

Report of the Traveling Workshops of SATCRIS in Botswana, Malawi, Tanzania, Zambia and Zimbabwe

18 Sep - 16 Oct 1989

**L.J. Haravu
D. Jotwani**



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Semi-Arid Tropical Crops Information Service

International Crops Research Institute for the Semi-Arid Tropics

ICRISAT, Patancheru, Andhra Pradesh 502 324, India

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LIST OF ACRONYMS

AGRICOLA	Agricultural On-Line Access
AGRIS	International Information System for Agricultural Sciences and Technology
AGRITEX	Department of Agricultural, Technical and Extension Services
CABI	Commonwealth Agricultural Bureaux International
CARIS	Current Agricultural Research Information System
CD-ROM	Compact Disk - Read Only Memory
CTA	Centre Technique de Cooperation Agricole et Rurale
DRSS	Department of Research and Specialist Services
GTZ	Deutsche Gesellschaft fur Technische Zusammenarbeit
IARC	International Agricultural Research Center
IDRC	International Development Research Centre
ILCA	International Livestock Centre for Africa
NARS	National Agricultural Research System
SACCAR	Southern African Center for Cooperation in Agricultural Research
SADCC	Southern African Development Coordination Council

REPORT OF THE TRAVELING WORKSHOPS OF SATCRIS IN
BOTSWANA, MALAWI, TANZANIA, ZAMBIA AND ZIMBABWE,
18 SEPTEMBER - 16 OCTOBER 1989

1 BACKGROUND

The workshops conducted in five countries of the SADCC region, described in this report, are the third in a series of workshops that the Library and Documentation Services Division at ICRISAT has conducted in Africa. The first set of workshops were held in four countries of West Africa in 1985 as part of the erstwhile project called Sorghum and Millets Information Center (SMIC). Response to these workshops indicated that end-users (scientists, technicians, extensionists) of agricultural information in these countries did not have adequate access to scientific and technical information, and were not oriented to using information as a resource in planning, research and development, and problem solving. The SMIC project was succeeded by a new project called the Semi-Arid Tropical Crops Information Service (SATCRIS) in 1986, and it was decided that an important objective of SATCRIS should be to promote its services in Africa through user-oriented workshops. Two sets of workshops were planned in the SATCRIS project. The first of these was held in three countries of Eastern Africa in 1988.

The present report discusses the work done in the workshops conducted in five Southern African Development Coordination Council (SADCC) countries. Two professional staff members of the Library and Documentation Services Division traveled to the five countries. The two-member team was joined at Zambia by the Regional Training Officer of the ICRISAT/SADCC program at Zimbabwe, and he traveled with the team from SATCRIS in India through Zambia, Zimbabwe, and Botswana.

2 RATIONALE OF THE WORKSHOPS

SATCRIS aims to provide wide and efficient access to information on the crops researched by ICRISAT, i.e., sorghum, pearl millet, chickpea, pigeonpea, and groundnut, and on other aspects of research associated with ICRISAT's mission. The rationale for the establishment of SATCRIS at an International Agricultural Research Center (IARC) such as ICRISAT is the fact that most institutions in countries in the Semi-Arid Tropics (SAT), particularly in Africa, lack the infrastructure, resources, and skills to provide access to needed scientific and technical information in research, development, and problem solving. An important objective of SATCRIS therefore is to reach users in the relatively information-poor environments of Africa. This it does partly through its information retrieval, dissemination and document delivery services. However, there is need for a more direct approach to understanding needs of users in these countries, and so that potential end-users in these countries get a better awareness of the resources and services of a facility such as SATCRIS. Further, there is need to involve other elements in the information transfer chain, viz., libraries, documentation centers, authors, editors, teachers, extensionists, students, and information gatekeepers, if a center such as SATCRIS is to succeed in its objectives. The Traveling Workshops are seen as a way of improving communications between potential end-users and SATCRIS on the one hand, and between SATCRIS and other elements of the information transfer chain on the other hand.

3 OBJECTIVES

Stated in broad and general terms, the goal of the Traveling Workshops, was to generate and improve awareness of users in Africa to SATCRIS resources, services and capabilities to enable potential end-users to effectively utilize SATCRIS services. In this sense, the workshops are seen as part of a marketing strategy of SATCRIS to promote the use of its services. The workshops were targetted to end-users such as scientists, researchers, academicians, extension personnel, technicians, students, and to intermediaries such as librarians and documentalists from agricultural research stations, laboratories and universities.

Stated specifically, the objectives of the workshops were:

- 1 To improve awareness of scientists and other users to the value of information in general, and in particular to the resources, services, and capabilities of SATCRIS;
- 2 To identify gaps in the accessibility to information on the five mandate crops of ICRISAT so that SATCRIS could explore ways and means to bridge this gap;
- 3 To build contacts with libraries and documentation centers in these countries so as to improve their awareness of SATCRIS, as also to develop or improve information exchange relationships with these libraries and documentation centers;
- 4 To identify sources generating nonconventional literature, and to explore formal and informal channels for ensuring the regular input of such literature to the SATCRIS database;
- 5 To examine the scope for utilizing the services of intermediaries such as libraries, documentation centers, and information specialists in reaching the target population of users. The idea is to use such agencies as nodal points or switching centers so that they could utilize SATCRIS services for the benefit of end-users. It was felt that the proximity of such intermediaries to the potential end-user of SATCRIS services gives them a comparative advantage in understanding real needs, and hence they are in a better position to effectively utilize SATCRIS services for the benefit of end-users. Further, effective networking requires a good understanding of mutual capabilities and strengths.

4 SELECTION OF INSTITUTIONS

It was decided to conduct traveling workshops in five countries of the SADCC region, viz., Botswana, Malawi, Tanzania, Zambia and Zimbabwe during the months of September/October 1989. These countries were chosen considering the fact that all of them have research programs and research centers working on the crops mandated to ICRISAT, and also because ICRISAT has major commitments in terms of research facilities and/or cooperative programs in these countries. Two kinds of institutions were identified in each of these countries: Venue Institutions and Target Institutions. Venue Institutions were those that had the requisite infrastructure to host the workshop or those which were centrally located making it easy for participants from more than one institution to travel to. Target Institutions were research centers with a population of potential end-users. In all cases the Venue Institution was also a Target Institution. The places and timing were chosen to ensure as wide a participation of potential end users as possible. A provisional list of venue/target institutions drawn from the Agricultural Research Centers: a world directory of organisations and programmes (1983), CTA's Information Sources on Tropical Agriculture vol.2. (1988), and the mailing list of SATCRIS was prepared. The list along with a proposal describing the objectives and methodology of the workshops was circulated to Program Directors/Program Leaders at ICRISAT center, Leader of the ICRISAT Regional Program on Groundnut in Malawi, and Executive Director, ICRISAT/SADCC Program in Zimbabwe, for their comments and suggestions. All those contacted supported the idea of conducting the traveling workshops and were in agreement with the objectives envisaged. Some

suggestions concerning the choice of venue and target institutions were made. Based on the suggestions received, a final list of over 35 target institutions in the five countries with 1 or 2 venue institutions for each country together with a statement of the objectives of the workshops was sent to the Director of Research/Chief Agricultural Research Officer/Commissioner of Agricultural Research as appropriate in the five countries to elicit their suggestions and to request their permission to conduct workshops in their countries. Response from the heads of agricultural research in the countries contacted was also quite enthusiastic, indicating that they supported the idea of the workshops. Some of them in fact took it upon themselves to publicize the workshops within their countries. All venue institutions were requested separately to provide necessary logistic support for the workshops. Target institutions were requested to depute appropriate individuals to participate in the workshops at the venue institution in their country. Target institutions were told that they would need to fund the travel and per diem of their participants since SATCRIS did not have the funds to support such expenditure. Venue and target institutions in Botswana, Malawi, Tanzania and Zimbabwe responded promptly and favorably. In the case of Zambia, however, the venue institution responded very late. Target institutions in Zambia could be contacted only by the middle of September giving them little time to depute their scientists.

Based on the responses received, it was decided to conduct one workshop each in Botswana (Gaborone), Tanzania (Morogoro) and Zambia (Lusaka), and two workshops in Malawi (Lilongwe, and Limbe) and

Zimbabwe (Harare and Matopos). However, in Zambia a second workshop was conducted at the Mt. Makulu Research Station, Chilanga at the request of participants from the research station who attended the workshop at Lusaka, and felt that more end-users at Chilanga could benefit if a workshop could be held there.

Venue and target institutions finally included are listed in Appendix-I.

5 PROGRAM ORGANIZATION

A one-day workshop at each venue institute was planned. In addition to the formal presentation, enough time was provided for travel, visits to libraries, and meeting with senior scientists (e.g. Heads of research stations, Deans of Agriculture, Directors of Research).

The program followed at most of the places is given below:

0830	-	0900	Registration of participants
0900	-	1030	Presentation on SATCRIS
1030	-	1100	Tea break
1100	-	1145	Discussions
1145	-	1230	Exhibition of SATCRIS products and services, and selected publications of ICRISAT
1230	-	1400	Lunch
1400	-	1600	Visit to library and documentation center at venue institute and discussions with the staff

In addition to the presentation and discussions at the Venue

institution, visits to important agricultural libraries including AGRIS input centers and meeting with other agricultural scientists and research administrators was planned at each location. Such visits usually took place over two days after the formal presentation. Thanks to the ground work done by ICRISAT offices in Malawi and Zimbabwe, the schedule of presentations, visits, and discussions proceeded without any major changes.

6 WORKSHOP METHODOLOGY

The workshop methodology comprised a formal presentation followed by discussion, an exhibition of samples of SATCRIS information products, and services, and charts depicting SATCRIS methodologies, and display of a carefully chosen sample of ICRISAT's publications, followed by assistance to participants in enrolling themselves in SATCRIS services.

Based on the experiences of the traveling workshops conducted earlier, some qualitative changes were made in the methodology adopted. The formal presentation was changed to be an oral one with the use of overhead transparencies instead of a tape-slide presentation as in the past. The oral presentation enabled a more detailed description of SATCRIS and its services. Further, it enabled the presentation to be interactive. Another important change made in the present set of workshops was the administering of two questionnaires, viz., a pre-workshop and a post-workshop questionnaire. The purpose of the questionnaires was to find out the extent of use of information sources and systems by participants, the quality of service that they had access to, the value that they

attached to different information services, and whether they were aware of SATCRIS and its services. The questionnaires used during the workshops are given in Appendices II and III. Results of the analysis of the questionnaire responses is presented elsewhere in this report.

Each participant was provided with a workshop kit at the time of registration containing the following materials:

- The leaflet entitled About ICRISAT;
- A color brochure on SATCRIS;
- Registration form;
- SDI and literature search request forms;
- A Pre-workshop questionnaire; and
- A Post-workshop questionnaire.

The formal presentation on SATCRIS began with an introduction to SATCRIS and the objectives of the traveling workshops. The core of the presentation concentrated on the following topics:

- The SATCRIS database and how it is being built to ensure wide coverage of information on the five crops mandated to ICRISAT and associated information. The fact that the SATCRIS database draws its information from two global databases to which is added locally generated input, and the inclusion of not only conventional but also nonconventional literature, and other items of literature (e.g. relevant chapters from books acquired at ICRISAT, papers from conference documents) that are not normally found in other databases was highlighted.
- Information services of SATCRIS - its SDI, Literature search, abstracting, referral and document delivery services. Special care was

taken to present the rationale for each service and the advantages of using a given service. Examples of how these services have benefitted users were also presented. The SDI service was described in detail, since it is a service that alerts scientists to current literature and since it draws its information from two of the most important sources in agriculture, viz., the CAB International and AGRIS. Considering the fact that many research stations and other institutions in the region do not have access to good libraries and the fact that they are not in a position to pay for subscriptions to scientific journals, the SDI service is probably the most effective way in which users can keep themselves abreast of information in their areas of interest.

Following the presentation of the rationale and scope of different services, how a user could enrol himself on one or more of these services was discussed.

- The need to ensure that information originating from agricultural research in the SAT is captured and disseminated as widely as possible so that useful findings are available to others and the possibility of using information to avoid unnecessary duplication of effort and in problem solving was highlighted.

The formal presentation was usually followed by a discussion. Notes were taken of points raised and questions asked during the discussions and these are reported more specifically elsewhere in this report. The questions generally centered around the SATCRIS database, and on specific services, e.g. SDI. One question that did occur quite frequently in the different workshops was concerning the policy of SATCRIS in providing information retrieval services on crops that were not part of ICRISAT's mandate. It was pointed out that SATCRIS will

not, as a rule, duplicate the effort of other information centers that had been set up to provide information services in other areas, e.g. at other IARCs. It was further stressed that SATCRIS was not equipped to deal with requests in other crop areas. However, SATCRIS could refer users to the most appropriate information source or system when it was not in a position to respond to a request. A recurring question related to the possibility of training facilities for library and documentation professionals of the region at ICRISAT.

Many participants met with the SATCRIS staff informally after the workshop presentation. The informal exchange of views was found useful in improving the understanding of such participants to SATCRIS services. Also, in these exchanges, we were able to learn of specific needs of some of the participants. Such exchanges often resulted in the request for a specific search for information or request for enrolment in a service (e.g. SDI, abstracts service)

During the discussion session, participants were encouraged to make request for SATCRIS products and services. Some of them were helped in completing the SDI and literature search request forms, and in selection of relevant items from the list of SATCRIS literature searches, ICRISAT-in-print, and ICRISAT publications catalog which were displayed at the workshop venue. Their requests were collected and follow up action has since been taken.

Invariably, a request was made to participants to contribute single copies of their formal and semiformal publications to SATCRIS, if these related to the crops mandated to ICRISAT. It was explained that these contributions would be valuable additions to the SATCRIS

database and would be disseminated widely through SATCRIS services. It was emphasized that their contribution, however small, could benefit a fellow scientist working elsewhere in the SAT.

The display of ICRISAT publications was an important feature of the workshops and it was found that the Information Bulletins and Workshop Proceedings invariably attracted participants, many of whom were seen noting down the details of such publications. Librarians present were requested to get in touch with ICRISAT center if they wished copies of publications that they felt would be useful to their centers. It was found that many of the libraries in the region do get ICRISAT publications.

The post-lunch session was mainly devoted to visit of the library and documentation center of the venue institute and for discussions with the library staff. The purpose of the visits to these and other libraries were:

(i) to study the nature of their nonconventional literature collection, serial publications (e.g, house journals, accession lists, annual reports, etc.) and any other literature that might be useful to be input to the SATCRIS database;

(ii) to develop new and improve existing relationships for the exchange of nonconventional literature, and of information products and services; and

(iii) to examine their potential to become switching centers through which SATCRIS could reach end users more effectively, and to encourage the libraries to utilize SATCRIS resources and services for the benefit of their users.

Special care was taken to describe in detail the resources and services of SATCRIS to librarians and documentalists some of whom may not have participated in the formal presentations. A copy each of the

ICRISAT publications catalog, ICRISAT-in-print, list of SATCRIS literature searches, and blank request forms for SDI and literature search services were given to the librarians so that they could select useful material and/or enrol their users on our services. Wherever necessary specific proposals for exchange of literature were made. In several cases useful literature was collected and brought back. Library staff were also told of the project at the ICRISAT library to produce an Union Catalog of Serials at IARCs, and the fact that this would be available not only as a printed product but also as a database that could be used with the Micro CDS/ISIS software package. There was interest in this product in several libraries visited since many of them are in the process of obtaining microcomputers and were considering the use of CDS/ISIS applications.

We also met senior scientists, e.g. Directors of research or Heads of research stations, or Deans of faculty, to brief them interpersonally about SATCRIS. It was realised that most of these senior researchers would not find time for (or would not like to attend?) the formal workshops. Most such scientists, however, hold key positions in their national programs and are involved in decision making and in influencing the course of action relating to agricultural research and development. It was felt essential that such scientists should be specifically briefed about SATCRIS.

7 WORKSHOP REPORT

71 TANZANIA

Workshop at Sokoine University of Agriculture

The first workshop in the present series was held at the Sokoine University of Agriculture (SUA) in Morogoro on 21.9.89. SUA is the

only institute of higher education and training in Agricultural and related sciences in Tanzania. Thirty-two participants representing 5 target-institutes attended the workshop. Table 1 gives the target-institute-wise break up of participants.

Table 1

Sl. No.	Name of target Institute	No. of Participants
1	Ministry of Agriculture and Livestock Development, Dar-es-salaam	3
2	Agricultural Research Institute, Dodomo	1
3	Agricultural Research Institute, Ilonga, Kilosa	9
4	MATI, Ilonga, Kilosa	5
5	Sokoine University of Agriculture, Morogoro	14
		32

The participants included teachers, scientists, researchers, training officers, students, librarians and documentatlists, as shown below:

Teachers/Tutors/Training Officers	12
Scientists/Researchers	5
Agriculture Development officers/Field Officers	5
Librarians/Documentalists	7
Laboratory/Field Technicians	2
Students	1

Following the presentation on SATCRIS, participants asked questions about the pricing of SATCRIS services, and the possibility

of providing services on crops other than those mandated to ICRISAT. The librarian of the SUA wanted to know if training of library staff of SUA was possible at ICRISAT.

During the informal discussion that took place at the tea break, it was found that most of the participants were not aware of SATCRIS and its services. Following the presentation and discussion, some participants requested enrolment on SATCRIS services and they were helped to fill up the request forms given to them in the workshop kit. Some of them returned the request forms duly filled at the workshop venue itself. Some requests were received by mail, and action on these has since been taken.

Visit to SUA Library

In the afternoon of 21.9.89, we visited SUA library and met with the senior professional staff. The Head of the library, Mr. S S Mbwana briefed us about the collections and services of the SUA Library. The library has a good collection of agricultural material with the emphasis being the graduate student. As is the case with most libraries in developing countries, the SUA library is not allocated enough foreign exchange and has not been able to subscribe to journals involving payments in foreign exchange since 1985.

The library at present caters primarily to the needs of the students and the faculty of the university. We were told, however, that there is a proposal to name the SUA library as a National Agricultural Library. Although Tanzania is a large country in the region with a number of agricultural research centers, it does not participate in AGRIS. Literature of Tanzanian origin is probably not adequately covered in other sources, e.g. CAB International. It was

found that the SUA library did have reports of work in the different research stations of Tanzania containing useful location-specific information. Such nonconventional information is probably not even available to Tanzanian centers considering that it has not been organized for retrieval. The librarian was requested to send to SATCRIS copies of reports on crops mandated to ICRISAT so that these could be added to the SATCRIS database. We offered to help the library in providing document delivery services to the faculty and students, especially since they could not afford subscriptions to journals due to the lack of foreign exchange. A copy of ICRISAT library's Catalog of Serials, 1989 has since been sent to the SUA library reiterating our offer to help the library in providing copies of required documents to the faculty and others.

The library has recently acquired an IBM PS2 microcomputer under a grant from GTZ, West Germany, and has begun using it to automate its serials holdings using the Dataperfect software. This work is being done by an expatriate since the local staff do not have the requisite training. The project to make available the IARC Union Catalog of Serials as a microcomputer database to run as a CDS/ISIS application was explained. There was interest in this, and not surprisingly a request for facilities to train the local staff in the use of computers for library and information work.

72 MALAWI

Workshop at Bvumbwe Research Station

The second workshop in the series and the first in Malawi was conducted at Bvumbwe Research Station, Limbe on 24.9.89. This research station is situated near the commercial town of Blantyre, and

is the second most important agricultural research station of the country. The station is also engaged in research on pigeonpea.

The workshop at Bvumbwe was attended by 36 participants representing 3 institutes as listed below:

Table 2

Sl. No.	Name of the target Institute	No. of Participants
1	Bvumbwe Agricultural Research Station, Limbe	30
2	Ngabu Research Station, Ngabu	4
3	Blantyre Agricultural Development Division, Blantyre	2
		----- 36

The participants included scientists, researchers, field/technical officers, lab/field technicians, and library and documentation professionals. The workshop began with introductory remarks by the Officer-in-charge of the Station, Dr P P Panje who also attended the workshop. Dr Panje was already familiar with ICRISAT having attended a 2-week training workshop on vertisol management in 1989. Bvumbwe is primarily a horticultural research station, and participants were interested to know if SATCRIS would provide services on other crops not on ICRISAT's mandate. It was pointed out that SATCRIS normally does not entertain requests for services outside its mandate. SATCRIS, however, can direct end-users to the service that can best respond to requests that SATCRIS cannot handle.

Visit to Bvumbwe Station Library

The library at Bvumbwe Station is a small one. It provides circulation and limited photocopying services. Acquisition and processing of all documents required at Bvumbwe is done centrally by the Chitedze Station Library, which in fact it does for the other research stations in Malawi. Considering that the Bvumbwe station library is not adequately equipped to provide information retrieval services, we offered to conduct literature searches for users at Bvumbwe, and to provide SDI services to those of its users who are working on ICRISAT's crops. We wanted the library to act as a switching center in utilizing SATCRIS services. Similarly, use of the document delivery service of SATCRIS was offered to enable the library to meet requests for needed documents. A copy of ICRISAT's Serials Catalog, 1989 has since been sent to the library which has also been put on the mailing list to receive the ICRISAT Library Services Bulletin.

Workshop at Chitedze Research Station

Chitedze Agricultural Research Station near Lilongwe is the largest research station in Malawi. Its research includes variety evaluation, agronomy and plant protection in maize, groundnuts, and other grain legumes. Research is also carried out on pastures, soil fertility, and livestock breeding and management. ICRISAT's Regional Groundnut Improvement Program is located in the same campus.

The workshop at Chitedze was attended by 18 participants comprising scientists, researchers, teachers, and librarians and documentalists from 10 different institutes/organisations as below:

Many scientists from Chitedze Research Station, however, could not participate in the workshop as they were busy attending another workshop on grain legumes on that day. Since 12 of the 18 participants were library and information professionals, the discussions mainly focused on the technical aspects of SATCRIS activities and services, e.g., the indexing technique being used, use of thesaurus, abstracting, design and creation of the SATCRIS database, use of CDS/ISIS package at SATCRIS. Some of them wanted to know if SATCRIS can conduct on-line searches for their scientists. It was pointed out that, since on-line searches cost on an average about US \$ 80.00, this service is limited to ICRISAT scientists. Where users are

Sl. No.	Name of the target Institute	No. of Participants
1	Chitedze Agricultural Research Station, Lilongwe	6
2	Bunda College of Agriculture, Lilongwe	3
3	Iunyangwa Research Station, Mzuzu	1
4	Chitala Research Station, Salima	1
5	University of Malawi, Zomba	1
6	Natural Resources College, Lilongwe	1
7	Planning Division, Ministry of Agriculture, Lilongwe	2
8	Dept. of Agricultural Research, Ministry of Agriculture, Lilongwe	1
9	Agriculture Ex-Aids, Lilongwe	1
10	Health Science School, Lilongwe	1
		18

Table 3

willing to bear costs, it was pointed out, SATCRIS would be happy to provide on-line searches. However, SATCRIS can provide copies of on-line search outputs already conducted for ICRISAT scientists. All the literature searches including on-line searches conducted at SATCRIS, are announced regularly in the ICRISAT Library Services Bulletin. Copies of blank SDI and Literature search request forms and SATCRIS brochure were given to librarians for distribution and use by their scientists. A copy of SATCRIS literature searches was also given to them for the selection and ordering of useful material for their library.

Visit to Chitedze Station Library

The Chitedze Research Station has a well equipped library and is considered to be one of the best agricultural libraries in Malawi, and probably in the SADCC region. It is an apex library in the Department of Agricultural Research (DAR) Library System. It has over 60,000 documents and subscribes to 200 current serials. The library provides a variety of services including current-awareness, inter-library loans, literature searches and photocopy services to its users. It has two IBM PC microcomputers and the AGRICOLA database on CD-ROM. The INMAGIC software is in use for automating the library's housekeeping operations. The library is also the national AGRIS input center.

ICRISAT library already has exchange relations with Chitedze station library. Considering the importance of this library in Malawi, the librarian was requested to send one copy of documents of Malawian origin on the five crops mandated to ICRISAT, to SATCRIS so that these could be entered into the SATCRIS database. There was

general agreement on this. However, in order to formalize this, it was suggested that we should write to the Chief Agricultural Research Officer of Malawi requesting that he permits the Chitedze station library to make available such documents to SATCRIS. Action on this has since been taken. Also, this matter was discussed when we met the Acting Chief Agricultural Research Officer in his chambers at Ministry of Agriculture. As a result of the visit to the Chitedze station and discussions with the library staff, there has already been a good exchange of services between SATCRIS and the Chitedze library.

Following the visit to the Chitedze Research Station library, we met the Acting Chief Agricultural Research Officer in the Ministry of Agriculture. The brief meeting was to thank him for the facilities provided to hold the traveling workshops in Malawi, and also to apprise him of SATCRIS and its services.

Visit to Other libraries in Malawi

A half-a-day visit was made to the library of the Bunda College of Agriculture near Lilongwe. The Bunda College is one of the oldest colleges of Agriculture in the region and has a reputation for high quality in its academic programs. The library is indeed well equipped and staffed by well trained professionals. Although the orientation in the college library understandably is towards the graduate student, the library has not neglected the acquisition of research materials. As with other libraries, we welcomed the librarian to use SATCRIS services for the benefit of faculty in the college. A request was also made to the librarian for copies of useful nonconventional literature (e.g. students theses) on crops mandated to ICRISAT. It was agreed that useful material would be sent to SATCRIS. Since

returning, ICRISAT's Catalog of Serials, 1989 has been sent to the library, which has also been put on the regular mailing list to receive the monthly ICRISAT Library Services Bulletin.

73 ZAMBIA

Workshop at University of Zambia

Permission from the Dean of Agricultural Sciences, University of Zambia, to our proposal to conduct a travelling workshop at the University came only in the middle of September. Although immediate steps were taken to telex the heads of target institutes to depute their scientists to the workshop at the University of Zambia, not many participants were deputed probably because of the short notice. Fifteen participants comprising university teachers, students, scientists and librarians attended the workshop from the following institutes:

Table 4

S.No	Name of target institute	No of participants
1	School of Agricultural Sciences University of Zambia, Lusaka	11
2	Central Library, University of Zambia, Lusaka	1
3	Dept of Agricultural Research, Ministry of Agric., Lusaka	1
4	Mt Makulu Research Station, Chilanga	2
		----- 15 -----

During the discussion session, the questions asked pertained to the scope of SATCRIS services, availability of back issues of the Sorghum and Millets Abstracts, method adopted by SATCRIS to obtain

input of non conventional literature for the SATCRIS database, the funding of SATCRIS, and whether the database included information on wild species of millets.

Mr Lovegot Tendengu, Regional Training Officer, ICRISAT/SADCC Program joined the two member team from SATCRIS in the presentations at the University of Zambia. He made a presentation on the training opportunities that ICRISAT/SADCC provided to students of agriculture and working scientists in the region.

Visit to Library of the University of Zambia

Unlike Tanzania, Zambia does not have a separate agricultural university. The School of Agricultural Sciences of the University of Zambia provides education and training at the graduate level in the country. The University has a large Central library serving all academic departments. There is no separate library for agricultural sciences. The university library (UL) has been severely constrained due to difficulties of obtaining foreign exchange. As a result, the library has not been able to subscribe to foreign journals for the last four years. (1986-89).

In the meeting with the Acting University Librarian we offered to help the UL in fulfilling requests for copies of articles from journals in agriculture held by ICRISAT which faculty or students of the University required. A suggestion was also made for the UL to seek SDI and search services from SATCRIS for the benefit of the faculty of the University. It was pointed out that SATCRIS would like to reach end-users through intermediaries such as the UL and therefore SATCRIS welcomed requests from the UL on behalf of users in the University of Zambia. A copy each of ICRISAT publications catalog, ICRISAT-in-

print, list of SATCRIS literature searches and blank request forms for SDI and literature search were given to the UL to enable them to select useful items for the UL and/or to enrol their users on our services. The importance that SATCRIS attaches to semiformal publications of Zambian origin was highlighted and a request was made for such material so that these could be entered into the SATCRIS database.

Workshop at Mt. Makulu Central Research Station

Dr E M Musonda, Research Officer, Mt Makulu Research Station, who attended the workshop at Lusaka requested us to conduct a similar workshop at Chilanga, the headquarters of Mt Makulu Station. It was felt that many potential users at Chilanga working on sorghum and millets would be benefitted if a workshop could be conducted there. Accordingly, a workshop was arranged at the Mt. Makulu station on 3.10.89.

Twenty-nine participants which included scientists, researchers, technicians and librarians attended the workshop. The attendance in the workshop, the interest shown by participants during the presentation, and the questions asked following the presentation, confirmed the need for information services of the kind offered by SATCRIS at an important research station such as at Mt. Makulu.

Following the presentation on SATCRIS, Mr Tendengu spoke on the training activities of ICRISAT/SADCC Program.

Visit to Mt. Makulu Station Library

The Mt Makulu Central Research Station at Chilanga is the largest research station in Zambia, and conducts research on cereals,

legumes, tuber and vegetable crops. The station has a fairly well developed library. It is perhaps the largest agricultural library in the country with a collection of over 50000 books, reports and other documents and subscription to 125 current periodicals. It is also the national input center for AGRIS. The library also has a good collection of nonconventional literature of Zambian origin. It provides circulation, interlibrary loan, photocopying and enquiry services mainly to scientists and other staff of the station. As in other libraries, we attempted to further strengthen the existing exchange relationship between ICRISAT and the Mt. Makulu Station library. We also renewed our request to the librarian for ongoing input of a copy of all relevant semiformal publications to SATCRIS. As in the case of other libraries, we welcomed the library to ask for services from SATCRIS for the benefit of its users.

74 ZIMBABWE

Workshop at University of Zimbabwe

The workshop in the Faculty of Agriculture, University of Zimbabwe was conducted on 6.10.89 and was attended by 19 participants including researchers, scientists, extension specialists and documentalists representing the institutes given in table 5 below.

Table 5

S.No.	Name of target institute	No of participants
1	Dept of Agricultural, Technical and Extension Services (AGRITEX), Harare	8
2	Chibero College of Agriculture, Norton	2
3	Veterinary Science Library, University of Zimbabwe, Harare	1

4	Dept of Research & Specialist Services, Ministry of Agriculture, Harare	2
5	Plant Protection Research Inst., Harare	3
6	Crop Breeding Institute, Harare	1
7	Agronomy Institute, Harare	2

The university was closed due to student unrest and hence no faculty member of the University could attend the workshop.

The discussions following the presentation focussed on SATCRIS services, and the future funding of SATCRIS. Participants were quite keen to know more about CD-ROM products. Some of the participants were helped to fill up SDI and literature search request forms.

Visit to Information Services of DRSS

The afternoon was spent in visiting the Information Services Division of the Dept. of Research and Specialist Services (DRSS), Ministry of Agriculture. This division is responsible for information services, the publications program of the DRSS and distribution of all the publications of DRSS. It publishes the Zimbabwe Agricultural Journal, Zimbabwe Journal of Agricultural Research (suspended since 1985) and directory of research projects in DRSS. It is also the national input center for AGRIS and CARIS. The Head of Information Services, Miss Matare, who attended our workshop earlier in the day assured us that SATCRIS would be put on their mailing list to receive a copy of all relevant publications of DRSS regularly. Similarly, it was agreed that SATCRIS could ask for copies of documents of Zimbabwean origin from DRSS. Further, Miss. Matare promised to distribute information about SATCRIS and its services to potential users in the other research stations in Zimbabwe. She welcomed the idea of acting as a

switching center for SATCRIS services. Several copies of the brochure on SATCRIS, blank SDI and literature search forms were left with her for distribution to users in Zimbabwe. As with other libraries, we offered to provide SDI, document delivery and search services required by DRSS scientists and others in Zimbabwe. A copy of our Catalog of Serials has since been sent to the DRSS.

There was considerable interest at DRSS in the use of microcomputers and the CDS/ISIS package for information retrieval. Here again, the possibility of providing training in the use of microcomputers and the CDS/ISIS package at ICRISAT center was raised.

Following the visit to the Information Division, we called on Dr.R.J. Fenner, Director of Agricultural Research, Ministry of Lands, Agriculture and Rural Settlement and briefly talked to him about SATCRIS and its services and the objectives of the traveling workshops.

Workshop at ICRISAT/SADCC Center

The workshop at Matopos was attended by 15 participants from the institutes given in table 6 below.

Table 6

S.No.	Name of target institue	No of participants
1	ICRISAT/SADCC Center, Matopos	12
2	AGRITEX, Bulawayo	2
3	Crop Breeding Instituts, Harare	1
		15

The objective of the workshop at Matopos was to update ICRISAT scientists to new systems, products, and services of SATCRIS.

Discussion centered around how SATCRIS services could be made better known to research stations at the different NARS in the region. It was felt that a presentation on SATCRIS at important regional workshops would be one way of improving awareness of SATCRIS among scientists and others in the region. Some of the scientists promised to make SATCRIS better known in the region when they traveled in the region.

ICRISAT scientists were keen to know how SATCRIS ensures that information generated in the SADCC and other regions of Africa was input to the SATCRIS database. The methodology adopted by SATCRIS for capturing data from three different sources, viz., CABI, AGRIS, and local input, was explained in some detail. It was pointed out that the SATCRIS database has the potential to become more comprehensive in respect of ICRISAT's mandate than either of the other global databases in due course of time. The need for help from ICRISAT/SADCC scientists to enable the input of useful information from the region was stressed.

The need to strengthen information handling in the NARS also came up for discussion. The idea of establishing an information network in which all IARCs with a presence in Africa together with libraries of the NARS would collaborate in formally defined roles to enable better access to information for the end-user on the one hand, and the generation of new skills in the NARS for information handling on the other hand, discussed and recommended at the Second CGIAR Documentation and Information Services Meeting held in January 1989

was briefly discussed. There was general agreement that such steps would be required if NARS institutions had to become self-reliant in agricultural research. Dr. L.R. House, Executive Director of the ICRISAT/SADCC program suggested that this matter should be discussed with SACCAR since it has the mandate to improve access to information and information handling by NARS in the region among other things.

Visit to ICRISAT/SADCC Center Library

After the workshop presentation, we visited the ICRISAT/SADCC Center library. The library is housed in a small room and has a relatively small document collection comprising mainly training literature. A librarian from Bulawayo visits whenever new books are added (once or twice a month) to accession and catalog the new arrivals. Users in the ICRISAT/SADCC program depend quite extensively on SATCRIS in India for information services. Considering that library facilities in Bulawayo and in the Matopos research station are quite poor, there is considerable scope for the ICRISAT/SADCC program to develop a good information program. A good facility with support from the center in India could provide valuable service to NARS institutions in the region. Such a facility could use modern methods for information storage, retrieval, communication and dissemination and could well become a model that other agricultural research stations in the region could emulate. We believe that the setting up of a good information program at the ICRISAT/SADCC center is an activity that should be looked upon as an integral part of ICRISAT's strategy to devolve greater and greater research responsibilities to the NARSs in the years to come. If this view is accepted, then it is essential that the the Program think of recruiting an experienced information

professional at a relatively senior level. Such a person would then be in a position to provide the leadership and direction in making information an important component of the ICRISAT/SADCC program.

Visits to other libraries in Zimbabwe

The library of the National Research station at Matopos was briefly visited. The library has a small collection and is in fact headed by a researcher. The library has not been well funded and has had to cut some of its subscriptions to journals due to the lack of foreign exchange. We talked to the librarian about SATCRIS and offered to provide SDI, literature search, and document delivery services to its scientists working on crops mandated to ICRISAT.

75 BOTSWANA

Workshop at Botswana Agricultural College

Botswana has a few research institutes located mainly in and around Gaborone. Five participants, representing the Dept. of Agricultural Research (4), and 1 from the Botswana Agricultural College (BAC) attended the workshop. Participants showed keen interest in SATCRIS services. The librarians present were invited to use SATCRIS services for the benefit of their users.

Visit to Information Services Division of SACCAR

After the workshop at BAC, we visited the Information Services Division of SACCAR and met Mr Nampoonya, Documentation and Information Officer. Mr. Nampoonya was apprised of the objectives of the traveling workshops of SATCRIS and of the different countries visited and response to the workshops. The recommendation of the Second CGIAR

Documentation and Information Services Meeting held at ICRISAT center in January 1989 to promote formal information networking in Africa in which all IARCs working in or for Africa should work closely with NARS centers to enable easier and wider access to information and also to improve information handling in the NARS was discussed with Mr. Nampoonya. We also told him that ILCA would be initiating action on the conduct of a feasibility study for the development of an African Agricultural Information Network. We were informed that SACCAR will do a study to assess information needs of the SADCC countries. Such a study would be valuable in the proposal to network IARCs and NARSs in Africa.

We provided Mr. Nampoonya with copies of the SATCRIS brochure and requested him to distribute it to potential users. Subsequently we met with Dr. Mmalawa, Chief, Arable Crops Research Officer, Dept. of Agricultural Research, and Dr. D. Gollifer, Regional Coordinator, Land and Water Management Project, SACCAR. They were told of SATCRIS and its services and the objectives of the traveling workshops.

Other libraries visited in Botswana

Four other libraries were visited in Botswana. These were: i) The Botswana Agriculture College Library, ii) Department of Agricultural Research Library, iii) The library of the Ministry of Agriculture, and iv) National Institute of Development Research and Documentation. The former two libraries are situated in the campus of the Botswana Agricultural College. The librarians of both these libraries participated in the workshop presentation and discussions. The

library in the Ministry of Agriculture acts as the AGRIS input center for Botswana, and we spent half-a-day at this library explaining the services of SATCRIS and offering its services to users in the Ministry. The project to create and maintain an Union Catalog of Serials in IARCs at ICRISAT, and the possibility of making available the database on microcomputers to interested libraries in the SADCC region was discussed. As with other AGRIS centers, a request was made for the input of nonconventional literature in the areas of interest of ICRISAT to SATCRIS so that these may be entered into the database. There was agreement on this and followup action has since been taken. The National Institute of Development Research and Documentation (NIDRD) is part of the University of Botswana and has an extensive research, publications and documentation program. Some of its researches relate to agricultural and rural development. The Director of the Institute was apprised of SATCRIS and its services and the possibility of on an exchange of publications between ICRISAT and the NIDRD was discussed. Followup action on this has since been taken. NIDRD has just begun using computers for its documentation and information retrieval activities.

8 ANALYSIS AND INTERPRETATION OF RESPONSES TO QUESTIONNAIRES

A total of 169 participants representing 33 research institutes/stations, Ministries of Agriculture, and university departments attended the workshop presentations at eight venues in five countries of southern Africa (Appendix IV). The participants included scientists, researchers, university teachers, technicians, extension personnel, students, and library and documentation professionals. The subject-wise break up the scientists who

participated is give below :

Table 7

S No.	Subject/area of specialization	Participants
1	Agronomy/crop production	36
2	Breeding	8
3	Soil science	13
4	Plant pathology	13
5	Entomology	15
6	Agricultural economics/home economics	3
7	Hydrology/irrigation	1
8	Microbiology	2
9	Extension/education	8
10	Animal nutrition/production	6
11	Food technology/grain quality	4
12	Agroclimatology	1
13	Agricultural chemistry	6
14	Horticulture	7
15	Seed technology	1
16	Postharvest technology	1
17	Ecology and agroforestry	1
18	Station development/farm management	1
19	Miscellaneous	9

The cropwise distribution of participating scientists is listed below :

Table 8

S.No.	Name of crop	Participants
1	Sorghum	41
2	Milliets	30
3	Chickpea	2
4	Pigeonpea	12
5	Groundnut	21
6	Maize	37
7	Other cereals	14
8	Other legumes	28
9	Other crops	33

As stated earlier, two questionnaires were distributed to all

participants as part of the workshop kit. This was however done beginning with the workshops in Malawi. Tanzanian participants did not get the two questionnaires. The object of pre-workshop questionnaire was to find out whether scientists had access to a library and documentation center and the extent to which their current awareness, retrospective information, and document delivery needs, were being met by their libraries. The extent to which access to external sources of information was being provided was also sought to be discovered. Further, the questionnaire also attempted to find out what other formal/informal channels scientists used at present to satisfy their needs, their experiences of how access to information or the lack of it affected their performance as researchers, and if they were aware of SATCRIS before.

The post-workshop questionnaire was designed to find out the impact of workshop presentation on participants' understanding of SATCRIS and what services they thought would be most useful to them. The response to these questionnaires provided interesting data and the results of the analysis are presented below.

One hundred and ten responses were received to the two questionnaires from participants from Malawi, Zambia, Zimbabwe and Botswana. All respondents said that they had access to a library at their place of work. The extent to which the libraries that respondents had access to were able to satisfy various information needs of the respondents is given in Table 9 below.

Table 9

Extent to which information needs of respondents are met by Libraries they had access to

Sl. No.	Type of need	Great extent		Some extent		Not at all	
		No.	%age	No.	%age	No.	%age
1.	Current awareness needs	16	14.81	90	83.34	2	1.85
2.	Retrospective needs	19	17.59	80	74.07	9	8.34
3.	Document delivery	19	17.59	71	65.74	18	16.67
4.	Access to external sources of information	19	16.66	72	66.67	18	16.67

The table shows that the majority of the respondents (66-80%) felt that the libraries that they had access to, were able to satisfy their current-awareness, on-demand information, and document delivery needs only to some extent. Only 14-17 per cent of the respondents felt that their libraries satisfied the above needs to a great extent. This finding is well corroborated with our observations during our visits to different libraries in the region, that many libraries provide traditional library services (circulation, reference), and only a few of them reported having provided search services. Not many were providing current-awareness services. Further, the lack of foreign exchange had exacerbated the capabilities of some libraries to provide current-awareness and document delivery services.

Only 17% of the respondents indicated that their libraries provided, to a great extent, access to external sources of information. The majority of respondents (66%) reported that access

to external sources of information was provided only to some extent. This finding again corroborates our observations and impressions got in our discussions with the librarians of the institutions visited during our travels.

Considering that the respondents belonged to the most important institutions of agricultural research, training, and education in the region, one conclusion that can be drawn is that information services of the kind provided by SATCRIS are indeed required and relevant to agricultural scientists, extensionists, and academics in the region.

In response to the question on other sources of information used by respondents to meet their needs or to keep themselves abreast, 36.36% of the respondents reported that to a great extent they use libraries or information centers outside their organization, while 50% used other libraries to some extent. Peers, superiors, and attendance at conferences were used to a great extent only by about 20 to 30% of the respondents as a means of keeping themselves informed. Table 10 presents the findings.

Table 10
The use of others sources of information

Sl. No.	Source	Great extent No.	Great extent %age	Some extent No.	Some extent %age	Not at all No.	Not at all %age
1.	Library/Information service outside the Institution	40	36.36	55	50	15	13.36
2.	Peers, superiors, Colleagues	20	25.45	72	65.45	10	9.10
3.	Conferences, meetings, seminars	30	27.27	66	60	14	12.73

Respondents were also asked whether lack of information had ever

hampered their work as teachers, researchers, etc. An overwhelming 88.5% respondents confirmed that lack of information did affect their work, while 11.5% said that lack of information did not hamper their work.

Table 11
Lack of information hampering scientist's work

S.No.		No.	%age
1	Yes, lack of information did hamper the work	92	88.5
2	No, lack of information did not hamper the work	12	11.5

The study also revealed that nearly 80% of the respondents were not aware of SATCRIS before the workshop they attended.

The attempt at SATCRIS since the beginning of 1989 has been to promote its services in the following ways:

- presentations on SATCRIS at all regional and international meetings and conferences at ICRISAT center.

- wide distribution of a brochure on SATCRIS in English and French to agricultural research centers, ministries of agriculture, and agricultural universities in different countries of the SAT including the SADCC region.

- insertion of notices in important agricultural newsletters published by NARS organizations and others.

In spite of the above measures, it was found that 80% of the respondents who participated in the workshops in the five countries of the SADCC region had not known (or probably even heard) about SATCRIS. This finding further strengthens the belief, which in the first place

impelled the idea of the traveling workshops, that face-to-face promotion and interpersonal interaction such as was possible during the traveling workshops is probably the most effective way of promoting an information service.

Table 12
Awareness of SATCRIS

S.No.		No.	Percentage
1	Participants who were already aware of SATCRIS	24	20.7
2	Participants who were not already aware of SATCRIS	92	79.3

The post-workshop questionnaire tried to find out whether the presentations at the workshop enabled a better understanding of SATCRIS, and the services that respondents thought would be useful to them. The question pertaining to services was an open-ended one and respondents were expected to write down the names of services they felt would be useful to them.

Seventy-four per cent of the respondents felt that the workshop had created, to a great extent, better awareness of SATCRIS and its resources and services. The literature search service ranked high in the estimation of respondents with 61 of them mentioning this service, 29 of whom ranked it as the most useful service. The SDI service was ranked second among the services, followed by document delivery service. Table 13, below summarises the findings.

Table 13

SATCRIS Services considered as useful

S.No.	Name of service	No.	Ist Rank	IIRank	IIIRank	IVRank
1	SDI service	46	24	12	6	4
2	Literature search service	61	29	19	8	5
3	Document delivery service	38	3	13	16	6
4	Specialist abstracts service	35	9	15	8	3
5	Information analysis service	33	6	8	15	4

9 OBSERVATIONS and CONCLUSIONS

Travel to five countries in the SADCC region and the opportunity to interact with agricultural scientists, extensionists, teachers, and librarians was an unique experience. We believe that our presentations and discussions have helped in providing a better understanding of SATCRIS and its services to potential end-users in the five countries visited. Personal contact that was possible to be established with librarians and information specialists, we believe, will also promote greater cooperation and exchange of information and services between the different libraries and SATCRIS. Some evidence of this is already beginning to be seen.

Experience of SATCRIS in India suggests that a multiplier-effect operates with information services. A satisfied user does influence his peers to utilize an information service that he found useful. We believe that the presentations on SATCRIS and followup actions taken should begin to bear fruit in more users from the region seeking

MTCRIS services.

Although end-users, in general, in the five countries had access one or more libraries/information centers, it was found that most of them were faced with resource constraints, i.e. inadequate funds for collection development, non-availability of foreign exchange. Considering that most research stations in the region need to deal with several crops and disciplines, the resources provided to the libraries were far from commensurate with needs of these stations. Also, most libraries provided only traditional services. Information services such as an on-demand search service or SDI were being provided only in a few centers. The lack of skills to provide such services, poor access to useful external sources of information (e.g. abstracts services, on-line systems, CD-ROM products), and poor utilization of appropriate technologies for information handling may be cited as the chief reasons for the lack of services that users in the developed world are accustomed to, and which undoubtedly has contributed to more effective and productive research systems.

Most users in the region, like in other developing countries, are generally unaware of the services that they can seek from a library/information center, nor can it be said that libraries in the region actively promote their services.

The one question that participants asked quite frequently at different workshop venues pertained to information services on other crops, e.g. maize, wheat, horticultural crops. Clearly, users in the region wanted to know where they could go to for information on specific crops or topics. One librarian wanted to know if other IARCs had services similar to that of SATCRIS on other crops. These

questions clearly point to the need for closer collaboration among IARCs and other information providers so that the targetting of services to research communities in Africa and elsewhere is better coordinated, and so that experience of one IARC in meeting the needs of users in a region is made use of in providing services on other topics to another group of users in the same research communities. These questions were raised and considered in the Second CGIAR Documentation and Information Services Meeting that was held at ICRISAT center in Jan 1989. The meeting had felt that under the present arrangement of IARCs working as autonomous institutions, each acting on its own in providing information programs, the collective potential of information and expertise available in the IARCs and NARS is not fully realized. The meeting had recommended, among other things, that existing NARS and IARC resources could best be used in multiplying benefits and rationalizing efforts, through the creation of regional information networks, established as partnerships among IARCs, NARSs, and regional information programs. Building on existing resources, the meeting recommended, that network activities should address the following areas:

- collaboration between and, among IARCs, NARSs, and regional agricultural information services programs.
- strengthening of links between the three types of information services programs and research networks.
- the human resources and infrastructure needs of NARSs' agricultural information systems.

Given the broad needs of the different research stations in the region, our own observation of libraries in the region, and the discussions that we had with end-users, we believe that formal

networking, as suggested by the CGIAR meeting, is probably the most cost-effective way of not only providing wide and efficient access to needed information but also as a means of improving information handling capabilities of NARS centers.

Another question that was asked at almost every venue was whether SATCRIS would provide training facilities to librarians and documentalists of the research stations or universities. This question was asked not only by librarians but also by heads of research stations. There was keen awareness of the need to utilize better methods of information handling and the use of microcomputers in many of the stations that we visited. However, there was also concern that there were no suitable training opportunities in the region where information professionals could be sent to equip themselves with the requisite skills. Here again, we believe that the setting up of regional networks with a clear mandate to address information handling skills of the NARSs is probably the most effective way of integrating information provision with skill building. In this, there is no doubt that IARCs have an edge and can contribute to effective networking, and transfer of skills.

Most of the libraries we visited, were willing to act as switching centers in the transfer of information from SATCRIS to the end users. There is keen interest to cooperate with IARCs, to participate in formal networks, and in the need to utilize microcomputers and other modern aids for information retrieval. The lack of training opportunities in the region is going to be a major stumbling block in improving information handling skills in the region, and hence ultimately in the setting up of systems and

structures that would enable better access to information to the community of agricultural information users.

One measure of the success of traveling workshops such as conducted by SATCRIS is the extent to which potential users who were exposed to the presentations begin to utilize the service. Since returning from the region SATCRIS has had requests from 26 new users in the region either for enrolment on its SDI service or for specific searches. We believe that this is an encouraging start. Also, some of the libraries in the region have written to us asking for our document delivery services and for possible training opportunities. SATCRIS proposes to build on the contacts made and hopes that the bridges built can be sustained and strengthened in the future through the establishment of formal networks.

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 - b) Bvumbwe Research Station, Limbe.
 - c) Chitedze Research Station, Lilongwe.
 - d) School of Agricultural Sciences, University of Zambia, Lusaka
 - e) Mt Makulu Central Research Station, Chilanga.
 - f) Faculty of Agriculture, University of Zimbabwe, Harare.
 - g) Botswana Agricultural College, Gaborone.
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14. Mr Lovegot Tendengu, Regional Training Officer, ICRISAT/SADCC Center, Bulawayo for arrangements in Zambia, Zimbabwe and Botswana.

Appendix I

TARGET AND VENUE INSTITUTIONS IN SOUTHERN AFRICA (SADCC)
 (BOTSWANA, MALAWI, TANZANIA, ZAMBIA, ZIMBABWE)
 FOR TRAVELING WORKSHOPS OF SATCRIS

Country	Workshop Venue/Institute	Target Institute/Res. Stations
1. Botswana	Botswana Agril. College (Ministry of Agriculture) P B 0027 Gaborone	1. Agricultural Res. Station (DAR) P B 0033 Gaborone
		2. Department of Agril. Research (Ministry of Agriculture) P Bag 0033 Gaborone
		3. National Institute of Devpt. Research & Documentation (NIR), Univ. of Botswana P B 0022 Gaborone
2. Malawi	Chitedze Agricultural Research Station P O Box 158 Lilongwe	1. Dept. of Agril. Reseach Ministry of Agriculture P O Box 30134 Lilongwe
		2. Chitala Agricultural Research Station Private Bag 13 Salima
		3. Lifuwu Agril. Res. Station P O Box 102 Salima
		4. Bunda College of Agriculture (University of Malawi) P O Box 219 Lilongwe
		1. Ngabu Agril. Res. Station Private Bag Ngabu
	Bvumbwe Agricultural Research Station P O Box 5748 Limbe Malawi	

2. Makoka Agril. Res. Station
Post Bag 3
Thondwe
Zomba
3. Tanzania Sokoine Univ. of
Agriculture
P B 3022
Chuo Kikuu
Morogoro
1. Commission of Research
and Training
Ministry of Agriculture
& Livestock Development
P O Box 2066
Dar-es-Salaam
2. Ilonga Agril. Research
Institute
P O Post Bag
Ilonga
Kiloso, Morogoro
3. Maruku Agril. Res.
Institute
127, Bukoba
Kagera Region
4. Ukiriguru Agril. Research
Institute
P B 1433
Mwanza
5. Tanzania Pesticides
Research Institute
Box 3024
Arusha
6. Uyole Agril. Centre
P O Box 400
Mbeya
7. National Soils Service
Research
Institute Mlingani
Private Bag, Ngomeni
Tanga
4. Zambia School of Agricultural
Sciences
University of Zambia
P O Box 32379
Lusaka
1. Mount Makulu Central
Agril. Res. Station
Private Bag 7
Chilanga
2. Natural Resources
Development College
P B 310099
Lusaka

3. National Council for Scientific Research, Documentation and Information Centre
Airport Road
P B 310158
Lusaka
 4. Zambia College of Agriculture
P B 660053
Monze 6600
 5. Luapula Regional Research Station
Box 129
Manisa
Luapula
 6. Kabwe Regional Research Station
P O Box 80908
Kabwe
Central Province
 7. Makera Agricultural Research Station
Box 81, Chipata
Eastern Province
 8. National Food and Nutrition Commission
Box 32669
Lusaka
-
5. Zimbabwe Faculty of Agriculture
University of Zimbabwe
P O Box MP 45
Harare
 1. Agronomy Institute
P O Box 8100
Causeway
Harare
 2. Grassland Res. Station
P O Box 3701
Marandellas
 3. Plant Protection Research Institute
Dept. of Research and Specialist Services
5th Street, P B 8100
Harare

4. Henderson Res. Station
Department of Research and
Specialist Services
P B 2004
Mazowe
5. Soil Productivity Research
Laboratory
Department of Research and
Specialist Services
P B 3757
Marondera
6. Nyanga Experimental Station
P B 8044
Rusape
Nyanga District
7. Chemistry & Soil Research
Institute
P O Box 8100
Causeway
Harare
8. Crop Breeding Institute
P O Box 8100
Causeway
Harare
9. Librarian
Central Library
Ministry of Agriculture
Private Bag 7701
Causeway, Harare
10. Officer-in-Charge
Information Services/
Training
Dept. of Research and
Specialist Services
P O Box 8108
Causeway, Harare

11. Chief Training Officer
Dept. of Agril. Technical
Extension (AGRITEX)
P O Box 8117
Causeway, Harare

12. Dr Made
Librarian
University of Zimbabwe
Box MP 167
Mt. Pleasant
Harare

ICRISAT/SADCC Centre
P O Box 776
Bulawayo

1. Chiredzi Research Station
P O Box 97
Chiredzi

2. Matopos Research Station
P O Box K 5137
Bulawayo

3. Cotton Research Institute
Department of Research and
Specialist Services
Kadoma

Appendix II

SEMI-ARID TROPICAL CROPS INFORMATION SERVICE
TRAVELING WORKSHOPS IN SOUTHERN AFRICA, 1989

Pre-Workshop Questionnaire

1. Do you have a Library/Information Center in your Institute/
Center/Research Station?
Yes () No ()
2. If yes, to what extent does your library satisfy the following?

To a great extent To some extent Not at all

a. Keeping you aware of current information

b. Searching for information required by you

c. Providing copies of required documents

d. Access to external sources of information

3. To what extent are the following sources of information used by
you?

To a great extent To some extent Not at all

a. Library/Information Service outside your Inst./Center/Res. Station

b. Peers, superiors, colleagues

c. Conferences, meetings, etc.,

d. Others (Specify) -----
4. Has the lack of information, at any time, hampered your work?
Yes () No ()
5. Were you aware of SATCRIS before?
Yes () No ()

SEMI-ARID TROPICAL CROPS INFORMATION SERVICE
TRAVELLING WORKSHOPS IN SOUTHERN AFRICA, 1989

Post-Workshop Questionnaire

1. Has the present workshop enabled a better understanding of SATCRIS resources and services?
 - a. To a great extent ()
 - b. To some extent ()
 - c. Not at all ()

2. Please list below the SATCRIS services that you think will be most useful to you:
 - a. _____
 - b. _____
 - c. _____
 - d. _____

Participant's Name _____

LIST OF PARTICIPANTS IN THE

Botswana

- | | |
|--|---|
| 1. Department of Agricultural Research, Gaborone | 1 Ruth Kebonye Seatta
Technical Assistant |
| | 2 Efedile Sebonego Mosarwe
Asst Agric Research Officer |
| | 3 Thuso Wkago
Technical Officer |
| | 4 Isaac M Elifas
Library Officer |
| 2. Botswana Agricultural College, Gaborone | 1 Lesego Ramore
Librarian |

Malawi

- | | |
|---|--|
| 1. Bvumbwe Agricultural Research Station, Limbe | 1 J W Nhlema
Technical Assistant |
| | 2 M E Kalino
Technical Officer |
| | 3 Elita Mwale
Technical Officer |
| | 4 Robert F Mbeza
Field Officer |
| | 5 Bill Braunworth
Asst Professor |
| | 6 P P Panje
Asst Chief Agric Res Officer |
| | 7 MacPherson Noel Nsanjama
Agronomist |
| | 8 A D C Chilimba
Soil Chemist |
| | 9 R A G Munkhondya
Field Assistant |
| | 10 Lewis J Chilalire
Sr Technical Officer |
| | 11 V C Phiri
Field Officer |
| | 12 Throne Mbandungu
Technical Officer |
| | 13 W W Luhanga
Entomologist |
| | 14 Chrissie E D Mainjeni
Technical Officer |
| | 15 Jarret L Mhango
Professional Officer |
| | 16 Blain Thomson Mkhata
Technical Assistant |

- | | | | |
|---|----|---|---|
| | 17 | R A Nsanjama | Senior Technical Officer |
| | 18 | V M G Mhango | Technical Officer |
| | 19 | C M Mukumbwa | Field Assistant |
| | 20 | Z W Chilima | Chief Technical Officer |
| | 21 | J S K Banda | Laboratory Assistant |
| | 22 | Pervin W C Mawoya | Senior Technical Asst |
| | 23 | I W Kamwiyo | Technical Assistant |
| | 24 | S D Kamoto | Technical Assistant |
| | 25 | D D Dula | Technical Officer |
| | 26 | Misheck Soko | Agric Research Officer |
| | 27 | Elvis Sobten Matabwa | Field Officer |
| | 28 | Percy Sonjera | Technical Assistant |
| | 29 | Chiuja Mondwa | Library Assistant |
| | 30 | Enock H Chikafa | Library Assistant |
| | 31 | Lisa Hayes | Librarian |
| 2 | | Blantyre Agricultural
Development Division, Blantyre | 1 John Benjamin Mtungama
Sr Technical Assistant |
| | | | 2 Wellington D Tsokonombwe
Field Officer (Crops) |
| 3 | | Ngabu Research Station,
Ngabu | 1 E R B Kadzibwa
Technical Assistant |
| | | | 2 Louis Muhiwa
Technical Assistant |
| | | | 3 Ephraim Lusius Dumbo
Technical Assistant |
| | | | 4 Willard Fred Chibwana
Technical Assistant |
| 4 | | Chitedze Research Station
Lilongwe | 1 W Trent Bunderson
Tech Asst (Agroforestry) |
| | | | 2 P N H Zulu
Seed Technologist |
| | | | 3 J T K Munthali
National Res Coordinator |
| | | | 4 Heather Murray
Reference Librarian |
| | | | 5 Catharina Campbell
Cataloguer |

- | | |
|--|--|
| 5 Bunda College of Agriculture
Lilongwe | 6 Katherine Wern
Chief Librarian |
| 6 Chitala Agricultural
Research Station, Salima | 1 Margaret Ngwira
College Librarian |
| 7 Lunyangwa Research Station
Mzuzu | 2 Benson Michael Ng'ambi
Sr Library Assistant |
| 8 Health Science School
Lilongwe | 3 Vincent W Saka
Associate Professor |
| 9 Agriculture Ex-Aids
Lilongwe | 1 Boniface P Mbundungu
Officer-in-charge |
| 10 Department of Agricultural
Research, Lilongwe | 1 Afete Divelias Gadabu
Senior Entomologist |
| 11 Planning Division, Ministry
of Agriculture, Lilongwe | 1 Walter Reandeau
Librarian |
| 12 Natural Resources College
Lilongwe | 1 Patricia Reandeau
Librarian |
| 13 University of Malawi
Zomba | 1 Candle Makato
Research Liaison Officer |
| | 1 Peter Ferguson
Librarian |
| | 1 Margaret M Bliss
Librarian |
| | 1 Catherine Collins
Librarian/Cataloguer |

Tanzania

- | | |
|--|---|
| 1 Sokoine University of
Agriculture, Morogoro | 1 M M Karegero
Lecturer |
| | 2 Jerome Peter Mrema
Senior Lecturer |
| | 3 Gerald G Kimbi
Assistant Lecturer |
| | 4 M E Mlambiti
Senior Lecturer |
| | 5 T A Kimboka
Lecturer |
| | 6 Cornel L Rweyemamu
Lecturer |
| | 7 Kallunde P Sibuga
Senior Lecturer |
| | 8 Wambura C W M
M Sc Student |

- | | | |
|--|----|---|
| | 9 | Mathias M Lung'wecha
Senior Technician |
| | 10 | John N Bachuta
Agricultural Tutor |
| | 11 | Salim S Mbwana
Head of Univ Library |
| | 12 | Eckhard Strohmeyer
Senior Librarian |
| | 13 | Elliah E E Mligite
Principal Library Asst |
| | 14 | Emmanuel F Chambo
Senior Library Assistant |
| 2 MATI, Ilonga | 1 | Makwell Aliko Kasoyeta
Asst Agricultural Tutor III |
| | 2 | Christine Mbwilo
Agricultural Tutor |
| | 3 | Theresia W J Gugu
Agric Training Officer |
| | 4 | Harnni M M Kalinexa
Agric Training Officer |
| | 5 | Hilda A Kapusi
Library Officer |
| 2 Agricultural Research
Institute, Ilonga | 1 | Catherine Charles Ley |
| | 2 | Ferdinand Bugumba Nkamu
Field Technician |
| | 3 | C Z Mkwangwa
Agric Research Officer |
| | 4 | Vincent C A Akulumuka
Agric Research Officer |
| | 5 | Immanuel R O Mhando
Soil Scientist |
| | 6 | Christine F Mbuya
Agric Field Officer |
| | 7 | Cornel R S M Massawe
Agric Field Officer |
| | 8 | Japhe A Masikwe
Agric Field Officer |
| | 9 | Halima Kwikwega
Agric Field Officer |
| 3 Agricultural Research
Institute, Dodoma | 1 | Charles D Kitundu
Agric Field Officer |
| 4 Ministry of Agriculture &
Livestock Development,
Dar-es-salaam | 1 | Faustin R Kamuzorn
Actg Dist Agric Dev Officer |
| | 2 | Tunu Ramadhani
Scientific Officer(Documentn) |
| | 3 | Janet E Kasya
Agric Res Officer(Information) |

Zambia

1 Mt Makulu Central Research
Station, Chilanga

- 1 Ephraim Mutale Musonda
Research Officer
- 2 Mwale Moses
Agricultural Chemist
- 3 Sakala Godfrey M
Agricultural Chemist
- 4 Irene Naushebo Nawa
Plant Pathologist
- 5 G M Kaula
Plant Pathologist
- 6 Luwika Benny
Senior Agricultural Asst
- 7 David Mututa Kalengesa
Senior Agricultural Asst
- 8 Dan Assa Mukutuma
Senior Agricultural Asst
- 9 Chipabika Gilson
Senior Agricultural Asst
- 10 Kapalu Sakayula
Senior Agricultural Asst
- 11 George Gonde Manda
Senior Agricultural Asst
- 12 Malauni K Stanslai
Senior Agricultural Asst
- 13 Chinsembu Kazhila
Research Associate
- 14 Muyangana Walubita
Engineering Asst
- 15 Gilbert Tembo
Senior Agricultural Asst
- 16 Josephine Changwe Chabala
Senior Agricultural Asst
- 17 Eliot P Chiyumbi
Registry Supervisor/Tng Officer
- 18 Monde Siyandwa Zulu
Storage Ext/Training Officer
- 19 Freddy Wasunyima Malemeno
Agrometeorology Officer
- 20 Chabala Collins
Agriculture Technical Officer
- 21 Kapekele Evans Mutale
Agriculture Supervisor
- 22 Elizabeth Siyumbwa Itwi
Agriculture Supervisor
- 23 Kahyata Kashweka
Agriculture Supervisor
- 24 Donald Msiska
Agriculture Supervisor
- 25 Jack Chipili
Agriculture Supervisor
- 26 Mweshi Mukanga
Agriculture Supervisor

- | | | |
|--|----|--|
| | 27 | Henry Kennedy Malwa
Agriculture Supervisor |
| | 28 | Dickson Ng'uni
Agriculture Supervisor |
| | 29 | Moses Ngwele
Agriculture Supervisor |
| | 30 | Edward Lumande
Librarian |
| | 31 | Jeneviver Namangala
Assistant Librarian |
| 2 School of Agricultural
Sciences, University of Zambia
Lusaka | 1 | Lumamba Roy
Student |
| | 2 | Mkuyamba Vincent
Student |
| | 3 | Shalo Iven Matandiko
Student |
| | 4 | Nambnalu Richards
Student |
| | 5 | Youni N Vibetti
Student |
| | 6 | Agnes R K Ngolwe
Student |
| | 7 | W Schmid
Lecturer |
| | 8 | D N Mbewe
Lecturer |
| | 9 | Yakub D Deedat
Lecturer |
| | 10 | F Begemann
Lecturer |
| | 11 | Iqbal Javaid
Senior Lecturer |
| 3 University Library,
University of Zambia, Lusaka | 1 | A M Chitambo
Reference Librarian |
| 4 Dept of Agriculture, Ministry
of Agriculture & Cooperatives
Solwezi, NWP | 1 | Mwananembo Mushiba
Crop Husbandry Officer |
| Zimbabwe | | |
| 1 Dept of Research & Specialist
Services, Harare | 1 | Elizabeth Matare
Head of Information Services |
| | 2 | Michael Tadiwa Mandiveyi
Publications Officer |
| 2 Crop Breeding Institute
Harare | 1 | Grace Mudzana
Plant Breeder |
| | 2 | J M Mushonga
Team Leader Sorghum & Millet Imp |

- | | |
|--|--|
| 3 Agronomy Institute
Harare | 1 Lawrence T Gono
Agronomist
2 Nyakanda Christopher
Agronomist |
| 4 Plant Protection Research
Institute, Harare | 1 Dumisani Kutuywayo
Research Officer
2 Maxwell Madondo
Research Technician
3 Esthes Mtisi
Senior Research Officer |
| 5 Chibero College of Agriculture
Norton | 1 S G S Matutu
Acting Principal
2 I Mujaya
Lecturer |
| 6 Dept of Agricultural Technical
& Extension Services (AGRITEX)
Harare | 1 P H S Johnson
Chief of Crop Production
2 A H McGregor
Actg Chief Agric Specialist
3 Edith M Mtetwa
Extension Specialist
4 P N Sithole
Extension Specialist
5 O Ndoro
Agricultural Extension Officer
6 Starben Midzi
Extension Specialist
7 Anthony M Mukmidigwi
Sr Extn Specialist(Documentation) |
| 7 Dept of AGRITEX, Bulawayo | 1 Bongeka Pube
Extension Specialist
2 L K M Ngwenya
Provincial Agricul Topographer |
| 8 University of Zimbabwe
Harare | 1 Lorraine N Mutawera
Veterinary Science Librarian |
| 9 Institute of Agricultural
Engineering, Harare | 1 Piet Stevens
Tillage Researcher |
| 10 ICRISAT/SADCC Center
Bulawayo | 1 L R House
Executive Director
2 M Mangombe
Research Technician
3 Marel I Gomez
Principal Food Technologist
4 W A T Demilliano
Principal Cereal Pathologist
5 A T Oblina
Principal Sorghum Breeder
6 Moxman Mhazo
Research Technician |

- 7 M Osmanzai
Principal Cereal Agronomist
- 8 C M Matanyaire
Station Dev & Mgt Officer
- 9 Henry Ssali
Soil Scientist
- 10 K Leuschner
Principal Cereal Entomologist
- 11 L Tendengu
Regional Training Officer
- 12 Bernadette M Mujuru
Part-time Librarian

Appendix V

LIST OF LIBRARIANS AND DOCUMENTALISTS MET DURING THE WORKSHOPS

BOTSWANA

1. Issac M Elifas
Library Officer
Department of Agricultural Research
P/Bag 0033
Gaborone
BOTSWANA
2. Lesego Ramore
Librarian
Botswana Agricultural College
Post Bag 0027
Gaborone
BOTSWANA
3. Joyce Majola
Librarian
Ministry of Agriculture
Post Bag 003
Gaborone
BOTSWANA
4. Nampoonya
Documentation and Information
Officer
SACCAR
P O Bag 0018
Gaborone
BOTSWANA

MALAWI

1. John Benjamin Mtungana
Sr. Technical Assistant (Library)
Blantye Agricultural Development
Division
Box 30227, Chichiri
Blantyre
MALAWI
2. Chiuja Mondwa
Library Assistant
Zomba Agricultural Research Station
P O Box 5748
Limbe
MALAWI

3. Enoch H Chikafa
Library Assistant
Bvumbwe Agricultural Research Station
P O Box 5748
Lisibe
MALAWI

4. Heather Murray
Reference Librarian
Chitedze Agricultural Research Station
P O Box 158
Lilongwe
MALAWI

5. Catherine Campbell
Cataloguer
Chitedze Agricultural Research Station
P O Box 158
Lilongwe
MALAWI

6. Katherine Wern
Chief Librarian
Chitedze Agricultural Research Station
P O Box 158
Lilongwe
MALAWI

7. Margaret Ngwira
College Librarian
Bunda College of Agriculture
P O Box 219
Lilongwe
MALAWI

8. Benson Michael Ng'ambi
Sr. Library Assistant
Bunda College of Agriculture
P O Box 219
Lilongwe
MALAWI

9. Walter Beandeau
Librarian
Health Science School
Box 208
Lilongwe
MALAWI

10. Patricia Reandeau
Librarian
Agriculture Ex. Aids
Box 208
Lilongwe
MALAWI
11. Candle Makato
Research Liaison Officer
(Research Publications/Information)
Department of Agricultural Research
Ministry of Agriculture
Box 30134
Lilongwe 3
MALAWI
12. Lisa Hayes
Librarian (was likely to join)
Bvumbwe Agricultural Research Station
P O Box 5748
Limbe
MALAWI
13. Peter Ferguson
Librarian
Planning Division Library
Ministry of Agriculture
Box 30633
Lilongwe 3
MALAWI
14. Margaret M Bliss
Librarian
Natural Resources College
P O Box 143
Lilongwe
MALAWI
15. Catherine Collins
Librarian/Cataloguer
University of Malawi
P O Box 280
Zomba
MALAWI

TANZANIA

1. Hilda A Kapusi
Library Officer
Agricultural Research & Training Institute
P O Box Ilonga
Kilosa
TANZANIA

2. **Tunu Ramadhani**
Scientific Officer (Documentation)
Ministry of Agriculture & Livestock
Development
P O Box 9761
Dar-es-Salaam
TANZANIA
3. **Janet E Kaaya**
Agricultural Research Officer (Information)
Ministry of Agriculture & Livestock
Development
P O Box 9761
Dar-es-Salaam
TANZANIA
4. **Salim S Mwana**
Head of Library
Sokoine University of Agriculture
P O Box 3022
Chuo Kikuu
Morogoro
TANZANIA
5. **Strohmeyer, Eckhard**
Senior Librarian
Sokoine University of Agriculture
P O Box 3022
Chuo Kikuu
Morogoro
TANZANIA
6. **Elliah E.E. Mligite**
Principal Library Assistant
Sokoine University of Agriculture
P O Box 3022
Chuo Kikuu
Morogoro
TANZANIA
7. **Emmanuel F Chambo**
Senior Library Assistant
Sokoine University of Agriculture
P O Box 3022
Chuo Kikuu
Morogoro
TANZANIA

ZAMBIA

1. A M Chitambo
Reference Librarian
University of Zambia
Library
P O Box 32379
Lusaka
ZAMBIA
2. Jeneviver Namangala
Assistant Librarian
Mt. Makulu Research Station
Post Bag 7, Chilanga
ZAMBIA
3. Edward Lumande
Librarian
Mt. Makulu Research Station
Post Bag 7, Chilanga
ZAMBIA
4. Acting Librarian
University of Zambia
P O Box 32379
Lusaka
ZAMBIA

ZIMBABWE

1. Michael Tadiwa Mandiveyi
Publications Officer
Dept. of Research & Specialist Services
Information Services
P O Box 8108
Causeway
Harare
ZIMBABWE
2. Elizabeth Matare
Head of Information Services
Dept. of Research & Specialist Services
P O Box 8108
Causeway, Harare
ZIMBABWE
3. Anthony M Mukwidigwi
Sr Extension Specialist (Documentation)
AGRITEX
Box 8117
Causeway, Harare
ZIMBABWE

4. Lorraine N Mutevera
Veterinary Science Librarian
University of Zimbabwe
Box MP 48
Harare
ZIMBABWE

5. Bernadette M Mujuru
(Part-time librarian in ICRISAT/SADCC Library)
Assistant Librarian
United College of Education
Box 1156
Bulawayo
ZIMBABWE

Appendix VI

LIST OF SENIOR SCIENTISTS MET DURING THE WORKSHOPS

1. The Dean
Faculty of Agriculture
Sokoine University of Agriculture
Morogoro
Tanzania
2. Dr P P Panje
Acting Officer-in-Charge
Bvumbwe Agriculture Research Station
Limbe
MALAWI
3. Acting Chief Agricultural Research Officer
Ministry of Agriculture
Lilongwe
MALAWI
4. Dr V R N Chinene
Dean
School of Agricultural Sciences
University of Zambia
Lusaka
ZAMBIA
5. Dr D N Mbeve
Head Crop Science Department
University of Zambia
Lusaka
ZAMBIA
6. Dr R J Fenner
Director of Research
Department of Research & Specialist Services
Harare
ZIMBABWE
7. Dr P Tongoonsa
Acting Dean
Faculty of Agriculture
University of Zimbabwe
Harare
ZIMBABWE
8. The Director
Matopos Research Station
Bulawayo
ZIMBABWE

9. Dr D Gollifer
Regional Coordinator
Land and Water Management Project
SACCAR
Gaborone
BOTSWANA

10. Dr Maalawa
Chief Arable Crops Research Officer
Department of Agricultural Research
Gaborone
BOTSWANA