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MEETING**

# A SYSTEM OF PROJECT REGISTRATION DESIGNED TO FACILITATE INFORMATION RETRIEVAL

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## SUMMARY

The registration of projects is mandatory in an efficient agricultural research programme. A proposed registration system, with facilities for information retrieval by computer is discussed. This system is designed primarily for use in the Faculty of Agriculture at The University of the West Indies, but it is hoped that with adequate organisation and cooperation, it will be eventually extended to encompass all agricultural research programmes in the Caribbean region.

## INTRODUCTION

The Science Information Exchange (SIE), under the aegis of the Smithsonian Institution (Washington D.C.) since 1953, provides the scientific community with timely information about currently active scientific research. This natural registry of research in progress collects and provides information to facilitate effective planning and management of scientific research at all levels of responsibility, and for all organisations concerned with the support and conduct of scientific research. The SIE

provides broad coverage of basic and applied research in all fields of biology, medicine, sociology, psychology, agriculture, and the physical sciences.

A project registration office is an essential element in any research organization. It is an office in which new projects are registered and existing projects updated and from which information can be retrieved, so as to facilitate coordination and evaluation of the research work carried out in the organization.

The Faculty of Agriculture at the University of the West Indies is currently in the process of setting up a project registration office and to this end a system of project registration and information retrieval has been designed. The objectives are similar to those of the SIE except that registration will be limited to agricultural projects in the Caribbean region, initially from within the Faculty but ultimately it is hoped that all agricultural research institutions in the Caribbean area will contribute to the pool of information.

The obvious benefits from such a system will extend to leaders of research programmes, funding organizations and should considerably lessen the areas of duplication of research effort.

The system is designed for the storage of information on magnetic tape and its retrieval by computer.

### *Project registration*

Each project is identified by a registration number and the following information is stored:-

- |                               |  |
|-------------------------------|--|
| (i) Date of registration,     | (v) address of responsible individual, |
| (ii) title of project,        | (vi) location of project,              |
| (iii) responsible individual, | (vii) funding organization,            |
| (iv) Cooperators,             | (viii) expected starting date,         |
|                               | (ix) duration of project               |

The objectives of the project are then stated, followed by the procedure to be adopted. There is provision for additional remarks.

When the project is received in the project office Key words, as are to be found in a Key word index, are assigned to a project. There is also a section on the form which gives information on the status of the project. The project office, by seeking information from the individual responsible for the project at regular intervals, is able to record the current status of any project. Any publications which may have been produced are also recorded at this time. A sample project registration form is shown in Table 1.

Other information, including a costing of the project, distributed under various heads, and a breakdown of an individual researcher's time, may also be included in a project registration form. The analysis of such information is sometimes invaluable to the administration of a research institution.

### *Information retrieval*

Information is registered and stored for the purpose of retrieval at some later stage. It is envisaged that the main users of the system would be research workers desirous of finding out what other researchers are pursuing in a particular field of interest. Examples of other requests may be to list the projects (a) funded by a given organisation or (b) in which a given individual is participating.

In the case of a researcher making a request for all projects concerned with crop protection with regard to onion production in the Caribbean, for example, he will have access to the Key word index and will make his request with reference to a number of Key words. There will be a choice of output either complete as recorded in the project registration form or abbreviated, giving only basic information e.g. title, and responsible individual's name and address.

Projects will be kept in the system at least until they have been terminated in some way. At which time they may have to be removed to another file.

Table 1

*U. W. I. Faculty of Agriculture and Other Regional Institutions*

**PROJECT DESCRIPTION – RESEARCH RESUME**

Date of Registration	Registration No.									
Title										
Responsible Individual (Surname first)					Other Participant (s)					
Dept. of Responsible Individual										
Territory										
Funding Organisation										
Expected Starting Date					Expected Termination Date					
Not yet in Progress		<input type="checkbox"/>	In Progress		<input type="checkbox"/>	Discontinued		<input type="checkbox"/>		
Extended		<input type="checkbox"/>	Revised		<input type="checkbox"/>	Pending		<input type="checkbox"/>	Terminated <input type="checkbox"/>	
Remarks										
Publications (give authors and references)										
Objectives					Approach (“Approach” should follow “Objectives”)					
Key words										

### *Programming aspects of system design*

The system is designed to run on the University computer at St. Augustine, an ICL 1902 A with 16K immediate access store, magnetic tape, and magnetic disc backing store.

The design philosophy from the programming standpoint is based on the relatively small amount of information to be handled, the expected continued development in sophistication of the system, and the provision of a human rather than a machine-oriented interface with the client.

The information for each project is stored uncoded in a single record of 2352 characters. Each record contains different length fields relating to different items of information such as starting date, the name of a person involved, or a keyword. The amount of space in the fields is generous to allow for future extra information to be added without extending the total record length, yet details of over 5000 projects could be stored on one reel of magnetic tape. This open uncoded format is useful because it allows the single file to serve as a master print file for producing selected reports and to be searched for statistical purposes.

As the system grows in size and sophistication it will be possible both to separate the search procedures from the printing operations, and to transfer selected parts of the operation to magnetic disc instead of tape. The system is also designed openly enough to use ICL software programmes wherever this will effectively save programming time.

The presentation of a human-oriented interface to those people who will use the system is perhaps the most important factor in the successful implementation of the project registration/retrieval scheme. It is also the most interesting and difficult from the programming standpoint.

Human beings interpret instructions with some latitude; computers do not. Human beings, in general, do not repeat their actions precisely, but computers do. Thus to human beings computers appear inflexible and inhuman, while to computers (if they could think) human beings appear to be error-prone!

The solution to this antipathy between the machine and the user must be a compromise. It is reasonable to expect a fairly high standard of accuracy and the caution or care to avoid ambiguity on the part of the user, but the machine must be programmed to allow for (and thus correct automatically) as many 'errors' as possible. In this way the machine appears bearably human to its users.

A simple example of the kind of technique that is being used concerns the format of keywords. Different users requiring information on pod set might write their request as 'PODSET', or PODSET, or 'POD SET'. Each of these three sets of characters would normally be seen by the computer as a different keyword. In our system they would all be accepted as equivalent, thus relieving the personnel writing keywords for new entries or inputting queries to the search programmes from having to use (and memorise) a unique representation.

### *Cooperation*

It is hoped that, when the project is well established within the Faculty of agriculture, individuals and organisations engaged in agricultural research in the Caribbean region will contribute to the information in the system and in turn request information from the information pool to keep in touch with their counterparts in other territories.

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