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I N S E A R C H O F A S Y S T E M

for the dissemination of research findings and
technology in Kenya

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1973

IN SEARCH OF A SYSTEM

for the dissemination of research findings and
technology in Kenya

Sponsored by: University of Nairobi
Ford Foundation
DAIRIDA

Committee Chairman: Dr. V.M. Njiru
Members: Mr. J. K. Kariuki
Mr. W.W. Wanjiku
Dr. J.M. Gachuihi
Mr. M. Njiru
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Occasional Paper No. 7
Institute for Development Studies
UNIVERSITY OF NAIROBI
1973

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 DIVISION OF THE CONFERENCE
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<u>Participant</u>	<u>Institution/Organization represented</u>
1. F.L. Abuje	Office of the President
2. C. Barnes (Miss)	Institute for Dev. Studies: University
3. E. Bergstrand	SIDA
4. W.A. Burgwin	Kenya Sisal Research Unit
5. E. Burke (Mrs)	Committee on Dissemination of Science & Technology
6. F.E. Chege	Institute for Dev. Studies: University
7. D. Court	Rockefeller
8. I. Csakany	Masai Rural Development Centre
9. J.M. Gachuhi	Institute for Dev. Studies: University
10. J. Gerhart	Ford Foundation
11. H. Gitata	East African Community
12. D.P. Ghai	Institute for Dev. Studies: University
13. S. Fisher (Miss)	Ford Foundation
14. I. Inukai	Department of Economics: University
15. Jumba Masagazi	East African Academy
16. J.W.G. Karuri	Institute of Adult Studies: University
17. M. Kempe (Miss)	Institute for Dev. Studies: University
18. S. Kihumba	Board of Adult Education
19. J. Kisa	Ministry of Finance and Planning
20. Kitheka Mutui	Voice of Kenya
21. A. Krystall (Mrs)	Programmes for Better Family Living
22. E. Krystall	Programmes for Better Family Living
23. R.J. Kukubo	Kenya National Archives
24. K. Kuiper	Agricultural Finance Corporation
25. J.L. Lijoodi	Ministry of Agriculture
26. R.S.M. Jukalo (Mrs)	CDRU: University
27. G. Lundstam	Co-operative College of Kenya

<u>Participant</u>	<u>Institution/Organization represented</u>
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29. P.M. Mbithi	Institute for Dev. Studies: University
30. J.W. Murelo	Central Bank of Kenya
31. R.S. Musangi	Faculty of Agriculture: University
32. C.N. Mwangi	Agricultural Information Centre
33. R. Mwangi (Miss)	East African Community: Literature Bureau
34. F. Mwiria	Ministry of Commerce and Industry
35. P.K. Ndalut	Pyrethrum Marketing Board
36. J. Ndegwa	University Library
37. L.D. Nguru	Kenya Institute of Mass Communication
38. N. Njiraini	National Christian Council of Kenya
39. J.H. Obaso	Kenya Institute of Administration
40. P.T. Obwaka	Egerton College
41. G.O. Ogola	Ministry of Agriculture
42. S.L. Ojuka	KITI Nakuru
43. D.J. Outram	Twiga Chemical Industry Ltd.,
44. F. Pala	Kenya National Library Services
45. R. Ramaer	UNESCO
46. J. Rantu (Mrs)	Kenyatta College
47. N. Roling	Institute for Dev., Studies: University
48. A.M. Schmohl (Miss)	Ministry of Agriculture
49. P.G. Sitati	Ministry of Finance and Planning
50. R.W. Tacker	Ministry of Finance and Planning
51. H.V. Thimm	Faculty of Agriculture: University
52. C. Trapman	Ministry of Agriculture
53. R.N. Tuluhungwa	African Medical and Research Foundation
54. G. Wachira	Sunday Nation
55. W.W. Wapakala	Ministry of Agriculture

ORGANIZATIONS (AND REPRESENTATIVES)

INVITED TO THE CONFERENCE

<u>Institution</u>	<u>Representative</u>
<u>A. GOVERNMENT DEPARTMENTS:</u>	
<u>Ministry of Agriculture</u>	W.W. Wapakala*
Farm Management	P.K. Gota
Economic Planning	C. Trapman; J. Idjoodi
Agri. Inf. Centre	C.N. Mwangi
<u>Ministry of Health</u>	D. Mbai; Mrs. S. Ngui
<u>Min. of Natural Resources</u>	
National Archives	R.J. Kukubo
<u>Min. of Information & Broadc.</u>	
Kenya Inst. of Mass Communication	L.D. Nguru
Voice of Kenya	Kitheka Mutui
<u>Ministry of Education</u>	
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Computer Services	R.N. Martin
R. Tornington	
<u>Office of the President</u>	
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KIA. Dept. of Public Admin.	R.M.O. Josiah
<u>B. UNIVERSITY OF NAIROBI:</u>	
ICIFE	T.R. Odhiambo
Library	J. Ndegwa
Inst. of Adult Studies	P. Kinyanjui; J. Karuri
Child Dev. Research Unit	Mrs. S. Lukalo

*Members of the Committee on Dissemination of Science & Technology.

<u>Institution</u>	<u>Representative</u>
Medical Research Centre	E.G. Muchunga
Faculty of Agriculture	R.S. Musangi
Dept. of Agri/Economics	H. Thimm
Dept. of Community Health	J. Kaggia
School of Journalism	W.H. McAteer
Inst. of Dev. Studies	D.P. Ghai; J. Okelo; F.E. Chege, Miss M. Kempe
Inst. of African Studies	The Director
Dept. of Economics	I. Inukai
Housing Research Unit	The Director

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Kenyatta College (Hom. Econ. Department)	Mrs. J. Ramtu
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DANIDA	H.E. Hetting
SIDA	E. Bergstrand
FAO, Nairobi office	L. Stenstrom
UNESCO	R. Ramaer
Ford Foundation	J. Gehart
Kenya Tea Dev. Authority	G. Gitungo; J. Mandi
African Med. Research Foundation	R.N. Tuluhungwa
Kenya Film Corp. Ltd.,	L. Obok
E.A. Meteorological Department	S.E.L. Mukhwana
Agri. Finance Corporation	F.G. Maina; K. Kuiper
Central Bank of Kenya	J.W. Mumelo
Kenya Commercial Bank	The Managing Director
Catholic Secretariat	P. Kiarie
Coffee Research Station	The Director
E.A. Community	H. Gitata*
E.A. Literature Bureau (EAC)	N.G. Ngulukalu
Agri. Dev. Corporation	G. Muchiri
Pyrethrum Board	J. Wainaina
E.A. Research Information Centre	A.K.K. Jumba Masagazi
The Pesticide Association of E.A.	The Chairman
Kenya National Library Services	F. Pala
Egerton College, Njoro	P.T. Obwaka
Management Advisory & Training Centre	J.M. Njoroge
Co-operative College	G. Lundstam
NCCK	N. Njiraini*
E.A. Industrial Research Org.	The Director
Shell Chemicals	H.W. Storm

<u>Institution</u>	<u>Representative</u>
BAT	A. Iuseno
KFA	Nganga
Twiga Chemicals	D.J. Outram
E.A. Industries	H. Muciiri
All Africa Conference of Churches	Y. Olumide
Danish Embassy	The Ambassador
IHI Programmes for Better Family Living	C. Bowen E. Krystall/S. Barghouti
Coffee Marketing Board - Nairobi	The Chairman
Cotton Lint and Seed Marketing Board, Nairobi	The Chairman
Canning Crops Board, Nairobi	The Chairman
Kenya Meat Commission, Nairobi	R. Douglas
Kenya Tea Board	The Chairman
Kenya Dairy Board	The Chairman
Kenya Sisal Board	W.A. Burgwin
World Bank	W. Brakel
Rockefeller Foundation	J.S. Coleman
The Wheat Board	The Chairman
National Irrigation Board	The Chairman
Wellcome Trust Research Laboratories	The Chairman
Sunday Nation ('Why')	J. Kadhi
E.A. Standard	Reporter
Daily Nation	Reporter
Kenya News Agency	Reporter
Committee on Dissemination of Science and Technology	P.M. Mbithi (Chairman) W.W. Wapakala, J. Kisa H. Gitata, P.G. Sitati N. Roling, M. Gachuhi N. Mwangi, Miss C. Barnes Mrs. E. Burke

P R E F A C E

This Report on the Dissemination Conference should be regarded as a sequel to the Report, 'Harnessing Research, for production, for Production, Dissemination, Utilization, Occasional Paper no.5, which in its turn is a Report of the proceedings of the Kiyuku Workshop held on January 20th-22nd, 1972.

Papers presented at the Conference are included in an edited form in this Report. Fuller versions are available at the Institute for Development Studies, University of Nairobi on request.

E.B.

ABBREVIATIONS

AIC	Agricultural Information Center
BAE	Board of Adult Education
BAT	British American Tobacco
DANIDA	Danish International Development Agency
EAC	East African Community
EAI	East African Industries
EAAFRO	East African Agriculture & Forest Research Organisation
EAIRO	East African Industrial Research Organisation
EAVRO	East African Veterinary Research Organisation
IAS	Institute of Adult Studies
IDS	Institute for Development Studies
ICIPE	International Centre of Insect Physiology and Ecology
KFA	Kenya Farmers Association
KIA	Kenya Institute of Administration
KIMC	Kenya Institute of Mass Communication
KITI	Kenya Industrial Training Institute
MFP	Ministry of Finance and Planning
MCA	Ministry of Agriculture
MTAC	Management Training and Advisory Centre
NCCK	National Christian Council of Kenya
PBFL	Programmes for Better Living
SIDA	Swedish International Development Assistance
VOK	Voice of Kenya

CONFERENCE ON THE DISSEMINATION OF SCIENCE AND TECHNOLOGY

BACKGROUND TO THE CONFERENCE

Dr. P.M. Mbithi
Chairman of the Committee on Dissemination of Science and Technology

The Conference is the culmination of a year's work, mainly by a Committee elected at Kikuyu last January by members representing organisations represented here today - a cross-section of all the organisations in Kenya concerned with either the use of science and technology or its dissemination.

The Committee includes members of staff from the University, officers of Government and members of the private sector and the E.A. Community. It is an example of academics working together with technicians and in this way we hope that the findings of the Workshop will be a combination of the efforts of these people.

At Kikuyu we were concerned with the use of research as a resource for development. We were concerned about the problem of duplication and lack of relevancy of some research programmes and projects. It was found that there was very poor dissemination of scientific findings to people who need them: eg. dissemination to small farming sectors and to nomadic tribes. This was discussed at Kikuyu. There is also the problem of lack of public awareness of some of the findings which could transform the land in Kenya.

The Kikuyu conference charged the Committee to study some proposals and this Committee has been involved in a system of consultation with all concerned with dissemination.

The papers to be presented here represent proposals by some organizations and others are tentative proposals.

The participants are very honoured that you (the Minister) have come to open this session and I would like to request the Deputy Vice-Chancellor who is in fact representing the University which has supported and hosted these activities, to introduce the Minister.

PARTICIPANTS INTRODUCED TO
THE MINISTER FOR FINANCE AND PLANNING

by Prof. J. Mungai

Deputy Vice-Chancellor, University of Nairobi

It is my very great pleasure to welcome you (the Minister) to this Conference on behalf of the University and to say that it is a very great honour that you have accepted our invitation and thus show the interest which the Government has in the whole question of dissemination of information on science and technology, with special reference to dissemination of research results that could be of great use to development.

You yourself have many times pointed out to those of us who do not understand about finance that if money is not circulated it is not likely to be of very much use. The same principle applies to research information. Many of us do research, publish it in journals which sometimes are read by 100, 200, possibly 1,000 people, yet it may be very crucial in terms of enabling someone else to undertake development work which could be of assistance especially to countries like ours.

I would like to ask if you could now address the opening ceremony of the Workshop, which I believe will be forthcoming with ideas and proposals that will help in trying to find ways of getting very valuable research work, research results into application and into development. This concern has been expressed by many organizations, and although there is awareness that perhaps every institution is trying to set up its own machinery for dissemination, nevertheless the basic development, the basic observation is that we are all concerned with the fact that we could utilise much more effectively what we know from research and what we know we can do with the utilisation of modern technology.

THE OPENING ADDRESS

Hon., M. Kibaki, Minister for Finance and Planning

We are looking to your conference for proposals rather than that we should put proposals to you. I say this in all humility since those of you who are gathered for this exercise are the only ones we have in the country and if we do not get proposals from you, we are unlikely to get them from any other source.

I am particularly grateful to those who initiated this exercise. I would like to congratulate them because in the effort they are making they fill a gap which we have been all too aware of but have not yet been able to do very much about, partly because we did not know how to go about it, because we did not have the time or the manpower.

I believe that whatever difficulties you might come across - and you will come across difficulties in getting your proposals accepted - you should not be discouraged but should continue in the line that you have adopted.

We who deal with planning are all too aware that we do not make full use of the available information and knowledge in this country. More important, we are all aware that we do not have enough information in fields in which we do have to make a decision. We are aware that statements we make are not backed up by detailed information. If we were challenged on the basis of our statements we could not substantiate them to an audience like you.

But we have to make statements and propose policies. We are aware of the gaps existing in the plans we publish, whether annual or five-yearly, and we are aware that there are people in the country who know what should be done, but because of the system existing in Kenya they have no short cut to inform those who are taking the decision. For instance in departments of the University - Economics or IDS - you have people, (some of whom we discovered last year when we got an ILO mission to investigate unemployment, etc) who have done research in numerous fields related to all these problems and come to some conclusions, many of which looked relevant. But we had never met these gentlemen and had never read what they had written, and they in turn had had no way of making that information available to us in Government. It took the appointment of an

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 now, 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 yet got away from that old idea that you have to import people from 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 organization 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 made a very important contribution indeed.

The greatest problem in public institutions is the fact that the people who leave universities and are employed by government or state corporations and the private sector, make up their minds that they have had enough education. You meet that same brilliant student five years later, and he has gone back to becoming quite illiterate in the science in which he got distinction as a graduate - a very serious handicap indicating apathy toward development. When you meet them, the only language in which such men and women can speak to you is that of ten years ago, when they left university. They are unaware of the numerous developments in that field which challenge what they learned, which are much more immediately relevant to the situation now. They do not retain an open mind; do not read anything new, and are not aware of new challenges. This is a serious problem in government where, because of the civil service structure, which we want to maintain, people are promoted on the basis of seniority. By the time they get to the top, they are about 20 years out of

university and if they have not updated their knowledge on all these matters, then you have gentlemen at the top who advise the Minister, who advise the Government on policy - supposed to be relevant now twenty years after they left university. They have not been kept informed partly because many of them are unwilling to read any more, but more important, because there is no organised channel for that information which is available to reach them on a regular basis. By having an organised system of dissemination knowledge, we can all have it made available to us and have it on a continuing basis. If we do not make use of it this is our own fault. This is one aspect on which, I am sure, at the end of your deliberations you will make proposals as to how we can arrive at a position to make full use of such knowledge.

In order for us to be able to utilise research, we have one problem we must try and solve. The assumption that if material is made available it will be used. But one has to ask whether that research will be relevant to the needs and this is important because if we are going to make use of the products of research, then that product must meet specifications. This is true in all other fields of production but when it comes to research we tend to reject this because we start off by saying 'I do research in order to pursue the principle wherever that might lead me'. Well and good, but if research is aimed at improving our capacity to develop, improve our ability to plan the utilisation of our resources we have more effectively, improve our capacity to use the knowledge that is available, then the question researchers have to be asked is whether it is relevant. Why not? Whenever we are discussing any other form of production we ask this question. We do this in every other field - constantly searching for a product which is relevant to the needs of today - but in research there is a general resistance both from those who do the research and those who refuse to accept that in order to use the product of research that research must be rendered relevant to the man. The demand is in relation to the problems we face here. I am not advocating that we should stop basic research or stop people from choosing what kind of research they want to do. I am merely saying that when you have worked out your proposals, one of the essential questions to be answered is how to so organise research that you guide people to do research which is needed by the society at this stage of development.

I am sure that this is the way in which we can find a meeting point between the needs of those doing research and the needs of

Government and those engaged in planning. Ask yourselves this question: how can we bring greater understanding, greater sympathy, between the man who is doing research and the man who is in the field implementing some previous research or programme given to him by Government?

Someone asks for assistance from Government and we give it, but find when the researcher goes to talk to the field officer that there is not much sympathy between them. The man in the field thinks that the research fellow is wasting his time. He regards this kind of research as something for academicians only.

We have got to bridge this gap; make the man in the field appreciate that research is likely to help him implement and plan better, that as a useful field officer, he ought to be doing research continuously. He ought not to be satisfied to do what he is told, but should make a contribution as a result of his own experience, report and record it, even if he cannot analyse it fully. This type of recording is not taken into account. He is only asked what he has done - and is not encouraged to record observations. This would help to bring closer those who are in the field and those doing research. Let them agree and recognise that theirs is one and the same task. In this way, we will be in a position to establish a link between those who consume the product of research and those who produce it.

There is no other sector in the economy where that gap is allowed to exist. Every other kind of product is produced with an eye to the consumer and the consumer reports back - sometimes very vocally. But the consumer of the products of research are either quiet or there is no feed back. This is a gap of which we are very much aware and it is proposed to appoint a District Planning Officer in every district to co-ordinate the work of field officers. Their work may be based on plans written last year. We do not want them to forget that we wrote them last year, on the basis of inadequate data or information and that part of their job is to continue to improve on the information available so that in future we may have a better plan. That is where you can be of real help to us.

Finally, we in this country are in very great need of getting those who do research to develop a certain measure of self-confidence and be able to speak up about problems. I don't say they are all afraid, but

suggest that there is a very marked distinction between the people who come to Kenya for four or six weeks and the very confident pronouncements they make about what must be done to save this country and those people who have been processing these matters right here, who belong to this country. We expect those who are involved in these matters to be more vocal. If we make decisions only on the basis of developed information or the influence of those who are less informed, then we are depriving our own society of benefits which are available in this country.

I want to make this appeal: that through institutions, those who do research here and who have lived here for a long time should speak up with confidence about what they have found and developed. I don't believe anyone can say that we have a social system in this country which suppresses people. It is the worst thing to have an isolated category of people who are educated. One of the primary reasons for searching to improve the communications machinery is precisely to make sure that we don't have this kind of isolation between society and those who do research and I am sure that this is more urgent than we appreciate - much more urgent.

We want to encourage this kind of gathering where you have people from government departments, the university and the private sector and research organizations. It is important in a country like Kenya that these old-fashioned divisions between government and private companies and universities be forgotten in this kind of work. Government should learn from what private industry is doing in various fields; we should make sure that what the university is discovering is also available to the Government. We don't want any separation between these groups.

Today, the nations which have been able to develop fastest - particularly in technology and science - have been those that have eliminated this distinction between research carried out by government, universities and the private sector, such as America and Japan, particularly Japan. The employment of research by the private sector is a steady and growing thing, so that whereas Government is limited sometimes by lack of manpower or resources, you have a private company which has carried out research which could be applied more broadly. We want to encourage this here, and I hope you will establish a means of communication between government, the private sector and the university.

QUESTIONS FOLLOWING MINISTER'S ADDRESS

OPENING COMMENT, Prof. D.P. Ghai, Director of Institute for Development Studies

I would like to join with Prof. Mungai in expressing our appreciation to Mr. Kibaki, who has made incisive comments on the whole question of research and dissemination. He has gone to the core of the problem. We are very fortunate that he is at the helm of affairs, and also fortunate that Kenya is relatively a very open society - this is very exceptional. There are very few countries which are as open and tolerant as Kenya in terms of criticism and discussion.

The preponderant share of educated men are in politics or the Civil Service. They make the policy and implement it and we cannot expect them to criticise their own policies. Kenya does not have highly specialised journalists who might do so. This leaves a very big gap and, apart from the public sector, the largest share of independent, intelligent, highly educated manpower is going to University which therefore has a critical role in discussing these matters and criticising constructively. I think the University has not done enough in this respect, not just in the field of dissemination, in making efforts to reach the public and educate them about the real issues of development. The Deputy Vice-Chancellor has given a lead in this and has been writing for the public and I hope that people here will do much more to reach the masses and educate them.

MBITHI: Government has already been working hard in establishing certain machinery for co-ordinating established research and Government priorities within a technological context. Having been exposed to what we are trying to do could you tell us how the two are linked together?

KIBAKI: You are referring to the Council of Science and Technology: a lot of discussion has taken place regarding its establishment. This has gone as far as a draft of the law that is needed and a draft of the guidelines, the terms of reference and there has been discussion between Government, the University and other people. It will be established fairly shortly and is included in the Estimates being prepared.

The institution that is proposed is, in fact, at this stage, an expression of good faith or intention. The Government feels there is need for a body to co-ordinate technology, science and research and how money is being spent on development and we do not have an institution in the country to advise Government in that field.

This is a typical problem for you to deal with. We have had to write the terms of reference on a Science and Technology Council. On what basis have we in the Ministries of Planning and Education and so on decided that these are the proper guidelines? On no basis at all: we do not have anyone advising the Government on how to go on developing in this field. But you have to establish terms of reference; in a sense we are putting the cart before the horse - setting up the terms of reference and asking the advisory body which has been set up to advise us how to do it.

Once we have set up the Council, we shall expect those who will be appointed to advise on the basis of the best information that will be available to them.

In the work you do here - perhaps the establishment of a centre or machinery for the collection of information - we expect you will find a way of fitting this in with proposals made by that advisory body.

GITATA: In England there is an Industrial Design Award in the private sector. Is there any way in which this could be established in Kenya, either in trade or by the Government's sponsorship?

KIBAKI: There is one proposal for an Award for the industries that export more than others but this is a promotional sales work by the Export Promotion Council. It has nothing to do with whether or not they discover a new product or process, or improve the quality of a product.

ROLLING: You have been stressing dissemination to Government officials in planning. I would like to know your views on dissemination to farmers;

KIRILI: Dissemination of information to people in Government is where we start in order to get more acceptance of new ideas by the field officers, by the people in the various departments. You are more likely to get co-operation in putting the matter over to the farmer.

Through films, lectures, seminars, field days, people who do research are able to reach directly and speak to those who are in the field. I have been to two field days. One concerned livestock economics on grass processed to become meat. It was much too academic but very stimulating, as farmers were led to ask questions they have never asked before. The other instance was when a lecturer talked of the meaning of devaluation to people who have never been to school. He found a language for reducing the concept of devaluation to make sense to a farmer in a remote place by bringing it down to the concept of barter trade - and it became interesting. I am sure that this is a healthy thing and we have to work out channels for it. My own impression is that we could work out ways of bringing the ordinary person closer to those who do research.

GHAI: Kenya has led many other countries in other fields, and this is another pioneering effort. I do not know of any other developing country which has done this kind of thing and this is another area where we can give a lead.

INTRODUCTION TO THE CONFERENCE

Enid Burke and Niels Roling

The main concern of the Conference is that a lot of scientific and technological know-how is being turned out by researchers but very little of it is reaching the right people or even being used at all.

The problem is not so much an absence of dissemination machinery. The machinery exists - a number of independent bodies working in isolation, often unaware of one another's existence. The problem is more a lack of co-ordination of the existing machinery, with a few missing links. In addition to poor dissemination and little co-ordination, another aspect of the problem is that research rarely benefits those who most need it - the rural people, i.e. 90% of Kenya's total population.

In a nutshell, the problem being examined is - poor dissemination of useful information, lack of co-ordination of existing dissemination machinery and the neglect of the rural sector.

Objectives: 1. to recommend methods for co-ordinating existing machinery into a national dissemination system; 2. to ensure that present gaps in the machinery are filled to allow a functional Dissemination System to emerge; 3. to recommend methods for co-ordinating a Dissemination System with the National Council for Science and Technology (proposed).

These recommendations will then be presented at a seminar of top policy makers.

Background: Problems of insufficient utilization of research findings were discussed at an earlier conference held in January, 1972 at Kikuyu, on the Production, Dissemination and Utilization of Research. The January conference represents the first stage of the problems and objectives being studied at this conference and was sponsored by Friedrich-Ebert-Stiftung. The January workshop was attended by representatives of 60 organisations drawn from government, international agencies, mass media, commercial and industrial organisations, university. Participants elected a Steering Committee whose activities since January last year have culminated in today's conference. The Committee on the Dissemination of Science and Technology was given a mandate to work out details arising out of the workshop and to present them in a finished form at a later workshop, the present one.

The Committee has examined the overall process of dissemination, beginning with science policy and documentation, through Brokerage and channels, to target groups at whom research policy is aimed, evaluation and back again to science policy. This can be seen more graphically in the diagram of a Dissemination system on p. 117 (Roling) which has become the basis for the work of the Committee.

The Committee's terms of reference given at the January workshop was to examine:

- a. Possibilities of establishing Research Brokerage
- b. Possibilities of Improving Documentation and Establishing a Registry and Data Bank.
- c. Channels of communication (establishment and improvement).
- d. Identification of Target Groups (Horizontal and Vertical)
- e. Methods for increasing consultation and interaction.
- f. Production and utilization of Research
- g. Aspects of the National Research Council

Committee Members are:

Dr. P.M. Mbithi	- Chairman (University)
Dr. N. Roling	"
Dr. M. Gachuhi	"
Miss C. Barnes	"
Mr. W.W. Wapakala	(Ministry of Agriculture)
Mr. P.G. Sitati	(President's Office)
Mr. N. Njiraini	(NCKK)
Mr. H. Gitata	(E. African Community)
Mr. J. Kisa	(Min. of Finance & Planning)
Mrs. E. Burke	- Administrative Assistant

Generous donations for the Committee's work come from Ford Foundation (K Shs 27,205/-) and DANIDA (K Shs 27,000/-). (Mr. Njiraini replaced Mr. Kiplagat, and Miss Carolyn Barnes, formerly the Committee's Administrative Assistant, was co-opted as a member in November 1972).

Area of Focus: Although the Committee's terms of reference covers a wide area at a national level, there must naturally be a small beginning. That beginning is focused on agriculture - an essential part of rural development, as a nucleus from which expansion may be envisaged. The terms of the Ford Foundation grant stipulated agriculture as a nucleus, and both the key Ministries of Agriculture and Finance and Planning also agree on this.

A conference on Documentation is being organised in July this year by the East Africa Academy and the Committee have an assurance that the organisers will note what transpires at this conference.

Mr. Trapman was also consulted on the proposed Rural Development Support Communication Centre which is at a less advanced stage than the Documentation Centre. On brokerage systems, those consulted were: Mr. Nguru, Principal of KIMC; Mr. Kithaka Mutui of VOK; Mr. Kangali, Deputy Head of KIE; Mr. Kihumba, Executive Secretary of BAE; Mr. Kinyanjui and Mr. Karuri of IAS; Mr. C. Mwangi of AIC; Mr. Njoroge, Deputy Director of MTAC; Mr. Shikhule, Deputy Manager of Kenya Industrial Estates and representatives of Twiga Chemicals, Shell Chemicals, DAT, E.A. Industries and KFA. Members of the Committee themselves were frequently consulted: Mr. Gitata of E.A. Community, Mr. Sitati of Ministry of Finance and Planning, Mr. Njiraini of NCCCK and those from the University.

Consultations held with these experts resulted in the preparation of Papers to be presented at this conference, grouped under seven headings as follows:

	<u>Papers</u>
1. <u>National Research Policy</u>	J. Kisa (MFP)
2. <u>Production and Dissemination of Agricultural Research</u>	W.W. Wapakala (MOA) H. Gitata (EAC)
3. <u>Target Groups and (other) Subjects for Dissemination</u>	I. Inukai (Econ.) University M. Gachuki (IDS), University P.M. Mbithi (IDS), University A.M. Shikhule (Kenya Ind. Estates) N. Njiraini (NCCCK) D. Outram (Twiga Chemicals) H. Muciiri (EAI)
4. <u>Documentation</u>	Miss W. Keape (IDS), University P.G. Sitati (MFP) R.J. Kukubo (National Archives)
5. <u>Brokerage and Research Evaluation and Training</u>	J.M. Njoroge (MTAC) J. Kangali (KI of Education) E. Krystall (PBFL) C.N. Mwangi (AIC) N. Roling (IDS), University
6. <u>Channels</u>	S. Kihumba (BAE) L.D. Nguru (KIMC) J.W.G. Karuri (IAS), University Kithaka Mutui, (VOK)
7. <u>Formulation of Policy Recommendations</u>	Presented for discussion by J. Kisa

Gaps that remain

All consultants mentioned the lack of co-ordination at almost every stage and welcomed the suggestion of a co-ordinatory body, either inter-ministerial, university-based, governmental or under an independent authority. It is left to the conference to decide on the nature of co-ordination.

All agreed there was need to improve feedin and feedback in the rural communication process. How this is to be done and at what junctures, remains to be decided.

Most consultants felt that facilities to train extension staff in development support communication should be pooled, either within the proposed rural development support communication centre assisted by KIMC, or within an interministerial body for training only.

Future Status of Committee

The responsibilities of the Committee on Dissemination of Science and Technology have grown. The Committee is unofficially recognised by MOA, MFP and FAO Rome, as a consultative body which could also act as a co-ordinator for all parties involved in this project. It will be necessary to formalize the Committee's status at this conference in order effectively convey recommendations made here to the powers-that-be.

The Committee is not keen to participate in any specific function but prefers to remain in a consultative role as an independent body which will have the ear of participating government officials when it presents recommendations at the conclusion of this conference. FAO and Ministry of Agriculture, however, have notified the Committee that they envisage a more implementative role for it.

Also, the Ministry of Agriculture wishes to see the Committee undertake an evaluation of the whole project and have suggested the setting up of an interministerial committee under the Ministry's chairmanship (the Permanent Secretary), liaising with KIMC, the proposed Documentation Centre and this Committee.

THE PLACE OF RESEARCH IN KENYA'S DEVELOPMENT POLICY

J. Kisa, Ministry of Finance and Planning

1. Kenya's Goals, Strategies and Policies Relevant to Agricultural Development and Rural Industrialisation

(i) Mass participation in development - The Government of Kenya is committed to an open society with a free flow of ideas and people and full participation by the people in development activities for their and the nation's benefit. The Government is also committed to effective co-ordination of planning and Plan implementation at the district level. Government assistance in education, training and credit will be accomplished through a variety of institutions extending all the way from the national level to the village level.

(ii) Full employment - Unemployment is a major problem in Kenya. The modern sector of Kenya's economy had only about 730,000 jobs in 1971. The labour force (ie. between the ages of 15-59) was estimated at about 4,500,000 in that year. This means that 3,770,000 economically active people had to find jobs outside the modern sector, largely in the traditional agricultural and non-agricultural enterprise sector and some were unemployed or under-employed. During the last ten years employment in the modern sector has increased at the rate of about 3% per annum, and is not likely to increase by more than 4.4% p.a. during the next five years. Because of a high rate of population growth (estimated at 3.3% p.a., 1962-69) and the rapid growth of the labour force, the modern sector is not likely to generate a sufficient number of jobs to absorb all Kenyans seeking jobs in this sector. The unemployment problem will, therefore, become progressively more acute unless measures are taken to increase employment opportunities in traditional agriculture and non-agricultural sector of the rural economy. The creation of full employment has become the Government's top priority objective.

(iii) Income distribution - This, in Kenya is uneven. In the modern sector the average European earns two and half times as much as an average Asian, who in turn earns six times as much as an average African. In 1971 Africans in modern wage employment earned an average of K£173 per annum, compared with only K£24 for workers on small farms

and settlement schemes. The wide disparity between urban and rural areas incomes engenders serious social and economic problems. Many people are attracted by the high incomes in urban areas but the available jobs and essential services are not adequate to cope with the resulting demands. The ILO Report on unemployment in Kenya estimated that out of 2,340,000 households in Kenya (1968-70) only 30,000 were owners of medium-to-large scale farms or businesses or were rentiers with incomes of over K£1,000 per annum, while 1,440,000 families engaged in rural activities earned an average of less than K£60 per annum.

Land, bank credit, education and other resources should be accessible to all who can use them well; their distribution should be limited only by the total amounts available to the nation. This objective is to be accomplished through regulation of private enterprise, encouragement of co-operatives, control of monopolies, nationalisation where desirable, land settlement programmes, marketing policy, pricing policy, and monetary policy. It is Government's policy to bring banking to the people, to make them more credit-conscious and to awaken them to the opportunities of operating within a modern credit economy.

(iv) Kenyanisation Since Independence, the transfer of political, economic and social control into the hands of Kenya citizens has been a primary objective. In pursuit of this long-range objective the Government aims at ensuring that all employment is held by Kenya citizens, that all agricultural land is owned by Kenya citizens, and that all businesses are owned by Kenya citizens, except where some overriding national advantage can otherwise be demonstrated. Those firms still under the control of non-citizens are issued with quit notices. Kenyanisation is also promoted through education and training and by technical assistance and credit facilities to farm and business enterprises. The Government has already made substantial equity investments in tourism, banking, oil refining, insurance, power and lighting, housing, industry and land transfer. These sectors are critical to Kenyanisation.

II. Agricultural and Industrial Development

(i) Agricultural development In the allocation of agricultural funds, greater attention is paid to less developed and range areas than in the past. In this way the distribution of national income

can be improved. Labour-intensive crops are encouraged eg. tea, pyrethrum, maize. Employment is also encouraged through irrigation and settlement schemes. Agricultural products such as tea, sugar and dairy products provide raw material inputs for processing industries. Agricultural products also contribute to export earnings. A growing agricultural sector provides an expanding market for industrial products. Increased farm production and consumption help to improve nutritional standards.

(i) The principal constraints in agriculture are knowledge, technology and credit. Development strategy, therefore, concentrates on extension services, training, research, credit and improved supplies of farm inputs, veterinary services, and markets and co-operatives. In addition, various experimental approaches to agricultural development are tested through the Special Rural Development Programme.

(ii) Industrial Development - The objective of Kenya's industrial development is to make maximum contribution to the welfare of the nation. This is achieved by selecting those goods which Kenya, by her resources and skills, either can now produce or will ultimately produce more cheaply than the rest of the world. These goods are produced in substitution for imports and ultimately for export.

There is great potential for small-scale rural manufacturing of products for import-substitution and for export. However, the potential manufactureres lack production skills and expertise in cost control, accounting and marketing. Government efforts are geared to the small-scale rural producer. In 1972 the Government appointed a Working Party on Small Business Development which submitted a report in which measures were recommended for assisting small businesses. These recommendations are currently under study by the Government for implementation.

III. Rural Development and District Planning

The Government is in the process of strengthening district planning which will involve the entire population in plan formulation through their legitimate representatives. District planning is the process where all districts in Kenya will prepare their own plans and integrate them with the national plan. A District Development Officer will be assigned to each district to work closely with District Development Committees in the preparation of the district plan.

The district plans will comprise sectoral programmes included in the national plan as well as local projects identified by District Development Committees after reviewing the sectoral programmes. This process is likely to reveal a number of projects which will be planned and executed by the local field officers.

In 1971 a scheme of grants to District Development Committees was

introduced as a preliminary step towards district plan formulation. The scheme will be expanded in order to strengthen district planning.

IV. The Contribution of Research

The Government has made extensive use of science and technology for development purposes. In 1971/72 the Government spent K£ 3,570,000 on agricultural research and development and K£ 10,330,000 on agricultural scientific and technical services. In the same year, the Government spent K£ 400,000 on industrial and technical services. Also in 1971/72, the manpower engaged in agricultural and industrial research and development as well as in the transfer of knowledge and technology in these two fields numbered 7,586.

The Government of Kenya accounts for 75% of the total expenditures on research and development, and 81% of the expenditures on scientific and technical services. These proportions represent 2.30% and 11.17% of the national budget respectively. The largest part (69.5%) is devoted to agriculture. Industrial and social sciences receive only 7.8%.

The transfer of science and technology proceeds on a somewhat ad hoc basis. Research and development are geared to development programmes largely on the initiative of those directly responsible for their implementation. Naturally, problems arise in the absence of an explicit overall policy. In the Development Plan 1970-74, therefore, a call was made for a science policy-making machinery. The Government is currently actively considering the establishment of such a machinery to advise the Government on science and research policy as well as on programmes based on such policy. The findings of the research will be disseminated through the established communication channels i.e. the extension service and Rural Industrial Development Centres. The contribution of researchers and workers in the field of dissemination of scientific and technological information for agricultural and industrial development in rural areas should be in the form of identifying obstacles to agricultural development and rural industrialisation, analysing their causes and suggesting their solution. This information should then be fed back into policy-making and programming. In this way, the dissemination of science and technology should be made more effective.

AGRICULTURAL RESEARCH IN KENYA
PRODUCTION AND DISSEMINATION OF RESULTS

W.W. Wapakala, Ministry of Agriculture

I. INTRODUCTION

In its simplest form, modernization in agriculture involves the use of new techniques. Development and testing of new production techniques, including the provision of improved seed, cattle breeds, etc., is the work of the agricultural research services of the Ministry of Agriculture, in collaboration with a large number of institutions within the Kenya Government and the E.A. Community. Notable among these are: University of Nairobi (Faculties of Veterinary, Medicine and Agriculture; Institute for Development Studies, Department of Geography), EAAFRO, EAVRO, EAIRO, Tropical Pesticide Research Institute and E.A. Meteorological Department.

II. PRIORITIES AND DISSEMINATION OF RESEARCH OF INFORMATION

(a) Assigning of Priorities to Programmes

It has been said that while many developing countries have foreign policies, economic policies, etc., they do not have science policies. Kenya is no exception to this, hence absence of national machinery for determining priorities in science including agricultural research.

A mechanism involving senior officers in the Research and Planning Divisions and members of statutory board to whose schedule the crop, animal or animal product belongs is used in assessing and/or assigning priorities to projects.

Some of the criteria used, based on predicted benefits flowing from solutions to problem, are:-

- i. Estimated effect on total agricultural production, quantity, quality and value.
- ii. Estimated impact on farm income, and number of persons and size of area affected.
- iii. Probable effects on exports and foreign exchange earnings.
- iv. Secondary and tertiary benefits to employment and overall economic development.

This broad mechanism of setting the basic priorities is necessarily administrative. Once it has been decided to initiate research into the improvement of a given crop or animal, the next stage i.e. development of a relevant research programme to solve the constraints requires a slightly different set of persons from those who establish national requirements. Thus the person (research worker) responsible for the investigations draws up a research programme for scrutiny by Research Advisory Committee. There are research advisory committees for each crop or animal. Such committees consist of research workers, crop planners (generally from statutory boards) staff of the community research stations in Kenya, and recently, staff of Faculty of Agriculture in the University of Nairobi, members of the extension service and the farming community. This broad representation enables the research workers to get a feedback, as well as new ideas from other research workers.

While this mechanism has been used for some years in determining areas of research, particularly with regard to crops, there have been criticisms to the effect that the determination of research priorities has in the main been left to research workers themselves and the recommendations put out by the stations give little or no information on the economics of adopting the recommended agronomic and other practices. This is understandable in view of the fact that:-

- i. the farmers and their representatives who attend research advisory committees have little experience in conceptualising researchable problems and hence are of little help to researchers when it comes to defining research programmes. The development of the Faculty of Agriculture in the University of Nairobi might help to broaden the variety of persons involved in determining research programmes and priorities. Equally, with the rising level of education of the farming community which now include senior civil servants and others in the private sector, the contribution of the farmers to the programme formulation will improve.
- ii. The economics of various innovations can only be comprehensively appreciated if economists are involved in the programme formulation. The numbers of agricultural economists in this country is very small and there are none attached to agricultural research. This problem is however, not peculiar to Kenya. Plans are in hand, however, to establish posts of research liaison officers in the Land and Farm Management Division of the Ministry. These officers will necessarily be agricultural economists. A start

has already been made with the Mbere Special Rural Development Project with regard to the work undertaken by the Embu Agricultural Research Station.

(b) Dissemination of Research Results

In the Ministry of Agriculture, the dissemination of research findings to farmers and other users is undertaken by two change agents i.e. research workers and extension staff.

1. Research workers: These communicate results of their work to prospective users through a number of media:-

i. Publication in Scientific Journals: Generally, these are too technical for the ordinary farmer. However, many educated farmers including farm managers read these journals and are hence introduced to new technologies. This channel of dissemination reaches a very small section of the target groups, but is an important aspect of research.

ii. Annual Reports: Produced by each research station or section. They are mimeographed and distributed freely to all District Agricultural Officers (DAOs), members of the research advisory committee serving the crop or station, statutory board (s) connected with the station/section and others interested in the report. Reports are edited at the Ministry head office and printed as a single report for the Research Division. High production costs prevent the printed version being distributed free. They are on sale at the Government Press.

iii. Field or Farmers' Days: Research stations/sections arrange special days for farmers, extension staff and all interested to come and see for themselves the benefits of adopting new practices. The effectiveness of this method of dissemination has not been critically assessed, but one aspect of criticism is that since the stations have more resources than the ordinary farmer, the latter cannot be expected to follow the recommended practices.

iv. Bulletins and Handbooks: These, like the Annual Reports, are for the extension staff and literate farmers and are not generally issued at any fixed intervals. Bulletins may be reproductions of papers published in a farming journal, like Kenya Farmer, while handbooks provide a condensed knowledge resulting from research in a given crop or animal production system. The usefulness of this form of dissemination depends on the level of literacy of the target groups and the availability of the information. Some of these documents go no further than the D.A.O.'s office, and the real change

agents i.e., the Junior Agricultural Assistants (JAAs) either have no access to this information and hence do not bring it to the attention of the farmers, or the information is too advanced for the JAAs. This can best be done by the Agricultural Information Centre (see 2 (iii)).

v. Advisory Services: Research officers particularly in coffee, soils, entomology and plant pathology handle inquiries from the farming community relating to such problems as diseased plant, suspected soil deficiency, and insect attack. If the researcher does not have a ready answer, the problem raised may become a subject of research particularly if it affects a large area. A good case of feedback.

2. Extension Services

This is the main vehicle for disseminating new technologies to the farming community and is done through the following channels:-

i. Courses for farmers and staff at Farmers' Training Centres and Agricultural Training Institutes

ii. Meetings or barazas

iii. Broadcasts and films

iv. Bulletins.

i. Farmers Training Centres and Agricultural Institutes: There are over 30 in Kenya providing farmers' courses in improved agricultural practices. Open days are also held at these centres for the farmers in the area and in-service courses for the junior extension staff.

ii. General Meetings: Meetings or barazas called by administrative officers give extension staff opportunity to advise farmers about improved practices and about rural development in general. This form of extension provides information to a much wider section of the farming community than most others. On the other hand, the others tend to cater for the literate and possibly progressive farmer. Following addresses of this kind, farmers may request extension officers to visit their farms and advise on how to plan the farm, where to obtain credit for purchase of inputs talked about etc.

iii. Broadcasts and films: (a) Broadcasts - These are put out by the Agricultural Information Centre in collaboration with the Voice of Kenya which has a regular radio programme on farming; besides that produced in conjunction with the AIC.

(b) Films - The AIC in collaboration with commercial firms and statutory boards produces films on agriculture and these may be borrowed by F.T.C.s for teaching purposes. The AIC has cinema vans which show films to farmers in the rural areas.

iv. **Bulletins:** The AIC in conjunction with specialist officers of the Research and Extension Services produces bulletins on crop and animal production. These are designed for the JAAs/ ^{and} agricultural assistants, who are constantly in touch with the farmers. One comprehensive bulletin which has been found valuable by the JAAs is the JAA Manual.

Besides these services by staff of the Ministry, there are other agencies providing information on new farming techniques and practices. Notable among these are statutory boards, commercial firms handling agricultural inputs e.g. fertilizers, pesticides, machinery etc. The organizations also employ a variety of media for disseminating information.

III. DOCUMENTATION - ITS PLACE IN AGRICULTURAL RESEARCH AND EXTENSION

The need for effective library information in scientific research and development, for the scientist and the administrator/planner who decides priorities on the one hand and the extension worker on the other, cannot be overemphasised.

In the Ministry of Agriculture, the libraries at the Ministry Headquarters, Provincial and district offices and research stations have served this objective. However, with the increasing production of books, journals and specialist reports, these library facilities have become inadequate. The present need is for quicker and more effective access to information required by the research worker, planner and extension agent. To achieve this the Ministry is in the process of soliciting technical assistance for the establishment of a Documentation Centre at the Ministry Head Office.

The Centre, which will be staffed by documentalists, will have three major tasks:

- a. Acquisitions - locate, select and acquire publications which are important to the three groups referred to above
- b. Processing - process printed materials acquired and make readily available for use - and
- c. Serving - the Centre should be able to provide personal service through abstracts, photocopying, reference and loan facilities.

As the final details about the Centre have not been worked out, it would be interesting to hear what this Conference has to say on this important innovation in information services.

PRODUCTION - DISSEMINATION OF RESEARCH IN THE E.A. COMMUNITY

H. Gitata, E.A. Community.

I. Introduction:

The East African Community provides the best example of co-operation in the field of science on the continent of Africa. There is the existence of a form of East African Common Market which caters for economic as well as research and scientific needs of over 30 million people in Kenya, Uganda and Tanzania. The spirit of co-operation in scientific research gives East Africa an advantage for obtaining international support in the field of natural resources, medical research and industrial research.

The Community research forms a nucleus for scientific and industrial development in East Africa. There is, however, a need to increase scientific and technological research. There is, also a need for a central scientific co-ordination body for Kenya, Uganda and Tanzania to implement a national science policy. Such a body should function with a degree of independence, while a brokerage system would co-ordinate activities and would carry out the co-ordination. Thirdly, a balance should be established between basic and applied research.

II. Production and Dissemination of Agricultural Research

The East African Agriculture and Forest Research Organisation carries out research programmes to cover a variety of interests such as water use for crops production, effects of drought on crops. EAAFRO also has a plant breeding section concerned with trying to increase the resistance of crops to pest and diseases by production of pest resistance variety.

The resources outlay of Research in the Community in 1969-70 amounted Shs. 23.2 million of which EAAFRO's share was 49.22%. EAAFRO reflects the importance of agriculture in East African economies and the following is a brief study of the functions of EAAFRO.

III. Purpose of E.A.A.F.R.O.

1. To undertake research in longer terms than easily undertaken by partner state Governments.
2. To undertake the research which requires high specialized inputs of equipments of manpower.
3. Co-ordination of Community research finding and national research.

4. To supplement and supply the background to the regional research activities.
5. Dissemination of research to partner states.

IV. Working Frame of E.A.A.F.R.O.

The Institute has a body of scientific services. This includes:-

- a. East African Literature Services: This provides current periodicals in a number of sciences to teachers and researchers. EALS sends lists of periodicals available in joint EAAFRRO/EAVRO library to those interested, and periodicals are then lent on request. Acting as a small documentation centre, it has a circulation of 27,000 documents every month.
- b. Chemical Analysis: This section analyses mainly soil and leaf sample which may be sent in by national-level researchers or other organisations.
- c. Statistical Advisory Service: offers advice on experimental design and data interpretation.
- d. E.A. Herbarium Services: identifies plants sent in and provides information on them.
- e. E.A. Plant Quarantine Service: enforces national legislative regulations on import and export of plant material to and from East Africa.
- f. E.A. Machinery Co-ordinating Unit: This service keeps partner states informed of developments taking place in this field in E. Africa and seeks to promote advice on agricultural machinery activities.
- g. Library Service. Generally considered the best agricultural library in the Community. There is inter-library loan to other libraries in E. Africa. The service is available to researchers and practitioners.
- h. East African Agricultural and Forestry Journal: The only readily available publishing outlet for agricultural and forestry research done in E. Africa. It provides a useful means of disseminating research results in East Africa.

V. Project Selection Co-ordination and Implementation

EAAFRRO has a Co-ordinating Committee which includes Director of Agriculture, Director of Veterinary Services, Chief Conservator of

Forests and representative of wildlife organization of the three partner states. There are four co-ordinating committees to represent EAAFRO interest in the community and dealing with Agriculture, Animal Husbandry, Forestry and Wildlife. The Agricultural Committee, which has a wider variety of subjects, has power to appoint a specialist Committee.

The starting point of a project is selection by a specialist Committee. The specialist Committee recommends research priorities relevant to the region which is forwarded to the appropriate Co-ordinating Committee on Research.

The recommendation of the Co-ordinating Committee is studied by the Research Council awaiting implementation. Implementation depends on financial provision granted by Legislative Assembly.

The Co-ordinating Committee keeps regional research institutes committed to works in terms of reference with the three partner states. The Co-ordination depends on the specialist Committee. EAAFRO also gets involved in joint projects. EAAFRO has decentralized the research institutes to enable the partner states to benefit from research.

VI. Dissemination:

EAAFRO has trial officers in the Ministry of Agriculture and also contacts private bodies.

VII. Veterinary Research:

Research in the veterinary field is carried out under the East African Veterinary Research Organization which shares the same site at Muguga with EAAFRO and with which it co-operates in research work on animal husbandry. Its own research includes important work on some of the major animal diseases in Africa.

VIII. Trypanosomiasis Research:

This research is based at Tororo, Uganda. Present studies are concerned with determining the manner in which trypanosomiasis is transmitted from wild animals to man and domestic animals. An outstanding achievement has been developed of techniques for preserving trypanosomes by freeze method thus making frozen live trypanosomes available for collaborative research studies by other laboratories outside Africa.

IX Medical Research:

This is based at Mwanza and conducts field studies on bilharzia with the object of developing effective methods control by prevention of transmission. Malaria research is based at what was formerly the Agricultural Research Institute at Amani, Tanzania.

X. Leprosy Research:

In this field, the main concern has been to study with the help of

laboratory facilities the effects of the treatment with the latest drug.

XI. Fisheries Research:

Regional research in this field operates in two organizations based at Jinja for Freshwater Fisheries and in Zanzibar for Marine Fisheries.

XII. Pesticides Research:

This Unit carries out research on control of agricultural pests and diseases, weeds snail that carry bilharzia^{and} on the use of insecticides.

XIII. East African Industrial Research:

Owing to financial stringency nominal fees have to be charged to industrialists making use of research services and these count for about 10% of recurrent cost of organization of about £60,000. At the moment, EAIRO has a number of services to national governments as well as private sectors.

The organisation's Food Processing Section carries out agricultural related research, eg. processing of sorghum and machinery suitable for processing. The research problem emanates from government e.g. Kenya Industrial Estate as well as private industries. A proposal has been made to expand and regionalize industrial research in East Africa by establishing two new Institutes - a Food Processing Research Institute in Uganda and a Rubber Plastic Textile and Fibre Research Institute in Tanzania. The Institute in Nairobi would concentrate building materials and Applied Research.

XIV. East Africa Academy:

The East Africa Academy is involved in documentation activities of collecting and dissemination research information in East Africa for over four years. The field of specialization so far has been bibliographic ranging in size from 60 to 120 pages. The Academy is interested in production and dissemination of knowledge, and willing to co-operate with those dealing with science policy. The East Africa Academy can be a brokerage within the Community. There is some thought of establishing a documentation centre. The Academy would be a good place for co-ordination of documentation activities and as a clearing house. The partner states Brokerage System would be co-ordinated by the East Africa Academy.

XV. Re-Appraisal of Dissemination and Target Groups

EAAIRO has several principal means of disseminating science and technology.

1. Monthly Newsletter:

This is alternated by various departments, and material used is translated into layman's language. The newsletter is very effective because the scientist gets response from it.

2. Record of Research:

A very comprehensive Report, published annually and sent to partner states' research institutions as well as institutions abroad.

3. Quarterly Reports:

The Quarterly report has limited circulation to partner states.

4. EAAFRO Journal: (mentioned earlier).

5. East Africa Literature Services: (mentioned earlier)

6. Visits: University departments, colleges, schools, vocational schools visit Muguga.

7. Mass Media:

Department of Army Worm report every week to the farmers on the movement of the African army worm in East and Central Africa. This warns the farmers to spray their crops before the invasion of army worm.

XVI. Problems of Targets Groups

Sorghum department is preparing a booklet on growing better sorghum. A booklet on African Army Worm is available, soon to be translated into Swahili. There is a great demand for radio information for the farmer. EAAFRO may act as a scientific brokerage system in teaching East African farmers. This scope could be explored with relevant authorities.

Research Priority:

Research priorities are set by partner states.

DISCUSSION ARISING FROM PAPERS OF FIRST SESSION

(J. Kisa; W.W. Wapakala; P.G. Sitati.)

IIJOOOI: I think we are facing a very serious problem. From what Mr. Kisa pointed out, the Government has a Development Policy which it would like to implement. The Minister himself said that it would be difficult to justify what they have presented as Government policy - very difficult to defend it at a conference like this.

I would like to comment on the involvement of the people in the formulation of the plan. When I go home, I cannot help wondering who can contribute to the National Development Plan. Do the people really know what should go into this Plan for their own benefit? If not, what is to be discussed at this conference is of very great importance. There is a lack of communication between the policy formulators and those who disseminate the research findings to the people. Is there any communication at all between ourselves and PCs and DCs who finally tell the people what actually needs to be done?

In my own village, one of the most highly recommended findings in agricultural science, artificial insemination, is totally rejected because when it was tried there it failed. When they use natural bulls, there is no failure! Here is an example of a complete lack of communication between those who disseminate the information and those who utilize it. Commenting on what Mr. Wapakala said - in the Ministry of Agriculture there is a feeling that research is very much ahead of extension. This is normal. What we agreed to implement ten years ago has not been fully implemented, for example, hybrid seed maize. Average production is about 8 bags (an acre) - you can get as much as 40 bags. Most of the well-to-do Kenyans who formulate the policies live in Nairobi. Their children go to very good schools and cannot speak the vernacular: my contention is that your family life at home as a policy formulator has a lot of bearing on the recommendations that you are going to make and which are supposed to be implemented in the rural areas. There is a clear case of lack of communication. Mr. Gitata has told us about Muguga, the EAC and scientific journals. Even with all my education I find it very difficult to read these journals. The language used is not for consumption by the people who are supposed to be implementing

what you recommend. We want to be told in simple terms how to solve these problems. We need a translation of such papers into a language which can be read by the ordinary man, so that as much effort as possible can be made by the people who are supposed to implement this into a workable solution.

KISA: One of the questions raised by the former speaker is how you involve the people in plan formulation. He referred to the statement made by the Minister to the effect that to some extent we formulate our programmes in the absence of adequate information. This is certainly true. We never have all the information we need before we can formulate a development programme. But the involvement of the people in plan formulation at the local level - the provincial and district levels, is through their representative - you cannot involve 12 million people. We expect the ideas of the people to be channelled through District Development Committees to their representatives. These Committees will include Members of Parliament, officials of the County Councils and others who represent the opinions of the local people. It would be extremely difficult to design any other system whereby one could involve everybody. Apart from the formal involvement through the District Development Committees there is the informal involvement through the change agents and the local people. These may not be as effective as they should be and we would be most receptive to any suggestions for improvement.

The second point I would like to respond to is with regard to what appears to be a gap between the policy makers and the people that the policy is expected to benefit. Again, the nature of involvement in practice would be in terms of machinery already provided.

policy makers in the Ministry of Agriculture do not sit in Nairobi and formulate policies without consulting their District Agriculture Officers and their assistants down the line to the people themselves. So I would hope that there is this link from the people through the established machinery right up to the top and that though policies are normally formulated at the top they are a reflection of the process that has gone into the formulation of those policies. I would find it difficult to draw up an agricultural programme sitting in Nairobi without getting the necessary information from the people in the field. If the consultation has been ineffective, again, this is a gap in communication and it is an area which merits some investigation.

The last point is the implication that those of us working in the urban areas are ill suited for policy making or are ill adapted really to formulate policies and programmes which are based on the priorities and needs of people at the local level. I do not think that the fact that we are living in the urban areas makes us any more incapable of making policies, assuming that the necessary consultations on the policy in question have taken place. We should look upon urbanization as a process which provides for a much needed integration in this country. You take somebody from the deep Central Province and put him into the deep Coast Province and he will be a complete stranger. But in the urban areas, because of the language facility and because of the environment and background, there is a greater integration than in the rural areas. We should encourage this, especially in a country where there is a deep-rooted tribal feeling.

CHAIRMAN: (SITATI)

Let us now make specific recommendations, concrete suggestions.

KITHLEKA MUTUI: It would appear that we are talking in terms of policies. What are these policies? We do not know them. What are we doing to bring realities home to the rural man?

WAPAKALA: It is a complex issue to bring things down to the small man, the man in the village. Information is a painful matter and we are not like the spider who generates his own cobweb from himself, and therefore has no problem in surviving, but man has to take an idea from one fellow to another and this is the basic problem. You cannot do anything without a given frame of performance. You say you want to talk about developing a group somewhere. You must have a policy for it. You must know that you have the resources to do it and you must involve the people who are going to do it, and so, without a policy, without a frame of activity, you cannot just say we are going to do this and this and set ideas formed in Nairobi back to the people concerned. Communication between the man in Nairobi and the people in the country is what we are looking for. We now realise that the policies we are drawing up might not be implemented properly because the man at the other end does not understand it.

PATA: I think what we are concerned with is communication from the level of Government to the common man and I use the expression common man meaning the general public and not in the ideological sense of Uganda! Communication is at two levels: from the point of view of researchers and policy makers; and communicating with the public as a whole, and here is where I come in. I work in public libraries and one problem that we have always faced is people coming in and asking for such

and such Government publication. We have to go to the Government Printer to purchase it. Sometimes it is not available because the Government Printer pushes something out for the Public Service and not for the general public. If the intention is to communicate with the general public why not publish more of these things and make them more readily available? Why doesn't the Government Printer publish something so it goes straight to the people, or sell it at a subsidised rate?

A carry over from the colonial days is that Government publications are still a matter for suspicion. The general public has to inform the Government before publishing something but the Government does not have a reciprocal rule. This is guarded by the Books and Publications Act. A public library receives all other publications except what the Government publishes. Any library should receive what the Government publishes as a matter of right, and should buy it at an extremely reduced price. We are talking about free communication in a framework that is null and void. The basic framework is indeed free communication and that is what we should correct before we go on to think about passing on information.

CSAKANY: I come from the Masai Rural Development Centre and we cover the area to Magadi. One point of Mr. Kisa's is how to involve the people and how to take the results of the researchers and pass them on to the rural people. This Masai project has been visited by many, including policy makers, who are involved in the development work and it is a good policy to involve the people. It is a question of communicating with the people where they are finding out what they are **thinking**, and have direct contact with them. I believe that is the best way to involve them. Do not do things for them, do not build something for them, but if they decide they **want** to change then give them the means to do it themselves, start them off and after that they will continue and will be able to make their own contribution.

CHEGE: Commenting on this whole problem of mass participation, Mr. Kisa sees it is difficult to involve the masses directly and that the only way is to involve the representatives of the masses. We make a lot of assumptions about the representatives of the masses in terms of, say, a Chief - whatever he says is what the people want or say. I think one must avoid this assumption because we know that there is little communication between the leaders and the masses.

Whenever one talks about mass participation one tends to assume that one is communicating something that the masses also know about. In Kenya in terms of economic and political education it is something that has always been avoided at the policy making level. If this type of communication strategy is going to work, there should be a department that will unofficially involve itself in mass communication. Mass education and political education in particular would make this type of system work.

CHAIRMAN: Some kind of management by remote control? This is precisely what you have said. We would be interested in what method you would suggest. We are talking on two different wave-lengths and we would like to strike a balance between the two.

GITATA: As I see it, Mr. Kisa pointed out that we must accept the conflict of development. I do not see any area of conflict. I think there is just a need for research for society as a means to begin development. If we teach them how to build the bridge it is better than building the bridge for them because then when they need it they will build it.

KISA: We must assume a certain amount of rationality on the part of the people involved and I would be the last to accept the assumption that the people are so irrational that they elect somebody who is not really suitable to represent them. If we do not do so I do not see how we can act.

The other consideration is that the self-help movement has indicated that the people can involve themselves in those development activities which they can see as being of top priority. We are taking over more than 30 Harambeeschools every year built by the local people and not by stipulation by the M.P.s. This is initiative which needs to be harnessed for the benefit of the people as a whole. I think the communication gap arises not so much between the representative and the people, but between the extension officer - including the agricultural officer and so on - and the local people.

Political education is just one education, there is social education, economic education, and many others. This involves everybody, it is not just one department.

MBITHI: I think the point Mr. Chege is bringing out is that you cannot represent people who do not know what they are going to be represented about. This means the man must be told what to say by the people he is representing. This does not nullify the need for a lot of

education. Mr. Kisa would agree with us that probably in Kenya the planner unit - if we had the finance to go to the village to use the village as the planning unit - would be the ideal.

KUIPER: I feel there should be far more research in the supporting services and quite a lot in operational research. One of the problems with for example, credit, is hardly any research is done in that type of field and it is extremely difficult to find out the current savings at village level, how they can be mobilised and raised locally. The question is whether the University can do this. You can use existing institutions like the banks to do their own research, but most banks cannot use their own funds for that purpose.

Another big problem which we (Agricultural Finance Corporation) face is the translation of an idea into something which can be financed. It gives no indication of economics and the financial resources involved. It is only a question of presenting data in a different way for institutions like banks. They need far more useful information to finance a programme.

Most of the information goes to politicians and they only seem to know how to issue the credit and not how to find it. They stimulate the farmers to take a loan and never talk about repaying it. This is one of the results which make it impossible to design any programme for the small farmer because you will never recover your money. In Mr. Kisa's paper he wants to stimulate banks to move into the rural areas and assist the farmers. But you should take into account that the interest rates in Kenya are extremely low and low interest rates stimulate loans to the big farmers who already have access to loans, not the small farmers. You mention that the constraints are knowledge and credit. Many banks found problems in issuing their funds in viable enterprises.

INUKAI: The previous speaker said that there is little information about research in credit and yet I believe there is some research being done by expatriate teachers like myself, though the words which we use cannot convey reality in the rural areas. This year our department (Economics) started to use the long vacation for such research. Each of 30 students was assigned to do practical research in his own area. One group of students picked on rural savings: how did they pay school fees, out of savings or borrowings?

Another group picked on the inter-locational flow of goods and services. This is a good start to train our own students to think and conduct research in their own thing without being dumped with foreign assignments. I believe if we continue this, we can produce good research material which can be communicated to the people. It is important to know that there is an effort to fill the gap between the policy maker and the rural people.

OBWAKA: I wish to follow up the remark that the farmers are ten years behind the research workers. The extension workers out in the field speak the language of the farmers, therefore the farmers understand them. But there is no organised personal communication between research worker and the extension man, and I think there are hundreds of extension people who have not spoken to a research man in the last ten years. So how can you expect the farmer to be any closer to the research men?

There should be a department to organise personal contact between officers and the research workers. You must have a good broker who can translate from the research man to the extension officer; he should also be able to write in Swahili and pass on the flow from the research worker to the extension officer.

WAPAKALA: The question raised by Mr. Lijoodi was one of language and then the level of the public to which these things are addressed. This is the dilemma: the scientist is expressing himself in the language of his profession and the farmer wants facts, ready to use, he wants to be in touch with the latest formulae etc. If we can get another way, maybe an educated journalist, who can reduce the information to the language of the people he is dealing with from time to time, we would get a way of communicating. This brings us to the suggestion of finding a broker at a research station who understands the language of the people and can translate technology into that language. You must get a non-scientist to do this, but he must understand enough so that he can pass on the information to the farmers.

GACHUHI: I would like to take just a small issue of Mr. Wapakala's regarding the scientist and the fact that he cannot bend so low as to write something that can be communicated. I think the basic issue here is that we scientists of one kind or another must ask ourselves: who do we write for? If I write for my colleagues there is a professional standard I must reach. But most of us do not just write for our colleagues, we try to communicate with our people. I think we are capable of doing so, and should change our way of thinking that only when you write at this level are you in fact keeping scientific standards. If you are writing for the 'wananichi' you have to edit what you write. We can also come down to where the people are.

HOLLING: We have been talking about translation but there is also the problem of how do you bring that message to the user. We have done research among extension staff in Tetu and most of them do not receive the "Kenya Farmer". Apart from translation we have a very serious problem of actually bringing material to these people who are in direct contact with the farmers and we should consider recommendations like improving the

SECOND SESSION, (Chairman, Mr. W.W. Wapakala)
PAPERS PRESENTED UNDER THE TOPIC:
TARGET GROUPS AND SUBJECTS

A PRACTICAL PROPOSAL FOR DISSEMINATION OF
RESEARCH OUTPUTS IN RURAL INDUSTRIALIZATION

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There are two ways for rural industrialization in Kenya.

First, a large-scale investment can be made on agro-based industries such as sugar factories and cotton ginneries etc. Secondly, a diversification and specialization of rural gainful employment can be sought for in the rural areas. In this paper, I limit my proposal to the second approach. This is not because I do not believe the importance of the first approach, but because I envisage the urgent needs of strengthening the economic bases of small proprietors in the rural areas.

The identification of target groups:

The scopes for development and the problem envisaged are different among the rural workers who are engaged in industrial activities. It is therefore crucial in the efforts to disseminate research outputs to identify different target groups. In this regard, I propose a system of three tier structure in which individual targets are horizontally grouped and also each group can be linked in the vertical up-grading of their activities.

- a. Rural youth as potential entrepreneurs will be given vocational training through village polytechnics, the National Youth Service, and related institutions. In view of the pressing need for providing basic skills in trade and industry, re-orienting rural harambee secondary schools to vocational schools might expand the scope tremendously. Recruitment of instructors may become a bottleneck, but this can be probably coped with by mobilizing locally existing craftsmen as part-time instructors, eg. a black smith in local market may be requested to act as an instructor on an hourly gratuity and a local tailor can be asked to teach tailoring at the training institutions. On this level, more agro-based enterprises such as poultry and pig raising should be introduced. Here is a good scope for

combining masonry and construction training with layout of a poultry or pig house.

- b. Existing rural craftsmen and construction workers, including contractors, need up-grading of their skills by using better tools and equipments. They also will be considerably benefited by being introduced to new products, new designs, low-cost production techniques and so on. The Rural Industrial Development Centres can take the responsibility of looking after those existing rural industrial proprietors. The industrial extension services with mobile units of hand-operated tools and equipment and/or portable electrified tools and equipment can achieve this task best. Industrial extension services should not be confined to industrial technical extension, but also be extended to management training as well.

It is crucial to make an attempt at organizing them into trade associations. In a growing rural center, it has been observed that industrial proprietors and their workers tend to have their workshops at the same location. If we can succeed in organizing them into a trade association, we can develop a system of joint purchasing of materials and a group training scheme at the same time.

- c. Existing "motivated" industrial proprietors in towns in the rural areas will soon face the problem of expansion. It may however, be difficult to finance expansion by one's own capital in view of the larger capital requirements. The problem of premises may also become acute. Among those problems, it appears significant that many "motivated" proprietors tend to be fooled by salesmen of machinery and equipment, resulting in the purchase of unnecessary sophisticated machines. For example, a contractor was bewildered by a machine powered cement mixer, which costs ten times more than a hand-powered cement mixer. Perhaps, the RIDC can offer a consultancy service in advising ways of expansion, e.g. selection of machines.

Industrial research and extension

Let us take carts as an example. Models and materials of carts produced at local workshops vary considerably. Accordingly, weight and efficiency differ among them. No research has been made on comparative costs and efficiency of these different carts. If the RIDC can undertake

practical research into reducing costs and increasing efficiency of carts, producing a sort of manual for manufacturing better carts according to local topographic conditions, it would benefit local manufacturers as well as farmers. In Kenya we do not see a cart which is pulled by a bicycle. This type of cart, called a rear-car, was a most popular transportation medium of farm produce in Japan until the late 1950s. The manufacturing of rear-cars can easily be done by local blacksmiths and bicycle repairers. The rear-car is efficient even in hilly areas.

Another example would be a cement block maker. In view of increasing renovation of houses, the demand for bricks is rapidly increasing. If we can produce at the local blacksmith workshop a simple hand-operated block-making tool it will help the local contractor tremendously. A black smith at Machakos has already manufactured and sold a hundred of this kind of tool, but the model and manufacturing techniques is not known in other areas. The RIDC can improve the efficiency of this tool, and produce a prototype blueprint which can be given to local blacksmiths.

This kind of research and extension has been undertaken by the Embu RIDC in manufacturing school desks and chairs. The importance of research and extension has been noted in other RIDCs. We should encourage these operations, and expand the scope not only to carpentry, but also to blacksmiths and other crafts.

Management research and extension:

Poor management of business operation among the African businessmen has been known for years, and the traders training courses have been conducted by various agents, including the Trade Development Officers. The bottlenecks in the traders training course, as in other types of training, is its once-and-for-all approach. Follow-up services are rarely offered to the participants.

Credit-hunger among the traders and workshop proprietors is recognised and misuse of allocated credit has become increasingly common among them. A supervised credit system may require additional manpower, yet it is one which we must consider carefully.

The injection of simple commerce courses into secondary school syllabuses will help in solving manpower recruitment in management and in extension for rural traders. Many harambee secondary schools are simply geared to further higher education, but by now experience has proved that only a lucky few can go into higher education.

Commerce-oriented secondary schools, if they were established as in Japan, will make better use of the output from secondary school education. Many harambee secondary schools in remote rural areas can be re-directed towards becoming vocational institutions.

Mr. Harper's research into a simplified and low-cost management extension service is commendable, and needs to be amplified. In the Kenya context fundamental business management can start with the habit of daily book-keeping. Supervision of a simplified book-keeping system can be easily done by low-level manpower like secondary school leavers if they were given such training.

Therefore, at the national level, it is worthwhile to consider changes in the character of the existing harambee secondary schools, in particular of those in remote rural areas.

Another area of research on the management extension service will be the compilation of stories of successful traders. If we can collect these success stories, translate them into Kiswahili and circulate these among the traders, they would benefit by gaining insight into how they can improve their businesses.

One of the problems appearing in the training course is that it is too dry and technical to induce real interest among the participants. Practical examples of how to be successful would be very useful.

How can we help the rural traders? Do we have a manual written in Kiswahili on how to promote businesses? Do we have a regular circulation of pamphlets written in Kiswahili giving simple information on markets, credits, supply sources, and other related items? I advocate the publication of these, and their availability to rural businessmen.

FAMILY WELFARE IN KENYA: WHO, WHAT, WHY AND HOW

J. Mugo Gachuhi, LDS, University

In Kenya we are concerned about improved family welfare as the ultimate objective in our development planning. Thus significant resources are allocated for disseminating such information as would be useful and beneficial to the members of a family. However, one is startled by the number of organizations which are expected to disseminate useful information on family welfare, and by their limited impact on the family. The reasons are mainly: little or no collaboration between the organizations involved in doing almost the same thing, and competing with each other for resources and recognition.

In the area of child, family care and development, five Ministries of the Government - Agriculture, Community and Social Services, Education, Health and Information and Broadcasting - are all involved but with little regard to what the other one is doing (see Table I). There are also about seven other agencies involved but with no collaboration between them to maximise their efficiency in their common interests. (Table I).

For other areas, e.g. Family Planning, see Tables attached.

Resources and efforts spent by these agencies are great and scarce. Most of the programs followed by the many agencies are curative with somewhat limited efforts in the preventive aspect. We believe that if the organizations got together, exchanged information and devised a method whereby they could disseminate their information in more ordered form, their impact would be far greater than it is at the moment.

Very little research is normally done by the agencies to find out what type of information their clients need. There does seem to be a needs-assessment so that only useful information will be given out. The kind of information that is needed is that which will actually help a family to overcome some of its familial problems. Such information should of course be integrated so as to approach the family in its totality. Target population must be selected carefully and appropriate information which is not only needed but also applicable be given. The agencies concerned could do an important service if their services were not duplicated but were complementary.

A useful discussion could be initiated by the Conference participants to show how these gaps could be closed.

TABLES BY ASPECT OF FAMILY LIFE*

Family life has been divided into six "aspects". These aspects are not mutually exclusive, but represent common areas of focus for agencies and educators in the field of family life education.

From these lists and information gathered from the question X (see below) it will be possible to show the degree and type of collaboration between agencies with similar interests.

Question X: "What other ministries/organizations do your workers collaborate with in the field? Indicate what level collaboration takes place (provincial, district, national), and specify the purpose and means of achieving this collaboration."

OUTSTANDING PROBLEMS ILLUSTRATED THROUGH THE SURVEY ON FAMILY LIFE EDUCATION PROGRAMMES

1. Lack of co-ordination and working relationship from national to field level.
⇒ Seldom team approach to problem solution in a field.
2. Poor communication between Government and non-Government agencies
- Lack of a system to utilize non-Government sector to support Government sectors.
3. Field Officers: often have limited perspective, work in isolation from agencies in related fields and in same areas.
- Seldom use team planning, training often too technical and irrelevant information is disseminated.
4. Staff continuity often lacking - transfers are frequent.
5. Very little emphasis on evaluation.
6. Little use of research and insights gained from experience - lack of a system for collection and dissemination of information.
7. Shortage of teaching aids and educational materials for use in field programmes.

* These Tables were compiled by the Program for Better Family Living (PBFL) Team of the FAO. Acknowledgement is therefore duly given. We are indebted to Dr. Eric Krystall and Miss J. Berger for allowing us to have these tables.

I. CHILD & FAMILY CARE & DEVELOPMENT (PHYSICAL HEALTH)

AGENCY	FIELD PROGRAMME	TRAINING	PROVISION OF INFORMATION
Min. of Agric.	Home Economics Extension	Extension Training e.g. Egerton	AIC
Min. of C/SS	Social Welfare: Day Care Prog.	Day Care Training Parent/Teachers	
Min. of Educ.		Schools, Teacher Training Colleges	
Min. of Health	MCH Prog. Clinics, Health Centres/Hospitals	Health personnel Training	Health Education Unit
Min. of Inf/Br.			Radio/T.V.
C.R. Services	Preschool Health Programme		
Child Welfare Society	Social Case Work		
Family Plan. Association	F.P. Field Workers		
NCCK (member churches)	Family Life Education	Home Economics T.C.	
Un. of NRB.		C.D.R.U. Dept. of Home Economics	Child Development Research Unit
Red Cross	Family Life Training Centres		
County Councils	Public Health Programmes		
Urban Municipalities			

N.B. This is only a rough listing, corrections, additions and typing improvements need to be made, Any suggestions would be welcome.

2. FAMILY RELATIONSHIPS AND INTERPERSONAL COMMUNICATION (MENTAL HEALTH)

AGENCY	FIELD PROGRAMME	TRAINING	INFORMATION
Min. of C/SS	Day Care Programme for Pre-school children - parents teacher committees.	Day Care Teachers & Supervisors	
Min. of Health	Community Nursing - Home visiting(?)	Community Nurse training	
Min. of Agri.		Extension training Egerton.	
Child Welfare Soc.	Social Case Work		
Family Planning	Family Service Council (couns.)		
NCCK (Member churches)	Family Life Education, Social Case Work	Youth Leadership.	
Catholic Churches	Social Case Work	Social Work	
Univ. of Nairobi		Child Development Research Unit (CDRU) Dept. of H/M, Dept. of Psy.	CRDU
Office of President		Social Work (KIA)	
City Council, Urban Municipalities	Social Case Work	Social Work	

3. FAMILY PLANNING CHILD SPACING/LIMITATION

AGENCY/	FIELD PROGRAMME	TRAINING	INFORMATION
Family Planning Assoc.	Field Workers - education & motivation	F. P.L. field Workers C.D. Nutrition workers	T.V. Radio/newspapers
Min. of Health	F. Plan. Services	Nurses Training Doctors training (limited)	Health Education Unit Family planning Section on statistics
International Planned Parenthood Federation	F. Plan. Services Mobile Clinics Doctors	Family Welfare Centre (Kenyatta Hospital)	Educational material
County Councils	F. Plan. Services		
A.M. & R.F.	Fly Doctors Service, Health Education Project		Publications
NCCK	Family Life Education		
Red Cross	Family Life Training Centres		
World Assembly of Youth	Seminars on Family Planning		
Dutch Aid	Midwives F. Plan. Services	Training of nurses and Doctors by mid-wives	

COMMENTS ON TABLE 2: Education (preventive) programme in rural areas ... only through day care where parents can be reached through parent-teacher committees and local day care training sessions. Beyond preschool there is no formal education programme for parents or children even through schools. The NCCK programme has recently started but has limited reach. The Family Service Council, having only one full time staff member, is the only counselling body available. Most education and service is done in connection with social case work by Child Welfare Society and Church employed social workers, who are already dealing with problem cases. There seems to be no official Government statement on or programme of education and prevention in this field. (Comments should be made on every table).

4. ENVIRONMENTAL SANITATION & PHYSICAL IMPROVEMENTS & UPKEEP OF SURROUNDINGS

AGENCY	FIELD PROGRAMME	TRAINING	INFORMATION MASS EDUCATION
Min. of Agri.	Home Economics Extension	Extension training	Agricultural inf. centre
Min. of C/SS	Adult Literacy C.D. Self help & Women's groups	village polytechnics	
Min. of Education		Secondary schools teacher training	primary schools broadcasts in health education
Min. of Health	MCH programme clinics, Health inspector activities	training health personnel	health education Unit
Min. of Inf. & Br.			T.V. Radio Programmes
NCCK (Member churches)	Rural Service extension	Village polytechnics(?), Home craft, Training centres	
Red Cross	Better Family Living centres Mobile Clinics	Training Red Cross Field Workers	
YWCA		Vocational Training Centre Limuru	
University of Nairobi		Dept. of H/E, Dept. of Community Medicine, Advanced Nursing	
Child Welfare Society	Social Care Work		
City Councils, Urban Municipalities	Public Health Nursing		

5: FOOD AND NUTRITION

AGENCY	FIELD PROGRAMMES	TRAINING	PROVISION OF INFORMATION AND MASS EDUCATION
Min. of Agriculture	Home Economic Extension & women's Groups 4k Young Farmers Clubs	Farmers Training Centres Extension training	Agri. Information centre
Ministry of C/SS	Adult Literacy Day Care Programme C.D. - Self Help groups - Women's Clubs groups	Village Polytechnics Day Care Teachers Training	
Min. of Education		Secondary schools, teachers training colleges	Primary schools broadcasts: health education
Min. of Health	Nutrition Education	Karen College Medical/Health Training centres	Health Education Unit
Min. of Inf/Br.			Radio/TV Programmes

(Continued)

TABLE 5 (Cont.)

AGENCY	FIELD PROGRAMMES	TRAINING	PROVISION OF INFORMATION AND MASS EDUCATION
African Medical Research Foundation (flying Doctor)	Nutrition Education	Training Medical students	Publications "Afia", "Defence"
Catholic Relief Services	Preschool Health Programme		
Child Welfare Society	Social case work - primary and pre-school feeding		R.V. Radio Programmes
National school feeding Programme	Social case work - Thru' parent teacher committees		
National Freedom from Hunger Committee	Funding of project e.g. 4k competition in horticulture		Public education and interest
NCCK (Members churches)	Christian Rural Service Programmes: extension	Village polytechnics Rural training centres. Home craft, Training centres	
Red Cross	Family Life Centre	Training of Red Cross field workers	
YWCA		Vocational Training school for girls - Limuru	

AGENCY	FIELD PROGRAMMES	TRAINING	PROVISION OF INFORMATION AND MASS EDUCATION
University of Nairobi		D. Sc. H/P. Dept of Community Medicine	
Maendeleo ya Wanawake		Women's club	

Table 5 (cont.)

6. HOME MANAGEMENT

Budgeting & Managlr. resources e.g. money, time,
 - - planning & decision making on all aspects of family life. e.g. education, social affairs, family size, meals.

AGENCY	PROGRAMME	TRAINING	INFORMATION
Min. of Agri.	Home/Econ. Extension	Extension Training	
Min. of Education	and pre-school feeding	Sec. Schools, Teacher Training	
Min. of Health	Comm. Nursing (Public Health)	Community Nurse Training	
Catholic Church Relief	Family Life Training Centres	Home Craft Training Centres	
Red Cross			
University of Nairobi		Dept. of Home Economics	
YWCA		Vocational Training - Limuru	

ISSUES IN CURRENT PRODUCTION AND DISSEMINATION OF
AGRICULTURAL AND RELATED TECHNOLOGY:

Towards an Identification of
Target group characteristics, and needs

Philip M. Mbithi, Institute for Development Studies, University.

Rural development in Kenya is seen as a multi-sectoral inter-ministerial, inter-agency, co-ordinated systematic process which aims at:

- a. Improving the incomes of rural people
- b. Improving the welfare of rural households
- c. Increasing employment opportunities in rural areas
- d. Increasing local participation in development.

If Kenya's rural areas are going to respond to President Kenyatta's call "Back to the Land", between 1968 and 1974, they should absorb about 80% of the total new adults. That is, out of 925,000 new adults, wage employment will only absorb 200,000 and 30,000 will presumably become self employed. The remaining 695,000 would have to be absorbed in agriculture. Kenya's growing population too, will need to be fed. It is against this background of increasing demand on agriculture that we must ask how can increased adoption of agricultural technology answer our problems? How can it be accelerated?

Part I

Agricultural Innovation

It has been argued that increased technology transfer to the peasant farm, coupled with other factors would increase farm productivity. Increased farm productivity would lead to more job creation at the farm level, and consequently raise incomes and living standards.

The Target of Technology

The choice of technology for the farmer is conditioned by his environment and in computing returns, this should be taken into account.

Applied agricultural research is concerned with supplying information to the following units:-

1. Individuals - to create an awareness of the relationships between environment and the basic human needs - food, shelter and health and how different activities affect this relationship.

2. Occupational Groups:

- i. farmers
- ii. agricultural supporting industrial organisations
- iii. agricultural supporting commercial organisations
- iv. agricultural planners
- v. extension agents
- vi. school and adult teachers
- vii. politicians
- viii. journalists and information peddlers

3. Scientific community

4. Farm planners, land use specialists and agronomists
5. School children, trainee agriculturalists
6. Other professions - architects, road engineers, agricultural economists (not planners), administrators.

Technology requirements differ in intensity and frequency according to whether the unit can be grouped as:

1. Professional agriculturist - categories 1 - value
2. Potential agriculturists - school children, trainees, school teachers
3. Related professionals
4. Unrelated but significant contact groups

If we consider one specific group, the farmer, this can be subdivided as follows:

- pastorolists
- subsistence agriculturalists
- cash crop farmers

(A chart showing some of the available choices of technology to farmers specializing in the major enterprise clusters in Kenya is available in the fuller version of Dr. Mbiti's Paper on Target Groups, at the IDS, University of Nairobi).

Illustration of Returns of Adopting Technology

1. Katumani Maize Programme

An effective adoption of Katumani synthetic maize for the dry areas (over 80% adoption) would ideally reduce moisture requirement of the main staple - maize - from 12" per season to about 7" per season. Rainfall probability calculations for most sites in this zone show that this would reduce the incidence of crop failure and food shortage from 1:3 years to 1:8 years. This means a reduction of crop failure and food shortage rate from $33\frac{1}{3}\%$ to $12\frac{1}{2}\%$.

The adoption of Katumani maize in any medium-low potential district could save Kenya over 2 million shillings per season per such district.

Non Adoption as Stable Phenomenon

Even with very limited innovation range in Kenya, it has been shown that the adoption rates of farm technology are very low. Questionnaires and detailed studies in various parts of Kenya show that farmers do not appear to take up new ideas as quickly as is often assumed. Example: In Eastern Kenya the adoption of the early maturing Katumani maize would reduce the incidence of crop failure from 1:3 years to 1:8 a more normal situation for Kenya. The reduction of misery, starvation and the saving of money due to a more stabilized food supply would lead to accelerated development in this area. Yet, of the total maize acreage, only 28% is planted to Katumani maize.

Non-adoption of programme is not serious, only at the farm level. Our research shows that in Eastern Kenya, over 80% of the community programmes introduced between 1948 and 1958 outside community self-help projects were never adopted.

Among the livestock keepers, the adoption of new ideas, especially those related to settled farming or ranching, is very low. Studies done on the development of the Kaputei group and individual ranches, for example showed that after 5 years of settled ranching, a severe drought was enough to cause all Masai to abandon their permanent houses, their ranch land and begin nomadic life in search of pasture and water.

Non-adoption of agricultural technology is caused by a complexity of factors which we are still studying but the most important ones are directly linked with poor communication of developmental technology.

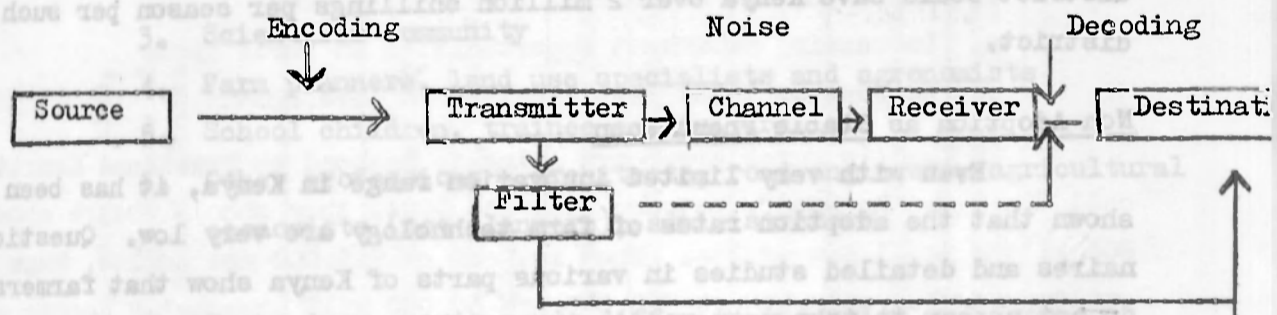
Part II

Factors Constraining Against the Adoption of Technology

The Communication Model

Communication theory given a model of information flow where a source produces signals, symbols, or messages which are encoded in a language to form understood by the receiver and transmitted by a channel connecting the transmitter and the receiver.

Figure I - Information Flow



The channel carrying the message and the encoding and decoding processes interfere with the transmitting process so that the message received differs from the intended one. Noise is the amount of transmitting error which is corrected by use of filters.

The above illustrated model suggests that the following factors will constrain the efficient flow of information from the research station to the farmer, and reduce the adoption rate of farming technology.

- a. The nature of the message "innovation". Research findings may not be relevant or focussed on high priority issues as farmers perceive them.
- b. The language used in disseminating the research may not be understood by grass root extension staff or farmers.
- c. The media or channel used to convey the message may be directed at a receiver who may have no effective contact established with the small farmer.
- c. The interaction effect of a faulty channel reaching an expectant receiver or vice versa may lead to the alienation of both parties.
- e. Receivers must be tuned in to the wave length of the message which is influenced by the choice of transmitter and channel.

Farmers do not have the same receptive capacity. Some are illiterate, poor, with small farms and large families. Others are rich, educated and progressive. At present, in Kenya, farmers are assumed to be homogeneous, and that they have equal receptivity. Farmer-training uses the same techniques and content for small and large, progressive and laggard farmers. Extension agents use the same arguments on all farm visits.

Using the above model, we will review the major factors shown in the diagram. Approaches found to be important to the adoption of innovations are those which relate source of technology, nature of technology, channels and media of communication to the recipient system.

1. Source of Technology

In Kenya, the main sources of technology for farmers and extension agents are Government research stations. These are normally self-contained institutions which have little or no ties with the extension service except on consultancy basis. Other sources are commercial firms such as Twiga Chemicals, the University and Egerton College and the Statutory Board's Research Department, plus MAFRO Muguga,

1. How do Farmers Perceive These Sources? Research on attitudes and adoptive behaviour show that farmers who live near Embu and Katumani research stations, for example, were found to have low adoption rates of hybrid-synthetic maize (the main research programmes of the two stations) than those who lived 20-100 miles away. Farmers felt that the research station was for "wazungu" where they use "wazungu dawa" - fertilizers, tractors (we cannot afford them), aerial irrigation when things are tough (we wish we had the money) and keep too many books and records (who has the time?). They employ so many people, their fields are overcrowded at planting and weeding times etc.

A follow-up on some of the farmers who had attended a field day at one of the stations showed that they felt that the scale of operations at the research station was irrelevant to the small farms.

"What they showed us is not really for my farm".

To the rural farmers Kenyan research stations are ivory towers, useful as employment agencies, and good government shambas.

The use of the research station as a source for direct

dissemination of technology is very poor. Where farmers have never seen a research station but receive information direct from extension agents or demonstration plots, the message is more neutral and farmers' basic recognitions vis a vis the technology are also simpler.

- ii. What Messages are Sent by our Research Stations? In his review of Kenya's Agricultural Research, Bhandari (1968) shows that Kenya's research has focused mainly on increasing farm income in the large scale sector and in the high potential areas. Thus between 1914-1940, the research programme emphasized the introduction, field trials and agronomic research for main cash crops.

The gaps are obvious:

- a. Little or no research for the small peasant farm with a strong subsistence base and a small or non-existent cash crop base. Research on certain major food crops such as sweet potatoes and small scale cash crops such as coriander, green grams, etc., has received low priority.
- b. Research findings have been tailored for the large scale farmer and not small scale farmers, e.g. research recommendations are in quantities too large for a farmer who simply wants to grow $\frac{1}{4}$ acre crop or $\frac{1}{2}$ acre mixture of two crops.
- c. The messages sent out of research stations are mainly tailored for large scale educated farmers, other researchers or overseas audiences. Articles are often sent to academic journals and never translated into a language understandable by the small farmer.

2. Farm/Farmer Factors

- i. Farm Size. It has been shown that visits by extension agents, qualification for government loans and adoption of new technology are very highly inter-correlated with farm sizes. Research in Tetu for example shows that extension officers visit most frequently only the 10% top farmers who are more educated and have larger farms.
- ii. Social Status, Wealth and Prestige: These concepts are oriented toward the community values. In progressive agricultural communities in Kenya, those who monopolize social prestige are relatively wealthy and have or aspire to higher social status, tend to be opinion leaders and are also "progressive".

On the other hand, although those who have social status, wealth and prestige in non-progressive semi-pastoral and pastoral communities, are opinion leaders, they tend to fill the role of tradition keepers too. Thus we find they measure wealth in number of livestock, women, children, land harvest of food crops and channels of reciprocity. They are thus interested in maintaining status quo.

iii. Education:

In our studies, formal education does not correlate at the lower and higher levels with innovativeness. The critical threshold appears to be numeracy rather than literacy. After 6 years of education, we begin to obtain retrogressive influence of education where substitution of farming to wage employment, trade, or other non-farm occupations cumulates.

iv. Availability of Inputs and Services:

The question of farm credit, markets, subsidies, etc., is considered elsewhere.

v. FTC Training and Outside Contacts:

Ascroft (1971) and Moris (1970) have shown that past employment experience in agricultural farms, travel outside the village to attend demonstration field trips and FTC training show some of the highest inter-corelations with progressiveness or high adoptive behaviour.

3. The Nature of the Technology

i. Profitability:

The extent to which an innovation is more profitable than existing practices has been shown to influence the rate at which all types of farmers adopt it. Profitability is obviously related to the cost of inputs, prices, and also the element of risk.

ii. Complexity and Divisibility:

Studies on innovation (Mbithi 1971) show that innovations which are tied up in complex packages such as hybrid or synthetic maize or cotton are more difficult to adopt successfully. When one must do ten different intricate and expensive operations to grow a crop, one normally chooses the crop that has fewer operations or reduces (divides) the operations.

iii. Compatibility:

The degree to which the new technology (whether it be a new tool, crop or technique) does not threaten inputs available for food crops affects the rate at which it is adopted. Kenyan small farmers must produce food for their families due to (a) low farm incomes, (b) poor distribution of food, especially in poor seasons, (c) dominance of female labour and decision making on family food production and supply where traditionally women do not obtain wage employment.

4. The Extension Agent

i. Centralized Planning: Lacks feed back and the preponderance of Nairobi tailored programmes with set targets reduces the change agent's ability to identify real farmer priorities and to adapt programmes to local conditions. It further alienates ^{the} change agent from his community as he often does not pay local influentials the right amount of homage. Such centrally planned programmes have low-credibility especially in the pastoral and semi-pastoral areas.

ii. Training of Change Agents: The Kenyan educational system which produces graduates who are not trained to fit into rural communities often produces change agents with little empathy with the small farmer and his problems, or needs. They often are members of our emerging elite who interact more with their counterparts, the rural elites - politicians, progressive farmers, school teachers - and rarely visit the small illiterate farmer. This kind of extension contact accounts for only 10% of the rural farmers in the small scale sector and leaves 90% unattended.

Ascroft and Roling (1971) have shown that the average extension agent in Kenya is well trained in technical skills, but knows nothing about communicating ideas to the farmer. They cannot create motivation for farmers to adopt or manufacture an optimal learning environment. They simply pass the message. Our studies have exposed a teacher-school children approach and a prevalent paternalistic arrogance of

extension and administrative officials in their contacts with rural people. This tends to alienate change agents and reduce the effectiveness of communications.

iii. Level of Training of Extension Agents:

In a progressive mixed farming community farmers expect an agricultural officer to give technical advice on a chain of farming enterprises, such as dairy, poultry, pigs, maize etc. It is most unlikely to find an agricultural officer with adequate technical knowledge in all those enterprises. He might know something about each one, but not enough to be of any help to farmers.

The situation is further worsened by our agricultural extension administrative system. The District Agricultural Officer (DAO) has a large staff working under him. When the D.A.O. is out in the field, he simply supervises and checks on what his subordinate staff have done. Consequently, farmers do not get as much technical advice as they need to change their farming methods. The grass root staff, the Junior Agricultural Assistant (JAA) is not well trained to interpret research station findings for the farmer so that the farmer can adapt it optimally to fit his circumstances.

5. Community Social Factors

Students of collective action show that group and individual participation is enhanced when their definition of their world - a world that is full of definite cognitions, values and beliefs - is consistent with the prescribed actions and prescribed sacrifices which are necessary to achieve some valued goal.

Among farming people, we have exposed parallel indigenous agricultural practices. There were religious rituals in seed selection, timing of planting, seedbed preparation, weeding, pest eradication, harvest and storage. In my study (Mbithi 1968), I found that farmers did not live in a technological vacuum but had prescribed behaviours for all operations. These were interwoven into existing sex taboos and role specialization age dominance taboos. Thus there were operations such as ground breaking which reinforced and dramatized the masculine ego in a family. Others such as child bearing and cooking reinforced the femininity of women, their uniqueness and belonging.

The thesis advanced here is that new technology replaces indigenous practices and shatters the rubric of family and community life. New ideas are not sown in neutral ground but in an environment where the safeguarding of vested interests and a "way of life" is very conspicuous.

Change agents have often failed to sense these undercurrents and the adoption of new practices has often been temporary.

In introducing change, we should be aware of these indigenous alternatives and present arguments to counter them rather than leave the farmer to grapple with them.

PART III

Summary of Findings

1. The source of small farm technology, the government research station is still considered by most farmers as an ivory tower, an expensive and fancy government shamba.
2. Research findings are often prepared for the large scale farm. Research recommendations are applicable to larger units. The packaging of inputs as per recommendations is often in too large a scale for the farmer who wishes to grow only $\frac{1}{2}$ acre of the particular crop. Research shows the packaging of fertilizers in cwt. bags discourages the small farmer who neither has the money nor the acreage to use such large quantities.
3. Dissemination of technical information is often aimed at educated farmers, academic audiences and is in a language ill-understood by the grassroot extension staff or the average farmer.
4. The District Agricultural Officer plays too much of an administrative role and the contact change agents, the Junior Agricultural Officers, are unable to advise farmers across a wide range of enterprises. Also, that these JAAS are not sufficiently trained to help farmers adapt the available technology to their circumstances.
5. That due to many social factors and the operation of the principle of homophily, change agents still visit more frequently only the top farmers and these are the ones who tend to obtain loans, farm and adopt innovations faster.

6. Formal education is not a critical factor in the adoption of innovations but that farmer education, travel, participation in field demonstrations, numeracy and farm size are critical factors.
7. Innovations which are presented to farmers in complex packages of recommendations are more difficult to adopt.
8. That availability of credit and market outlets are great incentives to farmers for adoption of agricultural technology.
9. The choice of profitable compatible innovations is a crucial precondition for the adoption of innovations by farmers.
10. Centralized planning and supervision where grass root change agents are given targets and deadlines minimizes the role of feedback, continuous programme evaluation and adaptation causes change agents to falsify reports and dramatize meagre achievements.
11. The grass root agricultural extension agent in Kenya is not trained in communication strategies and by virtue of his formal training has little empathy with the poor non-progressive farmer.
12. New ideas to farmers are not sown in a vacuum, but compete with existing indigenous practices, values, cognitions and beliefs. A transformation approach in the short run is likely to be less effective than phased development where indigenous practices are used as a base for new break-through.
13. Farmers still give high priority to the growing of food crops and this limits their choice of alternative technology.
14. Farm inputs such as fertilizers, seeds, insecticides, and artificial insemination are often not supplied to agents or transported to remote areas in time.
15. There are few alternative dissemination channels to extension and academic type radio broadcasts.
16. Farmers, the main target groups, are treated as a homogenous mass with - same literacy level
 - same level of intelligence
 - equal farm sizes
 - similar resource endowment
 - same social status and influence
 - same enterprise combinations

- 2 -

The technology selection needed to meet needs of farmers who vary on all of the above dimensions is crucial. This is a dissemination task.

Implications for Dissemination Techniques

1. Translation of scientific research and recommended technology implies:

- Choice of channel which is familiar to people of different levels of learning, i.e. language, media, form and duration of communication
- Choice of realistic forms, sizes, complexity of the recommended technology to be of immediate applicability to "laymen". Need for ADAPTIVE RESEARCH.
- To reach as wide an audience at the same time as possible. For maximum evaluative communication and diffusion.
- To maximize variety of channels, forms and sizes to appeal to a wide range of diverse interested parties.

2. Selection implies:

- Choice on what is "relevant technology" to meet different physical and socio-economic settings and demands
- Timing to top critical situations when awareness and interest can be generated and sustained
- Identify what form, size, durability etc. the technology should take for different situations
- To identify channels for different interested parties
- Indicate areas of needed research (gaps)

3. That the extension services offer a unique base on which to build a broad based dissemination organisation bearing in mind its weaknesses as identified earlier.

PROBLEMS OF INDUSTRIALISATION IN RURAL KENYA WITH SPECIAL
REFERENCE TO THE INDUSTRIAL ESTATE AND RURAL INDUSTRIAL
DEVELOPMENT IN KENYA.

A.M. Shikhule, Kenya Industrial Estates

The problems of industrialization in the rural sector are really those of the small scale industry. They cannot therefore be limited to the rural areas; they affect the small scale industrialist in both urban and rural sectors. Whatever difference there may be is one of degree.

It is generally accepted that small scale industry is not a transitional phase between a basically agricultural economy and industrialized economy. For even in the very developed economies of say Japan, West Germany and Britain, small scale industry continues to play a very important role. Such industries have peculiar problems arising from their smallness whether or not they are in a developing or developed economy.

Industrial Estate Programme:

The Kenya Government decided in 1965 to employ the instrument of industrial estates to try and achieve its declared objectives of creating more jobs, developing entrepreneurships, decentralising industry and using local resources. The programme which was launched on an experimental basis is now accepted as part of the country's industrialisation policy. In brief, the programme aims at:-

- a. providing well-planned factory accommodation to small industries at suitable sites, with infrastructural facilities.
- b. bringing together on one location a number of industrial units not only to reduce the infrastructural investment per unit, but also to facilitate establishment of common services etc,
- c. relocating existing small enterprises from congested areas to better premises.
- d. enabling the industries to avail of each others' goods and services, thus making them complementary and inter-dependent..

- 3 -

Assistance Rendered and Problems Encountered

The Kenya Industrial Estates Ltd., launched the first phase of a pilot industrial estate at Nairobi towards the end of 1967, a second estate at Nakuru was completed in 1972. When the industrial estate programme will be fully implemented in 1974/5, there will be five of them including Kisumu, Mombasa and Eldoret.

Apart from provision of well planned factory premises at subsidised rents (generally cheaper than the market rents), the entrepreneurs are assisted in a number of other ways:-

1. Feasibility Studies:

The staff of the K.I. Estates carry out techno-economic feasibility studies of various proposed industrial projects on a **continuous** basis. At present entrepreneurs do not pay for such feasibility studies and it is the first assistance they get from the Government.

2. Entrepreneurship:

The success of an industrial estate depends very much on the availability of industrial entrepreneurship. In the early stages of Phase I of Nairobi estate, it was difficult to get local people with suitable entrepreneurial ability to come forward and man the scheme. In certain rural locations, steps have to be taken to develop entrepreneurship. For if latent entrepreneurship is there, there is no evidence of it. The developers will have to 'create' it. Experience of the industrial estates in Kenya is that it is rare for entrepreneurial ability and financial resources to coincide in the same man. Still many of them may have treble loyalty in that being employed somewhere, they are also telephone farmers as well as industrialists. Whereas such a situation should be condoned in respect of the rural entrepreneur whose resources are meagre, allotment of projects in the urban sector especially in industrial estates should discriminate against dual or treble loyalty.

3. Relationship in Employment:

In the informal industrial sector found mainly in rural areas, there are one-man enterprises which necessarily employ other members of the household generally on irregular basis. This practice is accepted and has worked very well even in the developed countries such as Japan. Proprietors of small scale enterprises in Kenya tend to employ close relatives not because of efficiency but on the basis of blood relationship. This approach to employment will have to be discouraged in the interest of efficiency and ultimate success.

4. The Efficacy of Government Promotional Measures:

One or two things may be said about these measures insofar as they are part of solutions to the problems of the small entrepreneur in the urban and rural areas.

a. Credit:

The problems of lack of credit to the small entrepreneur are well known to both private and public development agencies. In Kenya the problem has acquired critical proportions in the rural areas. Over the years the Government has assisted the small scale industrialist with loan funds through the ICDC. But this is only one of many activities that ICDC has to handle.

There are the District Joint Loans Boards with limited finances, but these are biased toward commercial rather than industrial enterprises.

The very discouraging historical role of the commercial banks in this field is well known. If rural industries and the small scale industries as a whole are to play the very important role that they are expected to in Kenya's economy, the current credit flow must be changed. The Government has fully realized this and stress is now laid on assistance to the rural entrepreneur through the R.I.D. Programme.

This however, will not be enough; one would like to see Kenya's small scale entrepreneurs assisted to grow along sound business lines. Commercial banks should be encouraged to have direct dealings with such entrepreneurs. The Government, through the Central Bank of Kenya, should be able to influence the banks towards this goal. For example it will be in Kenya's interest if the Central Bank would require all commercial banks to invest a given proportion of their total annual lendings in industry particularly in small scale and medium industries.

b. Industrial Protection Measures:

Industrial development in Kenya should be understood in the context of a small market of about 11 million consumers (including 17% children under 10 years old). The viability of industrial projects especially those based on import substitution (as in the case of industrial estate enterprises) takes into consideration the total internal demand. Any imports would thus throw the project concerned out of gear.

The Kenya Government appreciates this and usually imposes either total ban or high tariff walls against imports.

c. Quality Control and Product Development:

At this juncture the question of quality control becomes important. The small industrialist has got no facility for controlling his quality particularly if he is operating under monopolistic conditions. This problem has lately occupied staff at K.I. Estates. There is a strong feeling that the Government should establish a Product Development Centre as part of extension service for the small entrepreneur.

d. Marketing and Raw Materials Sources:

Today Government assistance to the small entrepreneur ends with protection and other technical extension services available at the K.I. Estates. The ICDC, as explained earlier, gives credit. There are no efforts to help the entrepreneur to market his products, and more often than not the entrepreneur finds that his meagre working capital is tied up in manufactured stocks. In tackling this problem K.I. Estates is recruiting a marketing expert who will advise small entrepreneurs in the rural and urban areas on marketing problems and help design a marketing organization that could be incorporated in the existing extension service. Allied to this is the problem of shortage of raw materials. This is very critical among the small rural entrepreneurs who are forced to travel great distances to buy small quantities of materials. Costs involved are high, so the prices of the products become high. In an effort to solve this problem, a Raw Material Bulk Purchase Scheme was instituted for the industrialists in Nairobi Industrial Estate. This scheme has proved so popular that it has now been extended to the RIDCs.

Lack of Economic Infrastructure and Inducements:

The growth of small enterprises must be related to other economic activities in the area. It follows that better results will be obtained from inputs in an area with an existing strong economic base as compared to a place where economic activities are relatively underdeveloped.

Along with the activities of the RIDC's, ways and means should be found to establish some big industries in the rural sector to strengthen the rural economic framework and thus boost up the growth efforts of the small man. In Kenya's conditions the Government itself will have to initiate such large scale enterprise e.g. Webuye Paper Project or Mumias Sugar Scheme.

Local authorities could induce and promote entrepreneurship in their areas. E.g. county councils and urban councils are big consumers of certain products which they usually buy from outside their boundaries. They should simplify their tendering procedures so that the small industrialist may be able to supply them locally. In addition these authorities could help by offering various inducements and incentives to the rural industrialists e.g. remit local rates payable by the industrialists, or lower land prices for industrial plots. Many of these concessions should be temporary and tapered off at suitable periods to avoid perpetuation of high cost enterprises in disguise at the expense of the general public.

OTHER FACTORS:

i. Skilled Labour

In the rural areas skilled labour is scarce. Those skilled have usually emigrated into towns in search of employment. To retain them in the rural areas employment opportunities must be created.

ii. Need for Co-ordination

Rural industrial development should be linked with other development efforts. Kenya being primarily agricultural, there is need for industrial activities to be linked up with agricultural policies and practices. Co-ordination with institutions such as Village Polytechnics, SRDP and other developmental agencies is necessary.

iii. Choice of Industry

So far there has been complete absence of guidance in the choice of both industry and products. The rural entrepreneur has had to choose his enterprise and products by trial and error. The RIDC's are now trying to give this vital guidance.

INDUSTRIAL INFORMATION

The problem of serious lack of industrial information in Kenya is well known. It is understood that the Committee on Dissemination of Science and Technology's initial mandate is to focus attention on agriculture. This in itself is a fair approach in view of the importance of this sector to Kenya's economy. However, the agricultural sector is fairly well served with various extension services and while advocating their further strengthening, at this stage when Kenya is making efforts to industrialize, exclusive reference to agriculture in connection with information services could be a contradiction in policy and approach.

In other words it is felt that right from the outset the contemplated information service should be precisely what the name of the committee suggests i.e. Scientific and Technical Information Service. Such a service should be so equipped as to serve the needs of both agriculture and other scientific and technological institutions that may require it outside agriculture.

Industrial Information Today:

For someone who can spare the time, industrial information is available in Kenya even today. The only difficulty is that the information is available among institutions and agencies that are very unco-ordinated eg. there is the Government statistical bureau in the Ministry of Finance and Planning, Statistical Department of the E.A. Community, University of Nairobi, Polytechnics and other technical schools, international agencies such as UNIDO, etc.

What is now needed is a systematic approach to the collection, collation and dissemination of this information for the use of both the policy makers at the top and the industrial programmes implementing authorities

A well established information service should be able to reduce the gestation period of an industrial project. Depending on the nature and size of a project, experience has shown that it takes anything up to one year to get a project feasibility study finalized. If there were a proper channel for obtaining such information, it should be possible to finalize feasibility studies within very short time and thus advance the implementation.

Other Functions of an Information Service:

- a. Identification of the needs for information
- b. Locating the sources of such information
- c. Collecting and retrieving the information
- d. Processing the information ie. analysing, collating, synthesising and cataloguing.
- e. Dissemination of the information to where it is needed
- f. Periodic evaluation of the use to which such information is put.

Institutions to Benefit from the Service:

- a. Government departments engaged in formulation of general economic and specific industrial development plans and policies.
- b. Parastatal agencies such as ICDC: KIE: DFCK: Kenya Industrial Development Bank (proposed) etc.
- c. Chamber of Commerce and Industry and other allied bodies.
- d. Technical and economic consultancy services that might be established in the country.
- e. Investors from both within and outside the country including commercial banks.

In Kenya's own case, it is important that choice of the location for such an information service should be well thought out. It has already been suggested that the service should be under the umbrella of the Ministry of Agriculture. As mentioned above it is feared that such a location might be biased against other types of information service. In particular there is a worry that industrial information which has been the subject of this discussion may be given inferior treatment.

It is suggested that the existing information machinery should be strengthened but centrally co-ordinated. The co-ordinating agency should preferably be under the Ministry of Finance and Planning but with sufficient autonomy to be able to carry out their functions without the usual Governmental bureaucracy. It is further suggested that such an agency may have under its ambit a number of sections or departments specializing in specific information e.g. agricultural, industrial, commercial, educational etc.

POSITION OF VOLUNTARY AGENCIES (NCCK)

Method used in Reaching Specific Target Groups

Nganga Njiraini
National Christian Council of Kenya

The NCCK has a country-wide network consisting of Churches and other related organisations, such as YMCA, YWCA, Christian Churches Educational Association, Protestant Churches Medical Association, E.A. Venture Company (Target and Lengo Newspapers) etc.

Our membership on the Committee on Dissemination of Science and Technology is a clear indication of our desire and co-operation in this newly created venture of getting the available and useful scientific and technological information to our members who constitute, very largely, the less prosperous members of our society who live in the rural areas.

The following short description of the NCCK scope of work should be regarded as sub-agencies through which information reaches the people at grass-root levels:

The NCCK stimulates and initiates development programmes and co-ordinates them at a national level with some exceptions. These programmes and projects are, however, managed by the various member churches. Wherever possible, all these programmes and projects should fit into the Government Development Plan and should be planned and implemented with the assistance of the Government. It is, however, important to emphasise that the NCCK's role in development is not to be seen as participating in the implementation of the Government Development Plans, but also as pioneering and innovating new areas of work, new methods of tackling specific problems, and thus opening the way for Government action on an expanded scale. To this extent, there is NCCK/Church participation in policy-making with secular and other organisations regarding such matters as employment of school-leavers, urbanisation, slum improvement, labour, youth and the most important of all rural development.

a. Rural Development

Agricultural training, farm and co-operative management, poultry and bee-keeping through 8 Rural Training Centres, scattered through out Kenya.

Training of primary school-leavers for self-and wage employment in rural areas and introduction of village technology through 27 Village Polytechnics.

Technical and economic consultancy services established in the country.

Investment from both within and outside the commercial banks.

Rehabilitation and development of Northern Kenya's nomadic people through fishing industry at Lake Rudolf, village technology, irrigation and agricultural projects in Isiolo District, mobile medical work, agricultural training, etc.

b. Urban Development

Social Development through Community Centres in Nairobi and one in Nakuru, with nursery schools, clubs, and home industries, improving the overall living standards of people living in urban slums through Cottage Industries, Small Business Schemes, Medical Care, educational placement and tutorial programme and the most important of all, Site and Service Settlement schemes which include house loans and assistance in building and acquiring sites.

c. Leadership Training and Development

A programme to motivate and prepare Kenyans of all walks of life for the task of development and bring to bear the Christian dynamic for renewal and liberation from all forms of poverty and oppression.

Overall national development. So as to proach issues on a national level and respond to the political, economic, social and scientific challenges in Kenya today.

Youth and Social Work: Emphasis is placed on helping young people to participate fully, in school and outside, in all aspects of national development, and to train urban social workers with an emphasis on community work.

Church, Industry and Commerce: The project plans and organizes educational courses for trade union leaders, shop stewards, Supervisors and Middle Management.

Family Life Education: Its main emphasis is on Sex Education, Family Planning and Responsible Parenthood.

d. Medical Work:

15 hospitals with 21 dispensaries and health centres are operated by Christian Churches. These hospitals and dispensaries emphasis on Preventive Medicine and Health Education. In this way communities living in remote areas can get medical aid and at the same time information on hygiene and nutrition.

In order to facilitate a quick and efficient method of getting the information to the target groups it is extremely important that such information is in a presentable form. Lack of highly qualified staff in many of our educational centres, (RTS, .Ps etc.) demand that all academically written documents be converted for consumption by people of CPE level (this is the general level of most of our target groups). Some of this knowledge should be translated in Kiswahili.

Another important factor is the knowledge of whether or not our target groups are prepared and willing to accept change as a result of new knowledge. This Council as well as its corporate members are in a position to provide information on ways and means of breaking any barriers that may hinder change which is necessary for development.

Below is a summary address of our major channels through which relevant information could be given:

- | | |
|--|--|
| 1. General Secretary | General knowledge on Policy and Personnel Development. |
| 2. Secretary, CORDS | All materials relating to Rural Development. |
| 3. Co-ordinator, Urban Development | All materials relating to urban, industrial and commercial development. |
| 4. Secretary, Family Life Education | All documents relating to Family Planning. |
| 5. Secretary, Institute of Youth and Social Work | All documents relating to Youth and Social Work |
| 6. Secretary, Protestant Churches Medical Assoc. | All information relating to health and related fields. |
| 7. General Secretary, Christian Churches Educ. Association | To receive or be consulted on all issues relating to primary and secondary education |
| 8. Secretary, National Dev. | On National Policy issues. |

NOTE: In all cases, the General Secretary of the Council may receive a copy for information.

THE ROLE OF PRIVATE INDUSTRY FOR THE SMALL FARMER MARKET

D. Outram, Twiga Chemical Industries.

Twiga Chemical Industries Limited is primarily concerned, within the smallholder market, with sales of pesticides for crop protection and fertilisers.

APPROACH

Five Salesmen and one Technical Representative are employed full time on promoting markets of our products in the small farmer areas. In addition, two other Technical Representatives spend approximately 30% of their time promoting products in smallholder areas.

Products are supplied through distributors and stockists within the area and the sales team carries out the following major functions:

- a. Liaison with Government Advisory Officers and Administration
- b. Checking research results from Government Station so that we comply with recommendations.
- c. Studying the crop and market requirements and discussing problems with individual farmers and groups of farmers.
- d. Demonstration and lecturing on available products and how to use them.
- e. Advising stockists, distributors, unions and societies on products which are required, when and in what quantities.
- f. Reporting to Twiga any problems which cannot be solved in the field so that further advice can be sought from our Principal's Research Services.
- g. Advising Twiga of the need for new products where no satisfactory chemicals exist.

FEEDBACK

- a. From research stations, we require more information on research results involving the use of pesticides to enable us to keep our advice to farmers up-to-date.
- b. Information on farmer requirements in terms of volume, quality, type, packaging etc., is of value and our advice on these matters can assist us in providing a more comprehensive service.

PROBLEMS

a. Cost:

The cost of marketing to small farmers is considerably greater than doing the same on large farms. 60% of our total force is employed in servicing the smallholder areas, and this 60% only accounts for about 20% of our total turnover. It is not possible to provide sufficient numbers of salesmen and representatives to cover the areas adequately. The profit on a sale to an individual small farmer is unlikely to cover the cost of the time spent with him. Secondly, the market is competitive and for obvious commercial reasons, the field force must concentrate largely on products for which we are sole agents. The company cannot afford to devote a great deal of time to advising farmers on commodity products which are just as likely to be sold to them from a competing organisation, which may have no advisory staff to pay for, and which may be able to sell more cheaply.

b. Packaging

Although small packs would appear to be ideally suited to this type of market, it is our experience that the majority of farmers are loath to pay the higher price requested for the smaller pack. The cost of, say, one kilo of insecticide packed in ten 100 gramme packets is greater than if it were sold in one packet, because of the cost of packaging materials and labour. The unions and societies overcome this problem to some extent by purchasing in bulk and re-selling to their members in small quantities. This practice, however, is dangerous where toxic insecticides are concerned, and we feel that it should be discouraged if possible. We attempt to advise farmers on the use of our products by printing clearly on each package, the contents and strength of the active ingredient, the method of use and rate of application, both in terms of quantity required per hectare and also in terms of quantity required per 10 litres or 20 litres or 1 ndebe of water etc. One problem which the smallholder faces is that he is unlikely to have anything for measuring the product in grammes, ounces, cc's or any other commonly used measure. We believe that Government could assist in distributing such measures and publicising what they mean. The cost of supplying measures with the packs is usually prohibitively expensive in comparison to the value of the product itself.

c. Distribution

The availability of the product at all marketing centres is essential if all farmers are to have access to the products. It is expensive to supply products to the more remote marketing centres, but it is our opinion that the encouragement of free enterprise in the private sector is the only way of providing an efficient service. However, it must be appreciated that the cost of distribution must be paid for, and the farmer must pay for the service in the price of the product.

d. Liaison

It is extremely important that the Government extension workers and administration officers understand our position in the market. Although liaison and co-operation are generally good, there are sometimes cases where advisers have worked against us, usually because they are ignorant of the facts. We welcome very much closer co-operation with Government Departments. In this way, useful knowledge which we release can be spread to a far greater number of people than it is possible for us to do with a limited field staff.

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THE ROLE OF INDUSTRY IN PREPARING INPUTS TO THE

SMALL MAN

H. Muciiri, East African Industries Ltd.

This paper tries to show briefly the ways in which East African Industries Ltd., gears its efforts in reaching the small man (or farmer) through its products.

East African Industries Ltd., is one of the major producers of household consumer goods supplied to Kenya, Uganda and Tanzania. Being a subsidiary of Unilever International, the products manufactured by E.A.I. Ltd., are soaps, both toilet and laundry, non-soapy detergents (washing powder such as Omo), cooking fats such as Kimbo, Margarine, tree-top juices, and toothpastes such as Signal. In order that these products may reach all East Africans, much thought is given to packaging, distribution and presentation of the product to the customer.

Packaging

About 90% of the population in Kenya live in the rural areas. As a result of this, most of them are peasant farmers, with little spending money, but a need for industrially manufactured consumer goods. Thus any industrial firm or organization which produces and sells consumer goods, must reach this large population in order to do good business and assist in national building. Pack sizes are of paramount importance in considering how best the small man in the rural areas must be reached with the manufactured goods. Therefore, as a general rule before any pack is produced, the following points must be borne in mind:

- a. Satisfactory protection of product in the pack must be ensured. This is normally achieved by obtaining packing materials with differing protective degrees. Then the packing materials are filled with the product and sorted in different conditions such as in direct sunlight, in the dark or on the shelf, and the product examined at intervals and the results compared.
- b. The pack must stand up to transport conditions and must be convenient for the wholesaler, retailer and finally the user. Transit trials may be necessary in order to ensure that transport conditions will not adversely affect the pack during distribution.
- c. The pack must clearly show the brand name and be distinctive against competitive packs so that it can make the desired impression on the buyer.
- d. The purchaser must get all the essential information such as how to use the product, in a language that is commonly understood. If a promotional pack such as -/10 off is produced, this must be clearly stated in figures and in words to prevent the unscrupulous shop-keeper from selling it as a standard pack.

e. The cost of the pack must be reasonable to produce it.

In the light of the above considerations, E.A.I. Ltd., manufactures products of various sizes in order to cater for the small and the big man. A good example is the washing powder with sizes of 1250 gms, 500 gms, 200 gm, 100 gm, and 50 gm. The last pack costs 50 cts. Although sizes differ in order to cater for the small man and the big man, the quality is the same for all sizes of products. This helps to build the brand image and thus creates a kind of family identity in all sectors of the community.

Distribution and Co-ordination:

Before a product is released for sale for the first time, a thorough market research is done and relevant information obtained regarding consumer behaviour on the product in question. This may necessitate further improvements on the product before it is finally launched for sale.

In order to distribute the products efficiently, the company has depots in the major towns where products are sent for temporary storage before being sold to the wholesalers and the retailers. In addition, there are District Sales Managers with their salesmen who visit retail shop-keepers in rural areas to give them the relevant information on products as well as sell the products. The shopkeepers eventually sell the product to the small man.

To educate the small man about products, there are also Demonstrators who give lectures and demonstration on how to use various products. Home Advisers concentrate mainly on women organizations such as the Maendeleo Ya Wanawake or religious groups. Mass media such as radio, T.V., Press as well as posters are also used in order to pass on the relevant information about a product.

Weekly, monthly and quarterly reports are sent to the sales office for study, and weaknesses pointed out. Corrective measures are taken such as more advertising or special customer offers.

Though the small packs are initially costly, it seems to be one of the most effective ways of reaching the small man, but its cost has to be put into consideration before producing it.

DISCUSSION ARISING FROM PAPERS OF SECOND SESSION

I. Inukai, M. Gachuhi, P. Mbithi, A. Shikhule, N. Njiraini,
J. Outram, H. Muciiri

Chairman: W.W. Wapakala

KUKUBO: The point raised by Dr. Gachuhi on staff continuity: if we talk of physical transfers then perhaps I might agree with him, but there are times when someone is given other responsibilities in the same area so you transfer responsibilities but you are still there. If somebody dies he is not transferred! Therefore how can we get his information before he departs?

Normally in a district the headman compiles a daily report, either verbally or written, to his superiors and these culminate in annual reports. People who are transferred hand over to others. But the problem is the availability of these reports to other people who want to use them. Perhaps what we should stress here is that annual reports, monthly reports or quarterly reports must be made available and must contain data sufficient to guide those who are taking over from those departing.

GACHUHI: Physical transfer is what we were referring to, but we are more concerned with how much useful information an officer leaves in an area where he has been working for only a short time. Annual Reports are good documents, but they are useless to the people concerned in the field. They are useful to us researchers, but in terms of the people on whom the information was compiled, it does not help at all. Too often people are not transferred within the district, they move out, and it will take sometime before you know the people you are supposed to deal with and just as you begin to know them you are told to move out. The officers do not die too often.

INUKAI: Staff transfer is a very serious problem in disseminating research to rural enterprises. From February last year we had three transfers in one centre which means that one centre manager stayed in the centre for only six months on an average. When he started a new target group he was transferred.

KISA: I would like to raise one minor point which might help in the discussion of this aspect of the subject. We seem to be talking about dissemination of research, dissemination of information, dissemination of technology, and maybe we are confusing a lot of things. The distinction needs to be made between research activity and dissemination of technology. The farmer is not really interested in what

research is going on at Kitale. He is interested in what the results of that research will amount to in terms of his output. There is some research activity which goes on at the research stations and intermediary aspect of translating whatever findings have been revealed by the research station into technology, that is, into a technique of improving a production. If I am a farmer I am not concerned with who does the genetics of higher yield on wheat output. Dr. Mbithi was talking about farmers being taken to research establishments to observe what is being done. But then they think that it is so large that it cannot be done on their farms. A research man finds out you can double your output, then somebody has to take over and convey this techniques to the farmer.

MBITHI: I agree with you but let us be careful about making academic distinctions. These three stages which you have outlined might be undertaken by one research station. They hold a field day and they are translating their own research findings into operations. Some research stations run model farms and are trying to translate all of this to the farmer. I do not think these three distinctions exist.

LIJOODI: I think it is important that we know to whom we are addressing ourselves when we want to disseminate information. It was pointed out that there are three main groups, the rural groups, the rural entrepreneurs, and the classified group No.2. There is another group that we have to address ourselves to and that is the group that has not been defined. We would be failing in our duties if we ignored this fourth group that falls within the 3.7 millions mentioned in one Paper. These people are not rural youth, entrepreneurs. They are just nothing, but they are there. But these are the people we want to introduce ourselves to and do something for.

My second point is the method of research dissemination. We must utilise facilities which are available in the rural areas now. Traditionally we have been using 'barazas' but there are people who never come to 'barazas', like women, yet it is they who make the decisions in the homes on agricultural matters. We should also utilise church groups as well as other groups where people finally disseminate information.

SITATI: Dr. Mbithi mentioned that in most cases there are people who develop without planning. If somebody is developing you do not need to bother him with plans. In this case he has developed his own way. If somebody is going ahead on his own, do not disturb him.

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DISCUSSION ARISING FROM PAPERS OF SECOND SESSION

MBITHI: What we were saying is that some might start innovating without somebody telling them to do so. But they need more information to help with their own private innovation. Let them go ahead because we know that the planning resources are limited.

NDAIJUTI: We at the Pyrethrum Board buy pyrethrum from various parts of the country. We buy it, process it and market it. Also, within the organization we have research, biological, chemical and marketing divisions aimed at finding more uses for pyrethrum, better planting material and establishing the market. We also have the field extension division which translates research into action for the farmer; we tell him what type of material to plant, when and where to plant. Our extension officers work in conjunction with MOA. There is a feed back from the field extension officers and from the farmers whom we invite to visit our research stations where we demonstrate to them how to get better returns for their planting. The big incentive is that they get good money for their flower, so that when we tell them that this is a better plant for you to plant they accept it. So the constraint now is to produce enough plants for them. Generally we think our system is satisfactory and I think the same thing could be said of crops like coffee or tea. When we make a final recommendation as to the necessity of forming a national research council, we should consider various organisations in their own right, such as the Medical Research Council and the Agricultural Research Council.

CHAIRMAN: Few industries can be organised on the lines of the Pyrethrum Board. It is a bit difficult to organize small crops like bean growing, for example, but the Coffee, Tea and Pyrethrum Boards are all big enough to organise themselves like that.

OBASO: The President's Office deals with the clearance of research in this country, both local and foreign. More local researchers should come forward as they know the problems facing this country. Normally researchers are required to give their findings to us. We give these to the Ministries concerned who work together with the University of Nairobi. In the field, our administrative officers have been doing a very good job in translating the information to the wananchi. Sometimes there have been cases where a researcher conducts research and then is required to have it checked by the Ministry concerned, because we feel that the farmer should be fed with accurate information.

MISS MWANGI: One of the methods of disseminating information directly to the people is through literature. The Ministry of Co-operatives and Social Services has a programme whereby they write simplified literature; this is published and distributed for them by a local publisher. When considering distribution of research material, researchers should be imaginative enough to write booklets in simple vernacular for the local farmers to use. They could even write in short story form e.g what happens when you grow good pyrethrum or hybrid maize. The numbers of copies ordered from the E.A. Community show that farmers are ready for this kind of material.

MASAGAZI: I think someone was a little unfair to the researchers when he said that the papers produced by the IDS are too difficult. It is unfair to expect researchers to do research, write it in a language that can be immediately understood by all sorts of consumers, especially the civil servants. The concept of relating theory to practice is non-existent today. What we need is somebody who will bridge the gap between the researchers and the people who are in the field.

ROLING: In relation to target groups, dissemination by its nature, by the way it operates always favours the people who know most already, so if we are now recommending the setting up of a better dissemination system we must keep in mind this problem to seriously consider methods of reaching those people who are difficult to reach.

SECOND SESSION (CONTINUED)

TOPIC: DOCUMENTATION

A NATIONAL DOCUMENTATION SYSTEM FOR KENYA

M.E. Kempe, Institute for Development Studies, University

INTRODUCTION

In proposing a national documentation system for Kenya, it is first necessary to consider the needs that should be met by this system. The paramount need is to ensure that the results of research and other vital information reach those who need them. Secondly, it is necessary to ensure that earlier research is not duplicated which wastes effort and other resources. Thirdly, existing resources of information are under-utilised through lack of knowledge of their existence and it is necessary to use these resources more effectively for research and dissemination. All these needs will be met in this proposal, but greater emphasis is placed on the question of acquiring, organising and co-ordinating the information, with the mechanics of the dissemination left to later writers.

I. EXISTING RESOURCES OF INFORMATION

For our purposes, we are concerned with the subject coverage of information in Kenya, rather than the details of the collection. Only the major known sources of information can be mentioned, partly because there is no up-to-date comprehensive survey of all resources in Kenya.

The recent report by Cooney and Reviczky¹ covers the resources in Agriculture very comprehensively. It is assumed that the Agriculture Documentation Centre will be established along the lines laid out in the report and that it can be integrated into a national documentation system.

In the field of Commerce and Industry, there has been a proposal for an extension service which could channel information to the users.² The resources are poor and scattered at the moment. Various training institutions have small collections, such as MITAC and the Industrial

¹ Cooney S. & Reviczky, M.v. Agricultural Documentation Centre, Kenya 1972. FAO Report GIL: TF/KEN 36 (SWE)

² Harper, M. An approach to the problem of starting a small business extension service. Conference on Small-Scale Industry, IDS: Nairobi 1973.

Survey Promotion Centre at the Ministry of Commerce and Industry also has some material. It has been suggested that MTAC should co-ordinate the service it provides with the ISPC.

Medicine and Health, resources are being built up at the new library at Kenyatta Hospital and the Medical School. In conjunction with the Wellcome Research Laboratory Library, most of the relevant documentation should be available.

Education, material is scattered in several institutions such as the Faculty of Education Library, KIE and the beginnings of a library at the Ministry of Education.

For Planning and Public Administration, there is the KIA and the Statistics Division Library of the Ministry of Finance and Planning. In addition the Kenya National Archives contains all Government files and Government publications.

Natural Resources are an extremely important subject area and include Forestry, Fisheries, Wildlife as well as Mineral resources. The Mines and Geological Department Library covers the mineral resources, but information in the other fields is very scattered.

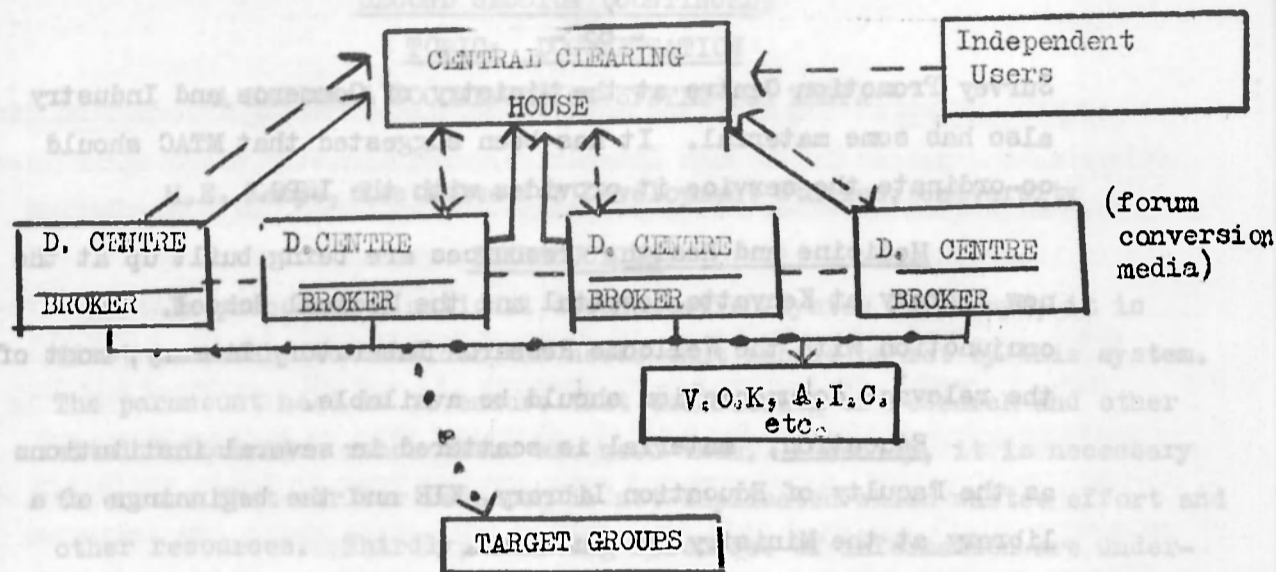
These are the subject areas that need most urgent attention. Others such as Social Services can be covered within these topics, but will undoubtedly build up their own collections as the need arises.

In addition to these resources, there are the institutions whose interests are very general or which cut across these subject areas, eg. University Library, KNIS and, on a smaller scale, the IDS.

I have not referred specifically to the Research Libraries of the East African Community, which contain large numbers of documents relevant to Kenya's interests. These Libraries cannot be considered in quite the same way as the Kenyan institutions as they serve the other partner states of the Community as well as Kenya, and are not potential documentation centres.

II. NATIONAL DOCUMENTATION SYSTEM

Briefly, the system consists of strengthening existing sources of information and linking them through a central union catalogue and clearing house. The system is shown diagrammatically below.



- flow of document records
- - - - - flow of user demand + supply
- flow of transformed material

The documentation centres send their document entries to the Central Clearing House for the union catalogue. Independent enquirers, the brokers or the documentation centres apply to the Central Clearing House for the location of specific documents or subject supplementation. The brokers are based on the documentation centres, edit the documents where necessary and either transmit them directly to the target groups or transform them to film or other media through VOK or centres such as the Agricultural Information Centre.

Co-operation with a centralised union catalogue clearing house can benefit existing institutions enormously, and collaboration should not be too difficult to achieve.

Each documentation centre would be required to collect all relevant documents in its assigned subject field. The documents would be identified and subject indexed in a standard format and sent to the central union catalogue, where they would either be filed, or put onto computer.

The functions of the Central Clearing House will include the following:

1. To maintain the national union catalogue of documents
2. To ensure that consistency is maintained in the agreed documentation processes
3. To co-ordinate the bibliographical activities of the documentation centres and to initiate where necessary
4. To direct users to the relevant documentation centres
5. To ensure that there is a complete coverage of all the relevant documents

6. To maintain an index of current research and researchers and ensure that reports and data are deposited in Kenya.

Various steps need to be taken, and agreement reached between co-operating organisations in order to achieve this:

1. Surveys to ascertain precisely what resources there are. (Agriculture has already been covered).

2. The potential documentation centres must be identified, and their collaboration guaranteed. They may need additional staff and funds, particularly if it involves changing an existing system to any great extent.

3. The subject areas must be defined with care. Duplication will occur where the subject interests of institutions overlap and this is not necessarily a bad thing. The problem of complete coverage is far more important.

4. The Central Clearing House must be established. It requires space, and equipment and an umbrella which could probably be the proposed National Research Council.

5. The processes to be used subject indexing, lending and reference facilities etc., - must be agreed upon. There should be a standing committee (sub-committee of the National Research Council?) consisting of the heads of the individual documentation centres chaired by the head of the Central Clearing House which can thrash out these problems and achieve the necessary standardisation, co-ordination and co-operation.

6. The problem of acquiring material, such as reports to Government and by Government departments, will require some instructions that they be deposited with the designated documentation centres. Alternatively, they may be deposited with the Central Clearing House, but experience with the Copyright Act - where published material has to be deposited with the Registrar General for forwarding to the designated libraries - has not proved entirely satisfactory.

7. Classified material - reports that are not released by Government for some reason of confidentiality, must be brought within the system. A scheme of degrees of confidentiality needs to be drawn up and applied uniformly. Periodical reviews of such material should be made to downgrade reports that are no longer sensitive.

8. Decisions must be made on finance. The recurrent costs of the documentation centres will rise slightly, the costs of dealing with existing material will be high, and the Central Clearing House must be financed.

Once these steps have been taken, the actual process of putting the system into operation can begin. The logistics of such a massive task require a step-by-step plan, with additional temporary trained staff to assist with the backlog of documents.

Costs: The costing of this system is dependent on the decisions made in the various steps outlined above. The number of staff required by the Central Clearing House will depend on the definition of the material to be handled as this affects the quantity of documents. Without surveys, it is impossible to estimate the number of documents held in existing libraries, though the Cooney/Reviczky report estimated 200,000 documents to be evaluated (not necessarily all to go in the index) in the Agricultural Subject Group.

I have not discussed the question of whether a computer should be used for the storage and retrieval or not. Initially, it need not be, but the procedures adopted must be of a type that can be readily computerised when this becomes necessary or feasible. A computer has certain advantages in that it can retrieve information faster, print out accurately and can handle large quantities of items. I am not convinced that these quantities are there to be handled yet, that high speed of retrieval is essential, or that computer print out is better for Kenya when we might have numbers of typists wanting jobs.

Equipment for photocopying/xeroxing and other routine library procedures already exists at the potential documentation centres. More is likely to be required as resources are used more effectively. The Central Clearing House will require storage equipment for the union catalogue, but this is not a very large item. Microfilm equipment also exists and will probably be used increasingly, but again this is not a large capital item in the initial stages.

Staffing will be the largest item in the budget. The Central Clearing House would initially require a staff structure along the following lines:-

	<u>K & Salary</u>
Head of Clearing House	2,000
Deputy	1,400
Filing clerks say 3 @ 800	2,400
Typist	500
Messenger	120

In addition, the potential documentation centres will need extra staff of the order of one documentalist (salary K£ 1,500) to each centre, assuming that the existing staff structure was designed to provide essential library services to the clientele.

Disadvantages: Mention must be made of the disadvantages of the system.

1. It relies on co-operation and co-ordination, this is hard to achieve and maintain. The system will be more difficult to control than a centralised system.
2. The objectives of the documentation system may clash with the objectives of the existing libraries that are selected to be documentation centres.
3. The documentation centres will be scattered geographically though on a present assessment they could all be in the Nairobi area.
4. The brokerage system will be scattered, being based on the documentation centres, and co-ordination of its work may prove to be necessary.

III. WSTHP WITH THE BROKERAGE SYSTEM

The brokerage system is dependent on the documents. Its objective is to ensure that the people who need and can use the information, get it. This may require editing and rewriting in many cases, depending on the level of literacy of the target groups.

I have placed the brokers physically within the orbit of the documentation centres for ready access to these resources. Since the documentation centres will all be within the Nairobi area, a feasible alternative would be to link the whole brokerage system to the Central Clearing House, which would involve the brokers in greater time spent travelling to the documents. Brokers should be subject specialists and would be better placed with the documents where they might also serve the centres' immediate clientele.

The brokerage system needs to have access to good printing facilities and audio-visual equipment, including film and video-tape and some of these resources already exist in such institutions as KEMCO, AIC or the Faculty of Education. The quantity of material put out by the brokerage system may require a separate unit, starting with printing facilities perhaps adding the other later. This could well be linked with the Central Clearing House.

IV. THE FUTURE

This proposal focuses on Kenya's needs now. It has been kept simple and has deliberately avoided high cost equipment and highly sophisticated techniques - in fact it is more of an operation in intermediate technology. It has been drawn around existing resources and constraints.

However, the situation will change. The quantity of material to be handled will undoubtedly increase. Kenya must not regard itself as an isolated unit for its information needs. There will come a time when regional and international systems of information exchange become feasible and even essential, and Kenya's system will become integrated into those. From an early stage, it is most important that Kenya maintains close contact with similar developments in Uganda and Tanzania, hopefully agreeing on a system that can easily link up into a regional system.

At some point in the future the central clearing house should convert into one national documentation centre, both holding all the relevant documents in microform or full sized copies, and maintaining the national union catalogue, on computer by then. The brokerage system would then come within the Centre, with all its supporting services.

Equipment for photocopying, reprographic and other printing library	2,000
Equipment for microfilm and microfiche	1,400
Equipment for microfilm and microfiche	2,400
Equipment for microfilm and microfiche	500
Equipment for microfilm and microfiche	120

LEGAL ASPECTS OF SETTING UP OF A BROKERAGE DOCUMENTATION
CENTRE (CENTRALISED OR NOT)

P.G. Sitati, Ministry of Finance and Planning

The subject I am asked to talk about is a bit vague and would be subject to a variety of interpretations. If by legal aspects, it is implied what would be the legal channels to go through to set up such a centre, I would suggest that the advice would be sought from the Attorney General's Chambers.

I, however, take it that what I am asked to talk about, is what administrative steps should be taken to set up such a centre and what effect would this move have on existing machineries undertaking similar functions currently. We have agreed that the functions we wish to assign to such a centre are already being performed by other agencies both in public and private sectors. The congregation at this workshop is a clear indication of the fact that work on the lines of our thought is being done. Our concern, if the foregoing is true, should therefore be to establish, or recommend the establishment of a system through which these efforts can be co-ordinated.

The following to my mind should be the line of approach:

1. Recognition of the committee set up after the 1972 workshop
2. Membership of the Committee
3. Location of the Committee
4. Functions of the Committee etc.

I now wish to comment on each of these points, and my observations are by no means conclusive. On the first point, we must accept that the Committee which was elected after the 1972 workshop has hitherto been working on a voluntary basis, and is not recognised either by the University or any organisation in the Government. From this point, it becomes imperative that suggestions made by the Committee cannot be binding on anybody, and members of that Committee have all along been expressing their personal views and observations. From this point of view, I would suggest that if what we propose to do is to have any effect, the first thing to be done is for the Director of the Institute for Development Studies to approach the University administration, and in conjunction, the two should submit a formal suggestion to the Government that an organisation be set up comprising of representatives from different sectors and be charged with the responsibility of mobilising research information on a national level to make it available for users when need arises.

The foregoing to my mind would be a positive approach and would be acceptable rather than if we as individuals attempted to make recommendations to the Government. This approach takes care of point number two.

On the third point, as to where such an organization may be based would be a matter of administrative convenience, taking into account related matters like availability of facilities and qualified manpower etc.,

The fourth point, would best be discussed when the move detailed herein above is taken. I would however, briefly comment that the functions of such a centre should be much more of administrative nature intended purely for co-ordination with no policy making powers. All along we have identified the fact that there is a lot of information on a variety of subjects and what is lacking is a system to pull this information together and put it in a usable form for those who may need it. For an establishment to fulfil this task, there will have to be a strong link between the centre and the already existing machineries wherever they may be. To achieve this, the composition of the centre will have to be as widely representative as possible. This will avoid fears that would arise from certain quarters that their powers are being eroded.

As I said at the beginning, I do not envisage any legal complications arising out of this exercise at all. What is significant is formal recognition of the establishment of such a body by the Government.

THE ROLE OF THE NATIONAL ARCHIVES IN RELATION TO THE
(PROPOSED) DOCUMENTATION CENTRE, DATA RETRIEVAL AND
BROKERAGE.

Robert J. Kukubo, Kenya National Archives.

The Kenya National Archives was established by the Public Archives Act No 32 of 1965 and its functions enumerated therein.

By Section 3(2) it is provided that:

"The Chief Archivist shall be responsible for, and shall have charge of, the Service and of the Public Archives, and shall take all practicable steps for the proper housing, control and preservation of all public archives and public records".

By public records is meant: records of any Ministry or Government department, Commission, Office Board or other body under the Government or established by or under an act of Parliament; records of the High Court and of any other court or tribunal; records of Parliament and of the Electoral Commission; records of any Provincial Council, Local Authority or other authority established for local Government purposes.

The Chief Archivist has statutory powers to control all public records produced in this country. You will appreciate therefore that the proposed Documentation Centre will automatically come under the control of the Chief Archivist.

CLASSIFICATION OF RECORDS BY TYPE

1. Administrative: Initially, records of all Ministries, departments, etc., are administrative in nature. At the time of creation or subsequently the record may have a more significant value as legal, fiscal, historical, research or some other material.
2. Fiscal Value: To be so classified, a record should be mainly an instrument used in inventory and fiscal controls, in examinations and accounting systems; performance of audits, investigations and settlement of claims; and estimating and allotting of appropriations to control expenditures.
3. Legal Value. Those records expressing legal decisions and opinions, international as well as municipal, which will have a continuing legal interest, either of a permanent character or until statutes of limitations have expired.

4. Historical Value: Records reflecting the history of public agency and its functions may have significant historical value long after their administrative, legal, and/or fiscal value have expired.

5. Research Value: Records that have historical value frequently also have research value. Research values result from the fact that the records can be used,

1. to reconstruct the activities of the public agency
2. to obtain information accumulated by the public agency
3. to appraise or make studies of the past
4. to furnish data on which to base new findings or conclusions.

Functions of the National Archives in relation to other public agencies.

By law the Chief Archivist and his officers are entitled to examine any record in the custody of any public office and to advise such office as to the care and custody of its records - in short as to "creation, utilization and maintenance" (CUM).

By Section 4(1) (b) it is also provided that the Chief Archivist shall require the transfer to his custody of any public records which he considers (after examining them) should be housed in the National Archives - universally known as "retention and preservation".

The Chief Archivist is also empowered by Section 7 of the Act to authorize the destruction of public records which are not for any reason required to be preserved - this procedure is called "Disposal".

The National Archives As Documentation Centre

The Kenya National Archives discharges the function of both a research institute and a documentation centre. Because of this special role it is our view that contacts with other documentation centres, research institutes and with the library services in the country should be maintained. Documentation in the Kenya National Archives will remain basically historical, though this factor is arguable. This means therefore that the Kenya National Archives is complementary to documentation material in other institutions, for this reason it is suggested that co-ordination in planning the proposed documentation centre should help to avoid possible duplication.

Kenya National Library Services as a Documentation Centre

In Kenya the basic problem is competition among planners as to how and where to locate a centre.

A meeting of experts on the national planning of library service in Asia, held at Colombo in December 1967, stressed that fragmentation of documentation resources of a country is wasteful from all points of view. It was suggested that the National Library of Ceylon should serve as the National Documentation Centre. In Kenya the equivalent of this is the Kenya National Library Services. In our opinion the question whether and where a national documentation centre should be set up is a matter for discussion with such public institutions as the National Library, National Archives, and other research institutions, private or public. (See para 3 page 13 of the FAO Report on Documentation). One or other of these institutions, in our view, if they are centrally placed as they apparently appear to be, may well be better suited to serve as the National Documentation Centre.

Departmental Libraries

These are departmentally too many and the only kind of administrative library which should be mentioned in passing are those located at K.N.H., V.O.K, M.L.S., A.G.'s Law Courts, etc. These contain collections of books (including other printed materials, photographs, microfilms, normal films and sound recordings) which may be, are no longer wanted by any public office.

Our archives regulations contain the provision that this type of material must be transferred to the National Archives. Alternatively the Chief Archivist has power to appoint any place to be a place of deposit of such material (Section 4 (1) (k)).

Special Collections in Archives

The Kenya National Archives is in the course of building up special collections. We would rather build up a series of historical photographs, slides, films and sound recordings, historical plans and maps, bibliographical items, records of historic buildings. These collections constitute an essential illustrative material supplementing the main contents of the archival buildings.

Permanent Preservation

The Kenya National Archives is an agency for the permanent preservation of documentary material. This means therefore that once the documents have been accessioned in the National Archives as defined in Section 2 of the Act, they should never leave it again except under special circumstances.

If the proposed Documentation Centre is to function properly it has to rely heavily on the guidance of the National Archives when it comes to requisitioning of the records of the Ministry of Agriculture already accessioned in the National Archives.

The National Archives as a Centre of Research

The National Archives as a research centre needs no elaboration. Statistics concerning the annual number of researchers and day visits maintained in the National Archives (soon to appear in our Annual Reports 1964-1972) give us an encouraging progress:

Year	No. of Researcher
1964	35
1972	97

The work done in our Research Room covers all disciplines, for which the Archives contain primary sources.

It is hard to say what role the proposed Documentation Centre will play in the advancement of research scholarship which the National Archives is already discharging.

What is needed is perhaps to expand the National Archives by establishing a proper "Reference and Research Station" whose main object will be to make contacts with our University, colleges, schools, and other research institutions in the country in "an effort to establish some general terms for a research programme". And also to process the already accumulated 70-year archives we inherited from the colonial government which needs immediate appraisal for utilization by the planners, researchers, etc. This naturally brings us to the question of access to documents.

Access Policy to Public Records and Archives

In Kenya the access policy to archives is very liberal indeed (c/f Uganda). And this is clearly spelled out in Section 6 of the Public Archives Act, (FAO Report, Documentation, p. 19 (IV), para 1).

Any access to documents (apart from published and unrestricted material) must conform to the Act - whether at the Documentation Centre or in any other public office.

Retrieval of Data: (Location of Documents)

The basic idea behind documentation is that the source and state of documents must be identified with certainty. And

according to the authors of the FAO Report (see page 6 (c)), they have identified three main sources:

1. Unpublished
2. Published - dealing with Kenya
3. Published - of relevance to Kenya

For the public material in the country this does not seem to be a major problem in retrieving the records. But for the records which may be located in other people's hands, be it in Kenya or overseas, a more liberal policy must be pursued if the Centre has to acquire anything worthwhile. In so far as this problem is concerned, the National Archives has a legal obligation to have returned to Kenya those records which were transferred from Kenya before the passage of the Act.

By Section 4 (1) (1) it is provided that the Chief Archivist may "Take such steps as may be necessary to acquire and have returned to Kenya any public records or records of historical value in Kenya which may have been exported before the commencement of this Act".

On the question of enforcement of the "existing rule that data be left with the authorities by expatriates going home", I should in fact categorically say that if such has been the case, then the authorities under whose public office the experts worked are responsible for such a practice. This opportunity is taken to acquaint public officers with the provisions of Section 9 (1) of the Public Archives Act which states:

"If the Chief Archivist is satisfied that any record which is in, or was made in, Kenya is of historical value to Kenya, he may, by notice in the Gazette, or by writing under his hand served on the person having the custody of such record, declare such record to be an historical record, and prohibit the export thereof except under and in accordance with the terms and conditions of a licence issued by the Chief Archivist."

As to the return of the records which are now overseas, it is vital to identify what we want. And this involves careful study of those records which we need for our developmental projects. Countries all over the world are trying as much as possible to acquire copies of their migrated archives.

As a result of strong agitation by the developing countries for the return of their archives plundered by their former metropolitan

powers, the 7th International Congress on Archives recommended that governments of developed countries should make available to the developing countries microfilm copies of archival sources relating to their history and that they should consider the possibility of returning to developing countries original documents that are included in their patrimony. On the question of retrieval of migrated data the Archives has ample machinery to carry out the exercise. It will therefore be a duplication of efforts and hence waste of resources for the Documentation Centre to carry out this function in isolation. As far as practicable the Archives must spearhead the return of migrated archives. As a member of ICA (International Council on Archives) the Archives is better placed to negotiate for the return of archives because it is professionally recognized as a safe place for the deposit of records no matter in what form they may be. This unfortunately does not seem (on the face of it) to be the case with the proposed Documentation Centre.

The National Archives is under a legal obligation to compile, make available and publish indexes and guides to, and calendars and texts of, all public archives (Section 4 (1) (c)), and also to prepare publications concerning the activities of and the facilities provided by the Service (Section 4 (1) (d)).

The foregoing provisions broadly construed will embrace all the proposed functions of the proposed Agricultural Documentation Centre: (paragraph 7 page 3 of the FAO Report). Our Archives Regulations clearly lay down the procedure to be followed when it comes to tracing documents (retrieval?) selection (depending on the value and physical state of the records) analysis and indexing, etc.

So there is nothing new in the proposed functions of the Centre. The only limiting factor is shortage of trained manpower.

The other factor linked with the Data Retrieval is the question of copyright and "brain drain".

It may prove difficult to retrieve data from private collections because of the Laws of Copyright. In the National Archives the law provides for the safeguard of copyright (see Section 13 of the Act). This means that the procedure as to copyright at the Documentation Centre should, as far as it will be practicable, be similar to the one obtaining in the Kenya National Archives.

On "brain drain", I feel the time has come when the Kenya Government should insist on postgraduate scholars, returning from

overseas should, in addition to producing their certificates, submit a copy or copies of their dissertations. It is of no use for the Government to insist on the production of a certificate and not on the material work behind the achievement of the certificate.

Legal Validity of the Records at the Documentation Centre

Insofar as the legal validity of the records housed in the National Archives is concerned, the Public Archives Act (Section 10) states that: "When it is a requirement of the validity of any public record that it be kept in, and produced from, legal custody, the validity of such record shall not be affected by the fact of its transfer to the National Archives". (See also Section 11).

It is our submission therefore that if the proposed Documentation Centre has to function as an independent entity, then the question of legal validity of records transferred to the Centre will be called into question. However, if the Chief Archivist approves the Centre, pursuant to Section 4(1) (K) of the Act, then the problem of legal validity will be eliminated.

The question of legality of microfilms and microfiche has not up to now been authoritatively settled by any Court of Law. And it would appear that the Centre is determined to computerize all its indexes, cards, etc., so the legal validity of magnetic tapes, etc., should be studied carefully.

Brokerage

If the National Archives is given a facelift, ample staffing and accommodation it can satisfy the three roles discussed above: ie. as a National Archives, Documentation Centre and Library. In which case automatically the problem of brokerage will have been taken care of.

What we need in order to effectively interpret data is a team of qualified personnel (in their own various languages and disciplines) to work in the National Archives and/or Documentation Centre. Their primary duty will be to study and pass on the findings of their studies (with their recommendations if desired) to the 'targets' in this case, to the policy makers for evaluation as to probable implication to the consumers. If the Brokerage Unit is on its own then they may run into problems as to how to recognize the best data for consumption for the benefit of the targets, so the Unit must be part of the National Archives and/or Documentation Centre if it has to co-ordinate its work effectively. It would be far cheaper if the Documentalists and Brokers worked together as a team because it will eliminate confusion in the flow of documented data.

SUMMARY

Before we agree, or do not agree, on where to locate a Documentation Centre, it may be of interest to the participants to note that: at UNESCO's 14th General Conference held in January 1967, Documentation was recognised as a separate but linked profession to Libraries and Archives, in which case we should all endorse the idea of the establishment of the Centre, but it should be on a National basis. My main objection to the location of the Centre as proposed will be co-ordination with other government agencies. Many public agencies may not approve of a Ministerial Centre functioning as a National Documentation Centre.

The need for documentation has already been recognized by librarians. And at a meeting in Nairobi on Documentation Activities in East Africa (December 1st, 1972) the delegates, mostly librarians and documentalists, focused their deliberations on documentation activities on the international scene, especially in less industrialised countries in general and in Africa in particular. It transpired that the following areas were of immediate concern:

- a. Need for Institutional Documentation Systems.
- b. National Documentation Systems.
- c. Regional Documentation Systems.
- d. Manpower Requirements.
- e. Training of manpower.

The main point at issue here is that if librarians put their case strongly for a documentation centre, it is definitely going to weigh against the proposed agricultural documentation centre, in that it will be overall instead of being specialized.

What we require is proper planning, and with this I am inclined to feel that we would have achieved the intended object for which the Workshop has been planning.

DISCUSSION ARISING FROM PAPERS PRESENTED

(Miss M. Kempe, P.G. Sitati, R. Kukubo)

KUKUBO: To summarise: The main feature is the role of Archives in relation to the proposed documentation centre. The Archives fulfils the function of a research institute and a documentation centre - provides guides, indices, catalogues of all records kept.

Another aspect is that when it comes to the retrieving of data the Archives has power under law to have all records returned which were out of this country before independence and has done so with records from Britain, Germany, Austria and Hungary. As to how the centre is going to get these back has not been spelled out.

SITATI: When we talk about a documentation centre, it would not be possible to envisage a situation where we propose setting up an organization starting from scratch to carry out documentation from material in different places - this is not practical. What we mean is some kind of system which will put together the information that is stored in different places in such a manner that it is available to those who need it. We want a system which will co-ordinate what we already have - the National Archives, Libraries, others to be set up should remain under these. There would be a common index. The legal implications would not arise. We would be getting nowhere in talking about abolishing existing institutions and beginning afresh. My proposal is that we standardise the information we have in different places, retain those places and have a central organisation to give the information as to where the records are. There is a need to create a working relationship - for all these organisations to understand that they cannot exist in isolation but should keep each other informed of what they have.

MBITHI: Mr. Sitati's suggestion is extremely useful. How do existing libraries - eg. agriculture, and documentation centres co-ordinate with the Archives to maintain status quo rather than conflict?

KUKUBO: According to the present arrangement, every publisher of a book in this country deposits a copy with the Registrar-General and one with the University. The Registrar-General has passed on to Archives the responsibility of keeping all the books. In order to maintain the present machinery, we suggest that the Archives **must be concerned** purely with records of historical importance, i.e. records which have acquired research value. I brought this out in my paper. There is no conflict. UNESCO has said

documentation centres and libraries are sister professions. The role of the documentation centre has not been defined in relation to the existing facilities. We wanted the Workshop to spell out what is to be done in this respect.

The Archives has over 300,000 documented records, including those of MOA. Records in the Archives must be 30 years old. It is not clear whether the documentation centre will be using current files or those 30 years old. My main objection to the centre being under MOA is lack of co-ordination.

MISS SCHMIDT: Miss Kempe's proposal concerning co-ordination is a good idea. Specialist institutions would like to have their libraries and documentation centres nearby so that researchers may have access to these. Duplication is not in itself bad as long as in the end you cover everything and everything is accessible to everybody.

KUKUBO: Mr. Feddah said that there was no conflict between an agricultural documentation centre and the Archives. They supplement each other. It was proposed that the centre would keep micro films. If the documentation centre is set up I would invite them to come and do our files as we do not have the machinery and the expert knowledge to determine what is important and what is not. We were very much encouraged by Mr. Feddah's support.

MDEGWA: Mr. Kukubo considers libraries, documentation centres and archives as more or less the same thing and that we should not see them as separate sources of information. They are separate: Libraries keep books and pamphlets; documentation centres deal with papers of more permanent use, printed, cyclostyled, handwritten papers which are printed for limited distribution; archives have written records on the activities of Kenya and its institutions.

I would have liked to have seen Miss Kempe's paper headed 'Research Information System', not talking purely about documentation. The question is, how can you get information for research? Miss Kempe has talked about the existing sources of information and the only documentation centre she has mentioned is the one that is being proposed. All the sources she has mentioned are libraries. To have a documentation centre in the MOA is wrong. What should be talked about is expanding the already existing organization in the Ministry to be able to cope with the required information. That there are two different organizations in the same Ministry is not apparent, particularly as the report is talking about the documentation centre which would be

started completely from scratch and the library would be a supplementary service to this centre. When the documentation centre cannot answer questions, these will be passed to the library. If the library is already there, why not expand it? This has not been done because of lack of resources. Instead of putting these into the existing organisation we are trying to have a completely different one. At the recent conference in Mauritius on African University Libraries, one of the resolutions made on documentation was that each country should concentrate on the library which was the most developed in that field.

GITATA: National Archives puts emphasis on historical aspects; a documentation centre is seen as a theatre of ideas where one can go and see what is there and get what one wants. Libraries should expand in their own way, with their own resources. There might be a central place for the consumption of knowledge.

NGURU: What do we mean by documentation? If we have a main centre, we shall still have several small documentation centres. We need a place where one can go and find out what documents are available, where they are available and on what conditions one can retrieve them. How many farmers go to the Archives? How is the material in the Archives being utilised for the farmers? There should be a central place where cataloguing is done.

MISS KEMPE: By documentation is meant: documents, reports - a first form of producing the results of research. They may come out in mimeograph form which poses a problem to those operating the library and to information systems handling them - the problem of how they are stored and retrieved. They tend to deal with a rather minute subject, so information retrieval systems and storage systems have been developed with a detailed index to retrieve a small subject area. This a somewhat specialised form of librarianship.

I emphasize information because the brokers who are going to act as intermediaries between the information - of whatever subject - and your target groups are going to need to get at your whole range. They are going to be one of the main users of the library documentation in that field or the national union catalogue to get at other fields. The farmer won't go there. The brokerage system is going to need filters - to filter out and reduce to a much simpler form for extension service or target groups.. The brokerage system is an editing - filter - conversion system, converting from the written word into another form: film, broadcasting, etc.

MUSANGI: I understand that one of the purposes of a documentation centre in the MOA is to simplify material to be available to farmers. If this is so, then there is a very good case for such a centre: if the role of the centre is to have specialists to translate difficult material into simplified form I support it. Otherwise, if it is another library, I don't support it.

CHAIRMAN: There are two points here: One is Mr. Kukubo's suggestion to improve and use the KNIS as a documentation centre, the other is Miss Kempe's and others' suggestion for a central clearing house with a national catalogue and specialist documentation centres. There is no general opposition to the idea that we have a documentation centre, although Mr. Wdegwa did indicate that it was wrong to have this sort of thing. He said: expand the library. But if the documentation centre is developed we must decide which system we propose and support. We agree that the present systems of passing on information to targets or research workers duplicate what they are doing because they don't have a place to get at what they want to do. They are not going to wait for 30 years to find it in the Archives. The libraries are not in a position to handle the literature that comes through, so a documentation centre or system is what we must now discuss.

MBJPHI: With reference to the national clearing house: I would like to know whether you think that we could establish a complementary activity of maintaining abstracts or summaries, so that if I am very interested I can go to the source?

KEMPE: I hope that this union catalogue would be set up with every item on an 8 x 5 card and it has an abstract of the item and its location. This can be quite labour-consuming. Ideally, the authors would write them, but this could be incorporated into it.

PALA: I would like to speak about the practical and legal implications of a national information system. Although Mr. Sitati avoided the question of legal implications, I think it should be examined. We are going to need institutions to do the documentation at their own level and some at a higher level. There are also financial implications as to whether at those levels they are going to be able to co-operate. We need a legal instrument to establish this institution to enable it to carry out its function. There are established institutions like KIL, University Library, National Archives etc. I am not speaking in favour of a definite scheme but highlighting a problem that is likely to arise: we cannot assume that a documentation centre can exist in a vacuum simply to document

material. The MOA may go on with theirs, that is only one aspect. It depends on the amount of capital available to be put into this project. If it is only a few thousand shillings it is not worth thinking about it. We might as well formulate something bigger into which MOA programme will fit later on.

SITANI: I deliberately avoided going into the legal aspects. We are discussing what we are going to present to the Government for acceptance. To talk about creating some kind of office is not within our powers. Instead, we can state in our recommendations that we need this kind of system because the existing machinery is inadequate and cannot cope with the demands of trying to transfer the information to the rural people. If we were to talk about legal implications we would not get anywhere.

CHAIRMAN: In order to make this clearing house functional it should have powers to retain all research work from the major libraries. We have talked about an agricultural library. What about the medical library, social services? Each major library should have somebody in charge of documentation, and once the material has been obtained in an abstract form this could be forwarded to the KML so that it can be kept on record there. Each major library must have its own documentation centre plus its own broker. I would suggest that there be some procedure regarding the presentation of research material which would require the research worker himself to write an abstract which would find its way into the centre.

KUIPER: The major problem is that research findings don't reach us (Agricultural Finance Corporation) quickly enough. Agricultural data is out of date within a few years. As soon as a research publication goes to the library, it is lost i.e. it is published. Let the information go straight to a documentation centre to be summarised with other publications on the same topic. The brokers could summarise various researches on the same topic. When you put that summary in the library, they won't find it. We don't have time to go to a library: the thing must just come on the table in a very short, digestible form. There is one aspect of a documentation centre: I have not heard anybody trying to compare its advantages and disadvantages - between developing one existing institution and setting up a new one.

KUKUBO: We are now in a better position to agree or disagree on the setting up of a centre. It is my view that it is better for us to

reach a decision regarding the centre in the light of the existing, well-established centres with statutory powers and defined policy, because that will eliminate the recommendations as to where this will be set up and what powers should be given to it. The only thing we should have to add are administrative aspects to suit the centre. If we say we will deal with the legal aspect elsewhere, we are avoiding the issue. If the Government agrees, and asks us about the legal aspect - we shall have to meet again. Miss Schmohl and Mr. Feddah agreed that the centre was a good idea and I have not objected to the centre being established. The only objection is the isolation of the already existing institutions in participating in the establishment of the centre: National Archives, National Library, University Library - they have qualified personnel who could meet to define a policy on what the centre should look like. The National Archives is not even mentioned in the (FAO) Report.

NDEWA: Perhaps we are forgetting where the information is eventually going to be fed. It may, in fact, have three systems:

1. A system the research workers themselves want, to find out about research and to give them information on other researches (not just the farmer);
2. Getting the information in the centre to be used by the brokers so as to convert it for the eventual consumer. Brokerage is going to be the very last part of the centre.
3. Information to be fed to the farmer should be prepared by the researcher while he is doing his own research. I am not against the documentation centre but wish to define its role as against the existing systems of information.

THIRD SESSION: Chairman, Dr. P.M. Mbithi

TOPIC: Brokerage & Research, Evaluation & Training
THE ROLE OF THE MANAGEMENT TRAINING & ADVISORY CENTRE
IN RURAL DEVELOPMENT

John M. Njoroge, Management Training & Advisory Centre.

The Management Training and Advisory Centre was set up to develop African executives to take up management positions in commerce and industry and assist the Government in speeding up Kenyanisation of personnel in commerce and industry. In 1971 the MTAC expanded its activities to serve the needs of small scale business under African ownership and management.

The Centre was set up in 1966 as a department within the Ministry of Labour in collaboration with the UN Development Programme, the International Labour Organisation serving as the Executive Agency, which provided assistance in the implementation and development of the Centre, as well as training the national staff to carry out the activities of the Centre, while the UN Development Programme and the Kenya Government financed the Centre.

To date nearly all fields of management have been covered and virtually all levels of management have participated in the Centre's training programmes. The training courses conducted at the Centre have been designed to give practical training for managers and businessmen in modern management practices and productivity techniques. This is aimed at raising productivity and improving skills in existing enterprises and those which would be established.

In due course it was realised that a major emphasis must be placed in developing small scale industrial and commercial enterprises in the urban and rural areas. The Centre was therefore called upon to expand its training services to African industrialists and traders.

Centre's Role in Training Industrialists & Traders

To establish the need of the Kenyan industrialist and businessman, MT&AC conducted extensive research surveys and orientation seminars across the country, in order to identify specific training and consultancy requirements for small-scale businesses, especially in the rural areas.

These fact finding surveys and orientation seminars were conducted with the co-operation of the trade officers of the Ministry of Commerce and Industry, the Provincial and District Administrative Officers, the National Chamber of Commerce and Industry, prominent traders and industrialists in Kenya.

The analysis of the information so obtained revealed some of the major training problems as follows:

1. Some businessmen do not appreciate the benefits that would accrue to their businesses through training and therefore lack interest in the value of such training.
2. Among those who appreciate the value of training, some have very little or no basic education which makes communication difficult.
3. Some of the businessmen find it difficult to be away from their business to attend courses for fear of losing customers, contracts etc.
4. Some businessmen do not have sufficient funds to pay travelling costs or boarding fees even if such courses are provided free.
5. Most businessmen in the urban areas appreciate the value of training. However, their major handicap is how to get funds to expand their businesses and they expect the Centre to recommend them to get loans from commercial banks etc., but there is no machinery for such undertakings.

To overcome some of the problems MT&AC has devised various methods:

1. A visual aids section capable of developing audio-visual training methods has been established.
2. Courses of short duration - one to two weeks - part time and evening courses covering such topics as:
 - Financial planning of a small business
 - Basic business accounting
 - Basic banking procedure for businessmen
 - Selling, distribution, communication and promotion
 - Marketing of agricultural produce
 - Stock taking and stock control
 - What to buy, where to buy for profit and purchasing planning
 - Production planning, plant location and layout etc.
3. After the training courses, participants are visited in their business premises by the course leaders to help them solve their business problems. Particularly where suitable systems and procedures applicable to small business and industry have been designed, MT&AC assists in the application and installation of such systems. In such cases other bodies involved such

as KNTC, and the trade officers are consulted to make suggestions.

4. The Centre is placing emphasis on extension service training and in plant training, and, it is hoped that this will become a regular feature as the MT&AC expands.
5. Courses are designed and conducted in simple language both in English and Swahili to facilitate effective communication with the businessmen. The Centre's national staff have been oriented to this type of work and have through knowledge of small business management techniques; and an understanding of the local business community.
6. Visits are arranged to commercial and industrial premises where improved methods are demonstrated. Such demonstrations have proved very useful and an effective method of communicating business ideas. In retail/wholesale business courses, course leaders demonstrate in the most practical ways the steps involved in establishing and running a retail/wholesale business. This includes setting up model shops.
7. In the rural areas arrangements are usually made with the Government Training Centres or schools having the necessary training and boarding facilities and courses are taken to businessmen nearer their business premises. These courses are highly subsidised to enable businessmen in the rural areas to attend.
8. The MT&AC plans to establish local advisory services in the districts to assist commercial and industrial enterprises in these areas. It is estimated that one officer should be permanently stationed in each district by 1976. Districts with greater concentration of small business could get more officers.
9. Courses for businessmen are organised and conducted in conjunction with the trade officers of the Ministry of Commerce and Industry who are constantly in touch with the business community in the districts. They possess essential field experience and local knowledge which are important factors in this type of work. It is hoped that when the MT&AC extension service staff are recruited they could be attached to the district trade offices or the local ICDC offices.

10. MT&AC is planning to develop training materials in a kit set form to be used by the trade officers and other staff engaged in training traders and industrialists in the rural areas, and also develop technical bulletins in Swahili and English on specific subjects in small business.
11. In collaboration with the National Chamber of Commerce and Industry and its various branches throughout the country, MT&AC is planning ways and means of promoting a best trader or industrialist's competition in selected areas on a pilot basis.
12. Training programmes for future national staff at the Centre should be heavily oriented towards training, advisory and extension services in the rural areas.

CONCLUSION

The importance of providing businessmen, particularly in the rural areas, with the basic knowledge they need in order to operate efficiently cannot be over emphasised, and MT&AC is playing a big role in such training. However, one of the most important questions to be considered seriously is the co-ordination of training, research, commercial and industrial activities aimed at assisting small business throughout the country. Such co-ordination would promote healthy development of small scale industrial and commercial enterprises and avoid isolated efforts as at present. Research, for instance, would indicate clearly the best form of training, and equally pin point those businesses which could do better with more funds.

A PROTOTYPE FOR A BROKERAGE SYSTEM

KIE Programme for Developing Teaching Units

J. Kangali, Kenya Institute of Education.

Kenya has many organizations and institutions involved in educating the public. Any new organization, therefore, which aims at co-ordinating all these must, in the first place, examine what these older institutions and organizations have so far covered, what has been left out and needs coverage.

This kind of exercise would ensure that duplication of efforts, repetitions or omissions are avoided. It will also provide a proper and meaningful linkage between the older organizations and the new organizations in providing both horizontal and vertical communication in conveying ideas and information between one organization and the other and between its subsidiary bodies and the main body.

A centre for disseminating information to a largely illiterate rural community, should not be passive. It must, as far as possible, be prepared to get involved in the carrying out of activities with the community, aimed at giving practical demonstrations that will enhance the knowledge being imparted to the community.

In developing the materials in designing the kind of information to be passed to the community, first hand information on the composition of the community to which the materials are to be passed, must be obtained so that the materials or information is made as relevant to the immediate needs of the community as possible.

Small sub-centres scattered all over the country must be developed for the purpose of providing feed back to the Headquarters on the effectiveness of the projects designed for the community and providing information on any change necessary to provide better absorption of new ideas.

The school must be taken as a centre of these activities. Whatever is being passed over to the community must be understood by the school teachers within that community so that the teacher and the pupil can assist in strengthening the parents' understanding of the new ideas. This way, the parent will feel that whatever he or she is learning has a bearing on education because his/her child is being taught the same thing.

This is where co-operation between the centre and institutions like Kenya Institute of Education, Teachers Colleges etc., is necessary.

I will now give a brief outline of how these ideas have been put into practice within the Kenya Institute of Education.

The KIE's 'brokerage' system: The Kenya Institute of Education is involved in the writing of materials for primary and secondary schools and teacher training colleges. The materials are sent out to Education Offices and

schools throughout Kenya. The KIE's main channels of communication are VOK, the University's Correspondence Course and the Teachers Advisory Centres which we have throughout the country based at Teacher Training colleges or attached to District Education offices. It is hoped to increase the number of TACs from one in a given area to several, in order to cover more than one subject: e.g. science, mathematics, geography. We also have Primary School Advisers working in collaboration with Education officers. In-service courses are also set up for teachers with a common problem and conducted by KIE staff.

Material for writing is collected through subject Panels. These Panels are composed of teachers from secondary schools and other trainees from all over Kenya. This material is then sent to a few selected schools for experimentation. Stage three: teachers in the experimental schools go back to work on a second Panel. This continues through several trial periods until satisfactory results are achieved.

The Panel does not use original material, but adapts material suited to the Kenyan environment, although teachers are always asked to make use of comparative examples available in their area. Teachers collect such material through the Schools Science Project set up in Kenya and Uganda schools.

The Panel is not composed of staff from KIE, with the exception of an Inspector of the subject and a secretary.

KIE provides a guide which teachers ideally ought to relate to their specific area. Here the Documentation Centre proposed by Government would greatly assist KIE staff, for example, by providing readily available material for a project being planned.

A declared policy may be put into action by KIE - or not put into action - after statements by political leaders have been studied and thoroughly discussed. For instance, if Swahili is declared a national language in five years time we have discussions with those involved. If the project sounds feasible, then plans are made 1) to produce Swahili teachers at TTCs 2) to convert present teachers into Swahili teachers after an in-service course 3) to develop a syllabus, examine books to be recommended and devise a KIE course book. If it does not sound feasible, then the decision is taken to Cabinet through the Director - then to the Minister of Education.

I feel it is possible to establish a similar brokerage system on a national scale, providing that work carried out is done with no strings attached, and the system operates down to grass roots level and is able to advise on co-ordination and priorities for different areas.

THE PROCESS OF RESEARCH FOR UTILIZATION AND ACTION --

A PBFL MODEL

Eric R. Krystall and Abigail Krystall

Introduction: Programmes for Better Family Living (PBFL), an educational programme of FAO, seeks to foster an understanding of the relationship between family size and family and community welfare. It is primarily concerned with introducing this understanding to field workers who reach rural families and thus can most effectively explain this relationship. It is also concerned that these workers be able to help families understand the relationship between family size and the effective use of resources and services available to them.

The programme seeks to define these concepts and develop related educational materials for the various audiences who are involved in implementing this approach to population education and motivation: policy-makers and administrators, trainers of field workers, the field workers themselves, and the families which they seek to reach. PBFL is concerned not only with the content of such concepts and their incorporation into training, but also with developing materials and training concerned with their effective delivery to families.

One of the primary needs of developing countries is to increase the number of people who are capable of envisioning and creating change. Recognizing this need to use all its people in solving its problems, the Government of Kenya has committed itself to develop the potential powers of each individual and to support local initiative and its resultant diversity of solutions to specific problems. The model of research and planning which creates dependency of the many on the few is inappropriate in view of this need and commitment.

An Alternative Model: PBFL

In this alternative model, developed by the Programme, the ideal researcher is one who is seeking information about himself and his own activities. The ideal research conditions are those which allow full participation of research subjects in this process of self-examination. The goal is not objectivity but training subjectivity - transforming consciousness of individuals, groups, and communities into self-consciousness. This goal is consistent with the needs of developing countries, for it is people who see the questions raised by their experience, who look at the implication of action in one sphere for other spheres, who are capable of envisioning and creating change. This goal also is consistent with the resources of developing countries for it creates competence to handle local problems among those who

operate at local levels.

Thus, in the ideal toward which the programme works, individuals and groups and communities themselves become the questioners and the respondents, observers and actors, the analysts and the analyzed, the planners and the implementers. In practice, we only approximate to this ideal insofar as our primary responsibility is to train practitioners to better service rural families.

Thus, we often are helping practitioners find out more about the people they service so they can better plan and implement servicing programmes. We have moved toward our ideal for we have made some practitioners collaborators in the research and planning processes, but we have not yet embarked on the next step of training these practitioners to involve the people they look at and plan for in the examination and planning processes. This final step would extend to the fullest degree the skills needed for full participation and commitment to development activities at the local level.

Some may question whether this model, good in training and better implementation is also a good way to generate data. Will it lead to good research? By abandoning the objectivity which we achieve by separating the researcher from those who are studied and those who will use his studies, are we not *abandoning our* standards of reliability and validity by introducing the risk of bias and distortion?

We feel that this method increases the likelihood of generating valid and reliable information. We agree with those who have pointed out that the more research subjects are aware of the purposes of the research and the more they see a direct connection between these purposes and their own needs, the more ready they are to respond openly and completely. They will reveal information they would withhold had they not participated in the formulation of the research. Subjects do this anyway, even when ignorant of the researcher's orientations. Subjects are less likely to distort when they share responsibility for planning and utilization on the basis of information they themselves are providing. Involving research subjects in the process of operationalizing variables and determining the categories of analysis helps to elicit the range of subjective meanings and thereby ensure that what is intended is being examined. Finally, involving research subjects in analysis and interpretation of the data will help to ensure that meanings inferred and connections hypothesized correspond to a felt and perceived reality.

We are satisfied that there is no contradiction between the conditions which generate the planning and implementation of good action programmes and which generate good research. We are further

satisfied that it is these same conditions which generate skillful and appropriate use of the research findings. The step-by-step involvement of the subjects or the consumers in the research process helps to ensure that the research will reflect central concerns of the group who will use the research. Using subjects as co-investigators, we help to ensure that our perspectives will supplement, not override their reality, and that central, not peripheral aspects of their experience will be examined.

Research Activity

We give as an example of the method developed by the Programme, activities undertaken in connection with the Women's Group Programme of the Ministry of Co-operatives and Social Services. The Department of Social Services of the MCSS has developed a programme to revitalize and strengthen the women's groups in rural areas to enable them to make more effective use of local resources; to increase the impact of group activity on the welfare of group members' families; and to establish more functional connections between group activity and the development of the local community. The basic strategy of the programme has been special training for the leaders of these women's groups given by field staff from various ministries and non-government organizations at the district levels. PHFL has been working with these field staff to assist them to better plan and lead their training courses for the women's group leaders and to better provide support and assistance to the groups in the field. It conducted a National Training Workshop for teams of field staff who would have subsequent responsibility for involving other field staff in the programme, and for developing a plan for the training course for the leaders and follow-up activities with the groups in their areas.

During the Workshop, the responsibility for planning and implementing the training courses and follow-up activities was given to the participants.

In one of these areas, the field staff who began to examine the tentative training plan developed at the National Training Workshop decided they did not know enough about the specific activities and problems of the group leaders to decide whether or not the course objectives and content were appropriate. Therefore, they decided to secure information from the leaders they would be training prior to finalizing the course. These field staff then designed an interview schedule which they administered to the women's group leaders whom they would be training. They participate

operate at local levels.

Thus, in the ideal toward which the programme works, individuals are encouraged to take responsibility for their own learning in abstracting the data and on the basis of the information considerably modified their original training plan. In this case, the information-gathering and analysis involved up to five days of work for field staff from various ministries.

Although the entire exercise sounds simple and small-scale, we would like to emphasize the points we find significant and exciting. When practitioners are given responsibility for planning an activity they will implement, several things happen. Their commitment is increased. They are aware that they are responsible for the quality of the programme and this responsibility motivates them to increase their competence in order to fulfill the responsibility.

Their commitment is also increased because they have opportunity to work through their doubts and difficulties during the planning process. By this time they are ready to implement, their own inputs into planning having created the greatest possible chance for their success. On the one hand they have been able to identify their own needs and lacks because they have been in a position to remedy them. On the other, they have been operating within a context which has assured them that they will not have to do anything they do not feel capable of or sure about. Thus, responsibility for planning fosters their initiative to increase their competence without creating a sense of dependency or insufficiency.

The next step in the exercise will be to have these same field staff examine themselves, specifically their opportunities and constraints for implementing an integrated follow-up programme with the women's groups that builds up the training course. It is the hope of the Programme that the skills of questioning, observation analysis, and utilization of this analysis become part of a general problem-solving orientation on the part of these practitioners. Our interest is not simply that they learn more about the situation or problem at hand, but that through the process, they learn more about how to extract from their experience the data they need to devise new ways to meet their problems.

Dissemination Activity

As part of its concern with training, the Programme also seeks to make available to practitioners and to those who train these practitioners information which has been obtained by others. This dissemination activity has proceeded along three lines: finding out what information is available, finding out what

information is needed in the view of expectations or objectives of training programmes, and finding out what information is needed in view of the conditions under which trainees will operate. We will explain each phase briefly and then describe the way in which they will be combined into a system of documentation and dissemination.

A wealth of information about various aspects of family life in East Africa remains scattered in journal articles, pamphlets, chapters and books. The Programme already has initiated a review of this research literature in Kenya, Uganda and Tanzania and proposes to continue this activity throughout the life of the project. The purpose of this review is to find out and inform others of all available sources of information and their specific contents. Therefore, the review is the first step of a process of finding out what is known and what needs to be found out about a particular topic or question. The Programme has produced and distributed a Bibliography of sources of information about areas of Family Life in East Africa. The Programme is in process of preparing and will distribute an annotated bibliography which summarizes the contents of many of the items listed in the initial bibliography. This summarizing activity will be continued throughout the project.

Also available to the Kenya Programme will be abstracts being prepared in Uganda and Tanzania, abstracts on family life research in both developed and developing countries being prepared by the PBFL Project staff at FAO Headquarters in Rome and the Aquarius Research Corporation (ARC).¹

These materials are all being classified according to a Classificatory System which has been developed by ARC and are being translated for storage in a computer so that they can be readily made available to users.² It is hoped that the materials can be adapted for use in a local system such as that proposed in the Agricultural Documentation Centre.

The Programme has also carried out a survey of Family Life programmes and activities which are being conducted by various ministries and non-government organizations in Kenya. This survey

1

Based at Case Western Reserve University, Cleveland, Ohio, and under sub-contract to PBFL.

2

Details of the system may be obtained from FAO/PBFL, Box 304730, Nairobi, Kenya, or ARC, 2837, East Overlook Road, Cleveland Heights, Ohio, 44118, U.S.A.

has enabled the Programme to identify the objectives of the training which various categories of workers receive and the content and materials currently used to achieve these objectives.

Finally, the Programme is beginning to collect information about what these workers actually do in the field, their difficulties and problems, and what they feel they need to know to accomplish their assigned and possible tasks more effectively.

On the basis of these three lines of investigation, the Programme will be in a position to assist in the development of materials which:

1. can be aimed directly to field workers to help them better inform the families they service.
2. can be aimed directly to field workers to help them better assess and analyze the needs of the families they service.
3. can be aimed to the trainers of these field workers to help them better connect the information and concepts they seek to present and skills they seek to develop with the conditions their trainees will find when they become practitioners.
4. can be aimed to the trainers of these field workers to help them keep abreast with current developments in their areas.

PROPOSAL FOR THE DEVELOPMENT OF A KNOWLEDGE BROKERAGE SYSTEM IN KENYA
OVERCOMING OBSTACLES OF POOR COMMUNICATION BETWEEN BROKER AND
TARGET GROUP

C.N. Mwangi, Agricultural Information Centre

It would be important to consider the following points when working out ways of improving communications between the broker and target group. I'll break the points into four main groups: The Brokerage, The Source, The Channel and the Target Group. It could be unwise to consider any of these sections without mentioning the others.

THE BROKERAGE:

- The staff of the brokerage section should be well selected and trained. Occasional visits to target groups should be organized. It should have a research unit to test effectiveness of the communicated messages. The information fed to the brokerage group must be seen to be useful, i.e. through establishing proper feed back and contact between the brokerage and the sources of information. The brokerage group must work very closely with the Documentation Centre and AIC and should co-ordinate with other organizations similar to AIC both in government and non-government sector eg., KIMC, Health Education Unit, Mobile Education Unit of Freedom from Hunger, Faculty of Agriculture etc. The proposed National Training programme suggested in the Report by the FAO Mission on Rural Development Communication with a National Advisory Committee will play a big role in bringing about this understanding and co-ordination. MOA's Advisory Committee to AIC would also contribute to the brokerage group. The Brokerage system should have access, even if controlled, to the Archives. The Documentation Centre would also be a useful source of information for the Archives and where necessary vice-versa.

CHANNEL-EXTENSION WORKERS:

The channel here refers to the field worker, the person who carries the information from the broker to the target group. They must be trained as communicators, whether employed by one Ministry or different Ministries and organizations, and encouraged by their superiors to work as a team. Regular seminars and training programmes could be organised for them as a team. The proposed training programmes mentioned above (FAO Mission) would train trainers for the programmes. These communicators must be trained to understand, consult and involve the target groups as far as possible. They must be trained to continuously feed back to the Brokerage system, AIC and to the Documentation Centre. The various communications

channels such as radio, films, printed matter, posters etc., must be fully and efficiently utilized to make the work of the communicators more successful. The IAS, University could also play part in the training programme. Communication centres such as AIC, Health Education Unit should co-ordinate and consult one another.

SOURCES OF INFORMATION:

The sources of information are many, eg., Agricultural Research Stations of MOA, E.A. Community, private firms, Faculties of Agriculture and Veterinary Science, Libraries, etc. The brokerage group must have access to all the sources. The sources of information must be made aware of the needs of the country, visit target groups, the Brokerage Centre and the Documentation Centre to understand the practical problems involved.

TARGET GROUP:

They must be made to see that there is no division and disagreement between the field officers of the various ministries and organizations but that these officers work as a team to benefit the target group. One example: when addressing public barazas or visiting individuals, involve all the officers. They must participate in the research concerning themselves, e.g invite them to meetings and barazas on development programmes. The local development committees should have representatives from the target groups.

PROPOSAL FOR THE DEVELOPMENT OF A KNOWLEDGE BROKERAGE SYSTEM IN KENYA

Niels Roling, Institute for Development Studies, University.

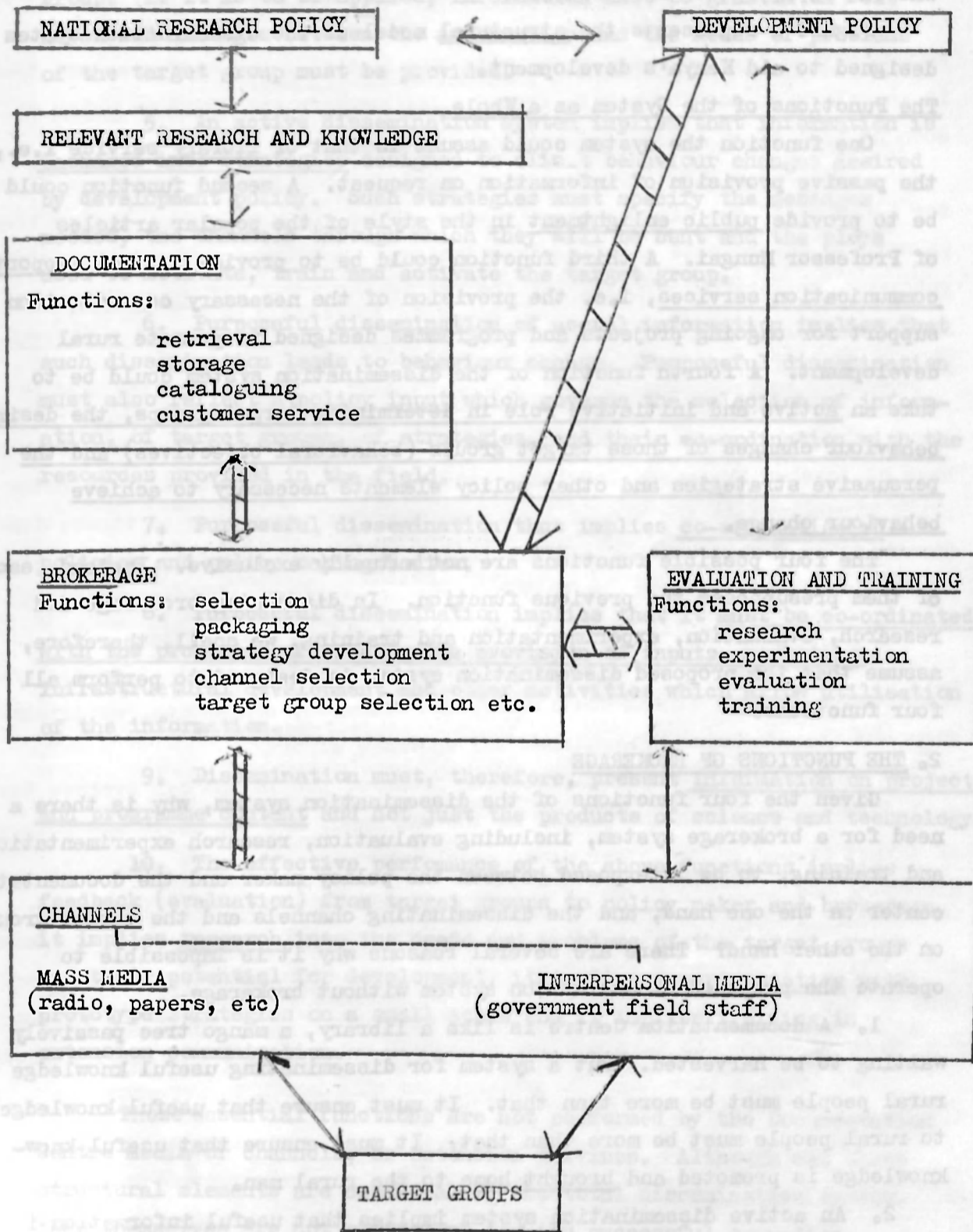


FIGURE I: STRUCTURAL MODEL FOR A KNOWLEDGE DISSEMINATION SYSTEM IN KENYA

1. INTRODUCTION

We are considering recommendations which aim at establishing a co-ordinated national system for the dissemination of useful knowledge to those who can apply it to their benefit.

Figure I represents the structural model of the dissemination system designed to aid Kenya's development.

The Functions of the System as a Whole

One function the system could assume is that of library service i.e., the passive provision of information on request. A second function could be to provide public enlightenment in the style of the popular articles of Professor Mungai. A third function could be to provide project support communication services, i.e. the provision of the necessary communication support for ongoing projects and programmes designed to promote rural development. A fourth function of the dissemination system could be to take an active and initiative role in determining target groups, the desired behaviour changes of those target groups (behavioral objectives) and the persuasive strategies and other policy elements necessary to achieve behaviour change.

The four possible functions are not mutually exclusive. Instead, each of them presupposes the previous function. In discussing brokerage and research, evaluation, experimentation and training, we shall, therefore, assume that the proposed dissemination system is designed to perform all four functions.

2. THE FUNCTIONS OF BROKERAGE

Given the four functions of the dissemination system, why is there a need for a brokerage system, including evaluation, research experimentation and training, to be interposed between the policy maker and the documentation center on the one hand, and the disseminating channels and the target groups on the other hand? There are several reasons why it is impossible to operate the proposed dissemination system without brokerage.

1. A documentation Centre is like a library, a mango tree passively waiting to be harvested. But a system for disseminating useful knowledge to rural people must be more than that. It must ensure that useful knowledge to rural people must be more than that. It must ensure that useful knowledge is promoted and brought home to the rural man.

2. An active dissemination system implies that useful information is selected from the Documentation Centre and other sources for dissemination to those who presumably need it.

3. An active dissemination system implies that information is translated into language which is consumable.

4. An active dissemination system implies that information is made relevant to the needs and problems of a particular target group. If it is to be applied, information must be grafted on felt needs and linkages between the information and the needs or problems of the target group must be provided.

5. An active dissemination system implies that information is packaged into strategies designed to elicit behaviour changes desired by development policy. Such strategies must specify the messages needed, the channels through which they will be sent and the ploys used to motivate, train and activate the target group.

6. Purposeful dissemination of useful information implies that such dissemination leads to behaviour change. Purposeful dissemination must also reflect a policy input which governs the selection of information, of target groups, of strategies, and their co-ordination with the resources provided in the field.

7. Purposeful dissemination thus implies co-ordination of policies and policy making bodies.

8. Purposeful dissemination implies that it must be co-ordinated with the provision of credit, the provision of inputs, marketing, infrastructural development and other activities which allow utilisation of the information.

9. Dissemination must, therefore, present information on project and programme content and not just the products of science and technology.

10. The effective performance of the above functions implies feedback (evaluation) from target groups to policy maker and brokerage, it implies research into the needs and problems of the target groups and their potential for development, it implies experimentation with prototype strategies on a small scale and it implies training in extension communication.

Those essential functions are not performed by the Documentation Centre media or channels, or extension services. Although all these structural elements are essential in the total dissemination system, they themselves are not sufficient for its successful operation.

Hence, there is need to establish a brokerage to perform the ten functions mentioned above.

3. ESTABLISHING A KNOWLEDGE BROKERAGE IN KENYA

For most elements in the dissemination system we propose, we can

name a number of already existing institutions which could, together or alone, perform the functions of the elements proposed. There already exists a policy formulating machinery, a research policy in the making, research and experiment stations which produce technical recommendations, a proposed (FAO) documentation center, an AIC which will be developed by FAO for communication training, mass media with substantial rural audiences and there is an extension machinery with around 8,000 members and 26 FTC's which will soon be part of an Extension/Training Division in the MOA.

Outside agriculture, a host of institutions perform functions desired for elements of the dissemination system. Thus, in most cases, the problem is more to co-ordinate existing institutions. But the functions of brokerage, research, evaluation, experimentation and training are not systematically performed by any institution to allow the effective operation of a dissemination system.

And this has immediate consequences with which we are all too familiar. Extension staff are not trained in communication skills; FTC trainers have no teacher training; knowledge produced by research stations is often badly disseminated; the amount of information and the number of innovations disseminated remains small, and the target groups who benefit, limited etc.

And these laments not only concern agriculture. Existing facilities such as KIMC and the National Archives remain underutilised; mass media hardly cater for the mass of the rural population; effective dissemination methods developed elsewhere remain unutilised; and research, evaluation, experimentation and training remain haphazard and sporadic efforts.

There is a need for information brokers, people who can oversee the realm between research and policy on the one hand, and the needs and potential of target groups on the other hand, people who are experts at creating, directing and managing flows of information and feedback for development.

There is only one institution in Kenya that I know of which systematically tries to perform a brokerage function for a limited target group, and that is the Kenya Institute of Education. Mr. Kangali presents the system in his Paper by which KIE develops new prototype curricular for primary schools.

It is high time that the MOA follows this model to increase the effectiveness of its vast operations.

It is, therefore, proposed here that the MOA set up a Kenya Institute for the Dissemination of Development Information. (KIDODI).

4. THE FORM OF KIDODI

KIDODI would consist of the following units:

1. The computerised Documentation Centre (Already to be set up by FAO).
2. A Strategy Development Unit (consisting of a number of senior dissemination strategists).
3. The Agricultural Information Center, with the technical facilities to produce messages for the extension services or the farmers (Already to be set up by FAO, IMC, already in operation).
4. An Extension Communication Training School (Not available at present with disastrous consequences).
5. A Research, Evaluation and Experimentation Unit (an evaluation unit is presently planned by MOA, the experimentation component could be developed in co-ordination with SRDP).

KIDODI would have a steering committee with the following composition:

1. Director of Agriculture (Chairman)
2. Heads of Technical Divisions (Crops, Livestock, Range Management etc.)
3. Head of Training/Extension Division
4. Liaison Officer Research Stations
5. Representatives KTDA, HCDA, AFC, etc.
6. Representatives Ministry of Finance and Planning
7. Director KIDODI (Executive Secretary)
8. Heads of Units KIDODI

The Steering Committee would meet regularly and would set specific objectives for KIDODI in terms of desired targets, types of information to be promoted, types of people to be reached, etc.

The Executive Committee of KIDODI would consist of a Director, the Senior Strategists and the heads of the other units. Apart from managing the Institute, they would work out the requirements for reaching the objectives laid down by the Steering Committee, eg. introducing Hampshire Down/local sheep crossings to the Turkana. Thus the Head of the Documentation Center would provide a summary of available knowledge about the Turkana. The Research Unit goes to Turkana and tries to fill-in important information gaps, consults with local people about the proposal and visits Naivasha to get the latest information on mixed sheep breeds. It might also visit some farmers, who already successfully use such crossings. The total of information collected is used by the Strategy Development Unit to develop a proto-type strategy.

ie., a plan for small scale implementation which is potentially replicable across Turkana. The plan covers staff needs and their required training, necessary communication inputs (visual aids, etc.), and the media to be used, it lays out the approach that needs to be used to convince and motivate the Turkana, the resources such as sheep, sheds etc., which will be necessary and the requirements for marketing the produce.

This planned proto-type is next implemented on a small scale by the Evaluation, Research and Experimentation Unit, which carefully evaluates it and adapts it to fit local conditions, needs and problems. The unit automatically has complete freedom in developing available MOA resources in the experimental area.

After trial the strategy is adjusted and a detailed plan for reaching the original objective is set up, indicating resources required, activities to be performed, and who is responsible. This plan is presented to the Steering Committee or its relevant members for implementation. Staff training and communication support are, of course, left to KIDODI for implementation.

Members of the Research, Evaluation and Experimentation Unit continue to regularly visit Turkana to monitor the programme and to discuss necessary adjustments with the Steering Committee or Heads of the relevant Divisions.

It is envisaged that, as KIDODI becomes known, MPs, DOs, PTOs, Chiefs, DAOs, DDOs, Directors of Irrigation Schemes and others will make specific requests for assistance to KIDODI to support projects in their areas with communication, training, evaluation or research inputs. Such requests must of course, be channelled through the Steering Committee.

KIDODI can also engage in activities of public enlightenment through radio, newspaper articles, cheap booklets, material for literacy campaigns (viz Tanzania), etc. KIDODI's Documentation Centre should also act as a library for anyone wishing to acquire specific information. The Extension Communication Training School would continually provide training for field staff, based on the experience gained in experimentation and research. Trainees would assist in field work as apprentices. The Institute could also engage in experimentation with extension apprentices, such as bush schools or improvements in farmer recruitment for FTC's.

5. OTHER DEVELOPMENT INFORMATION

Apart from MOA, other institutions responsible for rural develop-

ment are the FEA, the MSCC, the RDC's, the Small Business Administration (soon to be set up), the MOH, voluntary organisations etc. Such organisations would greatly benefit from a KIDODI set-up. The big question is whether the KIDODI in agriculture should be a model for KIDODI's in Health, Family Planning, etc., or whether MOA's KIDODI should be the nucleus for a national KIDODI which serves rural development in general.

Our belief is that since the communication, strategy development and research skills required for one field such as agriculture are the same as for other fields, the aim should be to develop a national KIDODI in which the best communication experts of the country work together.

It is, therefore, suggested that the MOA KIDODI proposed in the present paper be gradually expanded to a national KIDODI by expanding the Steering Committee to include members from other national institutions and by expanding the Documentation Centre to include information on subjects other than agriculture.

6. CONCLUSION

Most of us have been taught to think in terms of acres, water, crop varieties, production targets, costs, etc., and we try to achieve rural development by manipulating these variables. Rural development and the change of the mentioned variables can, however, only be achieved through changing people. It is high time, therefore, to set up a professional and efficient machinery for doing just that. It is suggested here that proposals for a KIDODI type of organization would be very popular with foreign donors. The expensive elements that remain to be financed are the Extension Communication Training School and the Research, Evaluation and Experimentation Unit.

DISCUSSION ARISING FROM PAPERS

J.M. Njoroge; J. Kangali; E. Krystall; C. Mwangi; N. Roling

GHAJ: The only problem I see with this kind of national scheme (Roling proposed) is that it would have to be a mammoth organization. What you are saying is the total research activity should be put together in one place, unless you are thinking of a very narrow range of this problem. But even agricultural research is going on in numerous places throughout the country. I do not see how one national unit can solve this variety of research activities and their dissemination.

ROLING: I did not intend to suggest that all the research should be in this centre. I should have specified communication type research, the establishing of the needs of the people and so on. It had nothing to do with agricultural research.

GHAJ: Do you envisage that we then hand over the whole package to this centre in MOA and say, OK, take over and disseminate it all over the country? Is this what you have in mind?

ROLING: Yes.

OBASO: I would like to congratulate Dr. Roling for his suggestion but I do not like it. We are interested in the extension officers who should take information to the people themselves. I do not think we should create another KIDODI with the kind of strategy he is suggesting. This is just creating another group of experts who can disseminate research information better than the I.D.S. We have a University Library, the I.D.S., the National Library Services - these are the facilities we should use for storing research matter produced.

KISA: I share the concerns expressed by Prof. Ghai and Mr. Obaso. It is suggested that this proposed Kenya Institute for the Dissemination of Development Information as presented here be established within MOA. Presumably the Ministry of Health has communication problems, likewise other ministries, relating to rural areas. Are we suggesting that there should be an institute in every Ministry? If not, how can the Institute in MOA function on a

national level? The problem is that there are centres or institutions in Kenya which can fulfill this function but are not doing so effectively. What we are probably talking about is co-ordination of information either within the existing institutions or by setting up practices within these institutions and bringing the whole Government machinery to do this.

CHAIRMAN (Dr. Mbithi): This follows on Miss Kempe's suggestion. Can we take it up further?

MISS KEMPE: I would like to try and get away from documentation and get on to information. A documentation centre will only cover a part of the information that is going to be relevant to brokers. There are various target groups and individuals who will be using sources of information. Their needs will be met in different ways. For example, a person who wants a specific document simply gives to his source. A person who starts on a research will want to know what is available on the subject etc., and the documentation centres will supply him with this information. For target groups, the people who need everything translated and sorted out, there are the brokers who go to the information centres to ask for material on a certain topic. Another group is the policy makers who must be in close contact with the nucleus of information and the information pedlar, the person who knows the needs of the various planners. He is the professional.

KARURI: What is really our problem is to make the technology available to the right people who need it and to make it understandable by the people who are expected to be interested; to make it available in the shortest possible time; to use the appropriate channels; to select the right person for efficient implementation. Therefore I see that the processing of this technology before it is finally documented would go through several stages. First, the report is ready for consumption. Second, it is presented to the broker or man in charge of editing. The duty will be to edit and find out what is relevant in relation to the problem already existing or if it is a new innovation. Third, will be the selection of the appropriate channels or mass-media, whatever method you want to use to reach the people. Fourth, identifying the target, what sort of people do you want to reach. Then comes implementation of that particular innovation.

When the people have been innovated we expect action and the action will be as a feed-back when they adopt it and we then expect development to be the feed-back. These are the functions that I see the institution should take into consideration.

NGURU: Dr. Roling's idea is a good one in itself but I do not like its being in a Ministry. We should be looking at issues on a national level. We (KIMC) are training people on how best to communicate and disseminate information to the masses. The fact that we are under a given Ministry has created problems. One of my biggest headaches is being able to cater for bodies that do not belong to our Ministry. I agree that there is need for a brokerage system, documentation, etc., but I am strongly opposed to the idea of that centre being in a given Ministry as it is going to create problems.

OBWAKA: THE PBFL programme will present an inter-ministerial approach to the problem that has been identified. One of these days we shall be launching this in a big way. We believe that every extension officer should be in a position to advise on Programmes For Better Family Living. Therefore we are going to teach everyone of our students (Egerton) family health education, communication, nutrition and so on. We hope that the students will not only discuss the Programmes for BFL but will also be able to collect information and feed it back to us. There will be one Professor whose only job will be to feed back information. We also hope that once a year at least, ex-students will be able to come back to Egerton and exchange ideas and we will call in researchers and policy makers to participate in these meetings.

KRYSTALL: It is a two-way process. It seems much more efficient if people are involved in the process and can make demands for information rather than our saying, here is the information you need. The people out there have problems and each Ministry can make its contribution to the solution of that problem. But you must have some understanding of the complexity of the problem. It needs work with the families, with the district committees. They can be reached and can make the demands but they have to be prepared for it. No matter how much research you do on media and packages and so on, unless the people are ready to receive these packages you have wasted your time.

NDALUTI: The politicians have developed a very powerful medium for dissemination and that is the Harambee spirit. It seems to me a good idea to take advantage of this technique which has been evolved.

CHEGE: Private companies always seem to be able to sell their goods. Why are Government institutions not able to do the same? Some research should be done on the best way to sell and the Government could then have it as a package. I also do not feel that this type of thing could ever develop into a national programme if placed in a specific Ministry. My suggestion is that we have the national research policy as it exists in Dr. Roling's diagram. A national clearing house could cater for all the information available from all the Ministries. For the brokerage system and its evaluation, the proposed development of separate communication could be on a national basis if it was removed from MOA. It would then be able to cater for specialised groups.

MWANGI: There is some misunderstanding on this bureau of separate communication. The idea is that it be in MOA but not only cater for the Ministry. If there is a national centre it has to be supervised by someone. The idea is that a centre be established and Permanent Secretaries of different Ministries will lay down policies for the centre and how it should function. We in the Ministry cannot train people every year for ever, the centre is going to train the trainers. The Ministries want a few people to go back to the field to train their field personnel how to communicate. Let us put up a proposal on how this can be carried out.

KISA: I agree with Mr. Mwangi. The functions as outlined here are acceptable except the manner in which the functions are expected to be performed, that is through the proposed institute. We recognise that the function of generating and processing information for development in the rural areas must be the responsibility of the Ministry concerned and if I understood Miss Kempe correctly the points that she made are in accord with my own thinking, that is, that this function be performed within the Ministry. We should recommend that each Ministry establish a brokerage system or unit for the purpose of processing this information and ensuring its dissemination, but at the same time the Government examine the best way of ensuring that these units are as effectively utilised and co-ordinated as possible.

OBASO: There is a need for brokerage at national level and at ministerial level. This is going to be an institution with a policy making power. It is only if each Ministry identifies what they need that one can talk about where to train.

TOPIC: CHANNELS
NATIONAL CO-ORDINATION OF EXTENSION SERVICES

S. Kihumba, Board of Adult Education

My assigned topic today is co-ordination of Extension Services vis-a-vis the proposed National Extension Centre. There has recently been a critical re-examination of the training techniques for various categories of occupations in the economic sector which do not necessarily require high academic qualifications. Some observers and reports have even doubted the effectiveness of the seminar and conference in training such workers like small scale traders and farmers. It is therefore imperative that the centre should carry out such research into the most effective teaching methods for the varied needs and requirements of a growing nation.

Basically the centre will be the national workshop and laboratory of adult education programmes in the country. There will be research facilities, both in general adult education and in the more intimate practices of student behaviour, effectiveness of Audio/Visual Aids like television, radio, film and film slides. The physical facilities will therefore include:

- a. A professional library
- b. Statistics and data bank
- c. Film and Sound Studio
- d. Dark Room
- e. Demonstration Room with capacity of 30 persons, fully equipped with close circuit television, communication system where professionals can watch a class in progress.
- f. A large Hall capable of sitting 60 persons for regular classes around Nairobi, but fully equipped as a production theatre for educational series.
- g. A high frequency Radio monitor recording radio programmes broadcast by stations in other countries for study by local producers.
- h. A small medium wave transmitter for experimental purposes with local listening groups around Nairobi to determine the effectiveness of radio listener groups in human communication.
- i. A small printing Unit for production of sample literacy materials and other simple readers for use by rural extension staff.

In a word the centre will be a highly professional workshop also specializing in dissemination of new techniques in handling adult students. It will act as the broker of adult teaching methods in the

same way that the Kenya Institute for Education does for primary and secondary schools.

For the future, it is envisaged that new educational programmes through correspondence will emanate from the centre; not to compete with the existing correspondence schools and organisations, but to demonstrate the latest methods of teaching by correspondence with particular reference to reducing the cost of fees per student per subject and the time factor in obtaining the desired qualifications.

Educational programmes produced at the centre will be integrated with the needs of individual target groups like farmers, traders, co-operative societies, group ranch farmers etc. Each of these groups has certain technological requirements which can be catered for through the professional services offered by the centre.

Relationship between the centre and the pilot multipurpose Development Centres. The two Centres at Embu and Matuga will require servicing from the national centre in their regular programmes and extension programmes. The national centre will initiate action at the local level through the Board's own district development centres, farmer training centres etc. Let's take for example films slides in teaching. The film library at the national centre can lend the local centres a whole set of slides on teaching of a particular course. It will also send its audio/visual training officer to assist the local teaching staff at the centre in using the materials. The role of communications in this field of dissemination of new scientific and technological knowhow is crucial as the information can only be transmitted through an integrated non-formal education system.

In that case, the question and answer system through which the listeners send their queries on important matters like how to erect a water pump, how to purchase such equipment, what subsidies the state would give to such development capital, has greater dividends than an attempt to mix up literacy with other educational materials which eventually confuse the learner. It is possible to overload a course in spite of the generally accepted role of functional education.

How then would various ministries and private bodies be co-ordinated in this exercise? There are several ways of looking at co-ordination. Duplication is an integral and inevitable element of expansion and it would be futile to expend enormous resources and expertise trying to control expansion just for fear of duplication. It creates frustration, and in the end stifles personal initiative. Under such circumstances co-ordination means orientation of overall

objectives and synchronization of training schemes. Even in totalitarian planning, decentralization and planned duplication, triplication, or what have you, is accepted as a necessary evil.

To achieve some measure of co-ordination therefore, the techniques of communication and adult education, need to be standardized and the training of educators streamlined to conform to given methodological concepts and practices. Training is the key word. Here, the resultant standardization ensures horizontal co-operation and consultations and therefore the desired co-ordination is achieved (hopefully).

As regards administrative co-ordination, this should be tackled by the Office of the President, going down to the PC and DC. The allocation of resources and personnel towards the priority areas is their responsibility in conjunction with the treasury on the advice of bodies like BAE and the University.

The workshop should consider the current debate in adult education, that courses intended for adults are becoming over institutionalized. That is, the role of colleges of technologies, technical institutes, village polytechnics has been over emphasized recently. Whilst such institutions are superbly suitable for the younger generation from primary and secondary schools, for the adults, the informal and social channels of communications are more suitable and should be exploited to the full in changing attitudes.

PROBLEMS OF DISSEMINATING INFORMATION THROUGH MASS MEDIA (Radio & TV)

L.D. Nguru, Kenya Institute of Mass Communication

Since communication is multidirectional it also involves the upward movement of grassroots opinions to local and national governments. We should bear in mind that we can bring about change and developments only with the consent of those being changed or developed. At the grassroots level communication and change become inter-dependent; it is here that the advantages of change must be translated into 'felt needs' for change. When the need is felt change comes quickly and communication expands.

The objective in communication can be looked at broadly from two viewpoints - that of the communicator and that of the receiver. From the communicator's viewpoint the objective of communication may be:-

1. To inform
2. To teach
3. To please or entertain
4. To propose or persuade.

And from the viewpoint of the receiver his objective may be:-

1. To understand
2. To learn
3. To enjoy
4. To dispose or decide.

It is in our effort to achieve these objectives that mass communicators are faced with problems. Mass communicators use the "tools" (mass media) of television, radio, newspapers etc. I am confining my remarks on problems of disseminating information through radio and television. The term 'mass' is applicable to the medium of radio, for it more than the other media reaches all groups of the population uniformly. Results of a recent survey carried out for the V.O.K. show that there are more than 80,000 radios in Kenya and that more than 2 million Kenyans listen to the news programme daily. With the availability of cheap transistor radio, people in all parts of this country are able to receive radio programmes and this coupled with the fact that inability to read and write is not a limitation we can say that radio is the most powerful mass medium in this country today.

The fact that we are disseminating information to the masses creates problems. Such a mass has four distinctive features. First, it is heterogeneous in composition, its members coming from all groups of the society, old men and women, literates and illiterates, children and University professors etc. Second, it is composed of individuals who may not know each other. Third, the members of the mass are spatially separated from one another and in that sense at least cannot interact with one another or exchange experience. Fourth, the mass has no definite leadership and has

very loose organisation if any. The mass has no social organisation, no body of customs or traditions, no established set of rules or ritual, no organised group of sentiments, no structure of status roles and no established leadership. It merely consists of an aggregation of individuals who are separate, detached, anonymous. Since the mass has no societal character, the form of its behaviour is not to be found in organised, concerted group activity but rather in behaviour of the separate individuals who make up the mass. This concept of the masses would obviously create a very big problem in disseminating information by both radio and television. To be able to achieve our objectives in disseminating such information we need to study the mass that we intend to inform, teach, please or persuade.

I shall call such mass our audience. Mass audience in Kenya is not homogenous. We need to know the culture of our mass audience, language, beliefs and traditions, their common interests, educational background; environment social structure, background experience etc. To be able to get all this information the communicator would require professional guidance from sociologists, psychologists, geographers, extension workers in the field, administrators etc. This therefore calls for a thorough study of the mass audience which in turn should enable us to identify any particular segment of such an audience that we may aim at disseminating information to - ie. our target audience.

Another problem facing communicators in dissemination of information is the limitations of both TV and radio and indeed of most mass media. The audience has very little control on the information being conveyed or on the communicator during the actual transmission. During 'face to face' communication the member of the audience can ask questions and get answers. But usually the communicator is unable to get immediate feedback from the audience and therefore not able to gauge the understanding or response of the audience to the information disseminated. He may in fact never know what impact the information has on the audience and whether he manages to achieve his objectives. This is a serious problem but it can be overcome by having a well-organised feedback system in which the communicator establishes a machinery to link him with his audience (or their representatives). The communicator can also enlist the support of field workers e.g., extension officers, Agricultural Officers, Administrators etc., who are in daily contact with the audience. Many radio and television stations in other parts of the world have evaluation of research departments to gather feedback information from listeners and at the same time keep potential audiences informed of programmes that

would be of value or interest to them. TV/Radio Magazines with special columns in which the audience can express ideas and make suggestions can serve as a link. In the case of disseminating scientific and technological information it may be necessary to publish support material in the form of handbooks which viewers and listeners can read before and after transmission of programmes, with follow-up assignments suggested. This would therefore call for a central distribution organisation which should also form a close link between the production unit, the transmitting station and the audience. Adequate finances would be needed for printing and personnel employed to effect the distribution of such materials.

Since our mass audience is heterogenous with different interests, customs etc., this creates problems in scheduling of programmes. There is a very heavy demand for the air time available during TV and radio transmission hours. We broadcast commercial, educational information and entertainment programmes on both radio and TV. In deciding on transmission times we should be guided by the needs of the majority of our target audience. But do we always know the needs of the so called target audience? We may know something about it but not as much as we should know. When we say we want to disseminate information to farmers we must ask ourselves a number of questions even before we plan how to disseminate such information. Such questions include 'which farmers do we want to reach, large or small scale farmers, in which part of the country' - in this case we may have to take into consideration rainfall, soils, road and rail communicators, etc. To be able to utilise the media of TV and radio effectively the communicator needs training in communication techniques. Lack of such properly trained manpower can hamper effective dissemination of information through the mass media. Communicators should also be experts in their own right in other specialist fields. A broadcasting station should, in my opinion have such specialists eg. sociologists, political scientists, agriculturists, professional dramatists etc., among its production staff who will have been trained in communication techniques, utilization of the media (TV and Radio) as well as programme production techniques. The advantage of having such staff in the station is that they will ensure that only accurate information is disseminated to their audience. We are very short of such specialists in Kenya and it is currently a problem to recruit them in the production division of our broadcasting system. There is also need to train researchers, extension workers, field officers etc, in basic communication techniques if they are to be required to play an effective role in the feedback machinery.

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The solution lies in providing adequate finances, expanding existing training facilities, recruiting necessary training staff and having a co-ordinated training programme for all the personnel requiring this type of training in Kenya today.

We at KIMC are training programme producers for radio and TV., broadcasting technicians, technical operators and information officers, but because these producers are not specialists in scientific and technological fields the emphasis is on equipping them with relevant skills and techniques as communicators, through TV and Radio. But for specialised information say on science and technology, they have to rely on the specialists who may not willingly give the required information.

The communicator's difficulty in gauging mass audience reaction to the information disseminated through Radio and TV can be minimised by organising target audience into listening and viewing groups. Such groups would listen/view the programmes during transmission, discuss the content and decide on action if need be. They could select their own leaders - to lead the discussions - and if properly organised and helped by field officers they could very easily become a useful source of feedback information. Countries like Canada and India have experience in this respect and available reports indicate that when listeners are organised in this way this leads to a more effective utilisation of information disseminated. This can easily be done if there was a co-ordinated organisation in the country which directs and concerns itself with the utilisation aspects of information, conveyed through the mass media. Again field officers, extension workers, family planning educators, health visitors and other personnel whose duties involve regular contact with the target audience would need to be involved in such an exercise.

Television is potentially more powerful than radio as a medium of mass communication in this country due to the fact that it incorporates sound and vision. In some developed countries where every household has a set it has replaced radio as the principal mass medium. Radio, however, continues to be the main source of important news, background music for entertainment, and information for people on the move (consider car radios and portability aspect of transistor radio). In this country television has a limited reach due to:

1. Lack of electric power in rural areas.

2. High cost of Television sets for the man on the street. It is estimated that only about 300,000 people watch TV programmes and most of these are in the urban centres. One can therefore conclude that this medium mainly reaches a more sophisticated urban audience and people in the high income bracket.

3. Television signals cannot be received in all parts of Kenya. As it is already a declared Government policy to extend electricity to the rural areas and also to improve the signal, more and more people will be able to view TV programmes. We should therefore consider television as a powerful medium (potentially). Government and interested organisations could equip certain strategic centres with TV receivers so that more people can be reached - but this would require additional finances and maintenance service.

KIMC would support a brokerage System, and provided our problems highlighted in the "Wamalwa Training Review" are resolved, I personally would like to see KIMC involved in the implementation of any recommendations aimed at co-ordinating communication efforts (including training) for the good of the whole country. I would recommend the setting up of a communications Council in this country. This could among other things be the 'Policy and Co-ordinating organisation'. It could have production, research, utilization, training departments which would concern themselves with these specialised areas.

1. Objectives of the research

2. Examination of negative and positive

3. Analysis of positive variables

negative variables

4. Treatment and recommendations

5. Evaluation and proposals

principles of the

The solution lies in providing adequate finances, expanding existing training facilities, recruiting necessary training staff and having a co-ordinated training programme for all the personnel requiring this type of training in Kenya today.

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- 1. Lack of electric power in rural areas.

OF ENGLISH CIVILIZATION BY HERRINGHART AND ED. HERRINGHART
LISTENING FORUMS FOR RURAL TARGET DISCUSSION GROUPS

J.W.G. Karuri, Institute of Adult Studies, University.

The Headquarters Training & Research Department in IAS is carrying out a pilot on the possibilities of using mass media for national development in SRDP in North Tetu and Machakos under the guidance of the Mass Media Tutor in the University of Nairobi. This action research is designed to find out the most effective media in disseminating information in rural areas.

<u>The Media to be tested.</u>	Media type	A	Print
	"	B	Tape-Radio
	"	C	Filmstrips
	"	D	Interpersonal-Lecture

Methodology: The Mass Media Tutor will establish discussion groups in SRDP in N. Tetu and Machakos with the co-operation of the Ministries of Agriculture, Health, Information (VOK & KIMC), Co-operatives and Social Services (Board of Adult Education) and University departments of Extra Mural, Correspondence Course, Residential Course, Institute for Development Studies and School of Journalism. There will be a national Mass Media Committee composed of these representatives.

Having established the discussion groups, films, lectures etc., will be tested through trained group leaders to give the researcher a chance of comparing the performances of these media in these two different areas of different environment. This is intended to take a period of 1½ years. At the end of the pilot, it is hoped that the best mass media will be detected and can be effectively used for development in Rural areas. The Message will be.

1. Objectives of the research
2. Examination of negative and positive variables.
3. Analysis of positive variables and elimination of negative variables.
4. Treatment and implementation.
5. Evaluation and possibility of replication of the principles applied in the research.

SUGGESTIONS ON THE TRANSMISSION OF SCIENTIFIC KNOWLEDGE TO
FARMERS IN KENYA

Kitheka Mutui, Voice of Kenya.

1. We need to create new purpose for our farmers, including potential farmers. E.g. do we need tractors or ploughs?
2. It is necessary to define targets and know them before knowledge itself is transmitted to the farmers.
3. The living and operational standards and performance of field officers of agriculture create problems:
 - a. Bringing information at the wrong time, i.e. talking of growing maize when the accent could be on something else, like a serious epidemic on livestock etc.
 - b. Poor approach to our unsophisticated rural population on crops which they have never seen. Eg. why talk of tea growing and its high returns to people in Kitui who have always lived on livestock supported by subsistence farming?

Agricultural field officers must talk to people on the basis of their experience and their enthusiasm.

4. VOK as the only public medium, government owned, has pressing demands made on it by various sections of our development targets. Our station runs farming programmes, but inevitably we are:
 - a. impersonal
 - b. Not an organ of Ministry of Agriculture
5. In order to rectify the situation, MOA must reactivate its education department and attune it to the urgent needs of development on the part of the farmers through public cinemas, training centres with audio-visual aids and not barazas because of its association with colonialism.
6. Before it reaches farmers we must first define scientific knowledge and the best ways of transmitting it to them through:
 - a. Appropriate language
 - b. Style and presentation.
7. This scientific knowledge often does not reach farmers but remains far removed from them in offices. Those engaged in educating farmers often have little or no knowledge of what their Headquarters want. In short, it would appear that an "information string" through the ranks of the people concerned should be established. In order to ease their information task, they could:

- a. Get their information clear on tape etc., through the use of V.O.K. expertise.
- b. Work in close conjunction with V.O.K. who have first hand information in terms of listenership, timing and collection of listenership data etc.

What is said above will need a carefully planned approach from:

- a. Ministry of Agriculture
- b. IDS and other related agencies
- c. Co-ordination of all in the field.

DISCUSSION ARISING FROM PAPERS

S. Kihumba, L.D. Nguru, Kitheka Mutui, J. Karuri

MUMELO: I wanted to refer to what Mr. Kitheka Mutui said about channels of communication. Several channels have been established but has the audience been maintained? The problem with adult students is that they often go to the class for the first time but then because of other commitments they do not turn up again. Radio programmes, especially those for farmers, may be on the air in the morning, but the farmers are not at home at that time to listen in, so the audience is not maintained. Channels must be established but checked regularly to make sure they are maintaining their audiences.

INUKAI: I was surprised to hear that thinking is biased towards the use of an extremely modern science technology in the media of mass communication, namely the radio. If we use this means we have first to provide the radio. The radio might cost KShs 120/- and the income of a farmer might be K.Shs 600/- per annum. There must be an experiment to explore lower cost mass media. Couldn't we use more effectively the primary school teachers, the priests etc., as the media of communication? I am saying this because the Japanese are interested in selling radios but they themselves do not use them as mass media in the development process. They use primary school teachers and monks as the key personnel to teach the farmers and it worked. Secondly, we are talking about how to motivate the consumers of our research. But we have to motivate the teachers or priests or young agricultural officers. We need to motivate more the changing agent before we try to motivate the consumers of our research findings.

GHAI: I would like to mention the inaccessability of the radio, TV, etc. I am all for using these different techniques. I am a member of the Community Relations Committee of the NCKK whose purpose

is to promote more harmonious community relations. We are using the whole religious community to carry across this message. If we are successful one can then think of using these people for other purposes. The radio is a cheap way of communicating messages and a very powerful one but people are very poor and in relation to their incomes a radio is an expensive item. But when we spend so much money on prestigious conferences, why can we not subsidise on a massive scale the sale of radios and TVs all over the country? 20,000 radios and thousands of TVs in community centres would be a tremendous value in terms of communication of information and its specific effect on development. It does seem to me there is a tremendous potential pay-off for this kind of subsidy.

KISA: I agree entirely.

NGURU: Radio is a tremendous prestige tool. To see somebody carrying a radio is prestigious. Radio as a tool is not completely effective unless it has the support of the people in the field. We may come up with a very good radio programme on the growing of hybrid maize, decide on a time you can reach the farmers. You will reach the people and they will listen to what you have to say about growing hybrid maize, but unless this is supported by the field extension workers, the field AO's, the provincial AO's etc., the effectiveness of the radio or TV programme will be minimal. If listening groups are organised, if extension workers are advised what messages are going to be transmitted say, on farming, and they then go out and talk to the farmers on the same subject. then you have an effective tool.

OJUKA: Referring to Mr. Njoroge's paper, the problem is that the MTAC is in Nairobi. The MTAC say they pass their information into the field with the co-operation of trained officers. I find that they tend to be repetitive and do not go out into the field. These people are very busy in the rural areas and have no time to come to Nairobi. If MTAC also go out to see people in the field then there is no breaking of the chain of communication.

KIHUMBA: It is our hope that every district will have a District Development Centre in the foreseeable future and it is at this Centre that forms of disseminating new knowledge on farming etc., should be developed and catered for from that Centre.

MWINIA: There are VOK programmes to educate people for examinations. A teacher in a Harambee secondary school can follow these lessons, students can do the same. But as far as educational programmes in the other

areas are concerned, there is no co-ordination between the VOK and MOA so that maybe there will be continuous lessons on, for example, how to raise pigs. As it continues it will be known that at a particular hour there are agricultural training programmes on the VOK and the people who will be there will be the people who have that technical knowledge in agriculture who will work together with VOK people. This then can be followed up on a regular basis. The programmes are interesting anecdotes but do not lead you very far at the moment.

KITHEKA LUTUI: VOK has two types of programmes: adult education correspondence courses and schools broadcasts. We have a definite audience for each, but when we give a follow-up programme the people who ought to be listening do not listen.

NGURU: This co-operation is also necessary with experts. The producer of the sort of programme we have talked about is not a specialist in agriculture, he has to depend for the content of that programme on a specialist before he can adopt the programme to make it interesting. Unless it is interesting you cannot possibly hold the attention of the audience for half an hour. The producer will get material from say, an officer in MOA - or he may not get anything in which case he depends on a publication like the "Kenya Farmer". He is not assisted by a specialist so how is he to hold the interest of his audience? He may not make it interesting as far as the audience is concerned and that is why I mentioned training.

GACHUHI: I would like to make a proposal. We are interested in hearing how to mobilise the various forces for positive change in development. We are talking about the channels opened by the radio. I agree it could be used. But the school teachers and priests are the answer. At the Kikuyu workshop one priest mentioned that he reached 2½ million people in a week. So the teachers in schools and the priests in the churches should be considered as channels of communication and some resources should be utilised to train or inform these people whereby they can pass on the information to their more or less captive audiences. The Harambee groups are also a good channel as mentioned earlier.

KUIPER: I do not think if you were going to look for a grade cow you would go to the National Park. Similarly if you want a programme on agriculture you do not go to MOA. If you want to have a programme on grade cows go to the farmers who have grade cows. Too many people look in the wrong quarters. You do not find information in the Ministries. The real technical information is in the field. Farmers have a lot of information. I am amazed that in the newspapers I can find all the information I want regarding the crime rate in Nairobi or the Golf Tournaments in Nairobi, but I know nothing for example about how to build a poultry house. This is the kind of information you can get from the farmers. Just take the time to go out and ask for it. These programmes are successful because the man speaks in a language that everyone can understand.

KUKUBO: What is the role of the traditional method of generating information in relation to the modern methods? If we are going to identify these methods we could say people in such and such areas need radios, and people in other areas need people to reach them. People on the move, nomadics, how do you reach them?

CHAIRMAN: They used drums in the old days!

NGURU: They should use both traditional and modern methods. If you combine the two you might end up being more successful. The traditional, and most effective, is face to face communication. This is why I am emphasising using the people in the field as well as the mass media.

CHIEGE: It seems every time one wants to talk about mass media and how to use it one talks about the radio in isolation from other media. It appears that the private sector has been able to use so called media circulation techniques, they use the newspapers, pamphlets, bus stickers, everything and within a week the message is passed. Is it not possible to mount some experimentation with Government programmes? Government does not seem to see the use of these methods like the private sector does.

Mr. Kilumba mentioned the National Extension Centre. How far has that proposal gone and will it in fact be implemented? If yes, we should link up with his proposal. Otherwise we may have two bodies competing with one another.

KILUMBA: In the next financial year 1973/74 the Treasury is going to vote £10 - a token sum - towards the programme which means they have accepted it.

CHAIRMAN: We are taking this proposal into account.

WINDIA: There are VCK programmes to educate people for employment. A teacher in a Kenyan secondary school can follow these lessons, students can do the same. But as far as educational programmes go...

FINAL SESSION: Chairman, Dr. M. Gachuhi, IDS, University

FORMULATION OF POLICY RECOMMENDATIONS BY PARTICIPANTS

On Research Policy, participants recommended:

1. a. That as a part of the proposed National Council of Science and Technology there should be advisory committees to set priorities and determine relevance; that these committees could be the proposed specialist advisory committees of the NCST.
- b. That there should be a close feedback between development policy, target systems and research activity.
- c. That expatriate researchers obtain exit research clearance upon their departure (eg. as with tax clearance).

On Dissemination

The participants examined existing dissemination of science and technology within agriculture and E.A. Community's agricultural sector, eg. Muguga. They noted that there was very little communication between research and extension workers, and recommended:

2. That each research station has its own research broker to
 - translate research findings
 - identify targets and their needs
 - package information in appropriate forms.
3. They noted that the sale of publications by Government Printer restricts usage, and that at present, all publications are deposited in specified libraries except those of Government Printer.

Participants recommend that existing legislation on deposition of all published documents be publicised and that Government documents including those of the Government Printer should be deposited with stipulated libraries directly and not only with the Attorney General as at present.

On Brokerage and Research Evaluation

4. a. That research in the field of industry should be geared more to the small industrialist.
- b. That a design centre should be established to pursue the development of prototype developments on appropriate technology for the

small industrialist, ie., production testing and adaptation of technology appropriate for the small scale industrialist.

- 5. a. That Government strengthens horizontal co-ordination of services designed for the small farmer-family, eg. District Development Committees at the district level.
- b. That voluntary agencies be included on D.D. Committees recommended above, through the National Council of Social Service.

The absence of a link between extension officers and research officers was noted by participants.

- 6. a. That there should be effective liaison between extension workers with researchers.
- b. That the JAA could be the major contact between farmer and extension officer. The DAO at present is too involved in administration at the expense of his extension duties.
 - focus should be by professionals such as the DAO. There should be specific attempts to give JAA's technical training.
 - to motivate DAO to utilize his special training he should be assisted by a personal assistant and given as his job description to disseminate information to junior staff.
 - this applies to other professional staff.

On Documentation

- 7. That a National Clearing House should be established: The functions of the Central Clearing House will include the following:
 1. To maintain the national union catalogue of documents
 2. To ensure that consistency is maintained in the agreed documentation processes
 3. To co-ordinate the bibliographical activities of the documentation centres and to initiate where necessary
 4. To direct users to the relevant documentation centres
 5. To ensure that there is a complete coverage of all the relevant documents.
 6. To maintain an index of current research and researchers and ensure that reports and data are deposited in Kenya.

8. PROPOSED DISSEMINATION SYSTEM AT NATIONAL LEVEL

FUNCTION

e.g. of Existing Institutions

