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# TOWARD AN IMPROVED MODEL OF FARM MANAGEMENT: THE CASE FOR INCLUDING MARKETING

by

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This paper arose out of a joint session of the Expert Committees on Farm Management and on Marketing and Trade held in Ottawa, December 8, 1985. That joint meeting delegated four committee members to prepare a paper for presentation to our peers; it was hoped that the paper could be presented at the CAEFMS annual meeting and that objective has been achieved.

The authors hope that the paper provides enough substance to initiate ongoing discussion and further literature development in this area because we view it as an important professional challenge.

We hope readers will provide comments and criticisms on this draft which we can consider for the final draft and for subsequent written efforts.

In this regard, the senior author would like to offer a partial disclaimer on behalf of his designated co-authors. Although we iterated twice in drafting, this delivery draft has not been seriously reviewed by the other authors. As a consequence, some changes in format or substance may be required to achieve full consensus among the four authors. Somewhat better "management" of our scarce time resource could have provided a more "marketable" product--but such is the realm of the modern agricultural economist!

The authors join in their thanks to the Expert Committees and the CAEFMS for providing the opportunity to prepare and present this paper.

Introduction

Farm management economics and marketing economics are two of the original areas of the trade we call "agricultural economics." They, along with "policy" or political economics, comprise the bulk of what agricultural economists have done in the past, and likely comprise the bulk of what we do today despite the outgrowth of new and diversified interests within the profession.

The issue, or problem, which this paper addresses has to do with the tradition of viewing and treating farm management and marketing as separate subdisciplines of agricultural economics. This separation has been maintained in both the conceptual and functional senses. Judging by the literature and teaching, this separation appears to be as typical of the profession in the U.S. as it is in Canada. We think, and the Expert Committees tend to agree, that this represents a problem of our discipline which deserves addressing.

An important cause of the separation has been the narrow definition given to "agricultural marketing." The same, however, can be said of definitions of, and practices within, farm management--the problem is one of missing some fundamental linkages within our overall profession. There are signs that this problem is being recognized and bits of literature are beginning to deal with it. However, there is a real and immediate need to provide a conceptual framework for analysis and to begin developing a literature base for integrating farm management and marketing within agricultural economics. This paper offers a framework and some analysis towards that objective and is

offered as a target for further discussion of the problem (presuming the problem is real).

Purpose of the Paper

Within the stated general purpose of attempting to generate further discussion on the separation of farm management and marketing within agricultural economics, we have two specific operational objectives. The first is to establish the rationale, and provide a conceptual basis, for bridging the disciplinary gap which we claim exists between traditional farm management and marketing. The second objective is to enhance, at the research, teaching and extension levels, the coordination and integration of marketing information and concepts into farm management. The first objective attempts to establish and more clearly define the problem; the second objective attempts to do something about it.

The fundamental proposition around which this paper is developed is that when the economic world is viewed from the standpoint of the farm business and farm management decision making--that is, the subject matter of farm management economics--that marketing is an essential and fundamental component of farm management. This is not to say that all "marketing" as conceptualized or practised within agricultural economics is part of farm management or that all marketing economists will somehow contribute to farm management theory and practice. But, it is to say that for all aspects of farm management decision making, there is an important marketing component which cannot be arbitrarily ignored or overlooked. More importantly, it is to say that there is a fundamental, conceptual basis for

treating parts of agricultural marketing as a component of farm management instead of separating the two. While we are tempted to observe that this is merely citing the obvious, it is not at all obvious when judged by what comprises our literature, our research, our teaching, and indeed our professional mindsets. In an important sense, the proposition only describes what most business administration marketing courses have taught for years.[1] On the other hand, farm management texts, and most agricultural marketing texts, do not recognize the relationship.

This proposition, if valid, has important implications for several aspects of our professional activities—it must surely indicate change in some of what we are doing in farm management as well as in the subject matter of marketing. Importantly, if we can successfully bridge the gap, we will significantly increase our contribution to farm managers decision making and, therefore, increase our value and relevance as a profession.

## A Conventional Model of Farm Management

We have summarized; and our perception of the current notion of farm management in Figure 1. Naturally, any simplified generalization will have deficiencies but this model conveys several characteristics of the discipline which we believe are valid.

- This concept of farm management implies a set of discrete components that may be interrelated, but do not adequately reflect the process of decision making.

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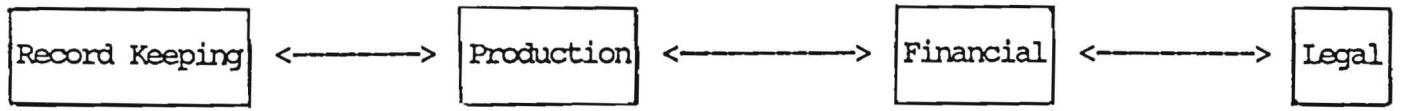
[1]cf. E. Jerome McCarthy, Basic Marketing: A Managerial Approach, Richard D. Irwin, Inc., Fourth Edition, 1971.

Figure 1

Generalization of the Current Subject Matter of
Farm Management




| Record Keeping | Production | Financial | Legal |
|---|---|---|---|
| Accounting | What, How and How Much Much to Produce | Credit | Farm Organization |
| Technical Relationships | Increasing Efficiency | Cash Flow | Transfer and Estates |
| Taxes | Technology Transfer | Liquidity | Liability |
| | | Financial Management | Taxation |
| | | Taxes | Contracts |

- Production appears to be the cornerstone of farm management with the records, financial and legal functions facilitating or supporting the production activity.
- The model excludes marketing.

It is, of course, this latter exclusion which is the purpose of this paper since our proposition is that Figure 1 ought to include a box for marketing. But, our proposition extends beyond the simple imposition of a marketing component into the schema--it has to do with the process of decision making (as opposed to the event) and, therefore, challenges the implied linearity of the relationship depicted in the model. In order to attempt to develop this notion and satisfy the requirements of our first specific objective, the next section purports to provide a set of conceptual arguments for revising Figure 1 to reflect both the role of marketing and the process of decision making.

Elements of a Conceptual Framework

Our first step in building a conceptual argument for directly linking farm management and marketing arises from basic economic theory. Management decisions are taken within the economic framework of input markets, production and product markets. Management is the processing of information and combining of resources to satisfy management objectives (for simplification, profit maximization). The basic management rules for the firm (optimization according to marginalism) presume a high level of knowledge on input prices, product prices and input-output relationships, i.e., if

$X_i$, $X_j$ are inputs, $P_{xi}$, $P_{xj}$ input prices

$Y_i$, $Y_j$ are products, $P_{yi}$, $P_{yi}$ product prices

then,

$$MVP_{xi} = MVP_{xj}$$

$$MRS_{xi,\ xj} = P_{xj}/P_{xi}$$

$$MR_{yi} = MR_{yj}$$

where MR is (or involves) $P_{yi}$ and $P_{yj}$

Conceptually, we think our argument could stop at this point because obviously at least marketing (input and output) information is required to be able to use the optimization rules, i.e., to manage. Applying this argument to the farm firm makes it clear that farm management and marketing are related. However, it is instructive to push this line of argument further.

Examine the quality of the assumption of perfect information in each of the three sets of optimizing conditions. In practical terms, the assumption of known input-output relationships is at least manageable, if not valid. This is so because it depends mainly on micro and managed variables (except weather). As well, we have support systems which produce information and reduce the impact of production variation--record keeping, irrigation and insurance within the firm; and research and extension activities outside the firm (on varieties, fertilizer response, growth rates, etc.). The intention is not to reduce the significance of uncontrolled variation in input-output relationships but they can be and are handled. Similarly, knowledge related to the input market will ordinarily be high quality. Information on input prices are likely the most complete of all information, with minor exceptions.

The weakest component of the information set for the farm firm must be on the product market side. This is true for a variety of reasons--lagged production, the length of the production period, complexity of product markets, institutional factors, etc.--and this deficiency of information is critical because it underlines the entire set of optimization rules. Clearly, the need to know, or to estimate, input and product prices provides a simple but basic indication of the relationship between marketing and farm management.

A second, conceptual issue arises from the above argument--information generation. Figure 1 indicates the major source of information generation to be at the record keeping/accounting level. This micro information is important and necessary, but not sufficient. Another form of information generation has been public and private efforts at market information generation and distribution. For example, the official public sources of Statistics Canada, Agriculture Canada, provincial sources, Outlook papers, print and electronic media. But, these latter information sources are all macro data, and even though they are essential to the process, they are also not necessarily sufficient for the management decision process. The gap between micro information and information needs, and macro information availability is wide, and probably undefined for important areas of agricultural economic activity.

This problem is perhaps most acute for those of us dealing directly with farmers in the teaching and extension roles, as well as in the applied research roles. Of course, one of the most fundamental information voids in this context is--what will price be when I sell

my product, i.e., what product price(s) is (are) plugged into the optimization rules. This is a question of assessing both price levels and price relatives. The lack of hard information on this (extremely tough) question has, over time, produced a number of simple rules by economists and farmers alike for forecasting. One of these is to use last year's (or current) price as the best estimate of tomorrow's conditions--the origins of a cobweb cycle. Another is to use some historical combination of prices as indicative of what the future may hold. The point is that these rules of thumb may have little or nothing to do with where prices will be when production is achieved, even though they may be available, hard numbers. Decision makers need this information; our theory, research and extension must be more finely tuned to these needs. The need which is identified derives from improved information on product markets--marketing <u>is</u> part of farm management.

Taking the market price argument one step further, it has to be recognized that general (macro) price information, whatever its quality, is still only part of the picture at the micro level. Macro prices are indicative of general transactions, generalized quality, and (often) centralized locations. Individual farmers, or groups of farmers, through their own efforts can organize their affairs (i.e., manage) to alter the market outcome which they achieve within the generalized market environment. In other words, micro prices may be different from macro prices.

Managers can organize their affairs so as to undertake pricing arrangements directed towards:

1. improving price level relative to the general level;

2. improving terms or conditions of sale relative to general conditions; or

3. decreasing risk relative to general risk characteristics.

It must also be recognized, however, that management decisions may fail relative to these favourable outcomes and results may be worse than general conditions (and worse than forecast conditions). But, what this says is that management encompasses marketing strategies, which may produce or are accompanied by another set of management risks.

Combining the major points made so far, what this says is that it is possible by appropriate marketing strategies (example, futures markets or forward contracting) to <u>know</u> the product (and/or input) price which is used to optimize resource combinations, and to execute the management function consistent with the assumption of perfect information, (i.e., the textbook case). However, this process requires that marketing decisions and arrangement be committed <u>prior to</u> (or simultaneous with) the decision to produce. Consequently, we conclude not only that marketing is part of farm management but that marketing decisions can frequently precede production decisions. In this extreme case, we have one form of risk free decision making, recognizing of course that this process of avoiding price risk may produce other risks. In the same context, in order to support other aspects of management (cash flow, taxes) marketing may continue long after the product is sold or delivered (cash-to-futures rollover, futures rollover, deferred payment).

The next argument is based on the traditional notions of marketing as they have appeared in the literature. Generally, agricultural marketing has been understood (and taught) to involve those economic activities which are performed to farm production in order to create the time, place and form utility demanded by domestic consumers or export buyers. Variations of the definition include issues such as how to define "agriculture," is food marketing different from agricultural marketing, and whether the functional, institutional or systems approach is most appropriate. But, traditional agricultural marketing, and most of the textbooks which present the subject matter, exclude farmers because it starts at the point of farmer sale. It also precludes the possibility of marketing decisions influencing production decisions. Traditional agricultural marketing has nothing directly to do with farmers in an active, management sense except for theoretical incursions into futures markets, marketing boards, etc. Unfortunately, we have not recognized this problem until recently and then only implicitly in the most recent texts. Most agricultural economists appear to have happily accommodated this absurdity in their teaching, research and extension despite the fact that commercial farmers have been practising marketing and farm management this way for some time. Contrast this perspective of marketing with that in any business school.

Finally, having criticized the farm management and marketing literature for its claimed omissions, let us recognize that a recent (1984) farm management text (Boehlje and Eidman) does introduce marketing explicitly. The authors devote a fully chapter to

"Marketing Planning" on the rationale that "The need for price and cost data to make adequate farm decisions underscores the necessity for expertise in the second field of farm management--that of marketing."[2] This statement of the role of marketing in farm management appears to reinforce the basic proposition of this paper. However, their basic reason for including marketing may be at odds with ours. In the introduction to the marketing chapter they say: (1) "fluctuations in both commodity and input prices are much larger than in the past," (even though some of their examples do not support the argument); and (2) "the number of pricing and delivery options available to the farm manager has increased." In other words, changed conditions in the markets which farmers face produce the expediency of incorporating marketing into farm management. We cannot agree with that argument. The fact is marketing <u>is</u> part of farm management, conceptually as well as practically; that agricultural economists have missed that point ought not to be cause for rationalizing its incorporation on grounds of more urgent need.

<u>Canadian Evidence in Support of This Framework</u>

We have indicated that some literature development, which supports the foregoing arguments, has occurred in recent years. We will present a few of these from the Canadian literature at this point to reinforce our case. The illustrations are indicative rather than

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[2]Michael D. Boehlje and Vernon R. Eidman, <u>Farm Management</u>, John Wiley and Sons, 1984, p. 22.

exhaustive, with three references on the micro side of the argument and two on the macro side.

The 1983 CAEFMS annual meeting produced each of the micro examples. In a paper entitled, "Financial Management Implications of Using Futures Markets," Martin[3] developed the linkage between a marketing tool--futures markets--and financial management. In a paper on the same program, Carter and Loyns[4] attempted to relate some of the practical aspects of futures markets available to Canadian farmers to their farm management tasks. These were the only papers presented in a session entitled "Futures Markets/Agricultural Exports." In another session at the same meeting--"Farm Management Topics"--Roseaasen and Ward[5] developed some of the implications of tax policy and tax structure for investment, production and marketing decisions.

The examples of the macro influence of marketing on farm management decisions and on production are drawn from quota and pricing policies of the Canadian Wheat Board (CWB). Loyns and Carter[6] presented a detailed summary of the forms and effects of regulation in the western grain economy, including identifying resource distortive

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[3]Larry Martin, "Financial Management Implications of Using Futures Markets," Canadian Journal of Agricultural Economics, Vol. 31, July 1983.

[4]Colin A. Carter and R.M.A. Loyns, "Futures Markets as a Canadian Farm Management Tool," Canadian Journal of Agricultural Economics, Vol. 31, July 1983.

[5]K.A. Roseaasen and B.L. Ward, "Taxation--The Invisible Hand in Canadian Agriculture," Canadian Journal of Agricultural Economics, Vol. 31, July 1983.

[6]R.M.A. Loyns and Colin A. Carter, Grains in Western Canadian Economic Development to 1990, Discussion Paper 272, Economic Council of Canada.

effects of CWB pricing and quota policy. A more recent Task Force Report in Saskatchewan[7] analyzed the quota system in greater detail and concluded, "The grain delivery quota system established by the Canadian Wheat Board encourages summerfallowing and cropping of submarginal land."[8]

On the pricing issue, the CWB announced in November of 1985 that due to pricing distortions resulting from the way transportation charges entered the pools, a new pricing policy would be introduced in the new crop year which would have the effect of lowering prices in the eastern half of the prairies relative to those in the western half. Many economists have recognized these "resource reallocative" effects of regulation for sometime, but their significance in linking marketing to farm management and production have not been explicitly recognized.

A Revised Model of Farm Management

Figure 2 presents a schematic indication of the points that we have attempted to make in this paper. We view management as the processing of information, constrained by environmental factors (and resources, managerial skills, etc.). Certainly, this is not the only model for conceptualizing farm management (for example, half of the authors of this paper still want to pursue risk management as the basic model) but it achieves what was set out in our objectives.

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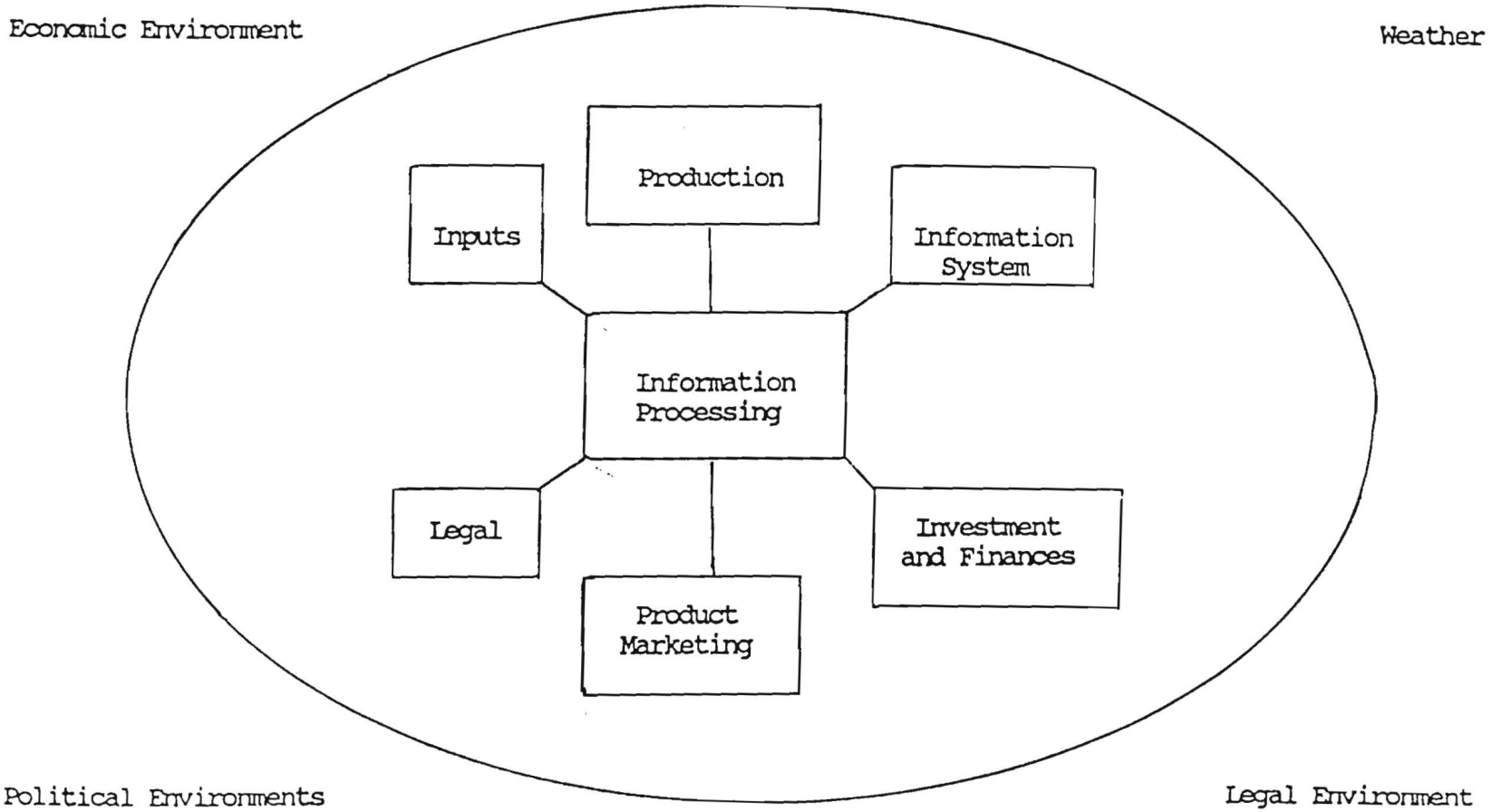
[7]J.A. Brown et al., "Strategy for the Development of Rural Saskatchewan," Government of Saskatchewan, Special Task Force Report, 1985.

[8]Ibid, p. 194.

Figure 2

Farm Management for Commercial Agriculture



As a process of assembling and processing information (or as a process of risk management) farm management (as well as its study) consists of a set of interrelated steps or functions, none of which necessarily or logically has precedence over the others--it is a "system" in the full economic sense. Information can be generated internally to the process (for example, from farm records or the market intelligence network) or it may be generated externally (hot, dry weather in the U.S. Midwest, or the outbreak of hostilities in the Falklands or Middle East). Depending on when the information becomes available and how it is interpreted, the impact may be negligible, it may alter production decisions by itself, or it may induce a marketing, input, legal or investment response.

Another important characteristic of the model is its explicit recognition of the interdependence of the components. We have observed for sometime that taxation considerations are important determinants of investment and input behaviour--federal budgets are premised on these relationships. But, how much effort have we put into understanding (or generating useful information) on the taxation aspects of when, how and to whom products are sold? Similarly, agricultural commodities which have alternative marketing outlets should have different cash flow implications associated with different marketing strategies--as a result, cash flow planning depends on marketing. Similarly, but perhaps conversely, financial commitments may impose particular marketing regimes on a manager in order to generate cash flow, reduce risk or simply meet the requirements of a financier. Clearly, as the model depicts, the various functions are

interrelated and marketing is a component of farm management. The model also allows for the important situation in which product marketing occurs prior to, and influences, the production decision. This situation has to be reflected in any farm management training and extension because it is the basis of planning and risk reduction, and it is the linkage between marketing strategies and production planning. At the same time, we must be aware of the other risks that are generated when marketing strategies are used in production planning.

## An Example: Chernobyl 86

Provided by Larry Martin

Scenario

Low and falling grain prices.

Little prospect for turnaround according to all information sources. Confirmed by technical analysts.

Grain producers in this specific example, corn producers, were handed significant new market information and opportunities on April-- when the reactor blew up at Chernobyl.

Explain
Detail example

Conclusions and Implications

This paper has attempted to establish the proposition that for modern commercial farms, marketing is an important component of farm management. This proposition has validity at the macro as well as the micro levels. We have also attempted to establish that from the standpoint of our professional activities, this relationship has largely been missed or overlooked despite its importance and despite its conceptual existence. We have attempted to provide the beginnings of a conceptual basis for linking the two, and to provide examples in order to generate further discussion and literature development. In other words, the effort has been to identify the need for, and take the first steps toward, bridging a significant conceptual and informational gap within agricultural economics.

We believe this paper has a number of important implications. Certainly it implies the need for a much closer working relationship between farm management and marketing economists. We would like to see, for example, a joint program at the next opportunity within CAEFMS to pursue this area. As well, we see the need to alter some of what we are teaching, to integrate some of our research, and particularly to improve what is available for extension. Basically, what is required is that some of what is done by marketing economists has to be made more relevant to farm management, and farm management economists have to respond by identifying needs and assimilating what is available. In a related area, one of the growing needs appears to be the legal aspects of farmer marketing. Some suggest this area is the subject matter of contract law and is covered wherever

agricultural law is taught. We doubt that proposition, but even if that is so, the incidence of farmer losses related to firm insolvencies in the past six years has indicated that a great deal more needs to be done. Our purpose is to put out the call for this kind of effort to be expanded and systematized.