

A STRATEGY FOR EXTENSION IN THE SOUTH AFRICAN SUGAR INDUSTRY

By R. H. PAXTON

South African Sugar Association Experiment Station, Mount Edgecombe

Abstract

It is anticipated that the introduction of projects into the extension programme, and their detailed planning and evaluation, will lead to more effective extension and that job satisfaction amongst Extension staff will be improved. The formation of Extension Committees in each extension area, with grower membership, will afford producers the opportunity of participation in the formation and evaluation of the extension programmes in their areas.

Introduction

The principles of extension programme planning, have been the subject of numerous papers^{1, 2, 3, 4} by authorities on the subject and the procedures are well defined and widely accepted. They can be adapted, perhaps with some modifications to most extension situations and services.

The implementation of these principles and procedures and the achievement of short and long term objectives can be complicated by a number of factors which could result in eventual frustration and the collapse of the programme. In developing areas, the difficulty of establishing an overall agricultural policy, the need for lengthy research and investigation, the choice of alternatives and priorities for development, shortages of staff and finances, and marketing problems, are some of the factors which could make agricultural extension programming extremely difficult. Few of these constraints exist in the South African sugar industry and this affords an opportunity to implement the principles of extension programming successfully. While programming has been carried out for a number of years by the SASA Experiment Station Extension Division, an attempt is now being made to plan activities in much greater detail, with the specific objective of dealing with factors which limit or could limit production in any area. Where such limiting factors are not already identified, an investigation may be undertaken to determine their nature.

The objectives and functions of the Experiment Station Extension Division

Unlike any state extension services which have a definite policy of community development, the service provided by the Experiment Station is specifically to assist the cane grower in improving the efficiency and level of his sugarcane production. This involves :

- providing the link between the Experiment Station and the grower community
- providing a consultancy service for cane growers and visiting them on request
- keeping the grower informed of the services available from the Station
- maintaining close liaison with research staff and keeping up to date with all new developments.
- representing the Experiment Station on various committees.

On average each year growers will be contacted on some 6 000 occasions by the 15 Extension Officers based in South

Africa and Swaziland, and about 60% of these contacts will be at the request of the grower. The remaining 40% of voluntary visits will be to inform the grower about developments in research and technology and to bring about change where this is considered to be necessary.

Communication with the grower is generally on a face to face basis, but increasing use is being made of group communication. Study groups, liaison groups, discussion groups and farm visits are all regularly used for the diffusion of information. Newsletters prepared by the local Extension Officer are his personal medium for communication with the growers in his area. The Experiment Station provides its extension service with the formal back-up of the specialists engaged in research at the Station, through the Specialist Advisory Service, whereby the scientific staff become consultants to the Extension Officer.

An indication of how an Extension Officer spends his time is provided by an example from the Durban North Coast extension area, given in Appendix 1.

This record serves to emphasise that planning is essential if the most effective use is to be made of an Extension Officer's time. It is a matter of policy that request calls will always be given priority in his daily programme.

Projects and Project Planning

It is clear that, at the present stage of development of the South African sugar industry, the Extension Division must place much emphasis on attempting to resolve the issues which limit productivity and profitability of industrial farms. In addition to continuing with the routine functions of extension, therefore, Extension Officers are now selecting a project or projects for particular attention in their areas, which are aimed at removing factors limiting to production. These projects are considered under the following headings :

- Problem identification
- Objective determination
- Plan of work
- Programme of work
- Evaluation of progress.

Problem Identification

Factors which are or could become limiting to production are often not difficult to identify in parts of the sugar industry. Nevertheless, the extent and exact location of a problem in an area needs to be confirmed by properly conducted and often extensive surveys and examination. As an example, disease surveys over a whole extension area provide positive information as to the intensity of the infection and the distribution of the disease in the area. Recent RSD and smut surveys have either been conducted by the Extension Officer himself or he has had the assistance of a Disease Inspector from the Pathology Department.

The results of these surveys serve to motivate the Extension Officer and to create an awareness of the situation amongst growers. They will be used in setting the objectives of the extension programme and in its eventual evaluation. The instances where limiting factors are not obvious, or

where yield reductions could be the result of a combination of limiting factors, a close examination of farm records and performance will help to guide the Extension Officer.

Objective Determination

- (i) Practical considerations as well as the results of surveys will help to determine where emphasis of the extension effort should be concentrated. In some instances disease surveys have shown that high intensities of infection are confined to relatively small parts of an extension area, and to avoid the spread of the disease, efforts should be concentrated on the affected farms. In areas where more than one limiting factor is affecting production, effort may be concentrated in different areas for different reasons, or it may simply be impractical to cover the whole area in one season. The first part of the Objective Determination will be to decide what specific areas will be selected for concentration of effort.
- (ii) Solutions to overcome the problem or potential problem of yield reduction comprise the second objective. There are fortunately not many growth limiting factors in our sugar industry for which solutions are not available. Nevertheless, investigations and surveys conducted in the Problem Identification phase could result in further research being necessary to provide the solutions to a particular problem.

The establishment of realistic objectives is the key to the whole concept of Project Planning. The project must be within the capability of the Extension Officer to carry out, and the objectives must be set in such a way that they are clearly understood and capable of eventual evaluation. The need for flexibility in any extension programme is nevertheless essential to enable the Extension Officer to undertake his many other functions and duties.

An example of Objective Determination is provided by the Extension Programme in the Eastern Transvaal. Disease surveys have shown that the highest levels of smut are concentrated in the Komatipoort area. Emphasis and effort have been directed towards solving the problem in this locality in particular, and solutions to the problem have been provided through the roguing of infected stools after field surveys, the use of clean disease-free seed at planting, and the introduction of smut-resistant varieties.

Plan of Work

The processes through which it is intended to achieve the objectives constitute the Plan of Work. In the first instance this necessitates the creation of an awareness amongst the grower community that the problem exists and that it contributes to a reduction in their productivity. The results of initial surveys and investigations form the basis for the plan, and these are disseminated by various means throughout the extension area, initially in newsletters.

Group activity would be initiated to discuss control measures or the action needed to remove the factors limiting to production, and individual farm visits made to discuss specific problems. An approach recently used by the Extension Officers of the South Coast and Midlands South areas was to invite the formal leaders of their grower community to a seminar at the Experiment Station to discuss the mosaic problem which exists in parts of these areas, and to see the symptoms and effects of the disease in the field trials on the Experiment Station Farm. It is hoped that by creating an awareness of the situation amongst the formal leaders, they will contribute to the implementation of control measures in areas where they have influence.

Programme of Work

The specific times for the implementation of the Plan of Work will constitute the Programme of Work, with targets for accomplishment set for periods within the programme if this is possible. The implementation of the Programme of Work will constitute the Extension Officer's principal activity during the year, and careful planning will be needed to allow sufficient flexibility within the programme to accommodate all the other extension functions. An example of a Programme of Work is that initiated in the Umfolozi Flats area to control smut.

April	Formation of working groups for smut control.
May-June	Assess seedcane and variety situation for each group. Newsletter on smut
July	Initiate RSD survey
Aug-Sept	Emphasis on nursery establishment through groups
Oct-Nov	Smut surveys to reassess situation Group meetings on smut situation
Jan-March	Meeting of Regional Extension Committee for assessment of results of smut survey and evaluation of progress — Newsletter to growers.

Evaluation of Progress

At the end of each programme year an Evaluation of Progress will be made as the final process in the Project Plan. In areas where disease control constitutes the Project, further disease surveys of farms and fields originally surveyed could provide a means of assessing the success or failure of the project, though a noticeable reduction in the level of disease will not necessarily be achieved after the completion of a single annual programme. A record of the number of growers who introduced disease resistant varieties, planted farm nurseries and practised roguing in their fields would also be a means of evaluating the success of the programme.

In order to avoid the unsatisfactory and frustrating situation where the achievements of a long and arduous work programme cannot be measured, it is apparent that, if at all possible, objectives must be chosen that will allow progress to be measured. Vague and unreliable objectives will lead to frustration, whereas an identifiable contribution to the productivity of an area by the Extension Officer will lead to increased job satisfaction and motivation.

While annual programming is necessary, it is anticipated that many projects will not be completed within a single period, and that they will often have to be carried over into following seasons. Nevertheless, an annual evaluation is necessary to measure progress and to reconsider courses of action. The completion of the annual programme itself, without necessarily solving the problem, will provide the extension officer with some degree of satisfaction. Disease surveys have been conducted in nine Extension areas as the initial step in the Project Programme and follow-up action is in progress in these areas. The computer analysis of farm records is being done as a Project in one Extension area and as part of the Project in a number of other areas. These analyses will be used to establish subjects for future projects. In the Umvoti area a project aimed at increasing the sucrose content of cane deliveries in this area of traditionally low sucrose has apparently contributed to record sucrose levels, and in the Indian area the Extension Officer is making progress in motivating young growers to become interested in contributing to increased production.

Regional Extension Committees

Extension Committees have been formed in each extension region, with both grower and miller-cum-planter representation. It is the function of these committees to assist the Extension Officer in the formulation of his annual programme and to agree on the priorities set. On the completion of the annual programme the Committees will assist in the evaluation of progress made and suggest courses of action likely to lead to further progress. The member of these Committees are appointed by the local Mill Groups and the Management of the miller-cum-planters. They will meet at least once each year, but additional meetings will be called by the local Extension Officer if and when necessary. Half yearly meetings would serve to motivate committee members and to remind them of their obligations.

Conclusion

The selection of Projects for detailed programming and evaluation has only been in operation for one full season, but has already been of value to the industry. It is appreciated that the evaluation of progress in many instances will be difficult, but with more experience in setting realistic objectives, at this early stage there appears to be no reason why this system of Project Programming in conjunction with Regional Extension Committees, cannot be implemented successfully with benefit to the sugar industry, and to the increased motivation of Extension Staff.

REFERENCES

1. Burger, P. J. and Düvel, G. H. (1973). "An operational model for programmed agricultural development". *S.A. Jnl Agr. Extension*, 2, pp 5-12.
2. Frutchey, F. P. et al (1967). "Evaluation in extension". *USDA Federal Extension Service*.
3. Raudabough, J. N. (1977). "Extension program development for increased agricultural production". *S.A. Jnl Agr. Extension*, 6, pp 37-41.
4. Terblanche, E. le F. (1974). "The extension programme as operational procedure in agricultural Extension". *S.A. Jnl Agr. Extension*, 3, pp 51-53.

Appendix I

This analysis of time is based on an average working day and a five day week. Travelling time is calculated by distance travelled and does not include to and from work time. Hours spent off and on the farm were recorded or calculated.

Three major work categories were considered :

Time spent on the farm	52% of total time
Time spent off the farm	31% of total time
Travelling time	17% of total time

Some details of the first two categories are as follows :

Time spent on the farm :

1. FAS reports delivery and discussion	....	7%
2. Request visits	....	27%
3. Voluntary visits i.e. Project	....	8%
4. General - Irrigation survey, Eldana Committees, Directors visit, etc.		10%
		<hr/> 52% <hr/>

Time spent off the farm :

1. Lecturing and preparation and marking of course results	....	11%
2. Meetings and conferences	....	6%
SASTA		
Agronomists Association		
Staff meetings		
Soil Cons. Committees		
In-service training		
3. Monthly Reports and general office routine	....	7%
Annual Programme of Work		
4. General	....	6%
Field days, farm trips		
Eldana maps and Committee work, etc.		
5. Computer Records	....	1%
		<hr/> 31% <hr/>