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Research Information and Documents Services Co-ordination in Southern Africa

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1.1 INTRODUCTION

Information and Documentation has evolved into a modern scientific tool which should be applied in the service of progress. A precise knowledge of all the relevant facts is an indispensable component of planned development policy, and the information which is the raw material from which these facts may be extracted is stored in libraries, documentation centres, data collection, and in vast numbers of reports and periodicals. Efforts must therefore be made in Southern Africa to promote knowledge of these resources and their organisation, particularly where these Southern Africa countries are concerned.

The importance of establishing information infrastructures in developing nations like those of Southern Africa has been stressed in the United Nation's World Plan of Action for the Application of Science and Technology to Development, prepared for the Second United Nations Development Decade. The plan states that efforts should be made to provide adequate facilities for the transfer of knowledge among nations, which cannot be accomplished without the existence of proper information channels responsible for the collection, treatment and dissemination of relevant data. The overall Information and Documentation Services in this region should be clear to scholars, politicians, planners and industrialists etc. and need not be over emphasised. All science and other research workers in Southern Africa are involved in development in one way or another. They alone know exactly what the bottlenecks are that militate against their work. High among these bottlenecks is lack of scientific and technical documents necessary for their work whether in form easily accessible, or from a temporal point of view, and also lack of communication with their colleagues elsewhere who work in
the same fields. This latter problem would in practice, mean that the local worker often toils in isolation and might, blindly, spend thousands of scarce resources in experimentation and in research on issues to which already solutions are available from elsewhere, either locally or externally. It is a primary goal of Information and Documentation Services to ameliorate such bottlenecks and thus contribute to the national conservation of developmental resources.

1.2 INFORMATION FLOW IN SOUTHERN AFRICA

In this context, I will treat Southern Africa countries to include Botswana, Lesotho, Malawi, Mozambique, Namibia, Zambia and Zimbabwe.

The free information flow which is an integral part of development in industrial societies, simply does not exist in most of the Southern Africa countries. The result is the dependency on the written word and the correct evaluation of its quality. Users are not all well served. Much work is reported as if nothing has happened elsewhere, and without consideration as to how it was done, what it has cost, what experience has resulted from it etc. Knowledge which has been printed in a different language or another country is ignored, authors (worse practitioners) proceed as if the specific requirements of a particular development or system can only be solved if the "wheel is re-invented". A few standard citations are frequently deemed to yield the essence of all knowledge needed to tackle a problem. The result from the professional viewpoint is so much duplication (using different semantics) that the advance of the state-of-the art is not as rapid nor as efficient as it should be. Organised information and documentation services in Southern Africa may minimise such problems.

Research and Development (R & D) report in the literature contains relatively little news on experimentation or significant new knowledge and innovation. Much of it is of a survey type character with insufficient citations and comparisons to allow for concessions. Rarely found are state-of-the art reports summarising existing knowledge and achievements which would provide a baseline against which further progress would be measured. Even at the international level the language is frequently woolly, often substituting platitudes and worn out untested dogmas for solid advances. Research and
development performed is frequently of the "brute force" character instead of being a sound intellectual (and leisurely effort). In most of the Southern African countries lack of resources such as manpower, finance, equipment and space, but even so, lack of time is always a stumbling block and a barrier which arrests the best of intentions.

1.3 DEVELOPING OF RESEARCH WORK IN SOUTHERN AFRICA

The countries of Southern Africa are presently having their research institutions and work expanded. This expansion definitely justifies the creation of well organised information and documentation services, for the following reasons:

(a) There is a lot of research duplication and overlap by different research organisations working in the same field.

(b) We have very poor dissemination of research findings to users e.g. policy makers, businessmen, farmers etc.

(c) There is lack of public awareness of research findings in Southern Africa. Well organised information and documentation services will be able to identify the problems of knowledge or information generation in many developing countries. The concern is not merely, one of eliminating duplication, overlap and low utilisation levels, but one of increasing the utility and relevance of a nationally expensive activity.

Most of the countries of Southern Africa spend very insignificant amounts of their Gross Domestic Product (GDP) on information, because many of the decision makers in these countries have as yet to understand the importance of well managed information and documentation services. For the countries of Southern Africa, research expenditure and infrastructure, can only be justified if research can be shown to be in keeping with some basic objectives and to lead to definite identifiable and utilisable results. Many organisations in the developing countries are very anxious to maintain their autonomy regarding information. However, all multi-national and large commercial organisations wherever they exist emphasise this autonomy more than all others. They always point out that they are sub-
sidiaries of bodies outside the countries of their operation and point out that it is not always necessary to create linkages with the countries of their operation.

1.4 RESEARCH AND DEVELOPMENT ACTIVITIES IN SOUTHERN AFRICA

Research and Development (R & D) activities in Southern Africa are growing at a tremendous rate, and to serve these R & D institutions effective information and documentation services are needed. The institutions performing R & D activities in Southern Africa comprise the national universities, though with close liaison with other institutions. The extent of this operational network usually increases with continued national development. However, in Southern Africa most of the work is still conducted at the national universities, while some R & D is also undertaken by e.g. schools of agriculture, veterinary services, etc.

Meanwhile the creation of "centres of advanced study and research" has been recognised as an effective means of improving the national research atmosphere and capacity, and for raising the already high standards of the work itself. There are also R & D institutions, both public and private which carry out their functions within the ambit of various productive sectors of the national economies. Their work has a direct bearing on the activities and responsibilities of the relevant government departments which support them either directly or indirectly through special fiscal measures for example. To support the mentioned R & D institutions, we should have scientific and technological services which should represent a mixed group and should include the institutions in charge of:

(a) Science and Technology Information and Documentation.

(b) Museums of Science and/or technology.

(c) Testing, standardisation, metrology and quality control.

2.1 RESEARCH INFORMATION AND DOCUMENTATION, AN IMPORTANT ASSET FOR THE DEVELOPMENT OF THE SOUTHERN AFRICA REGION

It is correct to look at development in any country by the products and standards of living, without scrutinising
the entire machinery that contributes to that development. It is true that the ultimate measure of a country's development is the degree of its economic prosperity which, in turn, is generally measured by its rate of industrialisation. That is, its transformation from basically primary product oriented economy to a more secondary product oriented economy.

The economic growth of the countries of Southern Africa are becoming more and more dependent on the rate of research and the ability of the policy makers that be, to transform the results of such research quickly and effectively into production. Research produces new knowledge in all countries (of different levels of industrial development). In the so-called developed countries, ways and means are sought to utilise that new knowledge. This should be even more so in the less developed (less industrialised) countries of Southern Africa.

The more the Southern Africa region aspires for development the more there is need for knowledge. The more this knowledge is produced, in forms of one kind of research or another, the more difficult it becomes to sort it out and therefore, the more urgent it becomes to devise a means to systematically organise it in such a manner that a researcher or policy maker gets the very information he or she requires with a minimum wastage of time. Appreciating time factor becomes a crucial point. This, therefore, calls for efficient research information and documentation systems in this region. I quote:

"The continuing increase of scientific knowledge, the growing differentiation and specialisation of science, the ensuing rise of productivity in scientific work, the more and more obvious inter-relationships between the various fields of science, call for a constant search and application of new methods of documentation and information. The international character of science and the growing bilateral and multilateral co-operation of specialists from many interested countries in regard to problems of Science and Technology, demand international co-operation in the field of Information and Documentation, the exchange and application of useful means and methods of documentation."

The countries of Southern Africa as part of the "less industrialised countries", are expected to contribute to this co-operation in the exchange of scientific knowledge. This will be to their advantage because they will be expediting the technology transfer from the more industrialised and therefore the technologically more experienced partners in the world. The problem facing the countries of Southern Africa is co-operation in the exchange of research knowledge because there is no machinery. In Southern Africa, it is not yet generally realised that if new knowledge or information is to be really useful in development, it must be organised so as to be readily accessible to government planners and research workers. As a result of lack of such organisation, in many government departments, important information is filed away by officers and it is almost impossible to recall or retrieve it when it is needed; and often even the existence of the information is forgotten. For instance in 1973 in East Africa an African director took over one of the former East African Community research stations, and spent a great deal of time planning research projects only to discover later that practically every project he had planned had already been carried out by expatriate research workers who had left masses of data in files in the office.

In some instances, even in Southern Africa, you find that Africans taking over the running of research sections of government ministries cannot find a trace of work done by their expatriate predecessors and work already done has to be "repeated". This can be expensive in terms of money, time and manpower resources, and at its worst, retard effective decision making.

The need for properly organised information and documentation services for development was emphasised by the Kenya's Minister for Finance and Planning Mr. Mwai Kibaki, when he was opening a conference in Nairobi, on "Dissemination of Science and Technology Information". This was in 1973. He stated as follows:

"In the departments of the University of Nairobi, Economics or Institute of Development Studies, you have people, some of whom we discovered had done some useful research related to Kenya's problems. But we had never met these gentlemen and had never read what they had written, and they in turn had no way of making that information available to us"
in government. It took the appointed ILO mission to come to Kenya to discover that in fact, here in Kenya we had elaborate proposals of what should be done and which we should have adopted a long time ago.

In the field of education, we are inviting people from all over the world to advise on science teaching curriculum for science secondary schools yet we have people here who are aware of how we should go about it, who know the children and what background they come from, but the channels of communication are not as efficient as they should be. More important, those of us who have to implement some of these policies, are quite ignorant of the availability of this information or even of persons who have done research in these fields and we have not got away from that old idea that you have to import people from the so-called developed countries because they have done it before. But they have never carried out a programme in circumstances such as those in Kenya. I am sure that someone who has done work in this country is more likely to have relevant recommendations than someone who comes here for a short time.

We need an organisation where not only do we keep a record of what is available, but also of all the persons connected with this research, where they are now and if they could be available to help in the country. I believe that if you progress even in this one field of collecting data on what is available, how it could be utilised and how it could be channelled to those who need it, you will have a very important contribution indeed.²

²From a speech delivered by the Hon. Mwai Kibaki at a workshop in Nairobi in 1973, on "Dissemination of Science and Technology".
of Southern Africa. In doing this, government participation is necessary. After all, government is responsible for national development.

2.2 REGIONAL CO-OPERATION IN RESEARCH INFORMATION AND DOCUMENTATION, IN SOUTHERN AFRICA

Regional co-operation in the field of Research Information and Documentation, as in other fields can only have a meaning and efficiency if it is based on co-operation at national level. Institutions in Southern Africa, which carry out research should be thus co-ordinated, harmonised and integrated at national level. Close co-operation must be established between them before they can be integrated into a regional network.

Regional co-operation can be accomplished in Southern Africa, in the area of research as follows:

1. Establishment of repertories of documentary institutions and research institutions in the region.
2. Publication and circulation of information (thesauri, indexes, bibliographies and other documents) among researchers and documentalists in the different Southern African countries.
3. Exchange of research information between all the countries of Southern Africa.
4. Continued training of documentalists in these countries.
5. Periodic international conferences on research and documentation.
6. Standardisation of documentary techniques in the whole region.
7. Integration and co-ordination of documentary activities at national and international levels.

2.3 A PROPOSAL FOR A BASIC STRUCTURAL ORGANISATION OF RESEARCH INFORMATION AND DOCUMENTATION SERVICES IN SOUTHERN AFRICA

We have important factors which should be considered when one tries to make suggestions for the organisa-
tion of research information in Southern Africa. Some of these factors are:

1. **Government Commitment**

The study of research information and documentation services shows that the tempo and success of these services is largely determined by the degree, the intensity, and sophistication of the industrial and social environment. It follows obviously, that the situation in Southern Africa obliges the governments to take the initiative in the organisation of research information and documentation services, relying on the research institutions and universities operated by public funds.

This arrangement will naturally have very limited effectiveness in the absence of strongly developed industrial and scientific research complexes which clamour for the service.

2. **Financing of Development and Research**

In Southern Africa, like in any other developing region, almost all development and research projects are financed by governments either through direct grants from public funds or by attracting aid or loans from friendly developed countries and international agencies. Therefore information needs of people engaged in these projects must inevitably be financed from public funds. We should note also that when the majority of these various plans for development and research projects are being worked out, the element of provision of funds for research information services for these projects should be considered.

3. **National Set Goal or Priorities**

Countries of Southern Africa have carefully worked out development plans setting out respective national priorities. These plans are comprehensive documents embracing development proposals in all sectors of the economy and are designed to benefit all sections of the community. The plan targets usually cover such areas as: Production and Incomes, Human Resources, Tourism, Transport, Water, Health, Education, Literacy, Law and Order. In my view information and documentation services should be fully utilised.
2.4 ORGANISATIONAL STRUCTURE

(a) The National Structures

The bases for national structural organisation of research information and documentation service should be laws setting up National Research Information and Documentation Centres, with powers to call upon the services of other national agencies. Once established, such centres should undertake the following tasks:

(a) Identifying the country's major fields of research activity which should be documented.

(b) Making surveys of the existing research institutions in the country.

(c) To delegate some of its primary responsibilities to carefully selected libraries on subject specialisation basis.

(d) To initiate training programmes for those engaged in research information work.

(e) To plan and budget for Research Information and Documentation work.

2.4.1 WORK OF THE NATIONAL RESEARCH INFORMATION AND DOCUMENTATION CENTRES

These centres will have under them specialised local research information units. The standard task of the Research Information and Documentation Centre, should be such as: the preparation of bibliographies, undertaking translations, indexing, abstracting, and Documentation Reproduction Services.

One of the major responsibilities of such a national centre, would be to collect and preserve local publications related to research done locally, and to disseminate information contained in these publications. The net should be cast as wide as possible in order to draw in, even the unpublished research material. The National Research Information and Documentation Centre should then be able to produce comprehensive research directories.
The other major responsibility of such centres would be to co-ordinate the work of all the local information units (sub-centres), in order to ensure that there is no wastage of resources and that duplication of effort is avoided. It should also be the responsibility of the National Research Information and Documentation Centres to collect and disseminate general research information about each country. This would ensure that people seeking information of the general nature are given authoritative data on topics/subjects such as: population, trade, government statistics etc. The National Research Information and Documentation Centres should be the main agencies into which enquiries which cannot be satisfied locally should be channelled for contacting other agencies outside Southern Africa.

2.4.2 WORK OF THE LOCAL RESEARCH INFORMATION UNITS
(SUB-CENTRES)

One of the top priority tasks of such centres would be to create research information units on specialised fields of their own, e.g. Agricultural Research Information Unit. I propose here, that the priority subject fields should embrace: Industrial development, Agricultural, Education, Transportation, Health, Law and Order, Tourism, Rural Development and Water Resources. These are some of the areas which are emphasised as priority areas in most of the development plans of the countries of Southern Africa.

Initially these sub-centres would need to operate independently of each other with co-ordination of their work being carried out by the National Research Information and Documentation Centre. In other words they would have a horizontal operational structure. However, where it is seen feasible, and for reasons of economy, some of these sub-centres should share facilities, such as: reproduction of documents and translation services.
2.5 REGIONAL STRUCTURE

It may not be easy to make proposals for a Southern Africa Regional Structure for Research Information and Documentation Service. This is largely due to the fact that legal administrative arrangements of a wider Southern Africa regional arrangement does not exist, and political authority at a supra-national level is extremely difficult to implement. However, if research information and documentation services could be well organised, one could see this as a strong base for the development of a Regional Service of Research Information and Documentation within the following structure:

2.5.1 REGIONAL RESEARCH INFORMATION AND DOCUMENTATION CENTRE

On similar lines, as the setting up of National Research Information and Documentation Centres, we should also consider establishing such centres at regional level. Such regional centres can be established also with subject sub-centres. Autonomous Regional Research Information and Documentation Centres should also be considered for establishment in Southern Africa. These may be on subject basis. The structure which may be useful, is that of a Regional Research Information and Documentation Centre with regional sub-centres. It should be a structure similar to the National Structure proposed earlier. The Regional Research Information and Documentation Centre should have responsibilities similar to those of the National Research Information and Documentation Centres, but at a regional level. It should have the responsibilities of co-ordinating both the work of the National Research Information and Documentation Centres and the Regional Research Information and Documentation sub-centres.
2.5.2 RELATIONSHIP BETWEEN THE NATIONAL RESEARCH INFORMATION AND DOCUMENTATION CENTRES AND REGIONAL RESEARCH INFORMATION AND DOCUMENTATION CENTRE

In the absence of a regional political authority with powers to legislate for the Southern Africa region, I propose that legislation setting up National Research Information and Documentation Centres, should recognise the necessity of a higher body, the Regional Research Information and Documentation Centre, and "compel" the National Centres to co-operate with the Regional Centre. A rationale should be worked out for centralisation at the Regional Centre of some of the most expensive aspects of documentation work, such as abstracting, translation, indexing services, and data storage/retrieval gadgets, such as computers. The Regional Research Information and Documentation Centre should publish a Regional research directory, showing completed research and research in progress in the entire region.

2.5.3 REGIONAL RESEARCH INFORMATION AND DOCUMENTATION CENTRE - ADMINISTRATION

The Regional Research Information and Documentation Centre should be established as an independent organisation recognised and given administrative authority in all the countries of the region. It should be run by a Director and an advisory policy making committee of nominees of the national governments, plus the local directors of the National Research Information and Documentation Centres. This committee should report to the appropriate organs of the national governments.

2.5.4 FINANCING THE REGIONAL RESEARCH INFORMATION AND DOCUMENTATION CENTRE

The annual budget of this centre should be met out of grants given by different National Documentation Centres - plus to some extent aid from outside the region.
2.5.5 REGIONAL RESEARCH INFORMATION AND DOCUMENTATION

CENTRES (SUB-CENTRES)

The Regional Research Information and Documentation Centres would have, as one of its initial tasks, to identify national sub-centres which should be allocated additional responsibility of functioning as Regional Sub-Centres. The Regional Centre would of course operate within the already identified national priority subject areas, plus any other areas which may be of a regional priority. The nomination of a sub-centre to serve as a Regional Sub-Centre would be based purely on merit. Consideration would be given to such factors as size of research information collection, availability of documentation facilities and ability of the staff to carry out the wider regional documentation responsibilities. With regard to research in subject areas of a regional interest, as opposed to national interests, the Regional Centre itself would handle the documentation work of such subjects. Examples of areas likely to emerge as being basically of regional interest are: general information about the region, air transport, meteorology, regional trade etc. The Regional Sub-centres would coordinate the work of the National Centres operating within the same subject areas. They would be responsible for maintaining comprehensive library collections of all research publications, in their subject fields emanating from all the countries in the region, including, as far as practicable, unpublished material.

3.0 PRACTICAL CONSIDERATIONS IN RESEARCH INFORMATION CO-ORDINATION IN SOUTHERN AFRICA

Having dwelt much on the principles of research information co-ordination in Southern Africa, my paper may not be complete if I can’t say something about the practical aspect of this co-ordination.

The practical aspect of research information co-ordination in Southern Africa is something that has to be seriously looked into by the countries of this region. Some of the questions that have to be put into consideration are:
(a) What communication channels have to be used in exchanging information?

(b) What sort of information has to be exchanged?

(c) What areas do we have information in already?

(d) What other information systems this region's research information system could benefit from?

3.1 (a) COMMUNICATION CHANNELS

At the present moment, Southern Africa's communication system is not well developed. The roads connecting all the Southern African countries are not developed, air links are poorly co-ordinated or non-existent between the countries of this region, postal services, telephone services and telex services are not very efficient. Perhaps the railway system is somehow developed but it is rather expensive. For the exchange of research information, I would suggest that where we have railway links, information should be transferred using the railway system or road system where they exist. The limited postal and air services should be fully exploited in the exchange of information depending on what type of media is used in the exchange of this information.

3.2 (b) INFORMATION TO BE EXCHANGED

The research information to be exchanged would be both published and unpublished in Southern Africa, on all questions relating to economic, social, scientific and technological development. This information will be in the form of:

i. Catalogues
ii. Indexes
iii. Abstracts
iv. Bibliographies
v. Current Awareness List
vi. Repackaged Information
The proposed research and documentation information system for Southern Africa, would be expected to facilitate the users' access to primary document collection, both with direct supply of microcopies and with the information concerning hard copy availability in and outside the United Nations family. It will provide information bearing magnetic tapes to interested member states, advise the Southern Africa countries on research information documentation problems. This system will also establish a register of on-going socio-economic research and development projects.

3.3 (c) AREAS OF EXISTING INFORMATION

It would be a disaster and a waste of funds and time for the Southern African countries to determine research priority areas, without carrying out research to identify what information already exists in various fields. A lot of research work both published and unpublished has been done in this region, and it is the duty of the scholars of this region to find out what has been done, so that when mapping the research priorities, this information should already be known. It is no use declaring Agriculture a priority research field, without knowing what aspects of Agriculture has to be researched into.

"In 1963, a scholar in one of the East African countries got an equivalent of US $20,000 to carry out research into the causes of skin disease among some tribe which lives near the sea". The scholar without making a thorough literature search to find out whether some information existed on this subject, just went ahead and carried out this research, which lasted one and a half years. He completed it and wrote a report of his findings. After his findings had been published, one scholar read it and to his astonishment found that this research had been done by another scholar from the Philippines, and in actual fact he held a copy of the findings which were almost similar". It is this sort of wastage of funds and time which scholars in Southern Africa should try to avoid when identifying the research priorities".
3.4 (d) INTERNATIONAL CO-OPERATION IN THE FIELD OF RESEARCH

INFORMATION

There exists various information systems from which the Southern Africa countries can draw a lot of research information. Some of these systems are:

i. AGRIS - *Agricultural Information System* - which is operated by the Food and Agricultural Organisation (FAO), has very useful information from which the Southern African countries could benefit. Agriculture, being one of the priority areas for development, for most of the countries of this region, it goes without question that, this is an important system with which the Southern Africa's proposed research information system could co-operate.

ii. PADIS - *Pan African Documentation and Information System*. This is designed to serve African countries by identifying and collecting African information resources and creating an efficient system for the utilisation of the information by Economic Commission for Africa (ECA) and the member states, by promoting information exchange.

PADIS may help satisfy the research information needs of the users in Southern Africa at the individual, institutional and international levels by providing accurate and updated information which is relevant to policy formation, planning, monitoring, and evaluation through various series of activities e.g. cataloguing, indexing, and abstracting, selective dissemination of information etc.

As a start I see the Southern African countries' research information system co-operating with the two mentioned systems, in addition to the informa-
tion programme of UNESCO. These countries could draw a lot of research information from these systems, which could help them in planning for research priorities in this region.

4.0 CONCLUDING REMARKS

The rapid setting up of an efficient network of documentation is necessary to the accelerating development of Southern Africa. To reach the developed stage, a method of integrated action must be adopted at all stages. International co-operation can help Southern Africa to develop the infrastructure of its documentation, scientific and technical services. However this co-operation must discard the struggle for influence from the developed nations wanting to help us. This co-operation should be able to help coordination of all research information and Documentation Services in Southern Africa.
REFERENCES


ORGANISATIONAL STRUCTURE OF RESEARCH INFORMATION AND DOCUMENTATION SERVICES CO-ORDINATION IN SOUTHERN AFRICA

Key:
RC  - Regional Research Information and Documentation Centre
NC  - National Research Information and Documentation Centre
SRC  - Sub-regional Research Information and Documentation Centre