THE TRAINING AND DEVELOPMENT OF FARM MANAGERS

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INTRODUCTION

I was asked by the Program Chairman to consider the position both of self-employed farmers and of salaried managers, with special reference to circumstances in my own country. To a large extent, of course, both of these types do the same job - especially when viewed on a day-to-day basis. One owns his capital, has the final responsibility for its deployment and accepts profit in return for risk. The other is at a different kind of risk altogether - and it is open to question which of them has the more difficult or the more enviable lot.

My own research interests in recent years have been directed specifically towards the salaried manager - his background, his training, his job, his rewards, his likes and dislikes and his ambitions. What I am about to write, therefore, will probably be slanted towards 'the manager', although I hope that much of it will be equally applicable to both types. Similarly, although it will be slanted towards the United Kingdom, I hope that it rings a few bells wherever farm management is an issue.

'Training', 'development' and 'managers' are three words that defy a simply and universally accepted definition. It was not easy, therefore, to know where to begin this paper. For a long time, I floundered. Then I came across the quotation from Robert Heller's book - which seemed so appropriate. To begin with, it puts 'education' (whatever that really is) into its proper place - not denying its importance but not putting it on a pedestal; and it recognises that the supreme importance of giving a man a job he likes (in my book that means getting the right man into the job in the first place - and sometimes being prepared to help the wrong one out of it!); of leaving him alone to get on with it (which means giving him authority); and of expecting good results. These things are no less important for the self-employed than for the salaried - but in the former case, they require a different, more self-disciplined approach. I was now on my way and what follows is not a collection of answers but a collection of thoughts designed to prompt questions and discussion.

Formal Agricultural Education and Training

Since some form of full-time formal education comes earliest in most people's professional careers, let's think about that first. We have become accustomed in the agricultural industry (at least in the United Kingdom) to a time honoured and, to my mind, futile debate about the relative importance of formal qualifications as against experience. Surely it need never be a question of either/or,

but of one, accumulating over a life-time, building on educational foundations which are designed to open, inform and train the mind when it is at its most receptive. It is in those terms that I think the strongest claim for formal education can be made. That is not to claim, of course, that to be successful, all farmers need, of necessity, to have received a formal agricultural education, or that all existing agricultural courses - whether at university or college level - necessarily offer the right blend of training for those who want to farm. The introduction of sandwich course at College level has no doubt helped in this respect, but to the extent that courses cater increasingly for students destined to take up careers in a wide cross section of jobs throughout the whole food sector of industry, a too narrow agricultural training may not be a practical or even a sensible goal in many cases. We are familiar at Reading, for instance, with a small but regular number of farmers' sons, destined to take over the family farm, who deliberately opt for degrees in agricultural economics rather than in agriculture. They argue, that given time they will acquire at home, and through the subsequent use of in-service training facilities, the agricultural knowledge that they need, and that University offers them three years in which to broaden their perspective of agriculture in a national and world economy. It also widens their employment prospects if they change their minds about farming.

I would personally not even try to argue that some form of travel, service or experience in another sector of industry may not be as valuable a prelude to eventual employment in agriculture as a period of formal education. It must be true, however, that at some stage, a certain minimum compendium of technical know-how becomes an essential prerequisit for actually doing the job, and many of the technical aspects of the job can be taught in a way that we hope at least hastens the moment when an individual achieves the maturity, self-confidence and competence needed to become a reasonably successful manager. If this does not happen, how can such training be justified at all? In the wider sense, the manager's job can probably never be taught in this way. Contrary to some popular opinion, graduates leaving universities and colleges are aware of this. They are, these days, frighteningly mature and, therefore, are seldom arrogant. They know that managerial competence and the responsibility to others that it demands, involves a large element of judgement which is only gradually acquired as experience supplements early training.

All this adds up to the fact that a smaller and smaller proportion of aspirants to the managerial ranks of British agriculture are without some kind of formal training. It is now almost essential in order to get a foothold on the career ladder and typically (unless he 'returns home') a graduate might hold down a couple of jobs for a year or two, in order to gain experience, before first seeking a managerial post in his middle or late twenties. With the increasing scale of individual farm enterprises, it so happens that the opportunities for experience as an under-manager or unit-manager are also increasing. It may be of special interest to this audience to know that 90% of all the salaried managers in Britain's Farm Management Association possess agricultural qualifications (mostly diplomas) and no doubt this proportion will get even higher[1]. Almongst the whole national population of managers, the

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[1] Farm Managers. A.K. Giles & F.D. Mills, Reading University, 1970

figure is much lower (about 20%) and lower still amongst farmers (10%) - although in the 'under 25' age groups the national figures are 63% are 35% respectively[2]. The tendencies are clear - and although there is evidence[3] that those who employ farm managers place certain more personal attributes (e.g., general intelligence, personal disposition, ability to work well with others) above formal training, is there any reason to believe that they will seek these attributes in the 'untrained' if they can find them in the 'trained'? It seems increasingly unlikely to me that it will be relevant to think in terms of either/or.

Training, of course, is not something to be identified exclusively with pre-employment full-time courses. On the contrary; experience may supplement initial training - but in a rapidly changing world - retraining must also supplement experience. It may assume a dominantly craft form or a broader management one. In either case, perhaps the greatest challenge to 'management' is to recognise that it (i.e., the management) may be in greater need of in-service training than any other part of a firm's labour force - whilst the challenge to teachers is to remember that their task is simply to help managers to be better managers. Too much time spent on the teaching of complicated and esoteric techniques that managers are unlikely ever to apply in practice should be seriously questioned from several points of view. The net effect could be to widen rather than to close the gap between management theory and management practice. In the United Kingdom we have taken a long time to begin to learn these lessons and the entry of Agriculture's Training Board into managerial and supervisory training could help to induce a more generally professional attitude towards the objectives of and approaches to this kind of work.

In the United Kingdom, colleges, universities, consultants, the F.M.A. and the Training Board provide, between them, a wide range of short courses. Market Research suggests that demand lies primarily in the technical field although business methods and personnel management are also important. In the survey of F.M.A. Managers already quoted, 79% claimed to be making serious efforts to up-date their training. Only 36%, however, did so by attending courses. A recent Training Board enquiry suggests that potential regular customers amongst self-employed farmers is likely to be well below that figure. Presumably, however, as farmers become a more highly educated group, their thirst for keeping in touch with training establishments will grow. But in the last resort will it not be their relevance to the manager's job and ease with which they can be attended that will determine the uptake of particular courses? And might it not be such human and untechnical issues as critical self-appraisal; the identification

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[2] Agriculture Manpower - England and Wales. Agriculture E.D.C. 1972

[3] Employing Farm Managers. A.K. Giles, Reading University, 1973.

of objectives; the retention of the learning habit; recognition of the need for management to control events rather than letting events control management; or, simply, meeting with and talking to those in similar jobs to oneself - that will provide the greatest and the most lasting benefits from managerial training?

SUBSEQUENT DEVELOPMENT

By 'development' we presumably mean something like growth in personal maturity and in competence to do the job in question. To a large extent, therefore, there will be no short cut and no substitute for actually doing the job.

'Liking the job' and 'being left alone to get on with it in one's own way' might be regarded as prerequisites of success. There can be no guarantee, however, that either of these conditions will exist without care and self-discipline on the part of the employers. Providing a man with a job that he likes may involve modifications to the job or persuading the man to accept change, and at the very least it should involve careful job and man specification in the first place followed by equally careful advertising, interviewing and selection methods. The consequences of decisions made at this stage - often by amatures in the personnel selection business - will be crucial to the people and the businesses concerned. And the job of fitting the manager to the job may be even more hazardous in the case of the self-employed.

Asking other people to do a job and then leaving them to get on with it their way is one of the most difficult disciplines that we all face. Effective delegation tends to be an acquired habit and agriculture tends not to have a lot of practice at it. There is certainly evidence from the two Reading surveys already quoted (in which certain identical questions were put to managers and their employers) which suggests that there is in many cases anything but a clear understanding of who is responsible for what decisions. This is especially true outside of the more routine day-to-day areas of management.

But assuming that a manager or farmer has received a sensible training in those aspects of agricultural science that he needs; assuming that he has a job to which he is well suited; and that he is allowed to 'do his own thing' - what then will encourage his development, or - more easy to contemplate perhaps - what can be done to prevent a hinderance to his development?

Generally speaking, I am reluctant to stress the differences between the business of farming and other businesses. I believe that what differences there are can be easily exaggerated and that anyhow it is the similarities and what one industry can learn from another - which are more interesting and important. If I list, therefore, some characteristics of the agricultural manager and his employment circumstances that seem to me to be counter to his development, I should stress that they are not necessarily peculiar to agriculture - and neither, of course do they all apply to all agricultural managers.

From research, observation and conversation, however, I would judge that, the farm manager can quite often:-

(1) Be intellectually and professionally lonely - working in relative isolation - not easily able to consult and discuss with equals.

(2) Get bored - depending on the size and complexity of his business - driven to 'fill in time' due to the slowness and sameness of events.

(3) Be underemployed in the strict managerial sense - due to the relatively small scale of his business and the limited number of genuinely managerial decisions that he has to make.

(4) Feel insecure (when salaried)-dependent on the financial and family circumstances and even the person whims of employers.

(5) Feel uncertain - because clear objectives are not spelt out for him or (when self-employed) because he does not find it easy to spell them out for himself.

(6) Be a bad organiser of his own time - a victim of the ad hoc events and his shere 'availability.'

(7) Be unable to delegate managerial responsibilities - in a way that is possible in industries with larger units; he thus becomes a jack of all trades and master of too few.

(8) Feel inferior - perhaps because he cannot speak with the authority of the 'specialist' - when moving in mixed management circles.

(9) Accept too readily long and irregular working hours and short-holidays - a mistaken feeling of indispensibility - with important repercussions for his family and himself.

(10) Lack recreational outlets that regularly take him away from his farm.

This may sound a depressingly critical list. It is not intended to be. I simply believe that to a greater or lesser extent these things frequently exist and that they often, individually or collectively, operate against individual fulfilment. If that is so, then we should recognise and discuss them; not ignore them. There may not be complete answers - but there may be partial ones. Many possibilities come racing to mind:- The need for professional involvement in organisations like the F.M.A.; local small group participation; in-service training; balanced farming systems with viable sub-units; structural change; job enrichment; multi-farm management jobs; off the farm employment; pension schemes; promotion ladders with increments; contracts of employment; syndicate employment; a closer appreciation of 'management by objectives' - and all that it implies; a willingness to buy expertise; the facing of facts; a greater determination to 'switch off' from farming and to flick on a few other switches!

The answers - and the problems - will no doubt differ in different parts of the world. That is what we have come here to discuss. In drawing attention to some of them, I have deliberately refrained from too much reference to average results from this or that survey or average replies to this or that question. If you now conclude from what I have written that I see the training and development of farm managers as essentially a human question rather than a technical or narrowly educational one - then you are right. And for that reason, I conclude with quotations from three employers from amongst the 100 or so who kindly provided me with material with which to write 'Employing Farm Managers.' These three quotations say very succinctly what I have taken much longer to say:-

"It is a very personal relationship and, therefore, the interview is the most important factor. The rewards are not necessarily all financial."

"I look for only three qualities: intelligence, character and personality. You cannot put these in a man if he hasn't got them. If he is short of technical knowledge, it can be bought."

"If you employ a manager for his personal ability then use it. If you don't you might as well use a foreman. Having been given the benefit of his professional knowledge, don't then over-ride his views until they are proved wrong or weak. Use your manager's skills - after all he is there to take your place."

TRAINING AND DEVELOPING FARM MANAGERS IN THE FEDERAL REPUBLIC OF GERMANY

By H.A. Ihle

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A Study Subjects and Methods

(1) The definition of the Farm Manager

The terms "manager" and "management" have found their way into general usage in the German language. In spite of this, they hardly ever occur in association with agriculture. One refers to the "agriculturalist", or the "farmer", or to the "head of an agricultural concern", but not to the farm manager.

This usage is characteristic. It indicates that the majority of farmers do not see themselves as managers, nor are they seen as such by the rest of the population. There is a historical reason for this: until well into our century the farmers or agricultural workers were considered as belonging to a special professional category - not to be compared, it has been alleged, with the manufacturers or mechanics, the traders and merchants. They had basic national functions to fulfill. And it is certain that earlier there were very few farmers who quite simply say their jobs as a way of earning a living.

There is, however, a broader, practical reason for the long delayed application of the terms "manager" and "management" to agriculture: agriculture in the Federal Republic of Germany consists predominantly of small and medium-sized concerns. Our statistics reveal at present a total just short of one million concerns. Of these only 2.5% have an area of more than 125 acres. It must also be taken into consideration that in 60% of our agriculture, non-agricultural activities are also pursued, since without these the family's income would be insufficient. This structural system has, hitherto, failed to provide the basis for "management" type attitudes and operations. This is understandable, but in no way defensible for the future. Three reasons for this:

- The agricultural concerns remaining in long-term production, will be considerably larger in both capacity and turnover than the present average concern.

- The management of his concern will in future make considerably greater demands on the farmer. Consideration must be given here on the one hand to the mastery of increasingly refined production techniques. But, on the other hand, new demands are also made on management in the course of increasingly necessary cooperation with neighbouring concerns as well as the hitherto generally unfamiliar working together with highly qualified salaried employees; demands concerning which commercial businesses, with their incomparably larger staffs, can teach us only a little.

- The adaption of his business to the supply market and to the requirements of the sales market is becoming the permanent task of the farmer - a particularly difficult task, as the trend reveals decreasing operational flexibility through capital investment.

However many branches he belongs to, be he agriculturalist or industrailist, it is the manager's task

- to establish goals,
- to plan requisite measures,
- to take decisions,
- to undertake their realisation and
- to control their outcome.

This applies to all areas of operation - that is to say, to the procurement of resources and operational agents and investment commodities, to the actual production process, to the disposition on the market of products produced, to financing and, not least, to the direction of employees.

To be able to fulfill his tasks, the manager requires tools or resources (management tools), which he applies according to certain principles (management principles). Combining tools and principles, one refers nowadays to management techniques.

The farmer does not, therefore, require special, specific agricultural management tools and management principles. He must, however, be made aware of the necessity to apply management techniques to his operations, and he must exercise them with awareness. The accent is on "aware". Many sociological studies have shown that farmers - particularly in the area of the small and medium-sized holdings - only rarely act on the basis of genuine decision-taking. Routine operation is wide-spread. Something is done because it's always been done that way. What others have done before, is simply taken over. Alternative methods do not come into consideration.

For this reason the process of decision-taking should be at the forefront in the training and further education of the farm manager: that is to say, the recognition of problem situations, the collection and evaluation of information related to the problem from within the business, from the market and general available sources, the formulation of alternative decision possibilities, the evaluation of the alternatives according to cost and utility criteria and, finally, the actual decision itself.

One should not, in the first instance, be too demanding regarding management techniques. It is a matter of teaching and learning the simple methods of information acquisition and business control.

The first point of consideration in acquiring inner-operational facts and information, but also of importance to business operational control, is of course, business accounting. Unfortunately, it must be said of the Federal Republic of Germany: far fewer than 10% of

agricultural concerns operate an accounting system, fewer still can be said to keep instructive accounts in the management sense and only very few agriculturalists systematically assess their figures for the purpose of control and planning.

It is also the case that only very few agriculturalists systematically pursue the acquisition of information conerning market developments, technical opportunities, scientific research results and organisational progress, although a wide range of information is available.

(2) What the farmer manager can actually learn and how he can acquire further education

We have hitherto questioned and discussed the desirable definition of the farm manager. What the actual situation is must now be reported. It is expedient to confront the desirable with the actual circumstances, as it is only this contrast which will clarify the situation.

The management training and further education which is offered to the agriculturalist in the Federal Republic of Germany is slight and very much in its early stages.

Not that those in the departments concerned with educational planning have not recognized the significance of training in management techniques. In all statements of policy principle in recent years, the declaration can be found that now and in the future, consideration is due "the training necessary to produce the enterprising business manager"- in other words, the educational goal of farm manager. And there is no doubt that the effort is being made in all agricultural educational institutions to supplement the teaching of production techniques with the teaching of business management, and its function and its relation to the market situations and the overall economy.

Classes today in an average agricultural training school are divided roughly as follows:

- 25% for business management, marketing and economics, law
- 45% for production technology (that is to say horticultural production, animal production, land technology and constructional matters),
- 15% for ancillary sciences for production technology (such as chemistry, physics),
- 15% other civics or general education subjects.

If the class time available for economic questions is utilized in the sense of training in management techniques, depends in the last resort on the further education undergone by the instructor or teacher. The vast majority of today's teachers have themselves no training in management techniques and are also scarcely familiar with modern teaching methods. Only the teaching staff who have come from the universities in the last 10 to 15 years bring with them an at least

partly sufficient grounding, which can be extended and improved upon in professional further education.

Consequently, in the Federal Republic of Germany it is, in the first place, a problem of training the trainers. Only when the teaching of management is fully established within the agricultural faculties of the universities, when the training methods have been acknowledged on all sides, and so trained teaching staff are available in sufficient numbers, only then will it be possible to offer management training on a wide basis.

The picture is not very different in the area of further education. In response to wishes arising from the agricultural sector, in particular as expressed by the directors of larger concerns or of cooperative associations, first experiments have been made by autonomous institutions, professional associations and agricultural bodies to carry out further educational training of enterprising, but at least "calculating" agriculturalists. The example of the Deutsche Landwirtschafts-Gesellschaft or German Agricultural Society (DLG) can be quoted: for some years now is has organized business seminars, in which typical management problems, such as financing, business operations control, forms of contract, are worked out.

(3) The methods by which farm managers receive training and further education

The content and coverage of training and further education in management techniques are still not satisfactory. This is partly the result of the application of unsuitable teaching methods.

Traditional teaching in Germany, which still predominates today, consists of the transmission of knowledge by the instructor and the passive reception of knowledge by the students, marked by lectures and talks, but also by study of textbooks. In this way one can, it is true, learn something about management, but not the application of management itself.

This has of course been recognized in the meantime. The evolvement of so-called active teaching methods is therefore being promoted and gradually introduced. Here and there they are already being applied to the training, but far more to the further education of the enterprising agriculturalist.

The underlying principle of all these active teaching methods is the simulation of working conditions in the training of students. They should, as it were, learn from their own experience and study their role as manager in simulated practice. Training in taking rationally expedient decisions, with all the preliminaries and controlled follow-up, is particularly important.

The repertoire of methods at present available in the agricultural sector in the Federal Republic of Germany is not very large as yet. For a few years now, introduced by the already mentioned DLG organization, the case study has been applied in further education.

So-called planning games are being evolved and introduced in the institutions of higher education. These lead the case studies out of their isolation, make plain decision consequences and confront the "players" with internal and external operational interdepencies. It is not yet possible to assess whether the planning game can become a training and further educational method for the practical agriculturalist, or is restricted to the education of instructors and, at the most, of a very small group of leading agriculturalists.

B Institutions and Financing

(4) Where the farm manager is trained and where he can receive further education

The range of training offered to management levels in agriculture is concentrated on the state educational institutions. It is impossible to review, as it has sprung historically from many sources, added to which it has been entangled for some time in adaptation reforms.

In a simplified form, it is possible to say that management techniques are taught, or could be taught, as soon as the conditions cited under (2) and (3) above are fulfilled, at three levels:

- In around 270 agricultural trade schools, whose number is to be still further greatly reduced in the future. These schools build on practical training in agriculture and are intended to lead to the ability to run a (medium-sized) agricultural concern.

- In around 16 university-level agricultural colleges. These build on the training of the agricultural trade school, adding a deepening of specialist knowledge and a degree of specialisation.

- In around 15 training institutions within the very varied organization of higher education, This is primarily the training ground for the rising generation in science, consultancy, teaching, administration, specialist association operations and the agriculturally allied branches of industry, rather than for practical agriculture.

Unfortunately, management training through practical activity is rare. The three years training is generally just about sufficient to become familiar with production technology routines and to acquire a certain facility in the handling of crops, animals and machines. Furthermore there are too few large agricultural concerns suited to training purposes, and too few instructor bosses, who can pass on their management experiences.

A selection of regional, permanently located institutions, with regularly repeated course ranges (e.g. supervisors' courses), are available for the further training of agricultural business managers.

Another possibility is offered by seminars and courses, as well as working congresses, held individually in varying locations and with varying subjects.

The rate of utilization of all these facilities for training and further education indicates that the range offered is, at present, quantitatively sufficient. An acute shortage will, however, arise, as soon as only approximately all agriculturalists who wish to remain active in this sector and must therefore improve their management techniques, make their requirements felt. A speedy extension of educational facilities is not possible in view of the requisite instruction intensification.

(5) Who organizes training and further education

The schooling system in general, and thus also the agricultural schooling system, in the Federal Republic of Germany, is extremely varied in composition, almost split. It is true that all schools are under the control of the state. But this does not mean one central state. The cultural and school authorities come under ten federal states, who have taken the initiative in law-making in the past in very varied manner and with the most diverse of purposes.

Private schools for the agricultural sector do not exist in the Federal Republic of Germany. Thus the burden for these training institutions also lies with the state. In part agriculture or culture ministries are responsible for schools, in part authorities are appointed and assigned to this task, in part responsibility for schooling is delegated to autonomous institutes.

A close association may be drawn between the state responsibility for schooling and the fact that training in management techniques in Germany is still in the primary stages. For it is the case that state agriculture policy has, for far too long, seen the agriculturalist as the "family farmer", which is to say, as the owner and worker of a small farm, sufficient to employ and feed the farming family itself, an attitude which has obviated the necessity for many years to extend training programs to initiative operations.

Further education is certainly promoted by the state or the federal state, but remains to a great extent in the hands of the agriculturalists themselves. Through their autonomous institutions, trade guilds and associations they can exercise direct influence on the range of further education offered, its content, its quality and its frequency.

For the sake of totality it must be noted that individual further education agricultural management courses are also offered by institutions which primarily operate for industry and serve as money-making operations for their owners.

(6) What is the cost of training and further education

For training in the agricultural sector which is sponsored by public authorities, the student has to pay no study fees in the majority of federal states. Basically he must, however, meet the cost of his travel to and from school and in attending a college or university must pay for his own upkeep. State aid for these expenses is laid down in a specific law (professional training promotion law).

The German agriculturalist is also used to paying himself only a very small part of the costs for further education. The state affords very generous assistance to those wishing to extend their professional training, directly or indirectly through subsidy to the institutions of further education. A part of the costs of further education is also furnished by occupational or private associations.

This procedure is followed with good intent for the promotion of further education. In individual cases, the participant has already today to bear the relatively high costs for further training in management techniques, and this will certainly be increasingly the case in the future; in successful further educational training he will be able to do so. This is certainly no disadvantage, if such a development forces the training institutes to continuously maintain competitive quality standards, whilst the course participants are given the incentive to make the best possible use of the expensive opportunity offered them.

THE EDUCATION, TRAINING AND INFORMATION OF FARMERS

By G. Lussier

Deputy Minister of Agriculture of Québec, Canada.

I am especially happy and also honoured to be here today to talk to you about the education, training and information of farmers.

The present era of advanced technology will progress at a geometric rate between now and the year 2,000.

All sectors, whether primary, secondary or tertiary, are undergoing and will undergo profound transformations in order to meet new irreversible concepts which form an integral part of our modern society.

In future, the performance and success of any enterprise will be increasingly judged by its productivity, efficiency, competitive capacity and profitability.

Are our farm operators ready to face these new demands? This is what we must ask ourselves today.

Agriculture will be called upon to play a leading part in our history in the years to come.

The world population increase (76 million in 1973), and new styles of living and eating will compel it to do so. Moreover, in 1972, the warning signals appeared for the first time. Even the most countries suffered a scarcity of agricultural products, followed by a rather spectacular rise in food prices.

This disturbance luckily made all social classes aware of the vital importance of agriculture.

Bigger and better production became the slogan for rapidly remedying the situation. Countries owe it to themselves to help farmers meet these new challenges as soon as possible -- and meet them with the best possible tools.

We must picture the training of our farm operators on two different though essentially complementary planes, namely:

(1) production techniques and methods.

(2) economic aspects.

I - Agricultural sciences and techniques are developing rapidly thanks to research and new discoveries. Thus, the farmer must constantly relearn his trade, take refresher courses and adapt to recent discoveries and their possibilities.

An obvious example of this is the recent success of breeders in increasing the yield of certain plants and also adapting them to a wider range of climatic conditions. The advent of these improved plants has, so to speak, revolutionized overnight our settled ways and crop rotations and programs.

May I draw your attention to certain productions where farmers have been more or less forced to break with the past and start afresh.

First let me mention "Golden Crop" grain-corn, a variety long considered semi-tropical, but which can now be successfully grown in North America above the 45th parallel. Barley ten years ago, that would have been completely out of the question. The same may be said to apply to soybeans.

And what about the new varieties of spring wheat capable of yielding twice as much as conventional varieties like Selkirk.

The same applies to the livestock industry. Geneticists are constantly improving breeding lines to achieve ever-increasing rates of feed conversion. Giant strides are also being made in livestock feeding with the use of a wider range of nutrients increasingly suited to our animal productions.

All this means that the farmer, like the engineer or the scientist, has to re-evaluate, to rethink his farming. Like other professionals, he has to keep up-to-date, to improve himself, and be open to new discoveries and techniques and rapidly absorb them.

A well-ordered production system will always be the primary essential of a farming enterprise and one of the factors of its success.

The avant-garde farm operator must have this scientific and technological curiosity plus an openmindedness that will lead him to change his production methods and adjust them to new advances in agricultural sciences. The first and constant concern of tomorrow's farmer must be to get optimum production from every field and every type of livestock on his farm.

To do so, he must keep himself informed by reading newspapers, farm periodicals and guides. He will attend study days, conferences and discussions in order to round out and improve his knowledge.

The government owes it to itself to support separate training efforts and assume wide responsibilities in this field to assure agriculture of a high-ranking place through adequate improvement of its manpower.

Faced with future world constraints and trends of farm-products markets, governments will have to develop a clear-cut strategy embodying well-defined short, medium and long term policies which will enable farmers to make rational choices and take the proper course.

In addition, the more that farmers can confidently rely on careful extrapolations and sound agricultural programs conceived by government authorities, the easier it will be for them to manage their farming enterprises efficiently.

The research which is so vital and essential must be quickly made known by effective systems and methods of extension. How and by whom are production methods to be spread and popularized?

We are increasingly seeing concerted action by different levels of government, universities and private industry. Farm organizations too should join forces with them.

They all have the same client to serve, namely "The Farmer" who, for his part, often hears a different tune depending upon whom he is listening to. The messages he gets are sometimes conflicting or contradictory.

It is absolutely essential that, faced with the complexity of tomorrow's agriculture, the farmer shall be sure of having the best information available; this information must be as standard as possible and preferably be the result of a consensus between research workers, the responsible government departments, institutions of advanced agricultural learning and industry.

This will be possible if all the future sources of information can be gathered under one roof. You are probably thinking that it will be a difficult task. Yes, but not an impossible one.

Let me give you some examples from our own experience in Québec. Barley five years ago, two bodies were set up called the Québec Plant Productions Council and the Québec Livestock Productions Council.

The essential mandate of these two councils was to assemble information and to transmit it first to agricultural specialists and thence to producers.

They were formed under the aegis of the universities companies, institutes of agricultural technology, federal and provincial experimental farms and federal and provincial specialists and civil servants.

Various committees and boards under the two councils were made responsible for preparing integrated guides. By virtue of their constitutions, the councils became the duly authorized bodies for recommending or not recommending farming methods, techniques and productions. They were there to set standards.

Within the councils, the results may be described as excellent. There is real harmony and esprit de corps in the recommendations, and there is unity of action and thought in the message to the farmers.

Thanks to the two councils, it has been possible, for example, to get all soil laboratories to accept voluntarily the same methods and the standard recommendation grids. Subdrainage and permeability standards will soon be set in a similar fashion by the agricultural engineering committee of the Québec Plant Productions Council.

Lastly, all who come in contact with the farmer speak the same language and use the same terms. Seeing himself backed by this scientific consensus and the unity of the recommendations, the farmer naturally feels more reassured and confident when he comes to make decisions about a certain production.

He is thus assured of being well informed about methods and techniques whose merits have been tested by the best specialists.

At the field level, these theoretical guidelines are extensively disseminated through demonstrations, meetings, audio-visual means, radio and television messages, etc.

In order to keep in immediate touch with farmers and pass agricultural science and techniques on to them as quickly as possible, the Québec Department of Agriculture decided in 1968 to decentralize its organization into twelve agricultural regions.

Each regional agricultural administration consists of a regional office under a coordinator aided by two assistant-coordinators, one an agrologist and the other a veterinarian. These in turn, are backed by a complete team of specialists covering the main fields of activity, namely animal husbandry, field crops, farm management, horticulture, agricultural engineering and economics, young farmers, etc.

The twelve regional teams have to second and support the efforts of 84 local offices strategically distributed over Québec's farming territory. A local office serves 350 commercial farms.

The coordinator and his team are responsible (amonst other things) for:

(1) identifying agricultural problems actually encountered in the region's territory.

(2) taking inventory of available resources and doing everything possible to develop them.

Every year, each region proposes a plan of action with the main priorities and the strategy to be adopted to promote rapid progress of farming and to increase its profitability.

Onto this basic plan are grafted objectives, quantified by each local team, in the following sectors: resources, planning, development of productions, farm management, education and training, marketing, dissemination of information, etc.

Each agricultural region has its P.P.B.S. (Planning Programming Budgeting System), its M.B.O. (Management by Objectives) broken down into 92 sub-projects and its quarterly M.I.S. (Management Information System) showing the steps to be taken, the adjustments to be made, and the achievements.

All these tools are geared to the information, education, training and support of the farmer so that he may have the fastest possible access to the best available technical and economic advice.

Thus, every farmer is actually surrounded by a multidisciplinary team ready to help him out at any time and aid him in his efforts.

In Québec, the accent at the regional offices and laboratories level has truly been on intensive dissemination of information and highly improved training.

Please let me give you some figures about such achievements in 1973:

- 1,305 communications of all kinds, representing 937,185 letters delivered directly to the farmer's mailbox;

- 445 agricultural meetings attended by altogether 28,626 farmers;

- 166 field and experimental plot demonstrations illustrating new techniques and productions to a total of 18,805 farmers.

In this way, through information, education and training, technical aid and dissemination on a regional basis, we were able to bring about a surplus of cattle feed worth $9,200,000. produced in a single year.

This result was achieved thanks to coherent, well-adapted programs and realistic well-defined targets accompanied by well-conceived information intimately related to the problems pinpointed and the resources inventoried and to be developed.

This is only one example among many others which it would take too long to tell you about now.

We are both proud and flattered to find that a number of provinces envy our system and also happy to realize that some have already adopted it.

To further illustrate our profound concern to ensure the best possible training and information for our farmers, let me tell you briefly about an avant-garde method we use in Québec, namely putting production techniques on tape.

In many cases, the scripts to be used in broadcasts and telecasts on crop or livestock productions have been written by the same specialists who worked on the recommendations. Advisers, professionals and other government employees in the field have cooperated in the recording. This is a much used and highly appreciated form of extension in Québec.

This modern information device makes it possible to render new farming concepts more readily understandable and easily grasped.

The tape method has a great many advantages: the following are the main ones:

(1) trains and educates people during slack periods using all the modern audio-visual methods:

(2) conveys a standard, high-quality message throughout the territory:

(3) makes for consistency with the Department's major programs and aims:

(4) reaches very large audiences quickly and efficiently using simultaneously the best scripts and most highly qualified specialists.

By this means, using methods which are highly perfected and yet suited to the audience and within its grasp, we convey this up-to-date key information (resulting from consensus in the Plant Productions and Livestock Productions Councils) to nearly 14,000 farmers a year in Québec. I draw your attention to the fact that, in Canada as a whole 20,000 farmers have benefited from refresher courses; this means that by far the majority of them were Québeckers.

With all this sound, integrated publicity-production guides, courses, lectures, printed matter, radio, newspapers and television --- not to mention all the opportunities that the farm operator has at all times for consulting various advisers and government employees --- we believe that the Québec farmer has the required information and technical training to manage his enterprise well.

During the next ten years, this dissemination of information will have to be increasingly well organized and constantly readapted to enable our farm operators to make rapid and sure decisions.

II However, it would be a serious mistake and a move in the wrong direction to consider only production methods without bothering about management or the economic aspects of the farming enterprise in general. In today's agriculture, these essentially complentary aspects have to go hand in hand.

Nor must farm bookkeeping be considered as an end in itself but rather as a tool for diagnostic purposes leading to advice on management designed for the better guidance of the farming enterprise towards a new profitability.

The business records of an enterprise often enable us to detect its technical and operational weaknesses and vice versa.

In modern farming, both aspects must be considered on an equal footing to assure the operator of recommendations which must be effective on two planes:

(1) improvement of farming methods in the weaker sectors;

(2) better investments of available capital and more efficient management of capital with a view to maximum profit.

Generally speaking, for a number of years past in North America, there has been emphasis on farm management and a really special effort has been made in that field.

In many cases, it was first necessary to inculcate basic notions into farmers: balance sheets, cash basis of accounting, etc. Then systems grew more and more complex, with each province having more or less a special one of its own.

Finally there appeared a national system called CANFARM, a detailed explanation of which will be given by another speaker.

All these bookkeeping systems or tools, manual or computerzied, are of value only to the extent that they are conscientiously and competently interpreted by an expert with the object of "trouble-shooting," making diagnoses and giving genuine management advice.

Too often in the past, many bookkeeping systems have served only as sets of figures recording the operator's returns -- large or small as the case may be -- when they should have been serving as a basis for reorganizing the enterprise.

Our farmers now have a fairly good grasp of bookkeeping itself. For the most part, they succeed in making the proper entries without too many mistakes and in producing a fairly valid document for analysis. However, most of them must still rely upon an adviser or a management specialist to evaluate the economic realities reflected by their farm accounts.

As the different systems of farm accounting become increasingly improved so as to be suited to the needs of agriculture in the nineteen-eighties, it will also become imperative to educate a new breed of farmer, able, like any good head of an industrial enterprise, to analyze figures, make his own diagnosis, pinpoint through economic standards and criteria the weaknesses of the enterprise, and gauge the corrective measures, new investment and programming needs.

Farmers capable of carrying out all these steps successfully without constant help from a specialist are still few and far between. However, we believe that the progressive farmer of tomorrow should be able to succeed in doing so.

We must, therefore, strive to give this new type of training in order to meet the increasingly exacting requirements and demands which farming will impose upon us in the next decade.

And when, together with our farmers, we have climbed the last step toward independent decision-making soundly based on full knowledge of the facts, we shall be justified in the proud claim of having adequately completed our task of "making and improving the farm managers of tomorrow."

Many other economic concepts could contribute to good farm management and administration. I am thinking for example of better knowledge on the part of the future farmer of the principals of hedging and pre-contracts.

Too often, farmers know only a very little about these concepts and make use of them even less. However, in many cases, they could use such devices to advantage.

I notice that other speakers will be dealing more thoroughly with those matters and I am, therefore, cutting short my remarks on these methods which should be more widely used.

In short, the Government, in the face of new farming techniques and economic realities, will be obliged to provide its future farmers with solid instruction in specialized schools.

This must be backed up by a program of continuing education kept constantly up-to-date. Government authorities will be responsible for developing and making known their short, medium and long term planning while never losing sight of secondary and tertiary agricultural sectors.

The economic aspects of future agricultural development and the training of its skilled operatives will, ipso facto, have to take into consideration new food habits and changes in the living standards of consumers.

The agricultural outlooks and market analyses of the departments and organizations concerned will have to reflect as closely as possible the trends and corrective measures to be applied to agriculture. It will be essential for the farmer to get to know these quickly in order to direct his enterprise accordingly.

To conclude then, it is important, in my opinion, for the training of farm operators to constantly relate advanced techniques to economic data. Both aspects must complement each other smoothly and it is thus that a farming enterprise will progress and come to compare favourably with other types of businesses or industries.

The modern operator will increasingly require precise and sophisticated advice. Hence, it can be expected that he will increasingly consult highly specialized persons and, to do so, be prepared to join farm-management and similar groups.

A progressive farmer will be one who follows the advances of the new agricultural technology, adapts quickly to changes and does his own "trouble-shooting" after analyzing the economic data of his enterprise.

Furthermore, training and improvement will continue to progress if applied in the context of "Canada, food supplier" and (as this implies) that the necessary measures be taken to safeguard the farmlands which are of such vital importance to the Canadian economy.