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About the Institute
The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

OFFICE MEMORANDUM

TO: Mr. David Rogers,
Consultant, AGP

DATE: 30 April 1974

FROM: Director, MD

SUBJECT: Your Paper dated April 1974 "Documentation of Plant Genetic Resources"

I have gone over the above paper which you sent to Mr. Wrigley, along with a copy of the comments which he gave you on 29 April and, which I endorse and recommend for your kind consideration.

Pl. 2/5

PLANT PRODUCTION
R'd: 2 MAY 1974
REFERRED TO: Initials
D. Rogers

Wrigley File.

MINUTES OF

INTER-DEPARTMENTAL WORKING PARTY ON PROGRAMME MANAGEMENT

HELD ON FRIDAY 10 MAY 1974

Present: Mr. E.M. West, DPB (Chairman)
Mr. JJ Cohen de Covia, AFM (Vice-Chairman)
Mr. M.F. Abbam, AGL
Dr. R.S. Temple, AGA
Mr. T. Lehti, FSD
Mr. J.D.M. Henderson, FI
Mr. C.Kienitz, FOD
Mr. A.J. Bronsema, AFF
Mr. F. Magrini, AFS
Mr. F.M. Roche, AFFA
Mr. J.J. Miocinovic, AFFA
Mr. R.M. Scott, AFFA
Mr. K.W. Mandefield, CIP
Mr. A. Peters, AFM
Mr. M. Walker, AFM
Mr. J. Wrigley, AFM
Mr. A. Amats, AFM
Mr. B. Corbishley, DPB (Secretary)

1. Preliminary discussion of an outline scheme for a computerized management information system

Mr. Cohen de Covia presented a paper on a proposed computer-based management information system, and announced the appointment of Mr. M. J. Walker as the Management Information Systems Officer. Mr. Wrigley was at present investigating the possibility of using a file management package programme which could simplify and reduce the programming effort for this and other systems. It will be possible to plan the timing of the system's implementation when this investigation was completed.

It was pointed out that:

(a) There was opposition to recording time at the programme element level in some areas, but it was recognized that this had to be done to implement the unified programme and if any real programme management was to be carried out. A further advantage would be the ability to summarize and present the basic programme elements from several viewpoints, such as sub-programmes, problem areas and organization units, which was becoming more desirable also in view of trends to further inter-organizational cooperation.

(b) One department had estimated the present cost of manually summarizing time records at about $5000 per annum (half the time of a G-4 clerk) and about double the cost to summarize from programme elements manually. How much of this could be saved depended on how these costs compared with the cost of the computer system and how much the present clerical effort could be reduced.

The planned reinstitution of the programme management workshops together with model system reports to be explained to divisions by AFM staff would considerably facilitate a favourable reception of the system. One of the aims of meetings with divisions would be to determine the kinds of reports required, since once the basic data were captured, many summaries at different levels were feasible. What departments/divisions would get out of the system should be emphasized in any presentation.

2. Programme Management Circular 3.7 Sub - Programme Reporting in Regional Offices

This circular was approved.

29 May 1974 (DPB)

INTER-DEPARTMENTAL WORKING PARTY ON PROGRAMME MANAGEMENT

To: Members

Mr. E.M. West, DTE
Mr. J.J. Cohen de Govia, AFM

Dr. I.H. Loerbroks, AGD
Mr. M.H. Abbas, AGL
Dr. R.S. Temple, AGA
Dr. H. Kötter, FSH
Mr. T. Lehti, ESD
Dr. M. Raivo, TE
Mr. J.D.M. Henderson, FI
Mr. R. Nicolosi, FIDI
Mr. L. Gimenez-Quintana, FOD
Mr. C. Klenitz, FOD

Mr. A.J. Bronsema, AFP
Mr. F. Magrini, AGG
Mr. P.M. Socha, AFWA
Mr. B.S. Matanjun, DDDS
Dr. A.L. Molle, DDP
Mr. M. Benaissa, CI
Mr. H.W. Mandefield, CIP
Mr. B. Corbishley, DPB

cc: Assistant Directors-General/Division Directors (information)

ADG/DD Mr. J.P. Friant
Mr. J. d'Alarcao, DTD
Mr. A. Joseph, DDF
Mr. J.P. Hogger, DDC
Mr. A.G. Friedrich, DDI
Mr. P.A. Oram, DDDR

ADG/AG Dr. O.E. Prachnich
Mr. E. Hartmans, AGO
Dr. H. Jasiorowski, AGA
Mr. E. Saouma, AGE
Dr. F. Albani, AGP
Mr. T.S.B. Aribisala, AGS

ADG/FO Dr. B.K. Steenberg
Mr. L. Huguet, FO DO
Mr. P.J. Vakomitis, FOI
Dr. H. Steinlin, FOR

ADG/FI Mr. F.E. Popper
Mr. H.C. Winsor, FIO
Mr. H. Watzinger, FII
Dr. H. Kasahara, FIR

ADG/FS Dr. E.M. Ojala
Mr. S. Aziz, FSC
Mr. H. Canzio, FSN
Mr. G.O. Kermode, FSNS
Mr. J.P. Bhattacharjee, FSP
Dr. K.L. Dachman, FSS

AF Mr. G. Heerweg, AFS
Mr. F.H. Thomasson, AFP

CI Mr. R. Aubrac, CID
Mr. A.C. Orraneja, CIC
Mr. J. Stordy, CII
Mr. N. Dumitrescu, CIL

AGS - Policy and Planning Unit, B640
AGP - Policy and Planning Unit, C724
ESC - Mr. J.W. Evans, E203
ESH - Mr. H.W. Fairchild, C517
ESN - Mr. N.W. McInnes, C634
ESP - Mr. C.L. Munson, C312
ESS - Mr. C. Battistini, C405

Mr. D.J. Walton, ODG
Mr. R. Pope, DPB
Mr. E.A. Devin
Mr. K.C. Wright, DPB
Mr. U. Skullerud, DDF
Mr. P. Niemeyer, DDD
Mr. A. Peters, AFM
Mr. J. Wrigley, AFM
Mr. A. Amatti, AFM
Mr. M. Walker, AFW
Mr. R.M. Scott, AFFA

PLANT PRODUCTION
Rec'd 30 MAY 1974
REFERRED TO: | Initials
Dr. F. Albani
Exec. Off.
Mr. Pichel
Mr. Rogers

ECtkg
DPB file PR 4/49
DPB reg circ

31.5.8

The concept of numeric data (stat) and the need to use the computer to crunch this-

where there are few records the computer is not needed

logical -n nstat analysis

INIS Vienna on the nuclear —

AGRIS

(GUIDLINE FOR BI' DO DESCRITION)

Dec, 1973

Building A Mr Dubois

OFFICE MEMORANDUM

TO: Dr. David Rogers
Consultant, AGP

DATE: 29 April 1974

FROM: J. Wrigley
Chief, Computer Systems Branch, AFM

SUBJECT: Your Paper dated April 1974 "Documentation of Plant Genetic Resources"

1. I am most grateful to you for sending me a copy of your paper. I have read it with interest and found your approach to the subject very realistic. You asked for my comments and I give them below.

2. General. It might be helpful to number all the paragraphs (as in the first part of Section 2). The term "documentation" does not seem to fit as the word is used in the UN system. It is better than "data bank". If others feel the title does not fit it could be worth giving some thought to a new title so as to avoid confusion in governing body meetings, etc.

3. Section 1. To the six points listed, the question of the time prospective necessary to develop a GRC system might be added: perhaps the fifth point might become "to estimate the cost and period of development required for the work". In the second category, example (b) and (c) raise issues which widen the scope of the activity. For example the experts names appear in the extrinsic descriptors in the Appendix. But whether they "are available and when" involves a fairly frequent updating. Similarly, "storage conditions existent in the GRC" seems different to "in the country" which implies a different kind of data collection (i.e. outside the immediate control of the GRC). Was this widening of scope intended?

4. Section 2. 2.1 and 2.2. What is the present quality of the data? Is the precision sufficient to assume as straightforward a transition to machine readable form as is implied in Section 7 page 13?

2.3. What is said is very true about the over-expectation from computers. But surely a major point that should be made is the "user effort" required before there is any prospect of using a computer (agreement on what input and output is required: definitions, scope of information). Most "documentation/data bank" projects fall at the initial fence of the user effort and cost (the point comes later in paragraph 4.1 page 4).

Grouping GIS with Mark IV may be correct. But are they in the same category of software as STAIRS. These are all certainly software systems but not CARIS and AGRIS which are at present data collections (to the machine readable point) without the retrieval functions.

.../...

cc: Cohen de Govia
chrono
4/17

5. Section 3. The information part of the description may overlap with what is usually considered a documentation and library system. Should the GRC system attempt, in itself, to service all users needs: or should they have the ability to draw on a number of other separate systems?

6. Section 4. 4.1 It can be agreed that it is not necessary to carry discussion on classifications, etc. to the point that all resources are exhausted in trying to establish "standards". However, there must be a minimum set of data. Otherwise answers to the kind of questions listed in Section 1 are not feasible and the "in India" example of paragraph 2.1 strikes home. Perhaps the concepts of levels (e.g. the level one and level two of AGRIS and the similar CORE and COMPASS of the IOB) could be useful. Subscribing to level one really becomes the entrance qualification to the GRC group.

On page 7 (paragraph 4.1(ii)) the question of the kind of staff likely to be involved is raised in the readers mind. This is better commented on under Section 7.

4.2 In addition to the points made in the airline example (low volume of input and output: short period of storage) there is also the question of the commerical nature of their operation. If an airline cannot say whether they have a vacant seat immediately the passenger goes to another airline. Keeping as high a rate of occupancy as possible is commercially essential and thus an on line file with a network is justified on cost/benefit grounds. In the GRC field of work what reasonable time limits can be put on answering questions given the means by which questions and answers will be transmitted (and whether the elapsed time is a constraint on subsequent action).

The point made about the size of computers available to GRCs (particularly in developing countries page 10) and the physical and cost problems which arise in using IR systems on service bureaux is important. It could be an important constraint in the choice of the system to be used and how the use is organized. The development of the argument on page 9 leads not only to a large computer but to a concentration of a large group of specialists. The reader probably needs some further guidance at this point: or the problem needs to be stratified (by crop: top of page 8) or by level (my comments on paragraph 4.1 above).

7. Section 5. There is also the availability of air pouch services (as well as post). A point that could be emphasised more is the ability of the proposed system to return to individual GRCs more comprehensive files of data.

Some of the argument on page 10 might be combined with that on page 7. A lot of difficulties could be foreseen in operating a large system on service bureaux (or surplus time on commercial companies' computers) spread over the world.

8. Section 6. What is described here is a tremendous task not the least component of which is the establishment of the detailed outline ("as yet ill-defined objectives") in a form which is "acceptable to FAO and to the various users". The elapsed time on this could be measured in years if one accepts the FAO experience of other international efforts. The existence of TAXIR as a working system could help to pull this effort along by illustrating the final benefits. It may be that one also needs a level one TAXIR. Some of the outputs described in the last part of this section could be achieved within existing computer systems: some may not require computer facilities.

.../...

9. Section 7. While it may be that "between 30 and 50 percent of the work now being done in GRCs is data-related" it is difficult to follow the conclusion that "total /staff/ costs will not greatly exceed the present expenditure". Can existing staff reorientate to new procedures? To what extent will new skills be essential at both the top of the scale (for planning and using systems) and at the bottom of the scale (coding, editing, input preparation)? The needed improvement to "well-ordered" records (mentioned on page 7) could be costly.

The existence of the system could be expected in itself to bring (should bring) an increase in activity (refinement, conversion of existing records: completion of collections, etc.). This should be budgeted.

There are various ways of getting raw input into machine readable form but it may be useful to base estimates on card input. With the impression of the kind of input involved a cost of 10 cents a card might cover the staff/machine cost of this part of the operation. Before this is the preparation of the document for keying and after the editing, validation, checking and loading. It would seem that the cost is likely to be measured in dollars per accession in machine readable format. Other similar problems with less scientific complexity have shown figures of $4-$5 a documentary unit. Much depends on the organization of the work and whether it is possible to take advantage of economies of scale.

The costs for the computer services (apart from input) through to implementation at $250,000 to $500,000 (even allowing for the free use of TAXIR) seems of the wrong order (that is too low). This is quoted as "depending on network complexity" so assumes more than one centre. A figure can only be estimated against the background of rather more detailed objectives. Available funds are likely to control the speed of development.

The set-up costs of the system at a given centre are dependent as stated in the paper (page 13) on the extent to which the centre possesses staff with the required skills and is able to devote them to the work. As mentioned some additional "central" costs would be involved in sending a TAXIR expert to help with conversion/training/elimination of technical faults, etc. A cost of "$2,000 to $7,500" implies only from about 3 weeks to 10 weeks at current UN salary rates not taking into account travel and subsistence.

A team of TAXIR experts would be required to maintain the system and prepare updates as stated in the paper even after implementation. But in fact development of the whole "network" and the incorporation of the improvements that would come from the successful use of the data would mean that the routine maintenance stage would only be achieved in the distant future.

10. Appendix. The distinction between "accessions" and "item" might be clarified. The reader might assume that there would be many "items" in an "accession" (from, for example, the explanation of "descriptor"). But under "item" it is stated "the item is an individual accession".

It might be advisable to rephrase the description of "pilot test" in general terms (giving the present details as examples of what is involved). FAO experience would point to the need for pilot tests in the lesser developed countries (and GRCs).

.../...

Either under "FORTRAN" or "programme" or "software" or separately it might be advisable to introduce the concept of "operating system". The difficulties of moving from one computer facility to another (even of the same manufacturer and the same basic configuration) are compounded by differences in operating systems and their characteristics.

Mr. M. Frère
Agricultural Meteorology Officer, AGPE

2 May 1974

J. Wrigley
Chief, Computer Systems Branch, AFM

Proposed AGP Project on Climatic Data

1. We discussed with Dr. Rogers on Monday, 29 April, the very broad outline of a project which is being considered for submission as part of AGP's 1976/77 Regular Program Budget.

2. The objectives of the system are not yet documented but you explained that it was desired to establish a computerised information system based on climatic data.

3. You said that much of the climatic data which you wished to store in the proposed system is already available to you through government yearbooks which contain information for individual weather stations. Such data is not in standard form but in your opinion the coverage of the essential variables is adequate for the AGP project which is being considered. It is not proposed to record data from weather stations in developed countries. Your estimate of the number of weather stations involved in developing countries is approximately 3,000. For each of these it is proposed to record average monthly data for about 15 to 20 items. The average monthly data are available with different time coverage (over the last 20 years, over the last 30 years, etc.) but you do not consider it will be necessary to standardise time coverage or to update (within the foreseeable future) the data once the collection has been established.

4. Information is not available in FAO on the extent to which climatic data are available from governments in machine readable form or whether similar analyses have been undertaken elsewhere of weather station data. You said that WMO was unlikely to have such a collection of data.

5. Dr. Rogers suggested that the initial formulation of the project would be greatly assisted by a systems analyst (preferably with a background of agricultural conditions in developing countries) who would help to define requirements; specify the desired input and output of the system; investigate and assess data availability and present software systems; and advise on the most efficient plan for the development and implementation of the project. Dr. Rogers said that it appeared that the TAXIR system would be suitable for the type of information storage and retrieval problem so far identified although TAXIR was not designed to serve all the analytical needs you outline. TAXIR cannot be run on the FAO in-house facility at present. However, there are service bureau machines in Rome and the ICC machine in Geneva which offer better possibilities for the TAXIR system.

.../...

cc: Director, AGP
Dr. Rogers, Consultant, AGP ✓ PR.4/1
Mr. Cohen de Govia, AFM
chrono PL.1/1
4/17

6. At this stage it is difficult to place any firm cost estimate on the proposed project. You said that you were going to have further discussions with WHO and their interest in the project may yield further ideas and requirements. Taking the need for a systems analyst; clerical labour required to extract the information, code, etc. and fill in input sheets; the punching, verification, editing and validation; the set up cost of TAXIR or of some other storage and retrieval system; the computer time necessary for testing, etc.; and other miscellaneous costs it would seem that the project would cost about $100,000 to develop and implement over a period of two years. After this there would be continued running costs (maintenance of system, question and answer service, development when necessary of analytical programmes) which would depend on the intensity of use of the system.

Wrigley chronology

May 6,1974

1.10 After leaving the personnel office in F building , Dr. Rogers thought it would be useful to pay a courtesy call on J. Wrigley , chief, computer system Branch, AFM. to introduce to him Missters Hanley and Hersh.

1.20 Wrigley and Rogers have known each other over the past few years, and have met several times since January of this year. Their relationship had been marked by cordiality and a sense of cooperation.

1.30 Wrigley knew that Hanley and Hersh were arriving, had arranged to see them on Tuesday, May 7,1974 at _____

1.31 The purpose of the May 7 meeting with Wrigley - aside from introductions- was to enable Hanley and Hersh to gain preliminary and essential information of the configuration , operating environment and capacity.

1.32 This information is necessary to complete the Systems Analysis necessary to provide the following basis for a work plan/program to AGPO and AGPE for:

1) estimation of cost/time / of installation of TAXIR at FAO or other UN computers

2) definition of work program to be done to prepare for installation.

3) cost as this cannot merit the cost/eff needed at the present time, alternatives to he immediate installation of TAXIR at FAO/UN

1.33 This assignment is in fact part of the contract with both Hanley and Hersh.

1.40 On May 6 Wrigley invited Rogers, Hanley and Hersh into his office and invited them to join = coffee.

Rogers explained that this was a courtesy call

1.41 Wrigley mentioned that on Tuesday May 7 he would be seeing (TAXIR/MARK IV) the European representative of Information Inc. (California USA) a proprietary Administrative Information Retrieval System.

Hersh noted that this was interesting because a cost/effectiveness comparison was being made at the University of Colorado between TAXIR and Mark 1V.

Wrigley said that Mark 1V was being investigated by FAO for Administrative purposes only and not scientific application.

Hersh told Wrigley that some experimental work had been done at University of Colorado using TAXIR for Admin. purposes the results of which need encouraging.

Hersh further suggested that the cost/effectivness comparison would be available in August.

Wrigley stated that he had not thought of TAXIR as an administrative system before. He would like to see further description of the system- what he had seen had not described he administrativit capacity of the system.

N.B. (He had been given the TAXIR manual in 1972 and a copy of the Source code Documentation in Jaunuary 1974). Although neither of these made direct notes on Administrative application, a sufficient knowledge of the capacity of TAXIR could be gotten to provide an insight into its administrative capability).

Wrigley went on to note that Mark1V application pkg. was available only as a binary tape- which could not be changed by the purchaser- and that the price was about $50,000 for what FAO needed. Wrigley said that he had tried to get this price down but that it was firm.

The contract would include maintenance should problems arise. He expected

He expected that the "System engineer " would not be located in Rome.

Hersh asked if a decision had yet been made to purchase MARK1V , since the comparison as administrative Information Retreival Systems between TAXIR and MARK1V would be available in August- and since TAXIR may be installed for Scientific purposes at FAO at some time in the near future, it could provide a substantial savings to FAO.

N.B. If TAXIR is available at FAO, the source code would be provided meaning that FAO would have full knowlege about it, could maintain IT with their own personnel and not need a service contact. FAO could also make changes in the TAXIR SYSTEM as it saw fit.

Hanley as DJR Any evaluation specifications for the use of Mark 1V ? Bench marks for Mark 1V ?

Wrigley no, he didn't have any.
Wrigley stated that the decision to purchase MARK 1V had not been made as yet and that he would be interested in having the information on the comparison of TAXIR.

1.42 The discussion turned to some of the problems about scientific application and the use of the computer center. The major points made by Wrigley were:

1) Many of the scientific requests brought to him were not well thought out- that the scientist had not defined what he wanted- and of couse the center could not estimate the cost of implementation.

2) Many of the requests, even when thought out were really not amenable to computerization. In this regard Wrigley explained that often :

a) the data was not sufficiently numerous (not sufficient in the number of data points) or

b) that the data were already information (the raw data having been processed) and little could be done with these.

c) that often the data that was from "official (national) sources" was of questionable validity.

In most of these cases a computer was not needed.

Wrigley gave an example of one request to computerize 300-400# records which he thought to be too small.

Wrigleysuggested that many of the people making requests had little understanding of what was implicit in computerization.

1.421NA Although it was not specifically stated, Wrigley implied the following:

1) if the data was not numeric and clearly defined, it was not really acceptible.

2) if statistical or precise mathematical application were not to be used, the use of the computer was questionable.

3) it seemed apparent that Wrigley was not conversant with applications other than statistically -numericaly related. He refered to this in pointing out that his past experience

PART I

Wrigley chronology

May 6, 1974 1130 AM

1.10 After leaving the personnel office in F building, Dr Rogers thought ~~it might~~ it would be useful to pay a courtesy call on J. WRIGLEY, Chief, Computer System BRANCH, AFM. to introduce to him MESSERS HANLEY AND Hersh.

1.20 WRIGLEY and Rogers ~~had met several times before over the past few years,~~ have known (since) each other over the past few years, and have met several times since January ~~1974~~ of this year. Their relationship had been marked by cordiality and a sense of cooperation

1.30 Wrigley ~~had know~~ knew that Hanley and Hersh were arriving, ~~and further~~ had arranged to see them on Tuesday, May 7, 1974 at ——.

1.31 The purpose of the May 7, meeting with Wrigley - aside from introduction - was to ~~a~~ enable Hanley AND HERSH to gain preliminary and

see 1.311 essential information ~~about the following:~~

of [illegible] capacity

1.32 ~~The purpose of gaining this knowledge~~
This information is necessary to complete the Systems Analysis necessary to provide the following basis for a work plan/program to ~~ASPE~~ AGPO and ASPE for:

1) determination of cost/time/effort/location of TAXIR at FAO or other UN computers

2) Definition of work to be done to prepare for installation

3) ~~if not~~ cost is this cannot meet the cost/eff needed at the present time, alternatives ~~means~~ to the immediate installation of TAXIR at FAO/UN

1.33 This assignment is in fact part of the contracts with both HARVEY and Hersh.

1.40 On May 6, Wrigley invited Rogers, Hanley and Hersh into his office and invited them to join in a coffee.

Rogers explained that this was a
1.41 ← courtesy call. Wrigley mentioned that on Tuesday, May 7 he would be seeing
TAXIR/MARK IV the European Representative of Informatics Inc. (California, USA) the proprietors of MARK IV, a proprietary Administrative Information Retrieval System.

Hersh noted that this was interesting because a cost/effectiveness comparison was being made at the University of Colorado between TAXIR and MARK IV.

Wrigley ~~at~~ ~~was~~ said that MARK IV was being investigated by FAO for Admin purposes only and not scientific application.

Hersh told Wrigley that some experimental work had been done at University of Colorado using TAXIR for Admin. purposes

the results of which were
discouraging. ~~Heath~~ /

Heath further suggested that ~~the~~
comparison the cost/effectiveness comparison
would be available in ~~the~~ August.

Weisley ~~[illegible]~~ stated that he had not
thought of TAXIR as an administrative
system before. He would like to
see further description of the system -
what he had seen had not described
the administrative capacity of the

N.B. system. → [He had been given the
TAXIR manual in 1972 and a
copy of the Source code Documentation
in Jan, 1974] → Although neither of these
made direct notes on administrative
application, a sufficient ~~[illegible]~~ knowledge of the ~~system~~
capacity of TAXIR could be gotten to
provide an insight into its administrative
capability.

Jim - any modification specifications for the use of mark IV

DJR - Bench marks for mark IV -
~~Reply was no~~

Wrisley - no he didn't have any

Post

NB - ~~TAXIR is not prop~~ available at
If TAXIR is ~~provided~~ FAO, the
source code would be provided
meaning that FAO would have full
knowledge about the it, could
maintain it with their own personnel
and not need a service contract.
FAO could also make changes in
the TAXIR system as it does fit.

Insert
No bench
marks/evaluation sheet

Wrigley said that the decision to purchase mark III
had not been made ~~and~~ as yet
and that he would be interested in
~~seeing~~ having the information on the
comparison of ~~IRIS~~ TAXIR and mark III
as administrative ~~Sy~~ Information
retrieval Systems.
He also said he would like
more information on the capacity of
TAXIR, - what it could do.

1:42 The discussion turned to some of the problems
about scientific application and the use of
the computer center. The usual points were made

WRIGLEY went on to note that MARK IV, applic. pkg., was available only as a binary tape — which could not be changed by the purchaser — and that the price was about $50,000. for what FAO needed. Wrigley said that he had tried to get this price down but ~~, and~~ that it was firm.

The contract would include "maintenance" should problems arise. He expected that the "system engineer" would not be located in Rome.

Heck ~~Asked if the system MARK IV had yet been purchased~~

asked if a decision had yet been made to purchase MARK IV, since the comparison [as administrative information retrieval systems.] between TAXIR and MARK IV would be available in August — and since TAXIR may be installed for scientific purposes at FAO at some time in the near future, it could provide a substantial savings to FAO. ~~AS TAXIR is not~~

by Wrigley were:

(1) many of the "~~problems~~ scientific requests brought to him were not well thought out — that the scientist had not defined what he wanted — and of course ~~[illegible]~~ the ~~[illegible]~~ center could not estimate the cost of implementation

(2) Many of the requests, even when thought out were really not amenable to ~~computer use~~ computerization. ~~(a)~~ In this regard Wrigley explained that ~~there were bas~~ often (a) the data was not sufficiently numerous (not sufficient in the number of data points) or (b) ~~that they had been~~ the data was poorly defined (c) or that the data ~~had al~~ were already information (the raw data having been processed) — and little could be done with these d) that often the data that was ___ from "official (national) sources" was of questionable validity —

In most of these cases a computer was not needed

Wrisley gave an example of one request to computerize 300-400 records, ~~whe~~ which he thought to be too small

Wrisley suggested that many of the ~~wo~~ people making requests had little understanding of what was implicit in computerization.

1.421
AT

1.43 NA – Although it was not specifically stated, Wrisley implied the following

1) if the data was not numeric and clearly defined, it was not really acceptable

2) if statistical or precise mathematical application were not to be used, the use of the computer was questionable. It

3) it seemed apparent that Wrisley was not conversant with applications other than statistically ~~data~~ ^accurately^ related. He refered to this in pointing out that his past experience

Wrigley 4/29

Documentation - what does it mean in UN system
new title

3. ___ time prospective for GRC system

___ expects where and when mangement to assist research widening

good! updating possible- paper flow must be part of system

___ storage - yes different - yes widen

4. ___ quality of data - need to have

system to examine quality and recheck. can be reevaluated - or/and purged

___ definition and classification of what an information system is (good)

5. not a library system if this is good ?

(2)

problem of systems Doc. if only get the binary

Wrig. ~~Markxxiv~~ Mark iv will provide a great deal of document.

Hanley

What good of all the system Doc . if you only get a Binary listing?

Wrig

no reply

but they will give the source if they go ~~brokebar-bausted~~ broke

(1) Han

TAXIR ~~veid-of~~ independent of ? content

pass additional

info about TAXIR

Walking out can all of it for Tuesday

asked us about GIS as another syst they worked at

Wrisley 2a 9/29

2. documentation = what does it mean in ON system
new title.

3. — time prospective for GRC system

— experts where & when. management
to assist research — widening good!
updating possible. — paper flow must
be part of system.

— storage — yes different — yes widen

4. — quality of data — — need to have
~~the~~ system to examine quality
and reflect. ~~some~~ can be
re evaluated. — or/and parsed.

— — definition and classification of what
an information system is
(good.)

5. — not a library system if this is good cluster

③ ②

problem of systems dsc if only get the binary

① HH - TAXIR void of independent of semantic content

WRG / WR mark IV will provide a great deal of document

poss additional info about TAXIR

FAM What good of all the systems dsc if you only get a binary listing?

walking out Consult XXX for Tuesday

WRG - if no reply but they will give the source if they go ~~broke~~ ~~bat~~ ~~busted~~ broke

Asked us about GIS or another syst they looked at

1.5 Rogers said that, as previously agreed, he wanted to introduce Hanley to some of Wrigley's programmer/Analysts. This was to get some basic understanding of the machine configuration, the operating system, and the operating environment at the computing center here.

Wrigley said that he personally would be glad to answer any questions we might have. He asked what do you need to know?

He then went on:

the price of services were:

$400/cp minute
Request put in/job in the morning-out at night
$20/ programmer hour

The equipment was a IBM370-145

Hanley asked about the core frame

Wrigley said 256 K (bytes)

H_____ what is the Ø S ?

W_____ Standard VS2.1

H_____ Which option? PCP, MFT, MVT?

W _ __ _said yes,

H_____What is your peripheral equipment?

W_____ 6-3330 Disks
3-800/1600 BPI Tape Drives

Wrigely then interjected that he could take the core frame 312 K or no problem to up grade it to a 370 /145 (but not likely in this next bienium)

There was also available in town a possible access to the Geneva 155 which is being up graded to a 158.

H_____ asked what's the job load factor?

W_____ currently about 2 shifts or an effective 2/3's load factor

H_____ Asked about job mix, accounting, admin, etc.

W_____ We run mostly Admin. packages, then he interjeced him self to say calmly -I don't have to tell you that, do I? That's for me to know, not you.

H_____ [illegible]

Wrigley Plenty

Hanley Do you run an open shop? or a closed Shop?

N.B. these are technical terms used to describe a specific type of computer center operating environment.

all development , and prod. work are done solely by a group of personnel. Users who have access to the machine are soley their staff personnel. Programs can be run, but only through the etc. of the staff personnel -staff queries

Open Shop have staff , prog. develop but ran comp staff personnel and non- staff per non in out computer

Implicit in this is considered the problem of control and functions of the computer center.

Wrigley All requests for use are made through me, you can put it in the morning and get it out in the evening. pause looking at Hanley "There are 3 exits from this room, that door, that door or out that door and over the balconyy."

Pause agitated

Pardon me, David. ____ at Hanley

I don't need any of you"know -it - all Americans"to tell me what to do in my computer center.

very agitated , voices raised

" I've met dicks like you before, pointing to Hanley, "You don't have to tell me what to do.....

Hanley. interjecting I'm sorry I didn't mean to...

W..... Apologyze you should, I accept-Yes .

stammering

DJR

W quite red in the face and quite agitated

David is my friend, that's the only reason I agreed to see you. Let's get this straight now, I run this computing center- not you or anyone else.

Rogers: W , no one is questioning your authority. Hanley was just trying to establish what the operating environment is

interject

Rogers We aren't telling you how to operate we need to know ther things in order to understand the problem in getting TAXIR operational here.

APPENDIX
OR
FOOTNOTE

a) What is the configuration and capacity of the UN computing facilities; What is the configuration of the FAO comuputing facilities;

Configuration and organization means associated operating systems (systems software), the applidation soft ware, the systems professional staff available for alteration or modification in systems software or in the installation and maintance of application soft ware; the computing center mangement controls (the cost/billing algorithm, the budget process, access to the equipment, access to software change etc.

Capacity means the availability of the computing system to preform certain specified tasks- in the case the systems current capacity for the installation f TAXIR as an systems application package and the capacity repomse of the computing system to continuous use of TAXIR and the necessary maintance of TAXIR/

the order to assess capacity certain information must be obtained:

The configuration of the system as above ; the comp.systems experience with similar types of application installation and maintance etc.

The currentt work load on the system , its expansion capability- the probable costs of utilization based on experience etc. In order to ascertain such information a series of quesations must be asked- usually of persons exceptionally knowledgable about the configuration , current work load and experience gained at the center in getting the current work load on the computer.

PART 2

1.5.

~~Roger recalled yesterday that he had~~

Roger said that, as previously agreed, he wanted to introduce HARVEY to some of WRISLEY's programmer/Analysts. ~~A~~ This was to get some basic understanding of the ~~operating~~ machine configuration, ~~and~~ the operating system, and the operating environment at the computing center here

WRISLEY said that he ~~was~~ personally would be glad to answer any questions we might have. He asked what do you need to know?

He He then went ~~on to go~~ on;

the price of services were

$4.00 / cp minute

→ Regret put in / job in in the morning out at night

20/ programmer hour

~~HARLEY~~ The equipment was a IBM 370-145

Hanley asked about the core frame.
~~Wrisley responded with~~

Wrisley said 256K [bytes]

Hanley what is the OS ?

Wrisley: Standard VS 2.1 ?

Hanley, Which option? PCP, MFT, MVT.

Wrisley said yes.

Hanley, What is your peripheral equipment
Wrisley - 6 - 3330 Disks
3 - 800/1600 BPI Tape drives
→

Wrisley then interjected that he could
? take the ~~[illegible]~~ core frame up to
312K or ~~[illegible]~~ no problem to
up grade it to a 370 ~~[illegible]~~ 145 —
(but not likely in this next biennium).

There was also available a IBM 370-195
in town or possible access to

the series 155 which is being
upgraded to a 158.

HANLEY: asked what's the Job load factor
~~and the Job mix~~

Wrigley: at currently running about 2 shift
or an effective 2/3 load factor.

Hanley: Asked about Job mix, ^accounting, services, etc ~~open shop, closed shop~~

Wrigley: We run mostly Administrative packages,
then he interrupted himself to
say calmly – I don't have
to tell you that, do I? ~~Do you do~~
That's for me to know not you.

Hersh: are you running any Scientific
programs

Wrigley: plenty

Hanley: Do ~~you~~ you run an open shop

or a closed shop (to

NB. these are technical terms used to describe ~~as~~ a specific type of computer center operating environment

? all development ~~maint~~ and prod work are done solely by a group of pre designated ? personnel.

users who have access to the machine are solely their staff personnel.

? programs can be run, but only through the select etc of

? the staff personnel. — staff got queries ?

— Open shop

have staff

? progs develop but rather

? carry staff personnel and non staff per ~~prog~~ intent

? computer queries.

Graphic in this is to considered the problem of control and function of the computer center

Wrigley: ~~you to~~ all requests to use are made through me, you can put it on in the morning and set it out in the evening.

pause

- looking at Hanley

there are three exits from this room, ~~the exit door, the~~ that door, that door or exit that door and over the balcony.

- pause -

agitated

pardon me, DROID ~~at~~ at Hanley

~~again~~

I don't need any "know-it-all Americans" to tell me what to do in my computer center

very agitated, voice raised

"I've met dicks like you before," pointing to Hanley, "You don't have to ~~teale~~ tell me what to do!"...

Hanley interjecting "I'm sorry I didn't mean to..."

Wrisley apologize you should, I accept, yes

stammering

DJR →

Wrisley quite red in the face and quite agitated

Let's get this straight now, I run this computing center – not you or anyone else.

~~To DM~~

DAVID'S my friend, that's the only reason I agreed to see you.

Rosen: Let no one's questioning your authority. Hanley was just trying to establish what the aquatic environment is.

Inject

Rosen: We aren't telling you how to operate we want to know these things in order to understand how to the problem in getting TOXIX operational here

~~of the computing center~~ 1.311 (Appendix)

Appendix

or footnote (1)

(capacity

a) What is the ~~capacity~~ configuration of the UN computing facilities; what is the configuration of the FAO computing facilities;

b) ~~What is the capacity of these [illegible] com facilities — the~~

Configuration or organization means the type ~~what~~ equipment, ~~the~~ (hardware); the associated ~~syste~~ operating systems (systems software); the application software; the ~~for~~ computing center management controls (the ~~user~~ cost/billing algorithm, the budget process, access to the equipment, access to software change), [or]

system

→ the professional staff available for alteration or modification in systems software or in the installation and maintenance of application software;

Capacity means the availability of the computing system to perform certain specified tasks — in the case

the systems current capacity for the installation of TAXIR ~~with~~ ~~attendant~~ s as an systems application package and the Capacity response of the computing system to continuous use of ~~TAXI~~ TAXIR and the necessary maintenance of TAXIR

In order to assess capacity certain ~~critical~~ ~~questions~~ information must be obtained:

The configuration of the system as above; the comp systems experience with similar types of application installation and maintenance, etc.

The current work load of on the system — ~~and the time required~~ its expansion capability —

the probable cost of utilization based on experience etc.

In order to ascertain such information a series of questions must be asked — usually of persons exceptionally knowledgeable about the

Configuration and current work load as and experience gained at the centre in getting the current cost load on the computer

Mr. R.J. Pichel
Chief,
Crop Ecology and Genetic Resources Unit, AGP

20 February 1974

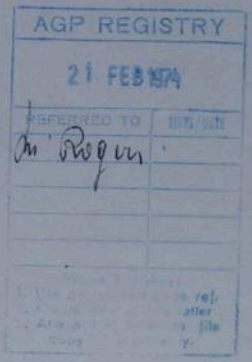
J. Wrigley
Chief, Computer Systems Branch, AFM

Seminars on Documentation

Very many thanks for your memorandum of 19 February. I would very much like to attend the seminar to be given by Dr. Rogers. Unfortunately, I shall be on duty travel for much of March and then engaged on the Finance Committee until 9 April. If in Rome I shall certainly attend, however, and would be glad to have a note of the dates of the seminar when they have been fixed.

PL 2/8

c.c: Dr. Rogers, AGP (C769)
Mr. Cohen de Govia, AFM



OFFICE MEMORANDUM

13 February 1974

To: See below

From: J. Wrigley
Chief, Computer Systems Branch, AFM

Subject: Third Draft of ACC Report on Information Systems

I attach the note prepared in response to my memorandum of 13 February on "Plans for the improvement of FAO Internal Information Systems over the next few years".

This note will be tabled today at the ICB Review Panel meeting in Geneva as an annex to the FAO comments on the Third Draft of the ACC Report.

To:	Mr. E.F. Akyus, FI:	ASFIS (Aquatic scientists, marine
	Mr. R. Andurac, GID:	AGRIS/CARIS research)
	Mr. A. Dawson, WFP:	Project Information
	Dr. R. Dudal, AGL:	Soil Data Bank
	Mr. H. Kotter, ESH:	Population
	Dr. J. Leon, AGP:	Genetic Resources
	Dr. M.D. Narain, ESS:	ICS

c.c: Mr. Nehemiah, IAA
Mr. Cohen de Govia, AFM

UR. 10/1

AGP REGISTRY
18 FEB 1974
REFERRED TO | DATE
Dr. Doon
PICHEL OK
ROGERS

15.2.74

PLANS FOR THE IMPROVEMENT OF FAO EXTERNAL INFORMATION SYSTEMS OVER THE NEXT FEW YEARS

1. AGRIS (International Information System for the Agricultural Sciences and Technology)

A sectorial application, in FAO fields of competence, of the UNISIST recommendations and principles, AGRIS aims at optimising and coordinating, in a worldwide cooperative information system, governments', institutions' and other bodies' efforts to provide information services on "agricultural" literature (published and non-published). The AGRIS project, endorsed by the FAO Conference, includes (a) "AGRIS-Level One": a Current Awareness Service (AGRINDEX) on world literature, scheduled to become operational in January 1975, and as a complement (b) "AGRIS-Level Two": a series of networks of specialised information/documentation centres, analysis centres and data banks, grouped by discipline, product or mission, to provide improved abstracting, analysis/synthesis, SDI and other services to users.

2. CARIS (Current Agricultural Research Information System)

Likewise a sectorial application of UNISIST recommendations, the CARIS project aims at establishing a current information system on agricultural research projects, institutions and specialists, through worldwide cooperative action. A "Pilot Project", covering 13 West African countries (220 research stations and some 1500 research projects) has been completed in 1973. Proposals will now be submitted to the CGIAR for a development, by stages, towards a "global project" encompassing research in (or for) all developing countries.

3. AGRIS and CARIS - Technical Assistance

In close relationship with the AGRIS and CARIS projects, is the action taken to provide technical assistance (through UNDP and other projects) to developing countries in order to establish or strengthen their national agricultural (or all-sectors) documentation/information infrastructures, in order to permit these countries to benefit from the AGRIS and CARIS international systems and progressively participate actively in these systems.

4. AFSIS (The Aquatic Sciences and Fisheries Information System)

AFSIS has evolved out of a variety of information services introduced during the last 10-12 years in the FAO Department of Fisheries. These services centre around files originally set up to meet in-house demands for literature searches and document control, for information on the performance of aquatic research equipment, for biographic information on aquatic scientists in support of the recruitment of field experts, for details on the facilities and training programmes in aquatic science research institutions, and so on.

In response to extra-mural demands the services were made more generally available, but it soon became obvious that for a really effective system meeting a general requirement, international collaboration was required. Cooperative arrangements have now been made with national institutions in France, the German Federal Republic, the Soviet Union, the United Kingdom and the United States. To capitalise on the improved efficiency offered by automation, steps are now being taken to convert the files into machine-sensible format and integrate them into a computer-oriented system using internationally accepted standards and formats. A study of a conceptual world system was prepared and submitted to the Eighth Session of the Assembly of the Intergovernmental Oceanographic Commission (November 1973), which accepted AFSIS as the system to serve UN agencies involved in aquatic science and fishery programmes, under the guidance of an inter-agency

5. FAO's APPROACH TO SOIL DATA PROCESSING

FAO's soil data processing system is planned to consist of files grouped in national and regional data banks, and of a collection of computer programmes to make use of the files.

Three files are envisaged:

(a) Soil Data File

The structure of this file has been completed in a first provisional form. Guidelines for codifying soil data are in preparation.

The main use for this file will be:

(i) print-out of soil profile descriptions and soil analytical data in one of the official languages of the Organization;

(ii) correlation and regression analysis of morphological and analytical data;

(iii) print-out of soil units by classification systems;

(iv) calculation of soil productivity from climatic and crops factors.

(b) FAO Fertilizer Programme Data File

This file collects the results of trials and demonstrations of the FAO Fertilizer Programme. Three programmes of use are already functional:

(i) statistical calculations on experimental data from projects including fertilizer response surfaces;

(ii) calculations of economic benefits and probabilities of economic returns from the use of fertilizers;

(iii) analysis of annual and multi-year results by crops, regions, years, etc. and printing of these data.

(c) Soil Geographic Data File

The boundaries of the FAO/UNESCO Soil Map of the World are digitized and stored in the computer. Through interaction of this file with a land use file, a climatic file, a soil use file, interpretative systems for the map units will be produced, leading to the production of single use or single factor maps (printed or visualized on screen) by computer techniques.

6. GENETIC RESOURCES DOCUMENTATION

The Crop Ecology and Genetic Resources Unit, AGP has the responsibility to develop or select appropriate computerised information (data) storage and retrieval systems for the purposes of documentation of accessions of plant genetic resources. Genetic Resources Centres are to be embedded in a global network, and the information retrieval systems will be selected (or developed) by the documentation officer of the Unit, to support the work of each and all Centres, for purposes of communication and exchange of data/information on each accession of each crop contained in the Genetic Resources Centres. The critical elements necessary for the IR system are:

(a) flexible format input;

(b) complete flexibility in querying in a boolean manner;

(c) efficient techniques to store the input;

(d) user-oriented language;

(e) written in one of the standard compiler languages (preferably FORTRAN IV or V, or less preferably, in COBOL, ALGOL, etc.);

(f) modularised software for adaptation to varying computing configurations;

(g) completely documented;

(h) available in full (no binary decks)

(i) complete user's manual;

(j) available technical Programming and User back-up;

(k) available at reasonable cost to FAO and recognised Genetic Resources Centres.

OFFICE MEMORANDUM

TO: Dr. David Rogers
Consultant, AGP (C769)

DATE: 20 February 1974

FROM: J. Wrigley
Chief, Computer Systems Branch, AFM

SUBJECT: Report of Messrs. Stevenson & Kellogg

In 1970 a firm of Canadian consultants reviewed computer activities in FAO and made comments on all the then current or proposed activities.

...

I enclose for your information and interest the consultant's notes on the Genetic Resources Information Centre which was Part 4, Volume 6 Information Retrieval Systems of the eight-volume study sent to AGP and other divisions in July 1970.

PR-3/32

file: MD 4/17
chrono

J. GENETIC RESOURCES INFORMATION CENTRE

1. Plans

Plant Division is committed to develop an FAO Information Centre for Genetic Resources. The purpose of this Centre is to collect, store, and retrieve data on the genetic characteristics and location of collections of plant breeding material. These data will be disseminated periodically and on request to plant breeders and field projects. You estimate that there are between one and two million samples of genetic material of 50 major crops in several thousand collections around the world. Since modern crop varieties have no evolutionary capability and primitive varieties are rapidly disappearing, you attach considerable urgency to this project.

You plan to first identify existing collections, which is already in progress. Then you want to record taxonomic, maintenance, location, transfer, origin, and other crop specific data and store them on magnetic tapes. The number of characters to be stored per sample will be between 200 and 1,000.

Ultimately you want to be able to exchange tapes with other centres, provide remote access for users in other countries, and to analyse the data with such techniques as multiple regression.

You have carried out trial runs using the I.B.M. Document Processing System. You would prefer to use I.B.M. equipment to ensure compatibility of tapes with other users. However, you are not satisfied with the results of these trials. Nevertheless you consider them useful because they help you to clarify your ideas on the proposed system.

The types of questions you want to answer include:

- Where are collections of a variety held?
- Where are the collections of a variety which is, say, adapted to over 1,000 metres altitude?

STEVENSON & KELLOGG, LTD.

. In what area should you search for a crop with resistance to a certain disease?

To be able to ask these questions, you want an on-line system with remote terminal access, possibly with visual display facilities. You also want complete lists of the data every six months and partial lists sorted by cultivar and location on request. Other sorts will also be required.

Some particular problems you are currently trying to resolve are:

. The need for upper and lower case printing for genetic descriptions (Aa, BB, cc, dD, etc.);

. Whether to permit free text descriptions where the scientific terms are difficult to define, and therefore to code precisely;

2. Recommendations

a. Conduct a Feasibility Study

In chapter VI we make general recommendations for:

. Defining users' needs;

. Determining the most appropriate system configuration;

. Evaluating existing computer systems.

All these recommendations apply to your proposed system. You need the advice and assistance of a systems analyst to help you to carry out these steps. We estimate it will take an analyst six months to do this. These steps should be carried out before even attempting to experiment on a computer.

b. Estimate Costs

Your proposed system appears to be one of the largest information retrieval systems in the world. The associated costs will, therefore, also be considerable. We recommend you consider the following cost estimates before embarking on this project. The estimates are based on 500 alphabetic or numeric characters (not characteristics) per record (of a sample) and 1 million records.

(i) To implement an on-line system (with or without remote access) you need to store your data on discs. You would need permanent use on-line of either 80 small disc packs or 20 large disc packs. The drives for small discs rent for $600 each a month; large ones for $6,000 per eight drives a month. The pure storage cost, excluding any equipment rental for controls, processing or transmission, would be in the range of $200,000 to $600,000 in a year. No known computer installation in Europe could handle this task.

(ii) Suppose, then, that you use off-line tape storage. To sort the data on one field only, assuming they are randomly distributed, would require between 10 hours on a very large computer to 40 hours on a typical machine. In either case about 50 tapes would be required. The processing cost of a single sort would range from $5,000 to $20,000.

(iii) Printing the entire data contents would produce 100,000 pages of print-out, 40 feet thick. This would take 75 hours, based on 1100 lines per minute. With upper and lower case alphabetic characters this time would at least double. The equivalent cost range is $10,000 to $50,000 depending on the type of computer used.

In view of the above estimates, it is vital that you take a rigourous approach to defining the requirements, benefits, and costs of different feasible systems, along the lines outlined in chapter VI. Depending on the availability of funds,

you may have to limit the system to a few crops or a few major collections.

c. Avoid Free Text

If scientific terms are difficult to define, they are unsuitable for automated communication. The computer cannot think. You cannot retrieve information which has been indexed and stored with one set of terms, with another set of synonymous terms. The rules for constructing a thesaurus in Appendix A should help you to define terms precisely.

d. Tape Compatibility

It is possible to convert I.B.M. tapes for use on Honeywell equipment, and vice versa. However, a special program has to be written to do this.

ROTHAMSTED EXPERIMENTAL STATION
Harpenden, Herts. AL5 2JQ
Telephone: 058 27 62271

Head of Computer Department:
D. H. Rees

DHR/JMC.C.75

14th February, 1974.

J. Wrigley, Esq.,
Chief,
Computer Systems Branch, FAO,
c/o Mr. M. Y. H. Samsoen,
FAO Liaison Office in Geneva,
Palais des Nations,
CH 1211 Geneve 10,
Switzerland.

Dear Mr. Wrigley,

Thank you for your letter dated 4th February. There appears to be a misunderstanding about the Numerical Algorithms Group (NAG) activities. The present objective of NAG is to produce a library of high-quality proven procedures for handling widely-used numerical processes, eg. matrix manipulation, differential equations, etc. It is certain that the NAG library will become accepted at all U.K. university sites, and hopefully at most other sites with a scientific computing requirement. NAG are aware of the need to extend this into statistical procedures, but there is no evidence of any great activity on this front at present. I would expect Rothamsted to become closely involved with this development in the future.

To return to other points in your letter, I had understood from our meeting that you would arrange a visit to Rothamsted during the Christmas period so that you could have an opportunity to meet people and to gain a broader view of our programming activities. This invitation still stands. Meantime, I suggest that either you or one of your colleagues should get in touch with Dr. F. Yates, F.R.S., at this address, to discuss the analysis of the food consumption survey. From this Dr. Yates will be able to consider the role of the Rothamsted general survey program (RGSP) on your IBM 360/50 system.

Your letter includes references to other statistical analyses, for which the generalised statistical program GENSTAT may prove of value. Like RGSP, GENSTAT is also available on IBM equipment. This system, however, was designed and implemented within the Statistical Department, who have sole control of the distribution of the software and documentation. I shall therefore pass a copy of your letter to the Head of the Department, Dr. J. A. Nelder, and leave it to him to decide whether he can also contribute to your enquiry.

Since our meeting there has been a definite upsurge of interest in the use of the TAXIR package by our plant breeders. I gather that FAO are similarly interested in this software and that TAXIR might emerge as the system with the widest international acceptance. I would certainly wish to be kept informed of any developments here so that we could possibly contribute both with data and enquiries.

cont'd.

Finally, may I repeat my invitation to you to visit the Department when next you are in the U.K. I feel sure that there is so much of common interest that we would both benefit by a closer exchange of information.

Yours sincerely,

D. H. Rees.

c.c. Dr. J. A. Nelder
Dr. F. Yates

c.c: Dr. Rogers, AGPE, C769

Pc 2/8

28 February 1974

Dear Mr. Rees,

Thank you for your letter of 14 February.

I am sorry that I had a misunderstanding about the Numerical Algorithms Group (NAG). I was working on the rough notes that I took during our meeting in November. I had put a query - Statistical Package - but this is something for the future, perhaps.

My visit to England at Christmas became rather complicated, partly because I had to spend some time with IBM at Hursley and partly because I had to deal with a number of family questions. In the end I had only free time in the Christmas week and returned to Italy on 2 January. It did not seem possible to arrange a visit to Rothamsted. I shall certainly take up the question again when I am in London in the summer.

I have followed-up your suggestion about writing to Dr. Yates (copy of my letter enclosed). I have also received from Dr. Nelder some information about GENSTAT. I fear that in practice GENSTAT will be too large for our 370/135.

On TAXIR I have corresponded with Dr. David Rogers for some years. Recently he has taken an assignment with FAO and is presently in Rome. If your people are interested in TAXIR I would suggest that correspondence is taken up directly with Dr. Rogers: the address is David. J. Rogers (AGPE, Room C769, FAO, Rome) and I would suggest c/o Mr. Samsoen, FAO Liaison Office in Geneva, Palais des Nations, CH 1221 Geneva 10, Switzerland as the post in Italy is still very bad. I am in touch with Dr. Rogers and hope that we can draw on his extensive practical experience while he is in Rome. We were talking today and I mentioned your letter. Dr. Rogers said that the Cambridge Plant Breeding Station are also interested in TAXIR. In fact, I recall that I sent a copy of my manual on TAXIR to Cambridge a year or so ago.

Thank you again for your invitation to visit Rothamsted, I hope to take it up later this year.

Yours sincerely,

J. Wrigley
Chief, Computer Systems Branch

Dr. Rogers

Mr. D.H. Rees
Head of the Computer Department
Rothamsted Experimental Station
Harpenden, Herts. AL5 1JQ.