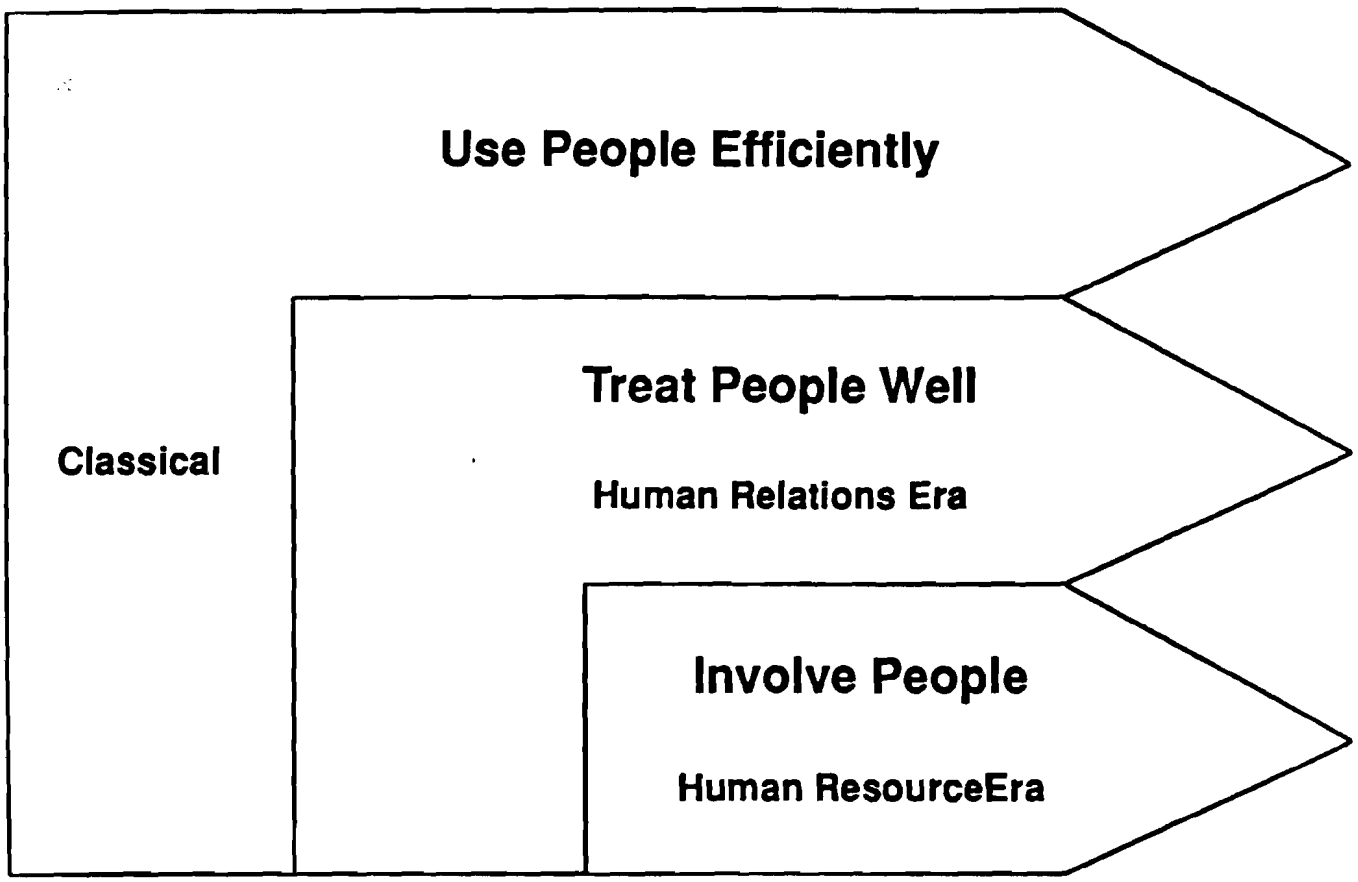
The final, major school of management is the behavioral school, which is commonly divided into two branches: 1) individual behavior or the interpersonal perspective and 2) group behavior or the social system perspective. Contributions to this school have come from the social sciences including psychology, sociology, anthropology, social psychology, and industrial psychology. The behavioral school deals with such topics as motivation, leadership, personality, style, behavior, teams, power and authority. The beginnings of this school can be traced to Elton Mayo, whose work is associated with early inquiries into the behavior of people in the work place. Mayo's Hawthorne studies were landmark studies within the field of management (Greenwood, Bolton, and Greenwood). This research showed that supervisory style effected worker output; workers changed their behavior when they were aware that they were being watched.

As the study of management progressed, not only schools of management, but philosophies of management developed. These philosophies establish relationships between technologies, material things and people. The illustrated philosophical time line (Figure 1) shows that each management philosophy is built upon the ones that have come before it. (Hodgetts).

The classical philosophy draws primarily form the quantitative school, considering people merely an input into the productive function. Therefore, it has no managerial conceptual framework. The human relations philosophy recognizes that people are a unique input and emphasizes how people are treated by an organization.

Figure 1

Management Philosophy TIME LINE



The human resource management philosophy asserts that management means full participation in delivering the organization's objectives and in the development of personnel including oneself. This philosophy began with Mayo's observations. The first significant research about human organizations was conducted by Chester I. Barnard, whose work explored the concept that the manager created and maintained an organization's complex communications system. Barnard's theory is called the acceptance theory of authority and features "zones of indifference" or that range of activities over which an employee readily grants authority (Barnard). This philosophy developed as the failure of the human relations philosophy to develop people to their capacity became apparent.

The contributions of each of these schools and philosophies can not be understated; they form the basis of modern management on which the operation of many businesses—including farms—are based. Each of these schools of thought adds to the overall understanding of management and suggests further areas for research and study. Each of the schools also has its short coming.

The quantitative school, with its emphasis on mathematical models and processes such as linear programming and games theory, leans heavily on economic effectiveness criteria and stresses the importance of goals and performance. This approach is criticized for only contributing a group of management tools, rather than a conceptual framework and also for failing to recognize the importance of people in management (Terry). This school does not provide enough emphasis on the general management of businesses, instead concentrating on narrow, operational problems.

The process school provides a model for separating and clearly defining functions and activities, a first step to evaluating newly implemented managerial techniques and to developing new principles. In this way, principles such as the primacy of planning and the exception principle can be tested and observed for validation. The process school offered structure to the study of management when management study was new and undefined. Today, the tenets of the process school are criticized for being too rigid to adapt to the unique scenarios of individuals businesses (Fayol).

The behavioral school stresses the observation of behavior on which to base understanding. This school is often criticized for not being scientific or quantitative enough in its approach (Koontz and O'Donnell).

CONCEPTUAL FRAMEWORK FOR FARM MANAGEMENT

The concepts and application of farm management to this time have drawn almost exclusively on the quantitative school. The results have been a narrow view of management with almost exclusive emphasis on record keeping and decision making. This narrow view with its emphasis on the technical has inhibited the development of human relations and human resource management philosophies in the farm community. The basis of our conceptual framework of management is the following management definition (Milligan and Hutt, p.8):

> "Determining what must be done and achieving results through the efforts of oneself and other people. Management is planning, organizing, staffing, directing, and controlling the business resources toward the accomplishment of established goals."

Three aspects of this definition are critical to an understanding of the conceptual framework. The first is that management of people is principally and dynamically linked with production, technology, and economics and, therefore, must be the focus of management. The second is that the integrated functions of management provide a structure for dealing with all aspects of management. This comprehensive view is lacking in the quantitative school alone. The dominant importance of specifying and attaining objectives and goals in the third critical aspect. A discussion of each aspect follows.

People are the focus of management in our conceptual framework. Management must first deal with people, including oneself. These people then work with animals, crops, etc. This is in contrast to focusing primary concern with the management of things (animals, crops, etc.). This can be illustrated by an example of analyzing why a herd of cows is thin. The usual answers — cows are not receiving enough feed, the ration is not balanced, forages are of poor quality — are technical. If one continues to ask "why," answers relating to management are detected:

— No one has devised a feeding plan.
— No one is monitoring the cows intake.
— There is no one responsible for feeding.
— The individual balancing the ration is not capable.
— No one has told the feeder how often to feed the cows.

These management answers are people oriented and are more amenable to a long term solution at the root of management cause rather than the technical surface issue.

Secondly, the definition provides a structure to management by focusing on the functions involved in management. In our structure, a management diagnosis and definition of a problem always involves one of the five functions. The management solutions delineated above involve planning, controlling, organizing, staffing, and directing respectively. These functions serve as a job

description for the farm manager. As here defined, they strive to create a useful unified framework for management combining the different schools and philosophies of management into a comprehensive logical structure.

The five functions of as outlined in the management wheel (Figure 2; Milligan and Hutt, Hutt, et al) are:

Planning is the ongoing process of developing the farm business' mission, objectives, goals and detailed tactics which will clearly focus activities toward the most productive and rewarding ends. Planning also involves the process of problem solving which includes decision making.

Organizing is establishing an internal framework for the farm business. This structure clearly defines the roles and activities required of people in order to meet the objectives of the farm business. The manager must decide the positions to be filled and the duties, responsibilities, and authority attached to each one. Organizing also includes the coordination of efforts among people and enterprises.

Staffing is recruiting, hiring, training, evaluation, and compensating oneself and other people. This includes finding the right person for each job and keeping manned the positions required by the organizational framework.

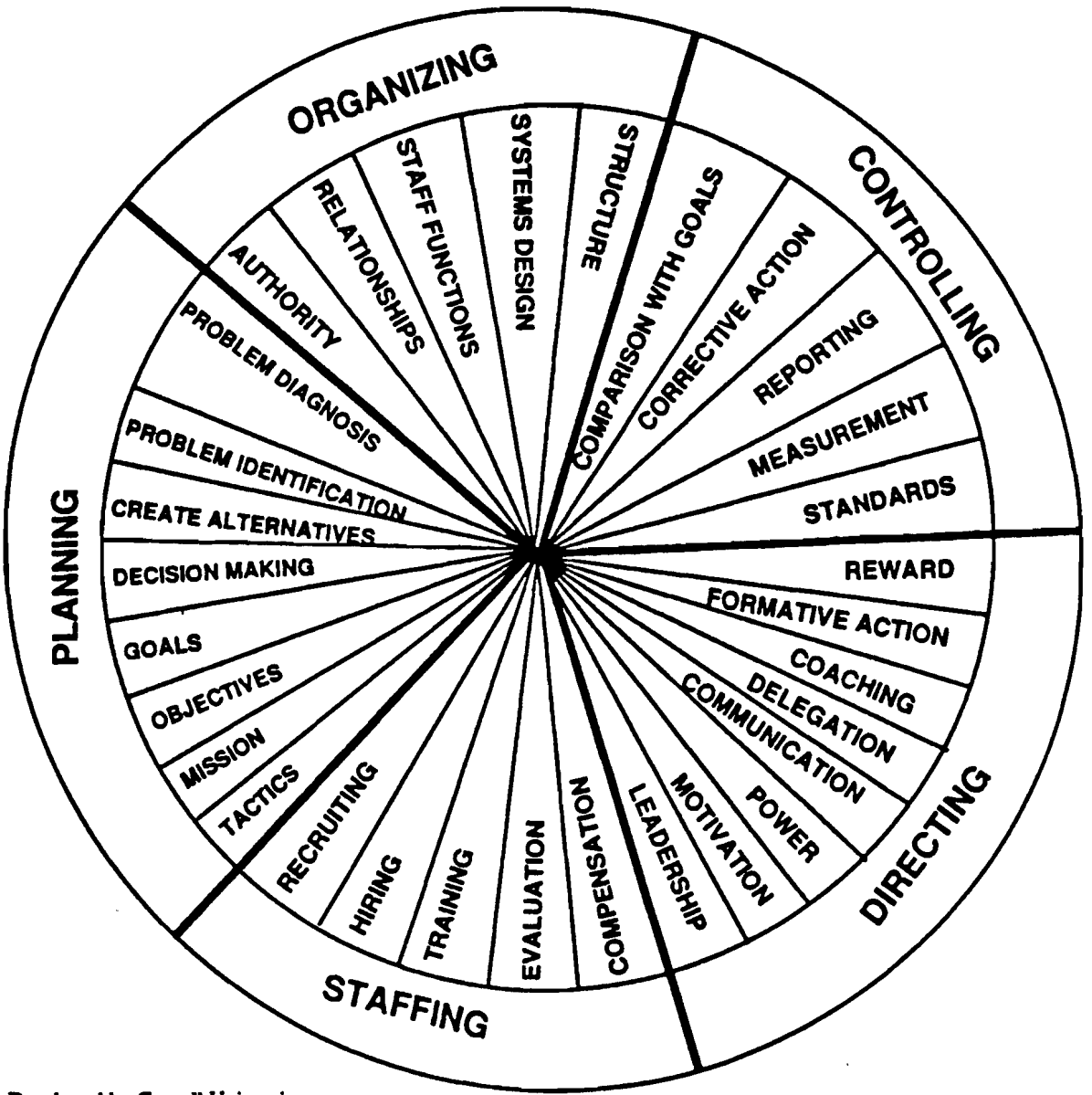
Directing is leading, coaching, delegating and motivating oneself and other people. Directing involves communicating with people enthusiastically carry out their roles in the organization.

Controlling is measuring and reporting actual performance at prescribed intervals, comparing that performance to set standards, and taking appropriate corrective actions when events are not conforming to plans.

The third important aspect of the definition is the critical importance of objectives and goals. Objectives and goals are necessary to provide direction and motivation and to provide satisfaction through accomplishment. Successful execution of the management function will result in specification of objectives and goals with each member of the business motivated to achieve the objectives and goals.

Figure 2

FUNCTIONS OF THE FARM MANAGER



Developed by Cornell University
by Guy K. Hutt
PRO-DAIRY

The conceptual framework as delineated by the management definition, the five functions, and the farm management wheel is derived primarily but not completely from the process school of management. Aspects of the quantitative school are incorporated in the planning function, and behavioral school topics predominate in the directing function.

This definition of management also facilitates an understanding of management activities. Traditionally management activities have been "not labor"; a description not conducive to conveying an understanding of management. Utilizing the above definition, a management activity is any activity involving one of the management functions; labor activities become the residual.

To complete an integrated and clear description of a farm manager's functions and attending philosophy, it may be further instructive to illustrate how the functions relate to different aspects of the business. The two principal aspects of the business addressed are the human aspect and the technical production aspects. Nothing can be produced unless people act upon things. Both aspects of the farm must be managed together in harmony for efficiency and focused productivity to occur. Prior to this time our quantitative approach to farm management has left people out of the equation.

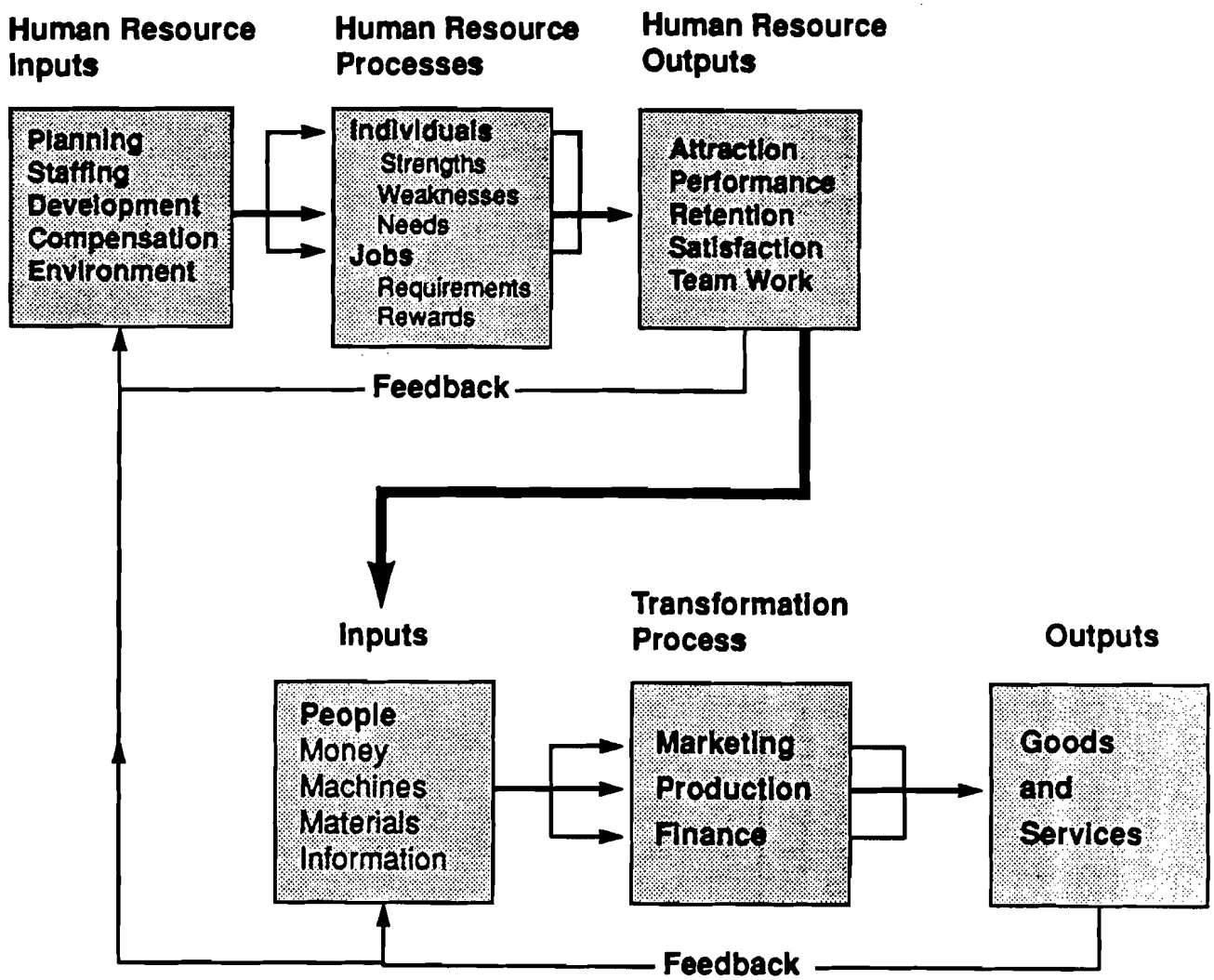
You cannot manage technology and production alone without managing the all important human resource. This warrants special consideration and attention as it is the most critical resource for any enterprise.

The lower portion of (Figure 3) depicts a simple process model of production. Our past research and extension efforts have focused almost totally on this model with our conception and understanding of management limited to a rather vague activity only defined as not labor and often confused with record keeping and accounting.

The upper portion of the figure is a process model of human resource management. The human resource inputs are subjected to human resource processes that are influenced by strengths, weaknesses, needs, etc, of the individual and requirements and rewards of the job. The results a human resource outputs are attraction, performance, retention, satisfaction, team work, etc. of farm personnel.

Figure 3

Human Resource Management Process



Operations Management Process

The complete production process model (Figure 3) then places the emphasis on the human resource as primary in meeting the objectives of production. In this conception human resource management is viewed as the application of management to the human resource process in order that the outcomes of that process would become a resource to be utilized in the marketing, production, and finance processes that produce goods and services. In practice these processes occur dynamically and are difficult to separate.

AN EXTENSION PROGRAM UTILIZING THE CONCEPTUAL FRAMEWORK

In March 1988 New York State funded an Extension program to improve the competitive position of the New York State dairy industry. The conceptual framework of management developed in this paper has been utilized to develop an eight course curriculum (Hutt and Milligan, Hutt and Telega) to teach management to dairy farm managers and agribusiness professionals.

In the two years the curriculum has been offered approximately 1800 participants have enrolled in one or more courses. The response has been very positive especially from agribusiness professionals. Most of the courses have been sponsored by one or more agribusiness professionals meaning that they recruited the participants, paid the fees, and/or provided facilities, meals, etc. Many graduates report that these courses have radically altered the way they approach the management of their farm business.

CONCLUSION

Farm management research, extension, and teaching programs have traditionally relied almost exclusively on economics as a disciplinary base. The result has been an orientation almost exclusively to record-keeping and decision-making. In management science terms, farm management has utilized the quantitative school of management. In the management literature, the quantitative school is considered to be very limiting (Hodgetts). It is the author observation that may farm managers have also recognized the limitations of the quantitative school of management.

In this paper we present a conceptual framework for farm management that recognized the breadth and power of management, and that provides definition to

management. From this framework management hypotheses can be developed and researched and extension programs developed that will dramatically increase the management capability of the farm sector. The use of this framework in an extension program for dairy farm managers in New York is illustrating this potential.

BIBLIOGRAPHY

Barnard, Chester I. The Functions of the Executive Cambridge, Mass. Harvard University Press, 1938

Carman, D. D. and A. de Janvry "A Conceptual Framework for the Empirical Analysis of Peasants" Amber. J. Ag. Econ. 61 (1979): 601-611

Fayol, Henri Industrial and General Administration trans J. A. Coubrough Geneva, Switzerland: International Management Institute, 1929

French, B. C. "The Subsector as a Conceptual Framework for Guiding and Conducting Research" Amber. J. Ag, Econ. 56 (1974): 1014-1022

Greenwood, Ronald G., Alfred A. Bolton and Regina A. Greenwood "Hawthorne a Half Century Later: Relay Assembly Participants Remembered," Journal of Management (Fall/Winter 1983), pp. 217-231

Hodgetts, Richard M. Management Theory. Process and Practice fourth edition Academic Press Inc. Orlando 1986

Hutt, Guy K. and Robert A. Milligan et all Management Resource Notebook AE Ext 89-22 Cornell University, Cooperative Extension 1989.

Hutt, Guy K. and Robert A. Milligan et all Managing For Success: A Workshop For Dairy Farm Managers AE Ext 89-20 Cornell University Cooperative Extension 1989

Hutt, Guy K. and Jonas B. Kauffman III Management Control Clinic AE Ext 89-25 Cornell University, Cooperative Extension 1989

Hutt, Guy K. and Stanley Telega Farm Management Planner AE Ext 89-24 Cornell University, Cooperative Extension 1989

Just, R. E. "A Methodology for Investigating the Importance of Government Intervention in Farmers' Decisions" Amber. J. Ag. Econ. 55 (1973): 441-452

Kofi, T. A. "A Framework for Computing the Efficiency of Futures Markets" Amber. J. Ag. Econ.

Koontz, Harold and Cyril O'Donnell Principles of Management - fourth edition: An Analysis of Managerial Function New York McGraw-Hill Book Company, 1968

Milligan, Robert A. and Guy K. Hutt Organizational Structure: Does it Hinder or Promote Management Decisions Cornell University, Cooperative Extension 1989

Milligan, Robert A. and Guy K. Hutt Dairy Management Skills Needed to Prosper in the Future Cornell University, Cooperative Extension 1990

Mooney, James D. and Reiley, Alan C., Onward Industry! (New York: Harper & Bros., 1931), p. 246

Other Agricultural Economics Staff Papers

No. 90-3	Breaking the Incrementalist Trap, Achieving Unified Management of the Great Lakes Ecosystem	D. Allee L. Dworsky
No. 90-4	Dairy Policy Issues and Options for the 1990 Farm Bill	A. Novakovic
No. 90-5	Firm Level Agricultural Data Collected and Managed at the State Level	G. L. Casler
No. 90-6	Tax Policy and Business Fixed Investment During the Reagan Era	C. W. Bischoff E. C. Kokkelenberg R. A. Terregrossa
No. 90-7	The Effect of Technology on the U.S. Grain Sector	O. D. Forker
No. 90-8	Changes in Farm Size and Structure in American Agriculture in the Twentieth Century	B. F. Stanton
No. 90-9	Optimal Agricultural Policy with Biotechnology: Bovine Somatotropin and the Dairy Sector	L. W. Tauer H. M. Kaiser
No. 90-10	How Diversified is Your State's Agriculture?	L. W. Tauer
No. 90-11	Bovine Somatotropin and Milk Production: Potential Impacts for the U.S.	H. M. Kaiser
No. 90-12	The Potential for Structural Change in the Northeast Dairy Manufacturing Sector	M. W. Stephenson A. M. Novakovic J. E. Pratt
No. 90-13	Disaster Planning in the Dairy Industry: Conceptual Issues and a Special Modelling Approach	M. Keniston J. Pratt M. Stephenson A. Novakovic
No. 90-14	Farm Financial Standards Task Force: Progress and Recommendations	E. L. LaDue