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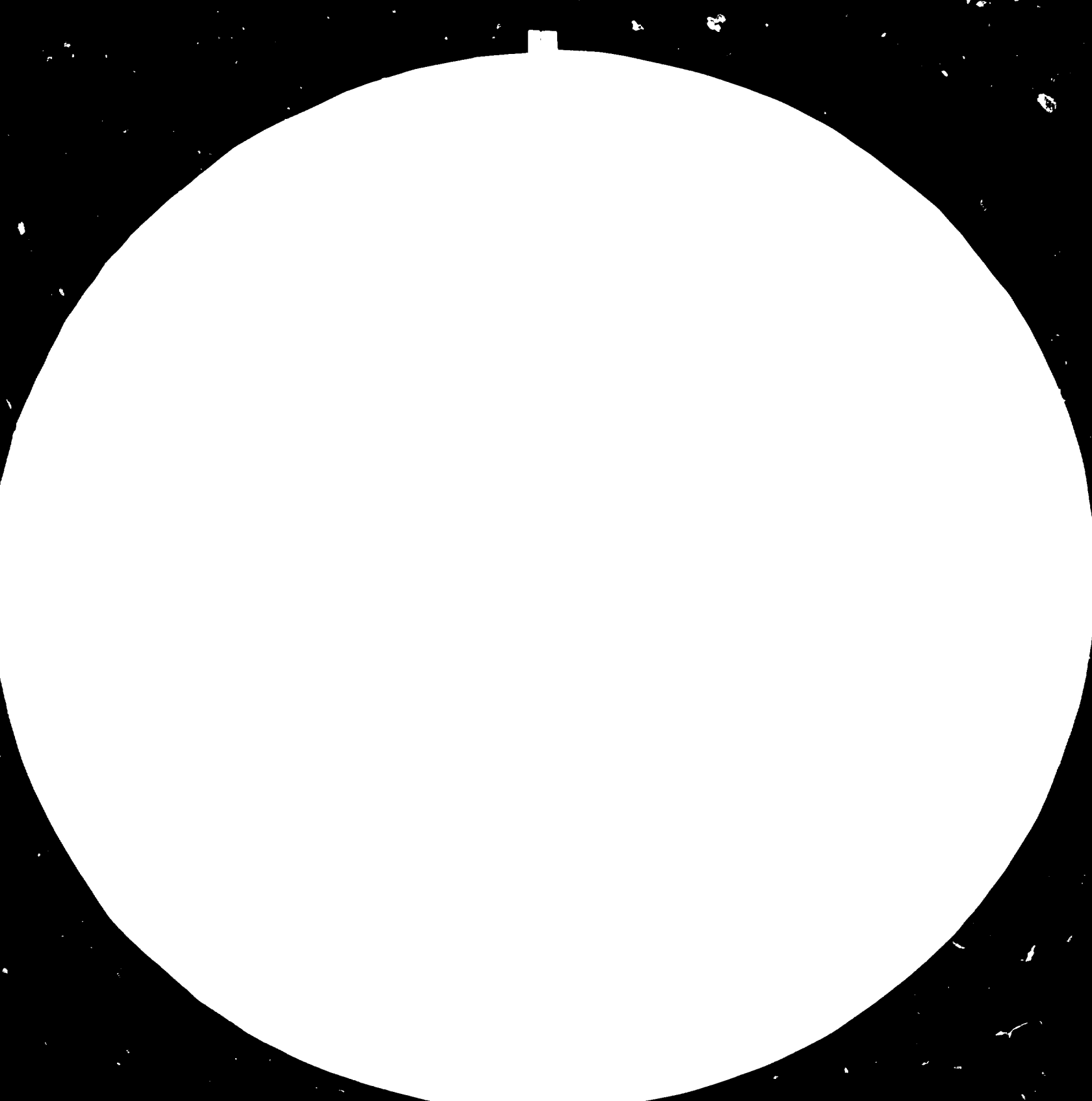
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2 April 1984
English

Zambia

TECHNICAL ASSISTANCE TO
VILLAGE INDUSTRIES SERVICE (VIS)
THROUGH MOBILE TRAINING UNIT (MTU)
(FOOD PROCESSING)

DP/ZAM/82/019

ZAMBIA

Terminal Report

Prepared for the Government of Zambia
by the United Nations Industrial Development Organization
executing agency for the United Nations Development Programme

Based on the work of R. Govin, Ph.D.
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Vienna

This report has not been cleared with the United Nations Industrial Development Organization which does not, therefore, necessarily share the views presented.

Abstract

The project DP/ZAM/32/013 was a 3-month technical assistance project in Zambia. The objective of the mission was to offer technical assistance to Village Industry Service organization by training instructors in food processing. The instructors in turn are to promote rural industrialization in the food processing field, through Extension Service. Training was provided to the instructor-trainees for Extension Service, through a Mobile Training Unit (MTU) by actually conducting field demonstrations in food processing methods in selected rural communities. Guidelines have been provided for the instructors to follow in their field work. A recommendation was made of the need for an in-house source for sustained technical assistance in food processing, and also of the need for an MTU that is more appropriate for the purpose.

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Introduction

The Government of Zambia has embarked on a comprehensive policy of providing support for the development of village and small-scale industries.

In 1976 Village Industry Service (VIS), an autonomous organization, was formed mainly to look after the orderly development of village industries in Zambia. The VIS aims to transform the basic conditions of village life wherever possible in two ways: first by helping village people to make the villages self-sufficient in terms of their everyday needs, and second, by creating employment and income-earning opportunities within the economy of the village itself.

The VIS made a technical assistance request to UNDP through the National Commission for Development Planning (NCDP) to enable a more intensive extension service. In response, the Mobile Training Unit (MTU) which is a set of trade specific equipment and training module loaded on a trailer and towed by motor vehicle, was supplied.

In addition, services of an expert in food processing were provided by UNIDO to train the VIS-MTU instructors and to conduct practical field demonstrations in food processing along with the instructor-trainees in selected rural communities. This is a report on the findings of his mission, along with recommendations for possible further action.

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I. FAMILIARIZING TOUR BY THE EXPERT OF CERTAIN
KEY FOOD INDUSTRIES AND FOOD ESTABLISHMENTS
IN THE LUSAKA AREA

The expert was given a tour of certain key food industries and food establishments in the Lusaka area in order to familiarize himself with the Zambian food processing, distribution, retailing and vending operations. The detailed log of dates and places visited is presented in Annex 1. The results of his findings and observations are presented in the form of a draft project proposal for possible follow-up action (Annex 2). The draft project proposal is also in direct response to the request by the Chairman, Village Industry Service, for a technical assistance proposal aimed at food industry development/expansion in Zambia.

II. TRAINING OF INSTRUCTORS

A. Theoretical training

The VIS instructors, eight in all, were recruited from various organizations (Government departments) namely: Village Industry Service, Department of Social Development, Department of Agriculture and Home Economics, YWCA, Lusaka Urban District Council, United National Independence Party Women's League, National Food and Nutrition Commission, and Department of Youth Development. The candidates had little or no prior background in food preservation whatsoever, nor did the majority of them have any prior scientific preparation to pre-qualify them for training in food preservation. As such, it was felt very

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essential that a classroom type instruction be given to the instructors prior to taking them out into the field for on-the-job training. Accordingly, formal classes were conducted at the Village Industry Service office every day, 5 hours a day for 15 days, on fundamental principles in food preservation/processing.

B. Practical training

Since there were no facilities at the Village Industry Service office for practical instruction in food processing, this aspect of training depended entirely upon field trips to local food industries and organizations involved in food industrial research. The detailed log of these "instructional field trips" is shown in Annex 3. Since some of the instructors were involved in nutrition education in their current jobs, a review of general principles in nutrition was also made in addition to instruction in food preservation. This was highly appreciated by the instructors. The instructors were ready for on-the-job training at the end of practical training in food processing.

III. FIELD DEMONSTRATIONS WITH
INSTRUCTORS AT SELECTED
RURAL COMMUNITIES

Field demonstration by the expert with instructors at selected rural communities is one of the major items in the project document. This provided an excellent opportunity for on-the-job training of instructors. The detailed log of places visited along with dates is shown in Annex 4.

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The villages selected represented the jurisdictions of the instructors. Each field trip was scheduled in advance, and the parties notified to enable all interested farmers to plan to attend the demonstrations. The turnout was quite encouraging in general. Prior to each field trip, information was gathered as to the availability of raw materials in the region. Based on such information, the type(s) of food preservation method to be demonstrated was determined. Initially, the expert made the actual demonstrations, providing a role model for training purpose, with one of the instructors serving as a translator, where necessary. Soon, however, the instructors were given the opportunity to do the demonstrations under close supervision of and monitoring by the expert.

The response of the villagers/farmers to the demonstrations was quite encouraging. At each demonstration, there were at least a handful who were interested enough to show promise of following up. These are the people who the Village Industry Service organization might pursue as possible candidates to establish rural industries, by offering necessary assistance.

IV. THE MOBILE TRAINING UNIT (MTU)

A. Problems encountered

The Mobile Training Units module (model No. FPP-152, obtained from Inter-Training Systems Ltd., Switzerland) has a label that reads "food preparation", and the module serves basically just that purpose. In addition to the usual kitchen utensils, the module contains a set of cutlery and crockery designed to feed up to 12 people. It is an ideal unit to demonstrate to a group of people in rural areas a certain new recipe, and to serve them.

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The module, however, was hardly any use as a tool for demonstrating principles in food preservation/processing, or showing the farmers how to preserve their foods under rural conditions, with the facilities that they have available. It must be emphasized here that a mere "mobile kitchen" does not serve the purpose the project is intended for, and the module basically is a modern domestic kitchen-on-wheels.

In fact, the Mobile Training Unit proved to be a liability during the field trips. In addition to housing a self-contained kitchen (the food preparation module), the Mobile Unit also houses a masonry demonstration module, a module containing a power generator, a tent and set of chairs to seat about 12 persons, and an audio-visual equipment module - all quite heavy. The Land Rover which was carrying eleven persons and pulling the mobile unit broke down after two short trips because of engine problems.

In addition to the fact that the equipment contained in the food preparation module being rather "out of place" for the purpose the project was intended, the accessories such as tent, chairs, power generator, etc. were hardly ever used since every village that was visited contained shelter, seating and other facilities for demonstration work. The dispensibility of the "ready-made MTU package" was further borne out by the fact that the majority of the field trips were made without it and quite successfully at that. It must be stressed however, that a mobile training unit, as an educational tool, is an excellent concept provided it is carefully equipped to meet the specific need. Otherwise, it could be a liability. Even though the module was not equipped to serve the purpose of this project, as has already been stated, it would perhaps aid a project dealing with Home Economics and/or nutrition education.

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B. General considerations

So far as a food processing training module is concerned, rather than a manufacturer of training equipment decide what the module should be equipped with, the decision should be left with the instructor (doing the training) who is more aware of the needs in the country in question. Also, a training unit, in order to be useful as a teaching tool, should either meet the needs of the training in question, or be flexible enough for changes to meet every need of the training programme. The present module offered neither.

It is possible that either the proper equipment has not been ordered, or the manufacturer of the training equipment does not have the right conception of the subject of food processing.

In the opinion of the author, the MTU concept comprises two elements: (a) mobilizing of the training aid (the food processing module), and (b) mobilizing the training source (the instructors). While the training aid was somehow improvised during the field demonstrations, the fact that the trainers (the training source) were able to be mobilized also proves that the important elements of the MTU concept have been satisfied, regardless of the shortcomings.

V. GUIDELINES FOR USE BY THE INSTRUCTORS IN THE FIELD

As part of the training, guidelines have been provided to the instructors to assist them in carrying out their duties in the actual field. This was done in the form of:

- (i) on-the-job training during field demonstrations
- (ii) written instructions
- (iii) written down process/product technologies for use by the instructors based on probable situations that they might encounter in the field.

The instructors have gained comprehension of the guidelines.

VI. CONCLUSIONS

In view of the fact that instructor-trainees had practically no prior preparation for training in food processing, it was possible to impart some understanding of the subject matter in rather a concise form. They would, however, by no means be in a position to handle specific technological problems that could arise in the field.

The VIS instructors with the training they received in food processing then, could serve as a liaison officer between the needy (entrepreneurs) and the subject matter specialist (a resource person). It is a concern that the VIS instructors, with their brief training, may not have gained sufficient competence to work independently. However, it is felt that at the end of the 3-month training, they may be in a position to serve as food processing liaison personnel. Obviously, therefore, there is a need for an in-house resource person or a subject matter specialist (food technologist) at the VIS who could continually assist the VIS' rural industrialization programme through the VIS-MTU instructors.

The scope of the VIS' rural agro-industrialization programme being so large and of such magnitude of techno-economic importance that entrusting the whole programme solely upon individuals who received a brief training in food processing may not be desirable.

Because of the possibility that a prospective rural entrepreneur could be too far away for the instructor to offer active assistance, perhaps in the future emphasis must also be placed on training-on-site of certain key individuals actually involved in the enterprise or have the necessary entrepreneurial

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prerequisites. This would, of course, have to be carried out region wise, prioritizing the neediest. This could eventually lead to the necessity of establishing regional training centres, in order to more effectively achieve the goals set forth by the VIS.

The villages selected in this project provided a good training field for training the instructors. In carrying out the VIS' goals of rural industrialization however, selection of the villages should be based on the need of the farmers (entrepreneurs), rather than being based on the geographical convenience of the instructors.

It has been sufficiently proven that if the MTU is not carefully equipped for the purpose, it could be a liability rather than a help. It is essential therefore that a MTU be "tailor-made" to meet the specific need rather than obtain a "ready-made" one. This can be accomplished very simply. It basically consists in carrying the necessary items for the demonstration, either directly in a vehicle or in a light hauling trailer.

RECOMMENDATIONS

1. There is need for an in-house resource person (a food technologist) on the staff of VIS, in order to monitor the extension service provided through the MTU.
2. Future training efforts might include training-on-site, also of prospective entrepreneurs. This could eventually necessitate establishing regional training centres in order to more effectively achieve the goals set forth by the VIS
3. Selection of communities for demonstration in food processing should be based on the real need or industrial development potential, rather than on geographical or staff convenience.
4. The MTU needs to be "tailor-made" for the purpose, if it is to be of any use in training.

ANNEX 1

LOG OF VISITS AS PART OF FAMILIARIZING
TOUR OF THE EXPERT

<u>DATE</u>	<u>PLACE VISITED</u>
23 January 1984	National Council for Development Planning, Lusaka
25 January 1984	AMIPNI, Lusaka
26 January 1984	Zambia Dairy Produce Board, Lusaka
26 January 1984	Zambia Pork Products, Lusaka
27 January 1984	California Cookies, Lusaka
27 January 1984	Twikatane Farm Products, Lusaka
27 January 1984	Robinhood Industries, Lusaka
27 January 1984	National Council for Scientific Research, Lusaka
28 January 1984	Vegetable Market and Department Stores

ANNEX 2

A DRAFT PROJECT PROPOSAL

PROJECT TITLE: Technical Assistance to Food Industries,
and for Agro-Food Industrial Development
and Training

MOTIVATION FOR THE PROJECT

1. There is a desperate need for proper quality control and food sanitation procedures/surveillance in certain key Zambian food industries and other food establishments.
2. There is an urgent need for on-the-job training of personnel in many existing food industries.
3. There is a definite need for technical assistance to small-scale food industries.
4. There is a great potential for developing new agro-based food industries utilizing the locally available agricultural raw materials, some of which are presently being wasted due to natural elements.
5. There is a potential for development of certain consumer food products that:
 - (a) would reduce or eliminate dependence on imported products (and hence foreign exchange)
 - (b) would eliminate dependence on imported raw materials, and hence recurring demands on foreign exchange
 - (c) would have a definite public demand, and
 - (d) have raw materials available locally.
6. There is a dire need for developing research and development programmes specifically aimed to meet immediate needs of the country in so far as the food problem is concerned.
7. Last but not least there are no facilities available in Zambia, at present, to train professionals to man the ever so important food industry.

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OBJECTIVES OF THE PROJECT

To contract the services of a Food Technology Expert who, serving in an advisory capacity to the Government, develops and coordinates programmes:

1. to offer on-the-job training (in-service) and technical assistance to food industries that desperately need help.
2. to train and certify all personnel, who handle food in food industries and other food establishments, in food sanitation.
3. offer specialized ("tailor made") training to key employees of industries that need it
4. Up-grading of small scale and rural food industries
5. initiate a programme on the utilization of local agricultural raw materials for developing new food products preferably with export potential
6. to develop new food products (using local raw materials) to substitute for imported products, in order to save foreign exchange
7. to develop research and development programmes based on the immediate needs of the country
8. finally, to develop a formal curriculum in Food Science either at the University level or at a vocational school level.

SCOPE OF THE PROJECT

The scope of the project, needless to say, is nation wide. The concerns expressed regarding quality control and food sanitation problems in the Zambian Food Industry could have serious public health consequences, if unattended.

One of the major thrusts of the project is to reduce the drain on foreign exchange. This is proposed to be accomplished through efficient and profitable utilization of local agricultural raw materials and to develop substitutes for certain key imported food products. Such an approach offers a great incentive for farmers to produce more, thereby adding materially to agro-industrial expansion and to the GNP.

It appears that there is an adequate manpower in Zambia but what is needed is training. And fortunately there is the necessary infrastructure in Zambia to accomplish it.

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GOALS OF THE PROJECT

The goals of the project or the results that may be expected are as follows:

1. to produce quality food products by the Zambian food industry, that are safe and wholesome from a public health stand point.
2. Saving of foreign exchange and perhaps even earning through possible exports.
3. Training of food industry professionals locally in Zambia
4. Increase in GNP.

LOG OF INSTRUCTIONAL FIELD TRIPS

<u>DATE</u>	<u>PLACES VISITED</u>
15 February 1984	Kabulonga Supermarket, Kabulonga, Lusaka
15 February 1984	John's Wine Manufacturing Co., Lusaka
16 February 1984	Pamodzi Hotel (kitchen), Lusaka
16 February 1984	Zarbia Pork Products, Lusaka
16 February 1984	ZAMHORT (Zarbia Horticultural Products Co.), Lusaka
17 February 1984	National Council for Scientific Research, Lusaka
17 February 1984	Dairy Produce Board, Lusaka
22 February 1984	Poultry Plant, Lusaka
3 March 1984	Technology Development Advisory Unit, Lusaka

ANNEX 4

LIST OF FIELD DEMONSTRATIONS BY EXPERT WITH INSTRUCTORS

<u>Date</u>	<u>Place visited</u>
21 February 1984	Chinkuli
23 February 1984	Kapini
28 February 1984	Desai
29 February 1984	Monze (night halt)
1 March 1984	Monze to Chikumi and back (night halt at Monze)
2 March 1984	Returned to Lusaka
6 March 1984	Chipapa
9 March 1984	Kamwala
13 March 1984	Chongwe (night halt)
14 March 1984	Chongwe to Chalimbana and back to Chongwe (night halt)
15 March 1984	Chongwe to Lusaka
20 March 1984	Chinkuli
20 March 1984	YWCA, Lusaka
21 March 1984	Matero
22 March 1984	Makeni Ecumenical Center, Makeni

