

PLANNING MALARIA CONTROL PROGRAMMES

Part II : Tutor's Guide



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Preface

Malaria, today, is by far the most widespread tropical parasitic disease, threatening at least four out of every ten persons in the world. It is a killing disease particularly in tropical Africa where 90% of the world's cases and deaths occur.

In endemic countries this disease must be brought under control because it undermines the general health and welfare of families, debilitating the population and straining the countries' and people's economic resources. In each country the national health services must be suitably primed to be able to manage malaria as a priority health problem, communities must be suitably supported to be able to take preventive action and systems need to be put in place that rapidly refer patients when needed, that monitor drug efficacy, that recognize promptly unusual epidemiological trends, that manage epidemics and that keep health workers up to date and on their toes.

During the 1990s the World Health Organization developed a Global Strategy for Malaria Control which was adopted in 1992 by the Ministerial Conference on Malaria, held in Amsterdam. Subsequently it was endorsed by the World Health Assembly (1993) and the United Nations General Assembly (1994). The Heads of State and Government of the Organisation of African Unity, composed of 53 countries, fully supported the Global Strategy and in 1997 issued the Harare Declaration on Malaria Prevention and Control in the Context of African Economic Recovery and Development.

The Global Strategy has four key elements:

- Early diagnosis and prompt treatment
- Planning and implementation of sustainable preventive measures and vector control
- Early detection, containment and prevention of epidemics
- Strengthening local capacities in basic and applied research to permit and promote the regular assessment of country's malaria situation, in particular the ecological, social and economic determinants of the disease.

These basic elements form the fibre of any control programme. However to be effective, control programmes must be well planned based upon a good knowledge of the situation. The approaches to be implemented must be tailored accordingly. It is for this purpose that this module has been developed. The principles embodied herewith will permit the development of meaningful programmes in any situation, which are flexible enough to take account of epidemiological variability and the availability of resources.

This training module may serve as a practical guide to planning and replanning a malaria control programme in any given situation. It is designed for health professionals and health care planners at national level who are responsible for planning, implementing, evaluating and replanning national control programmes in endemic countries. It is also useful for international partners faced with the challenge of assisting countries to establish or re-establish control programmes. Although this module centres around malaria, many of the principles of planning can be applied for the control of other parasitic diseases, especially vector-borne parasitic diseases.

The module consists of Part I, a Learner's Guide, and Part II, a Tutor's Guide. The learning units in the Learner's Guide follow a suggested sequence of thought processes for logical planning. This may be difficult to follow and may need time to fully understand the process. Once the learner has had the opportunity to carry out, step by step planning in this way, at the end of the whole exercise the learner will invariably realize its value and potential applications.

Part II, the Tutor's Guide, provides guidance to the tutors in planning the training activity ahead of time, making the necessary preparations for each unit, preparing the evaluation instruments, preparing the field work, and in the actual approach to training unit by unit. Planning can be very complex and difficult for learners to grasp especially if they are not used to thinking logically and do not have an eye for detail. The tutors therefore must not only facilitate learning but must also encourage the development of what might be for some, a new way of thinking. The easiest way to accomplish this is for each learner to work through a set of data as an exercise and to produce at the end, a control plan. At each step of the way, participants should be invited to share their work with others to generate discussion amongst themselves. This is most valuable for the tutors as well because areas of misunderstanding will become apparent and can be corrected. This is, however, time consuming and sufficient time must be allowed in the programme.

There are many ways to plan using the methodology proposed in this module, which is based on many years of experience, and which has two basic premises. The first is that the planner is planning with the resources that are available, or can be mobilized. Thus the plan should result in a better use of existing resources. The second is that the planner is planning with the available information and data and is not expending time or money to collect new data. During the planning process described herein, gaps in information will become apparent and these should become part of the new data to be collected in the future by the information system which is an important element of the plan.

This module is thus devoted to the development of national programme plans for programme direction and which form the basis for seeking authorization for allocation of the available resources and for accountability. That is to say, the end product of the planning process is an authentic plan for the control of malaria throughout a whole country. The same process can however be applied to a state or province if the country is very large. Planning requires multidisciplinary team work carried out over a period of two to three months. Sectors outside health must be involved as malaria is not strictly a health problem but a social, economic and development issue.

The implementation process for the national plan once approved and funded will begin with microplanning for the development of implementation plans at the various administrative levels. Such plans cover an administrative area and are in much more detail including techniques and methods to be used. Unit 16 provides some guidelines on developing an implementation plan, but this is not the main purpose of this module.

Acknowledgements

The technical content and style of this training module was prepared by Dr F. Beales. It is based on a published article¹ which has been further developed over the past 15 years whilst teaching the subject to health professionals in international training courses, many of whom were programme managers. In addition, elements have been included from a "Guide to planning malaria control programmes in Africa" which the author developed with Dr A. Schapira in 1994. Both the learner's and tutor's notes have been gradually modified over the years according to feedback from many of the participants. The author wishes to thank all the past students for their valuable contribution from which future generations will benefit.

Specific contributions from verbal discussions and in writing have been made by Dr Awash Teklehaimanot, Dr Elil Renganathan, Dr F. Rio and Dr C. Delacollette.

This is a trial edition intended to be used in practice for one or two years before final production. Comments and suggestions resulting from experience in using these materials would be most welcome and should be addressed to Human Resources Development, Division of Control of Tropical Diseases, World Health Organization, 1211 Geneva 27, Switzerland.

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¹ Beales, P.F. (1988) The planning of malaria control. In: *Wernsdorfer & McGregor, Malaria, Vol. 2. Edinburgh, Churchill Livingstone, 1988: 1287-1334.*

Introduction

This Tutor's Guide is designed primarily to assist the trainers who are responsible for developing the human resources needed in malaria and other tropical disease endemic areas, for planning, implementing, evaluating and replanning control programmes. It should be useful even to the most experienced trainer and will be of special value to those not used to participatory forms of education.

The module can be used in many ways and can be moulded to the entry level of the participants, as evidenced by the pre-evaluation. It can be used for stand-alone training in this field or as part of a larger (and longer) course. After a formal training course, learners can use the Learner's Guide as a reference manual and if their responsibilities include training then learners should also be given the Tutor's Guide, preferably at the end of the training.

Training, using this module, is intended to be based on a problem-solving approach. There is very little task-oriented learning. The subject, however, is difficult for some to grasp. Those who are already well organized and think logically will have little difficulty mastering it, others will have to work much harder to achieve all the learning objectives. You, as the tutor, will need to ascertain very quickly which of your students are likely to have difficulties and be prepared to work with these individuals during the practical and field sessions.

It is helpful to have two facilitators with you. However, they should be experienced individuals, but even so you will need to brief them very carefully all the way. The tutor and facilitators provide guidance and do not in general perform supportive functions. Learning / teaching is not didactic. If you are not familiar with this training system, read this introduction carefully. It is also imperative that you read the introduction to the Learner's Guide and that you know thoroughly the entire contents of the Learner's Guide, even if you are an experienced trainer and have a lot of experience in this subject.

For whom is this training module intended?

The module is intended for those health professionals who in the course of their work have some responsibility in planning and evaluating antimalaria programmes, or programmes designed to control other vector-borne diseases. It will also be useful as part of the basic training for programme managers or as part of a much larger training programme in basic malariology.

What is the ideal educational level of the learners?

It is not possible to plan a programme against any disease without having a good knowledge of that disease, its epidemiology, (including parasitology and entomology), its clinical features, diagnosis and how it may be prevented, treated and cured. It is also not possible to plan without some basic knowledge of statistics. It has to be assumed, therefore, that the participants will have the competence and skills in these subjects before starting the planning module. If, therefore, the module is used as part of a larger basic training course on malaria, then it should be the very last subject to be

dealt with as it affords an opportunity for the participants to make use of everything they have learnt in the basic course.

The entry level will therefore depend upon whether the module is used as part of a basic course or whether it is a stand-alone training exercise. If it is the latter, then participants must have a solid background of skills and competence in malariology as a subject because the module does not teach the basics.

Thus the entry level would be for health personnel, with basic training in malariology and malaria epidemiology. Apart from educational qualifications, it is important that trainees:

- are able to read, comprehend and write English or the language of this module, if translated;
- have had experience in implementing an antimalaria programme or some aspect of it;
- will be responsible for some aspects of planning for which this training will be put to good use.

The complete module is designed to be accomplished in 87 contact hours (12½ working days), but this does not include a field exercise to analyze the malaria situation in a health district. In addition, at least two week-ends are needed to allow the participants to prepare themselves for classroom work. The field exercise is a most valuable part of the training and could be accomplished in 9 days, or if the 7-day *in vivo* test is not carried out, then 8 days, but the field work needs to be well planned in advance. You will find a suggested timetable at the end of this introduction.

How is the training designed?

The principle objectives of the training are listed in the Introduction to the Learner's Guide. Please stop and read these now. The module is designed to stimulate active learning by working with data that each participant has brought with them from their place of work (see Introduction to Learner's Guide). This makes the training more meaningful to each trainee and adds the most valuable element of variability into the learning process.

Learners are taught the salient features of the planning process and at each step of the way they are given the opportunity to put into practice what they have learnt by developing, as an exercise only, a national malaria control plan. At the same time they are given the opportunity to individually share with the other trainees what they have accomplished and the problems and difficulties encountered. Thus they can learn from each other. This is by way of reinforcement. It is crucial that no trainees are left behind, so all have to actively participate and produce to a given timeline. This is part of the discipline of planning. This type of training is performance-based and is highly effective.

At first most trainees will be fearful of the whole process and concerned that they will expose their ignorance. It is vital that you, the tutor, put them at ease in this

regard. It is also vital and part of the planning philosophy that you insist that all trainees, regardless of their status, respect the deadlines you impose (according to the timetable known by all well ahead of time) for producing the work. They will all tell you they have insufficient time and insufficient data. Neither are true. Part of the educational process is to learn to manage time and use it wisely and to plan with what data is already available and can be gathered together. Most of it may be less than accurate, much of it may only be educated supposition based on personal experience. If that is all that is available, it can be used for planning, but the plan must include data collection to fill the gaps in knowledge. Replanning can occur at the end of the first one or two years of implementation based upon the new data gathered whilst controlling the disease.

At the beginning of each Learning Unit of the Learner's Guide is a list of learning objectives. Learning objectives summarize the knowledge, skills and attitudes that each learner should have acquired upon reaching the end of that unit. You and your facilitators must satisfy yourselves that each learner has achieved the stated objectives before proceeding to the next Learning Unit. This is particularly important for this subject, because each Learning Unit is dependent upon the trainees understanding and developing the competence necessary to implement what is described in the preceding unit.

Who runs the course?

It is you who are responsible for organizing and running this training activity. The Learner's and Tutor's Guides will help you greatly in this task, but the end result will depend upon your efforts. This may be the first time that you have ever organized and run such a course, or you may be an experienced teacher. In either case, the importance of using the Learner's Guide and the Tutor's Guide together as you proceed through the Learning Units cannot be over-emphasized.

Who helps you to train?

Your job will be easier, and your teaching more effective, if you have competent colleagues to help you, provided you are all well coordinated and briefed properly. These assistants, who should have knowledge and experience in the subject, are called facilitators. You can divide the learners into three small groups of not more than seven persons. The class should be no larger, as it will be very difficult to teach this subject in the time available if it is. You can take one group and your two facilitators the other two groups. This allows a greater interaction between learners, tutor and facilitators and results in better learning and understanding.

As overall manager of the training programme, you will be responsible for designing the timetable, explaining the learning tasks to the learners and facilitators, and giving learners and facilitators whatever help they need. Do not be too concerned if the facilitators are not trained as teachers; their task is to explain or demonstrate a particular activity, to keep the group or individual on track and to watch learners perform various activities.

Facilitators must be prepared to admit to the learners when there is something they do not know or understand and be prepared to refer the question or problem to you, the tutor. Impress upon your facilitators that the subject is so vast that no one person can be expected to know everything about a particular subject. Facilitators should also elicit ideas and opinions regarding the subject raised from other trainees in the group and thereby share collective knowledge and experiences.

Many potential problems can be avoided by selecting your facilitators early, giving them plenty of time to read the Learner's and Tutor's Guides and affording them ample opportunity to discuss with you any part of the module that may need clarification. It would be a good idea for you and the facilitators to go through the module together; you could then test their knowledge by asking them appropriate questions.

In small group work neither the tutor nor the facilitators lead the discussions, that is the job of the moderator who should be selected from within the group and should be rotated each time the group meets so that all trainees have this experience.

Why provide a Learner's Guide?

Providing learners with a full set of notes ensures that:

- all learners have the same basic material and guidelines on how to proceed, thus avoiding unnecessary, time-consuming and distracting note taking;
- you and the facilitators can refer to any part of the Learner's Guide knowing that all learners can find the right page quickly;
- learners can read the Learner's Guide in advance of the tutored session allowing more time for clarification, discussions and formulating ideas. This gives a greater opportunity to understand the subject, and there is less note taking during the session;
- there is less chance of learners making errors in note taking;
- after the training, each learner can take a copy of the Learner's Guide and the Tutor's Guide to use as a reference and also perhaps to train others.

How will this subject be taught?

This is dealt with in detail in the Learner's Guide. Please stop and read that section now.

As stated in the Learner's Guide, there is little place for formal didactic lectures in teaching this subject. There will be tutored sessions to give guidance in the planning process prior to actual practice on the part of the trainees. The use of examples, shared experience, group exercises, discussion groups and individual exercises are all a much more effective way of teaching and greatly facilitate learning.

How will you know whether the course was successful?

Judging whether or not the course was good is difficult and involves answering the following:

How well did the group learn?

This may be assessed by evaluating the learners' performance as they work through the Learning Unit and again at the end of the training, by evaluating the level of knowledge and competence that has been achieved. Individual presentations of work in plenary and the training process and at the end can be evaluated by the tutor and the facilitators. Pre- and post-tests will also be a measure of progress made and examples of questions that may be used are to be found in Annex 1. More details on evaluation are given later in the Tutor's Guide and in the Learner's Guide. A further evaluation of how well they have retained their knowledge, improved their competence and further developed their skills could be ascertained some 12-18 months later.

How did the learners view the training?

The answer to this question will provide you with the means to improve the training for the next group of trainees in many aspects. It will enable you to correct administrative problems that may have arisen, deficiencies in course contents, deficiencies in the course implementation, deficiencies in training capacity of the tutors and facilitators, deficiencies in the training materials and in the visual aids. A suitable questionnaire is provided in Annex 2 and this can be improved by yourself prior to the course. Frankness should be encouraged and this is best done by allowing trainees to complete the questionnaire anonymously. Sufficient time should be allowed to answer all the questions and the time during the course when it is given is crucial. Do not ask them to complete the questions when they are stressed to produce their plans on time, take a post-test or make a presentation of their work. On the other hand, you need time to analyze the results and feedback to them in plenary in order to weigh the value of the responses.

Feedback provided during the training will allow you to assess how well the training is being received by the trainees and allow improvements to be made as necessary. Feedback received at the end of the training will help to improve future courses. If you have prepared your training programme carefully, feedback is likely to be favourable, which is rewarding both for you and for the facilitators.

Whatever the government policy may be regarding the award of a certificate of competence, some record of attendance and level of competence reached by each learner should be kept so that details may be checked later. Although this is adult education, and learners are supposedly there to learn, there is no reason why discipline should not be maintained. The required level of attendance should be stated from the very outset, and attendance monitored. This subject is very demanding for both trainee and trainer alike and your job is made even more difficult if there is a sizeable percentage of absenteeism.

How may the Tutor's and Learner's Guides be used?

The Learner's Guide is the basic work book for the learners for this subject. They need to work through it from beginning to end and each should be disciplined enough to read those sections relating to the day's work programme, ahead of time. The Learner's Guide is also a reference book for use on a day-to-day basis, and also as a means for refresher training prior, for example, to a planning session.

The Tutor's Guide does not contain any extra technical information. All information is contained in the Learner's Guide. The Tutor's Guide does, however, have answers to examination questions and to some exercises, and therefore it is strongly suggested that trainees do not have access to the Tutor's Guide until after the training has been completed. They could then be given a copy to take with them in the hope that they will be able to use it for training others. The Tutor's Guide is designed primarily to aid the tutor in planning, implementing and evaluating the training in planning malaria control programmes. Full use should therefore be made of it for that purpose. Many of the suggestions in each unit are based on years of experience.

You and the faculty should make full use of both Guides and any areas that may prove difficult may need some special visual aids to facilitate the learning process. Learners will follow the group training activities using the Learner's Guide plus whatever other instructions you provide to them. It is advisable to set reading tasks to be accomplished before you start each new Unit.

What training facilities are needed?

A number of basic facilities and equipment must be organized before training can begin. In some countries these are readily available but in others you may need to improve or to modify existing resources. Bear in mind that there may be long intervals between ordering supplies and getting them delivered, but do not delay training unnecessarily because you do not have the best equipment.

Ideally, one large room should be available for presentations and group discussions; pictures projected by the overhead and slide projectors will be seen more easily if the level of lighting can be controlled. Chairs and small tables or desks will be needed for this room. Whatever the conditions, do your best to ensure that the learners are as comfortable as is possible in the circumstances: you may be surprised how much you can achieve even with relatively few facilities.

What training equipment is needed?

For tutored sessions and group discussions, the following items should ideally be available:

- two fully functional overhead projectors
- one slide projector
- two screens (white sheets are an adequate substitute provided the wind does not blow them about; a white board is unsuitable because it will reflect projected light)

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- flipcharts - one for each small group of learners. Supplies of “butcher’s paper” or “news print paper” are usually cheap and readily available
- large blackboard or white board
- chalks for blackboard or marker pens for white board, in a selection of colours
- 500 acetate sheets for use with an overhead projector including those that can be used with a photocopier
- coloured marker pens for acetate sheets (including some permanent markers for diagrams you may wish to keep)
- ready access to a photocopy machine
- several hundred sheets of photocopying paper
- sufficient toner for the photocopier
- access to computers an advantage with Harvard Graphics, Microsoft Word and EPI-INFO 6.X (latest version)
- 50 diskettes (1.4 MB)

What equipment will be needed for each learner?

The equipment listed below should be provided for each learner. Where supplies have to be ordered, this should be done well in advance of the course, many items are difficult to obtain at short notice.

- copy of the Learner’s Guide, and Tutor’s Guide (to be given at the end)
- notebook
- sheets of paper for the exercises during the working groups and for the individual plan
- ball-point pens
- set of pencils (medium hard graphite, plus red, blue, brown and black) for drawing during practical sessions
- set of colour marker pens
- pencil sharpener
- eraser
- ruler
- 20 acetate sheets for overheads
- 2 diskettes (1.4 MB) when computers are available

What is the syllabus?

The contents list of the Learner’s Guide represents the syllabus - the list of subjects to be covered - for the training course. Go through each of the Learning Units in turn and calculate how much time you will need to devote to it and decide what kind of training activity would be most suitable for the topic. For example, you will find that Learning Unit 8 “The social and economic aspects of malaria control” are best learnt by group exercises. Thus this unit involves group work and discussions by the participants, presentation of their findings in plenary, discussions in plenary involving yourself and a short presentation by yourself to seed ideas. Sufficient time must be allocated to accomplish the tasks. Other subjects may not have group work, only individual exercises as part of developing their individual plan. Thus planning the

training activity is greatly facilitated by dividing the module into a number of Learning Units. The sequence of these Units is important. If more than one tutor is involved the timetable should **not** be developed around the availability of the tutor, instead the tutors should make themselves available to teach the subject at the time best suited for the learning process.

Time will always be a constraint especially for the trainees. There can be a lot of time wasted in group work and thus strict adherence to the allotted time is a discipline in itself which all trainees need to respect. By good organization of group work, and very clear instructions as to what the exercise entails will ensure the best possible use of the time allocated to that activity.

In teaching the content of this module various training techniques may be employed and below is a list of some of the techniques you might consider using.

Group discussion

Once participants get used to group discussions, the two-way exchange of information between them and the facilitators makes this a very effective learning activity. People share their knowledge and experience with the rest of the group and stimulate each other's thoughts on the subject in hand. However, the objectives must be clear and the allotted time adhered to.

Field work

It is very useful to carry out a situation analysis in the field. The purpose is to give learners the opportunity to experience this analytical process which forms the basis for planning. The more techniques they implement, the more competence they will acquire in putting into practice all they have learnt and experienced.

The field training needs to be well planned in advance to be sure that data are available, and the senior management and medical staff are agreeable to, and well informed about, the visits to offices and health facilities. In addition you as the tutor should caution the participants before going to the field to conduct themselves in a professional manner and not to criticize procedures or discuss the patient's conditions while inside the facilities. All discussion and critical observations should be made back in the classroom or residency.

It will take several months to organize the field training sites and there should be at least three different districts to accommodate all the trainees divided into three teams. A national facilitator should be assigned to each team to assist the trainees with the day to day problems of living and working in the field. In each chosen district the local authorities should be informed of the visit well in advance. They should be asked to prepare information and data for the past three years on all the elements needed for a situation analysis (See Unit 3). The person responsible for malaria control in the district and the district medical officer should be invited to brief the trainees upon arrival in the field. It will be the responsibility of each facilitator to have all the available data and to provide it only when asked by the trainees as described in the Introduction to the Learner's Guide, "How this subject will be taught - field work".

The facilitators have an important role to play to ensure that maximum benefit is gained from the field experience. A team leader should be appointed from among the participants in each team. Responsibilities need to be assigned to each trainee to share the responsibility and ensure that the analysis is done properly in the time available.

Each team will need to write up the situation analysis and present their findings in plenary upon return to the place of training. The use of portable computers would greatly facilitate the task not only for word processing but also for data analysis and graphic presentation.

Demonstrations, examples

These are designed to reinforce the learning process. Clear examples help to clarify concepts and establish principles. The tutor and facilitators should have many examples ready to use, but in addition trainees should also be invited to give examples. This is a much stronger reinforcement.

Evaluation

Whether this module is used for group training or self learning, assessment of progress made by the learner in gaining knowledge and competence in the subject matter is essential to the learner and for the tutor.

This can be accomplished by means of a pre-test in the form of a multiple-choice questionnaire (MCQ), given before the learner reads the Learner's Guide or any other documentation on this subject. To be valid it must be clear that the learner must work on it alone. Guidance on how to prepare multiple-choice questions and a few examples are provided in Annex 1. The post-test should be administered only after all the Learning Units have been completed.

The results of the pre-test can be used in two ways. The tutor may use it to ascertain the general level of knowledge on the subject amongst the group, and have an indication of general weak areas that need emphasis and areas of general knowledge that can be de-emphasized. This is done by making the correct responses to each question by the class as a whole. Thus it could also be used to identify individuals who might be used as facilitators for certain subjects areas, and those who may need special tuition. The other major use for the pre-test is as an individual base-line comparator for measuring the gain in knowledge and competence at the end of the training as revealed by the post-test.

To be valid the questions in the post-tests should be of the same difficulty as the questions in the pre-test and both tests should be given under the same conditions and for the same length of time. The only sure way of knowing that the questions in the post-test are of equal difficulty to those in the pre-test is to give the same questions but in a different order and in the case of multiple choice questions with the answers also in a different order. It is thus essential that the pre-test papers be collected and retained (not handed back to the participant). In any event, it is not necessary for the participant to know the answers to the pre-test questions until the end of the training.

However, they should have individual feedback regarding weak areas upon which they could concentrate.

You, as the tutor, are encouraged to develop a bank of questions that can be used for pre- and post-testing in subsequent training sessions. The answers to the sample pre- and post-test questions are provided separately in the Tutor's Guide to enable you to easily reproduce the question papers. The answers are scored equally because all questions are considered, in this instance, to be of equal value. It is essential for the validity of the evaluation for confidentiality to be respected at all times.

Other evaluation instruments can be used to evaluate the training module itself, also by means of a comprehensive questionnaire completed by all learners at the end of each Learning Unit. Examples of such questionnaires can be obtained from Human Resources Development, Division of Control of Tropical Diseases, WHO headquarters, Geneva.

The method of training proposed in this Tutor's Guide lends itself to ready assessment of the knowledge, competence and skills of each individual trainee. This is because they will all be active in the classroom presenting and discussing their individual work. This can be guided by the tutor and used to ensure that all trainees are brought up to standard and that none are left behind in the process. Also at the end of the training each learner should present the plan that he or she has developed. This is another opportunity for assessment.

Finally, as explained in the Learner's Guide each trainee will be given the opportunity to evaluate the training in its entirety from its administration and planning to the curriculum and how each tutor and facilitator conducted themselves.

The timetable

Once you have calculated the amount of time that needs to be spent on each unit, all the various learning activities must be fitted into the framework of the training programme. The duration of the programme may be something over which you have little control; for instance, you may be told to limit the programme to 10 days because of financial considerations, even though you have calculated that it should ideally be spread over 24 days. You and the facilitators will then need to spend time reorganizing the timetable so that all the learning activities can be fitted into the time available, or to decide what may have to be left out.

In planning the timetable, remember to allow time for evaluation both during and after the course, and for the hidden activities, such as getting settled into group work, delays in transportation to the training facility and so on.

A suggested timetable for a 24-day training course including 9 days in the field, is shown in Table 1, but again it is provided only as a guide. If the field experience is not possible or felt not necessary, then the module could be accommodated in 16 days to include two weekends. It is based on a 7-hour working day, four hours in the morning and three in the afternoon, for 5 days, plus 5 hours in the morning of the sixth day each week. This may not be suitable for your purposes

and may have to be adapted accordingly. As the course progresses you may feel that further discussion is necessary on some topics. These activities can be fitted into the “free” periods and a discussion session on the afternoon of the last day can also be used in a flexible manner.

The timetable should indicate when the trainees will be expected to present their work to the class. However, based on experience, it is preferable to select those who will present only at the start of the session. This ensures that all trainees will have completed the work up to that point and be ready to present if asked to do so.

Arrangement of the meeting room

Decide on the number of working groups ahead of time. Groups of four to eight are best. This will depend upon the number of learners and number of facilitators available. Try to arrange the room so that participants sit in groups in more or less a semi-circle as in the diagram. Make sure everybody will have a clear view of the blackboard and projector screen. This arrangement has many advantages, for instance it is less formal, saves time when starting group work, enables the tutor during a presentation to break off to allow group discussion for five minutes on a particular issue, facilitates healthy competition and aids discipline.

The group compositions can be changed occasionally if you wish or left the same throughout the course. But for the pre- and post-test evaluations, participants must be seated apart from one another under strict examination conditions. However, the group activities can all take place in the same room and time is saved by not having to change places.

Accommodation

Planning is a difficult subject that from a practical point of view has to be well taught in a limited amount of time. Time will be a constant constraint, it will have to be used wisely and you will need to minimize time wasters. There are some important preliminary arrangements that can be a great saving on time and these are described in the following paragraphs.

Ideally this subject should be taught in a residential training centre. The trainees should ideally live and study in the same institution. There are such centres which are well equipped for training and which have good accommodation. If this is not possible then the next best arrangement is to accommodate all the trainees in the same residence or hotel within walking distance of the training facility. This avoids a transport problem and having all the trainees together allows them to work and consult together in the evenings and at weekends, which they will need to do, and they should be told this from the outset.

The worst scenario is to have the trainees scattered all over the town having to rely on local transportation to arrive at the training centre. This will not allow them to work and consult together after classes, there will increasingly be delays in starting classes on time and very many other difficulties will arise.

Introduction to the course

Your very first session with the learners in the meeting room should be preferably with the seating in a semicircular arrangement as indicated in the diagram. If the chairs do not have fixed supports for notebooks, it would be helpful to have small desks or tables available.

Introduce yourself first. Write your name on the board or flipchart and tell the learners a little about your background and your job. Then ask each of the facilitators to do the same thing.

The learners should introduce themselves next. It might be helpful to divide the learners into pairs and ask them to exchange names, information about jobs, home towns, and so forth. Each learner can then introduce his or her partner to the whole group. This method often has the effect of reducing tension, and a relaxed atmosphere is a good learning atmosphere.

The learners will have been given their copies of the Learner's Guide. Allow 10 minutes or so to read through its Introduction and then briefly, but carefully, deal with the various topics covered. Explain, for instance, that working in small groups with facilitators should make learning easier. Stress that the course will involve a great deal of exercises, since this is the best way to acquire the necessary skills.

Go through the objectives so that the learners understand exactly what they should have achieved by the end of the course. Explain that the learners should keep these objectives in mind throughout the course and always ask for help if they feel uncertain of having achieved them. Each learner is likely to be more aware than the facilitators of how well he or she has understood a particular topic or has mastered a particular skill; it is the job of the facilitators to make the learning process as effective as possible.

There may be other subjects you want to raise at this time, but try also to encourage the learners to discuss the training programme - what they expect of it, what aspects of it are worrying them, and so forth. Explain that you and the facilitators will welcome feedback throughout the course - constructive criticism from the learners may well help you to improve the training programme.

Talk to them about preparing individual plans for a malaria control programme in the place where they work based on the information that they were asked to bring with them at the time they were notified that they had been selected for this training. Explain that planning has to be based upon the available information and they should not worry that they have not all the information they would like to have. Warn them that they must keep up with the class and use the evenings and weekends to think about their plans.

Inform them that they will be asked to present certain aspects of their plan during the course, and the entire completed plan at the end of the course. Explain that this is an exercise and that they should enjoy it and gain as much experience as possible benefiting from the observations and discussions of their peers and the tutors and facilitators. The development and presentation of these plans does not imply in

any way that the plans have been approved for implementation. Explain that planning is team work, requires input from all sectors, including non-health sectors and would normally take about three months.

The preparation of a control plan by each trainee is an important discipline to acquire and an important learning activity. The end product is confidential to the course and thus each trainee should feel free to plan according to their own initiatives based upon their knowledge and skills.

Now work through the timetable, discuss identified needs of participants and arrive at a consensus of time utilization.

Finally, talk to the learners about evaluation. Explain that evaluation will be a continuous process throughout the training course. Stress that the pre- and post-tests should be enjoyed rather than feared; they are part of the learning experience. Their purpose is to allow you and the facilitators to assess the learners' starting level and to correct mistakes and clarify misunderstandings. Emphasize the importance of the learners reading all the questions (and any supplementary instructions) very carefully. Explain that everyone will learn at different speeds and that you and the facilitators will make as much allowance for this as possible.

Table 1: Suggested timetable including a situation analysis in the field

WEEK 1	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	Weekend DAYS 6 & 7
A.M. 4 hrs	Official opening of the course (1 hour) Introduction to the course. Tutor (1 hour) Pre-test (1 hour) Unit 1 Introduction to planning and basic principles. Tutor (1 hour)	Unit 3 Situation analysis. Tutor (3 hours) Unit 4 Stratification. Tutor (1 hour)	Field work. Early departure for field training areas: Group I Health District: Facilitator: Group II Health District: Facilitator: Group III Health District: Facilitator: Visit to Municipal /District Health Office and major health care structure (District Hospital, Health Centres, etc.), for briefing and data collection.	Field work. Trainees screening patients at schools for malaria, selection for <i>in vivo</i> follow-up. Treatment of positives with first or second line drugs. Facilitator and district health personnel.	Field work. Rechecking slides of <i>in vivo</i> test patients and other cases to be followed up. Precise parasite counts. Request more information from facilitator. Visit to other health facilities / activities in the district. Collection of information for verification.	Field work. Malaria metric survey I. (Parasitology / Splenometry / Anaemia) Staining and examination of survey slides Collection of Day 2 slides of <i>in vivo</i> test and other post treatment follow-up patients. Staining and examination of Day 2 <i>in vivo</i> test and follow-up slides
Lunch break	Unit 1 (contd.) Introduction to planning and basic principles. Tutor (2 hours). Unit 2 Writing the plan. Tutor (1 hour)	Unit 4 (contd.) Stratification. Tutor (2 hours) Briefing, orientation and preparation for the field (1 hour)	Site selection for malaria survey, establishment of contacts. Request basic information required for the situation study. Briefing on local malaria situation by responsible district officer and local health services staff.	Guided environmental / epidemiological tour of the study site and its surroundings, observing special risk / exposure factors related to malaria and other communicable diseases. Facilitator.	Preparation of locality sketch map Planning of entomological survey Preliminary stratification	
P.M. 3 hrs						

Unless otherwise indicated, formal sessions are 4 hours in the morning (08.00 hrs to 12.00 hrs) and 3 hours in the afternoon (13.30 hrs to 16.30 hrs). The lunch period is from 12.00 hrs to 12.45 hrs, and the personal study / reading period is from 12.45 hrs to 13.30 hrs daily, except on days 6, 13, 20, when formal sessions are in the morning only for 5 hours.

WEEK 2	DAY 8	DAY 9	DAY 10	DAY 11	DAY 12	Weekend DAYS 13 & 14
A.M. 4 hrs	<p>Field work. Malaria survey II. Adult mosquito survey (house resting, early a.m.). Entomology. Larval survey Evaluation of existing malaria / vector control activities, if any</p>	<p>Field work. Identification of mosquitoes from night collection. Visit to communities to discuss social and economic issues. Analysis and interpretation of entomological data.</p>	<p>Field work. Final collection and request of missing data to complete the situation analysis. Finalize the group report except for day 7 <i>in vivo</i> data.</p>	<p>Field work. Collection of Day 7 slides from <i>in vivo</i> study and other post treatment follow-up. Staining and examination of slides. Analyze the Day 7 <i>in vivo</i> data and finalize the report. All groups return from the field.</p>	<p>Presentation of malaria situation analysis by Groups I, II and III in plenary and discussion by colleagues, tutors, facilitators. Provincial and District Medical Officers, and other specialists (4 hours)</p>	<p>Preparation of individual plans for malaria control. Situation analysis and stratification (5 hours)</p>
P.M. 3 hrs	<p>Mosquito night collection (18.00 - 22.00 hrs human bait collection; all night light trap collection)</p>	<p>Final stratification. Group work on malaria situation analysis report</p>			<p>Preparation of individual plans for malaria control. Situation analysis and stratification. Tutor: (3 hours)</p>	

Unless otherwise indicated, formal sessions are 4 hours in the morning (08.00 hrs to 12.00 hrs) and 3 hours in the afternoon (13.30 hrs to 16.30 hrs). The lunch period is from 12.00 hrs to 12.45 hrs, and the personal study / reading period is from 12.45 hrs to 13.30 hrs daily, except on days 6, 13, 20, when formal sessions are in the morning only for 5 hours.

WEEK 3	DAY 15	DAY 16	DAY 17	DAY 18	DAY 19	Weekend DAYS 20 & 21
A.M. 4 hrs	<p>Unit 7 Development and implementation of a national anti malarial drug policy. Tutor: (1 hour)</p> <p>Unit 8 Primary health care, its meaning and malaria control. Tutor: (1 hour)</p> <p>Unit 9 The social and economic aspects of malaria control. Tutor: (2 hours)</p>	<p>Unit 11 Development of approaches to achieve objectives. Tutor: (2 hours)</p> <p>Unit 12 Setting operational targets Tutor: (2 hours)</p>	<p>Presentation of objectives and approaches for individual plans by four participants followed by discussion Tutor: (2 hours)</p> <p>Unit 14 Programme budgeting Tutor: (2 hours)</p>	<p>Presentation of operational targets for individual plans by three participants Tutor: (1 hour)</p> <p>Unit 15 Selection and definition of evaluation and methods in malaria control Tutor: (2 hours)</p> <p>Unit 16 The research and development approach Tutor: (1 hour)</p>	<p>Presentation of evaluation methods for individual plans by four participants (2 hours)</p> <p>Unit 17 General programme management for disease control (2 hours)</p> <p>Unit 18 Guidelines on developing an implementation plan Tutor: (1 hour)</p>	
Lunch	<p>Unit 5 Selection of malaria control measures. Tutor (1 hour)</p> <p>Unit 6 A critical analysis of the existing malaria control problems (Tutor: 2 hours)</p>	<p>Unit 9 (cont'd). The social and economic aspects of malaria control. Tutor: (1 hour)</p> <p>Unit 10 Formulation of disease reduction objectives. Tutor: (1 hour)</p> <p>Preparation of individual plans for malaria control (formulation of objectives) (1 hour)</p>	<p>Unit 13 Support activities and milestones Tutor: (1 hour)</p> <p>Preparation of individual plans for malaria control, objectives, approaches and operational targets, (2 hours)</p>	<p>Preparation of individual plans for malaria control. Setting operational targets, activities and budgeting. (3 hours)</p>	<p>Unit 16 (cont'd). The research and development approach. Tutor: (1 hour)</p> <p>Preparation of individual plans for malaria control, evaluation and budgeting (2 hours)</p>	<p>Completion of the course evaluation questionnaire by the participants.</p> <p>Preparation of individual plans for malaria control and preparation of overheads and notes for presentation and discussion of individual plans for malaria control.</p>
P.M. 3 hrs						

Unless otherwise indicated, formal sessions are 4 hours in the morning (08.00 hrs to 12.00 hrs) and 3 hours in the afternoon (13.30 hrs to 16.30 hrs). The lunch period is from 12.00 hrs to 12.45 hrs, and the personal study / reading period is from 12.45 hrs to 13.30 hrs daily, except on days 6, 13, 20, when formal sessions are in the morning only for 5 hours.

WEEK 4	DAY 22	DAY 23	DAY 24			
<p>A.M. 4 hrs</p>	<p>Post-test on planning malaria control programmes (1 hour)</p> <p>Presentation of programme budget and management for individual plans by three participants.</p> <p>Finalize the individual plans for malaria control. (3 hours)</p>	<p>Presentation and discussion in plenary of participants' plans (4 hours)</p>	<p>Presentation and discussion in plenary of participants' plans (4 hours)</p>			
<p>Lunch break</p> <p>P.M. 3 hrs</p>	<p>16.00 hours. Each participant submits original of plan and annexes to the Tutor.</p> <p>Feedback to participants on outcome of evaluation on planning malaria control, strengths and weaknesses.</p> <p>Technical Coordinator and principal tutor (½ hour)</p>	<p>Presentation and discussion in plenary of participants' plans (4 hours)</p>	<p>Discussion of the participants' evaluation of the entire course and feedback on participants' performance. Tutor: (2 hours)</p> <p>Closing ceremony</p>			

Unless otherwise indicated, formal sessions are 4 hours in the morning (08.00 hrs to 12.00 hrs) and 3 hours in the afternoon (13.30 hrs to 16.30 hrs). The lunch period is from 12.00 hrs to 12.45 hrs, and the personal study / reading period is from 12.45 hrs to 13.30 hrs daily, except on days 6, 13, 20, when formal sessions are in the morning only for 5 hours.

Learning Unit 1

Introduction to planning and basic principles of planning malaria control

Learning objectives:

The learning objectives for this Unit are for the learner to be able to:

- state what planning is and is not, and why we should plan
- describe the planning process
- identify characteristics of the planning environment and take these into account when planning

What you will need to prepare

Overhead transparencies of major issues you wish to discuss including:

- the learning objectives
- the problem statement for the exercise
- definitions
- the planning pyramid
- a set of direct questions on the subject covered by the Learner's Guide such as:

What is planning?

What does it involve?

Why plan?

What are the steps in the planning process?

What are the important characteristics of the planning environment that need to be taken into consideration?

What factors determine that a disease is a health priority?

How can we decide on the planning period?

Time frame

You should allow three hours for this Unit.

Group exercise

Unless you have been able to conduct the pre-test the day before the opening of your training course, you will only now be handing the Learner's Guide to the trainees (remember this Tutor's Guide contains answers to the exercises and must remain safely in your hands only).

Start the session by going through the learning objectives with the participants.

At the end of chapter 1 Learning Unit 1 in the Learner's Guide you will see an exercise. This is an exercise in logical and economic thinking and is a problem faced everyday by managers in the peripheral areas of malaria endemic countries. It is suggested that you start this session first by going through the learning objectives with the trainees and ensure that they understand them and then ask them to do the exercise in working groups. As explained in the introduction to this module it would be helpful if they were always sitting in groups in the classroom. In this particular exercise do **not** ask the facilitators to join the group, let the participants work by themselves.

Allow 20 minutes for the trainees to come to a consensus on the answers and then conduct a 10 minute plenary session, whereby one person (the moderator or rapporteur) from each group presents the results. It is suggested that you ask one trainee to tabulate on the "blackboard", or overhead projector, the answers to each question from all three groups. The differences will become apparent. Then discuss the answers with the class as a whole, taking one question at a time and the presenter of each group explaining the reasons for their answers.

The answers

The following are the proposed rational sequence of events:

Question 1 : (iii) and (v).

The health officer should be familiar with his area of responsibility and in any case more information is needed before expending valuable resources travelling to the area, also his limited vehicles are in service and some out of action. The local health or malaria programme officer should have reported the epidemic to the provincial health officer but instead it was the newspaper that reported it, therefore maybe the malaria officer should be summoned to the province or contacted by telephone or fax at least. A consultant would be expensive and not useful at this time.

Question 2. : (ii) and (iv)

Not enough is known about the epidemic to be able to make recommendations for action, and for the same reasons as before a visit to the area would be high visibility but expensive and unnecessary. It is too late for new reporting forms.

Question 3. : (ii) and (iii).

The annual blood examination rate is not going to provide useful information about the epidemic. As provincial health officer the number of health centres serving the population should be very well known and the age distribution of the malaria cases over the past 3-5 years will not be useful information.

Question 4. :(ii) and (iv).

The infant mortality rate is already known from question 3 and the provincial health officer should know how many primary health care workers are operating in the area. The pattern of population movements should also be well known although a sudden influence of non-immunes may be an important feature in the outbreak but this should be apparent from the results of the analysis in (ii).

Question 5. : (ii) and (v).

There is now sufficient information about the epidemic to begin formulating the action to be taken to control it. This means drugs and insecticides. The percentage of abnormal haemoglobin in the population may already be known but for controlling an epidemic this information is not going to be helpful, similarly the cholinesterase levels in the spraymen. Spraymen will be needed to spray insecticides. Temporary labour that have not sprayed before or for some time should be hired. The animal to human population ratios may have been incidental in triggering the epidemic (sudden depletion of farm animals through disease or withdrawn to other areas, causing the vector(s) to feed on man instead) but this information will not influence your recommendations to control the epidemic.

As the tutor you will no doubt have found that there was an overwhelming urge on the part of the trainees to immediately travel out to the area. If this was so you would impress upon them that resources are scarce and costs must be weighed against usefulness. In other words this is an exercise not only in logical thinking but also in prioritizing our actions.

This short exercise, especially at the beginning of your training session on planning has many benefits. Planning is a formidable subject for some, probably many of the participants do not know each other and many may never have participated in a small working group, that had to reach a consensus and defend a point of view. A very good introduction to logical planning.

Personal reading and assessment of opinions

Since the trainees may not have had the opportunity to go through Learning Unit 1 of the Learner's Guide allow 20 minutes reading time. At the end of this period spend 10 minutes asking direct questions (which you have prepared ahead of time) to the trainees. Do not enter into a discussion at this time simply try to ascertain the total knowledge about the subject and identify any misconceptions. Use the information you gain from this session to modify your presentation of the subject.

Presentation and discussion

Begin to work slowly through the subject with the trainees following the Learner's Guide. Allow free discussion on the various issues as they are raised. Try to ensure that trainees contribute their experiences in malaria control and planning for the benefit of other trainees in the class. Try to allay any fears they may have about the planning process and what will be expected of them in this training course. Try to bring in as many examples as possible from your own experience to clarify any points that may not be clear and if you do not have any examples ask the trainees and the facilitators to give some.

Be sure to explain what planning is and what it is not and answer the question, why plan? You may use diagnosis and treatment as an example. Explain that planning involves making a choice (of measures to use and of evaluation), analyzing problems (determining underlying causes, which will be dealt with in Learning Unit 6) examining possible solutions, setting priorities and making decisions (as in the group exercise).

Describe the planning process using the pyramid which you have already prepared as an overhead or using the Learner's Guide. Go through it step by step allowing time for questions and discussion.

Achievement of learning objectives

As you are nearing the end of the time allotted for this Learning Unit go through the learning objectives (on the overhead) and ask the participants if they have achieved them or not and fill in any gaps that may be identified.

Before closing the session, remind them to read Learning Units 3 and 4 on situation analysis and stratification for the next day's sessions.

Before closing the session, remind all trainees to read Learning Units 3 and 4 on situation analysis and stratification for the next day's sessions.

Learning Unit 2

Writing the plan

Learning objectives:

The learning objectives for this Unit are for the learner to be able to:

- describe the structure of a plan for malaria control
- organize the available information you have into a realistic plan
- write a comprehensive plan for malaria control

What you will need to prepare

- an overhead of the learning objectives
- a complete set of overheads of the suggested outline of a plan as written in the Learner's Guide. If this is not possible then the outline in the Learner's Guide can be followed
- an example of a plan for malaria control in a country (real or hypothetical)

Timeframe

Allow 1 hour for this Learning Unit. This is a critical unit for the learners because they will need to consider this outline whilst learning about this subject as they write up their individual plans based upon the information they have each brought with them. No doubt there will be many questions by way of clarification of what is expected of them.

Presentation

Start by going through the learning objectives with the participants. Explain that the planning process and the way in which the plan is best presented, are not necessarily the same, especially regarding the situation analysis. For example when writing up the report of a conference one would not necessarily strictly follow the sequence of events as they occurred, but present the highlights and outcome in a sensible and easy to read style.

Go through each section of the outline of a plan in plenary session ensuring that all trainees understand the contents. Do not get caught up on an in-depth discussion about the situation analysis as this will be the subject of the next Learning Unit.

Conclusion

About ten minutes from the end summarize the session, invite final questions and then go back through the learning objectives with the trainees to make sure they have been achieved.

Note

It will be very helpful to the trainees if, in addition to the outline of the plan, they could also have an example of a completed plan that conforms, more or less, to this outline. The plan should be anonymous, no indication of the country or who wrote it, just an example to give them an idea of what the end product might look like. You may wish to select a plan that has been developed in a previous course. Select one that has good graphics and tables and that has been well thought through and presented. Provide each trainee with a copy at the end of the session emphasizing it is only an example to help them.

Also emphasize once again that they should use their own initiative and ideas during the planning process and in writing it up. These guidelines are not intended to restrict or prevent free thinking and innovation.

**Please remind all trainees to read the next Learning Units
before the sessions begin.**

Learning Unit 3**Situation analysis****Learning objectives:**

The learning objectives for this Unit are for the learner to be able to:

- analyze the malaria situation in an area
- write in a logical manner part of the plan for malaria control relating to analysis of the malaria situation

What you will need to prepare

- overhead of the learning objectives
- overhead of the pyramid chart
- simple overheads of difficult aspects of the situation analysis
- five searching questions about the process of conducting a situation analysis such as:

What do you understand by a situation analysis?

What are the elements of a situation analysis?

Who are the key health care providers?

Which health programmes have affinities with malaria control?

What aspects of the malaria problem do we need to know?

Timeframe - allow three hours for this session**Introduction**

Start the session, like all others, by putting up the overhead of the learning objectives and going through them with the participants to ensure that they all understand what they have to achieve with you, as tutor.

Next ascertain their knowledge and experience of this subject by asking some searching questions that you have prepared in advance. Simply ask the questions so that all trainees are involved. Depending on the answers ask more questions until you are satisfied you know the weak areas and the strong points. Allow only ten minutes for this introduction.

Presentation and discussion

Using the pyramid chart, point out that this is the first step in the planning process and the whole basis upon which they will build their plan.

Now go through the process of conducting a situation analysis which is in the Learner's Guide. You would have already asked them to read through the unit the night before. However, this may not have been done by some. Because Learning Unit 3 is quite detailed in its explanation, it is quite useful for you to have prepared a set of overhead transparencies with the main headings under which you could discuss this subject with the trainees. This is the time to go into detail so that they all understand what to do and how to do it.

Draw out of the participants their experience in certain issues, for instance community and family economic problems with malaria or some of them may have already carried out some special research studies on treatment seeking behaviour of the population.

Make full use of the fact that the trainees are seated around you in groups. break off every now and again and ask them to discuss as a group for not more than five minutes a certain aspect of the situation analysis or an issue that may have been raised by one of the participants themselves.

Keep strictly to the time, this is good discipline for the groups to get used to coming to the heart of a subject quickly. Then ask one person from each group to give the consensus opinion of the group on the subject or the answer to your question. Compare answers to make a point.

Some issues with which they may have difficulties are micro-economic indicators, social and cultural aspects, the private sector (exchange experience by the participants), non-governmental organizations, drug supplies and cost recovery, other health programmes that can support malaria control, laboratory services, intrasectoral and intersectoral linkages and collaboration.

Because this is a long session, you will need to take a short break in the middle of it. Because also it covers the whole range of malariology, make full use of the varying expertise amongst the participants themselves. Thus ahead of this session you should have familiarized yourself with not only the names of the participants but also their experience and qualifications. Make full use of this information in discussing this subject.

Conclusions

Near to the end of the time period, round off the discussions. You could ask one of the trainees to summarize in two minutes what the session was all about. Then go through the learning objectives to make sure everybody agrees that they have been achieved. If not, then tie up any loose ends that the trainees may expose.

Individual plans

Inform the trainees that now they are in a position to begin analyzing the data they have brought with them and that they should waste no time in getting started. Each participant will be expected to analyze the data they have brought with them and develop a plan for malaria control for the area to which that data pertains. It is useful to ask each trainee to write down for you the exact name of the country and location for which they propose to develop a plan. This should be done now so that there is no misunderstanding later on. A list could be posted on the wall later so that every body knows who will do what. Try to avoid if possible having more than one trainee planning for the same area. Also avoid a group of trainees wanting to plan together, this will only create difficulties for yourself and the learning will not be as strong. However, you should encourage discussion about these plans and problems between the participants themselves.

Sufficient time should have been allocated in the timetable for them to sit quietly and develop the plan, starting with the situation analysis. At an appropriate moment in the timetable you will hold a 2-hour session where you will call upon, at random, 3 trainees to present in plenary session the situation analysis that they have each done. Allow each of them 20 minutes for their presentation and 10 minutes discussion. Allow for a 30 minute general discussion after all three have completed their presentations. The trainees will learn from each other as well as from you and the facilitators.

You, as the tutor, together with the facilitators, should make yourselves available at all times to guide — not help — the trainees in developing and writing up (according to the outline) their individual plans. This includes evening time and week-ends when the trainees will have to work on it if they are to finish in time. It is helpful to have all the trainees residing in the same establishment so that they can consult each other (see introduction to the Tutor's Guide).

Field work

Hopefully you have been able to allocate time and arrange very carefully field training areas where the participants, divided into three teams, could have practical experience in conducting the situation analysis in a health district (see introduction to this Tutor's Guide).

The key to the success of this exercise, which should be conducted in three widely separated health districts in the country which have a malaria problem, is communication. It is absolutely crucial that all authorities at all levels are fully informed of the activity, where it will be carried out, when, by whom and why. It is important to emphasize that it is not an evaluation of the work being carried out but it is a training exercise in conducting a situation analysis the results of which may be of benefit to the district authorities.

At the end of the field work, each team will present their findings in plenary in the training centre. They must have written up their report before returning from the field exercise. This means they must be writing up their work everyday that they are in the field. The experience that each trainees gains from the exercise will be most valuable in helping them to work on the data they brought with them for their individual plans. There are thus two separate end-products from this training. These are three reports of a situation analysis carried out by the trainees as team work in three different health districts and a complete plan for malaria control by each trainee, using data each has brought with them.

In the event that it was not possible to organize the field experience as a team, then based on the training they have received for this Learning Unit they will have to begin now on the situation analysis for their individual plan.

Please remind all trainees to read carefully the next Unit of this module before the session to which it relates commences.

Learning Unit 4**Stratification****Learning objectives:**

The learning objectives for this Unit are for the learners to be able to:

- define stratification and state its purpose
- stratify the malaria problem in an area or country based upon a situation analysis
- describe the characteristics of each stratum
- present the information in the form of maps and tables using GIS as a tool

What you will need to prepare

- overhead of the learning objectives
- simple overheads of difficult aspects of the situation analysis
- a set of overhead transparencies of Figures 1-4 and of Table 1 in this Guide
- if possible a set of colour slides depicting each of the characteristics described by Figures 1-4
- overheads of the maps in the Learner's Guide to facilitate explanation of the use of GIS
- if possible borrow a Global Positioning System (GPS) navigating instrument (such as the Garmin GPS 38)
- if possible have available a computer set-up such as is described in the Learner's Guide for GIS or take the participants to an institute or government department that has it already set up for demonstration purposes
- some colour slides (diapositives) of different strata in Africa or the country you are holding the training
- a set of 5-10 searching questions on this subject such as:

How would you define stratification?

What is the concept of stratification?

What are some characteristics of stratification?

What are some variants used for stratification?

What are the essential features of a modern malaria control programme?

What are some criteria for stratification?

What does GIS mean and what is it?

What does GPS mean and what is it?

Timeframe

Allow a good 3 hours for this session with a break at some time.

Introduction

Start this session by putting up an overhead of the learning objectives and going through them with the participants to ensure that they all understand what they have to achieve with you, as tutor.

Next, ascertain the sum knowledge and experience amongst the trainees about stratification, GIS and the use of GPS by asking some of the 5-10 questions that you have prepared ahead of time. As before simply ask the question, do not attempt to answer it. Have as many trainees as possible answer the same question and make a note of misconceptions and knowledge gaps. If there are trainees who have experience in GIS and the use of GPS then later on in the session have these trainees describe the procedures they have used and their experience. Allow only ten minutes for this introduction.

Presentation and discussion

Using the pyramid chart overhead prepared for previous sessions, point out at which point in the planning process stratification could be carried out, but emphasize that it is not one stage but a continuous process requiring frequent updating.

Now begin going through the stratification process as described in the Learner's Guide. Allow small group discussions for 5 minutes on issues such as the concept of stratification, grouping of variants and criteria and data analysis. Follow these short sessions with discussions and clarification where necessary.

Use the set of transparencies of Province X (Figures 1-4 and Table 1) as an example to demonstrate a simple approach to analyzing the data by overlaying one transparency on the other to see where the vector coincides with the disease and where the health facilities, communications and local urbanization also match or mismatch. It will be clearly seen that there is a vast area in Strata IV and V where the malaria incidence is very high but the communications and availability of health services are very poor. Clearly this is an indication for planning improved services and developing an approach to controlling the disease in these areas.

In conjunction with the transparencies, it is good to show at the same time on the second screen diapositives showing plates of the actual terrain that coincides with the description depicted in the figures.

When you are satisfied that all trainees have grasped the concept and process of stratification and how the analysis and presentation could be done in its simplest form you can move on to the explanation and if possible demonstration of GIS and GPS.

Demonstration of GIS and GPS

Hopefully you will have found an institute where GIS equipment is set up and will have been able to borrow a GPS. Is so there will no doubt be qualified people to make a good demonstration and explanation.

If this has not been possible, then go through the Learner's Guide with the trainees emphasizing that the intention is not to train them in the use of this tool but to give them a good understanding of how it works and how it can be used for stratification purposes in malaria control and for disease surveillance. Use the overlays you have made of the maps in the Learner's Guide to facilitate your explanation.

If you have trainees with some knowledge and experience, allow them to start this. You may even invite them (ahead of time) to make a short presentation of the subject.

Emphasize that this is only a tool, and that the quality of the data is paramount for meaningful results.

Meaningful strata

Emphasize to the trainees that the stratification process in their particular geographic areas will allow them to delineate meaningful strata for planning and implementing malaria control. In all probability they will end up with too much data and decisions will have to be made as to which are important and which are not. Eventually, a statement describing each stratum can be written and this should be linked to easily identifiable practical markers so that the areas can be clearly delineated in practice.

In the Learner's Guide some meaningful strata for Africa are proposed. This is a good exercise to go through them slowing discussing the characteristics with the trainees. It will have been helpful if you had already prepared a set of overheads for each stratum and obtained some photographs (diapositives) that can be projected on the screen at the same time to show what the stratum looks like. These can have been taken in the country where you are conducting the training and in other countries you may have visited. You can show these simultaneously since you should have two separate overheads and slide projector. This will greatly facilitate your explanation of this difficult subject.

From this the trainees will learn how to write out a statement describing a stratum, the key elements that distinguish one stratum from another and the criteria used.

Control measures in different strata

Emphasize that in the planning process the objectives, criteria, approaches and activities will be developed in a logical manner for each stratum. However, by way of an example table 2 in the Learner's Guide relates to the example strata for Africa and gives a good idea of the different control measures that are suitable for different strata. Thus the stratification process is influencing greatly the choice of control measures as it is grouping together areas (which may not be contiguous) with similar malaria epidemiological characteristics and in which malaria can be expected to respond to the same control measures if applied appropriately.

Small group exercise

Allow 30 minutes for all three groups to carry out the complete exercise described in the Learner's Guide. They start with a ten minute general discussion about stratification sharing experiences. It would be helpful if yourself and the facilitators each join one group and guide the participants through this discussion. This is particularly important because there may not be much experience of this subject among the participants in the group. You should make sure that each member of each group fully understands the concept of stratification and why it is so important for planning malaria control.

For the exercise each group member could spend five minutes listing the variables that could be used for stratification in his or her area of work and these could be discussed briefly among the group as a whole. Then each member could spend another five minutes writing down on a transparency the description of one stratum that they think could be identified in the area and the variables (criteria) used to identify the stratum. As a group for the remaining five minutes the presentation that will be made in plenary could be mapped out and all the transparencies of stratum put together. Please ensure that the country and area of the country are identified for each stratum described.

Invite one participant from each group to present the outcome in plenary. Preferably one person who has not done this before. After the work of the first group has been presented open up the subject for discussion and clarify any misunderstandings that may have arisen before inviting the next group to present the outcome of their work.

Conclusion

Near to the end of the time allotted for this subject, round off the discussions and summarize what has been learnt. As before ask one or two trainees to do that, especially if they have helped with the teaching of GIS and GPS.

Finally, go through the learning objectives with the trainees for a consensus that they have been achieved.

Participants will have a chance to develop the strata in the individual plans based on the completed analysis of the situation using the data they each brought with them.

Field work

If field training has been organized, then impress upon the trainees to take full advantage of this experience to stratify the area using their observations and the information available as part of the exercise. It would be even better if each of the three teams could be given on GPS to use in the field and return with a table of data suitable for GIS mapping. This could be discussed in plenary upon return.

Please remind all trainees to read the next Learning Units ahead of the time; they will be dealt with according to the timetable.

Table 1. Stratification and criteria for each strata of Province X

Strata	Criteria	Number of localities	Population	Malaria Cases	Annual Parasite Incidence (per thousand population)
Stratum I	<ul style="list-style-type: none"> • mainly urban areas • no malaria transmission • API < 1 	N / A	586 814	91	0.2
Stratum II	<ul style="list-style-type: none"> • peri-urban area or developed villages • occasional transmission • API 1-50 	N / A	314 273	1 173	3.7
Stratum III	<ul style="list-style-type: none"> • active transmission • difficult accessibility • shifting cultivation • API 51-100 	2 009	269 710	22 963	85.1
Stratum IV	<ul style="list-style-type: none"> • major plantation settlement (established and new) • API 101-150 	85	25 498	3 545	139.0
Stratum V	<ul style="list-style-type: none"> • timber camps API > 150 	101	10 102	3 701	366.4
N/A not applicable			1 206 397	31 473	

Figure 1. Province X - Distribution of health facilities and communication system

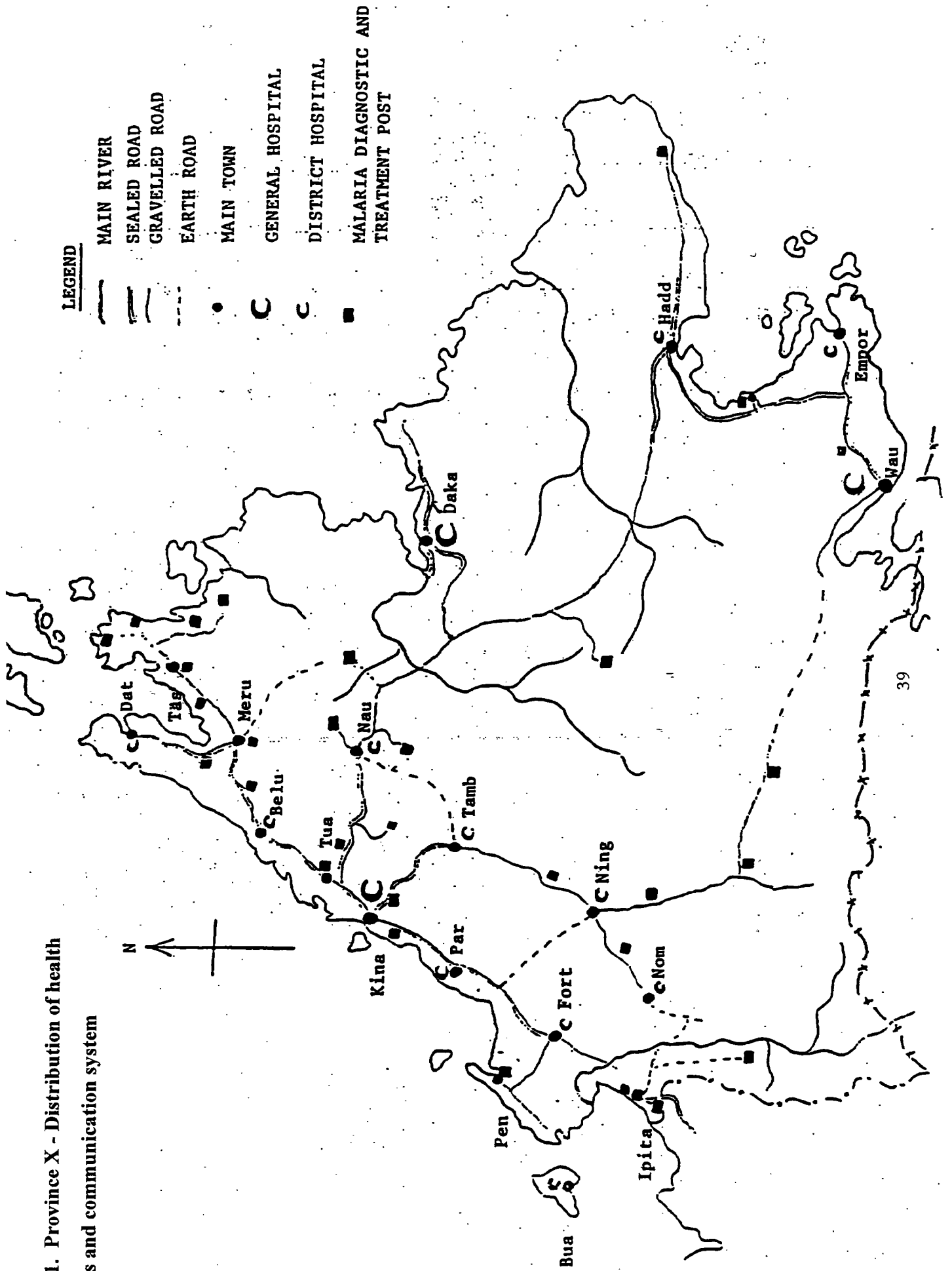
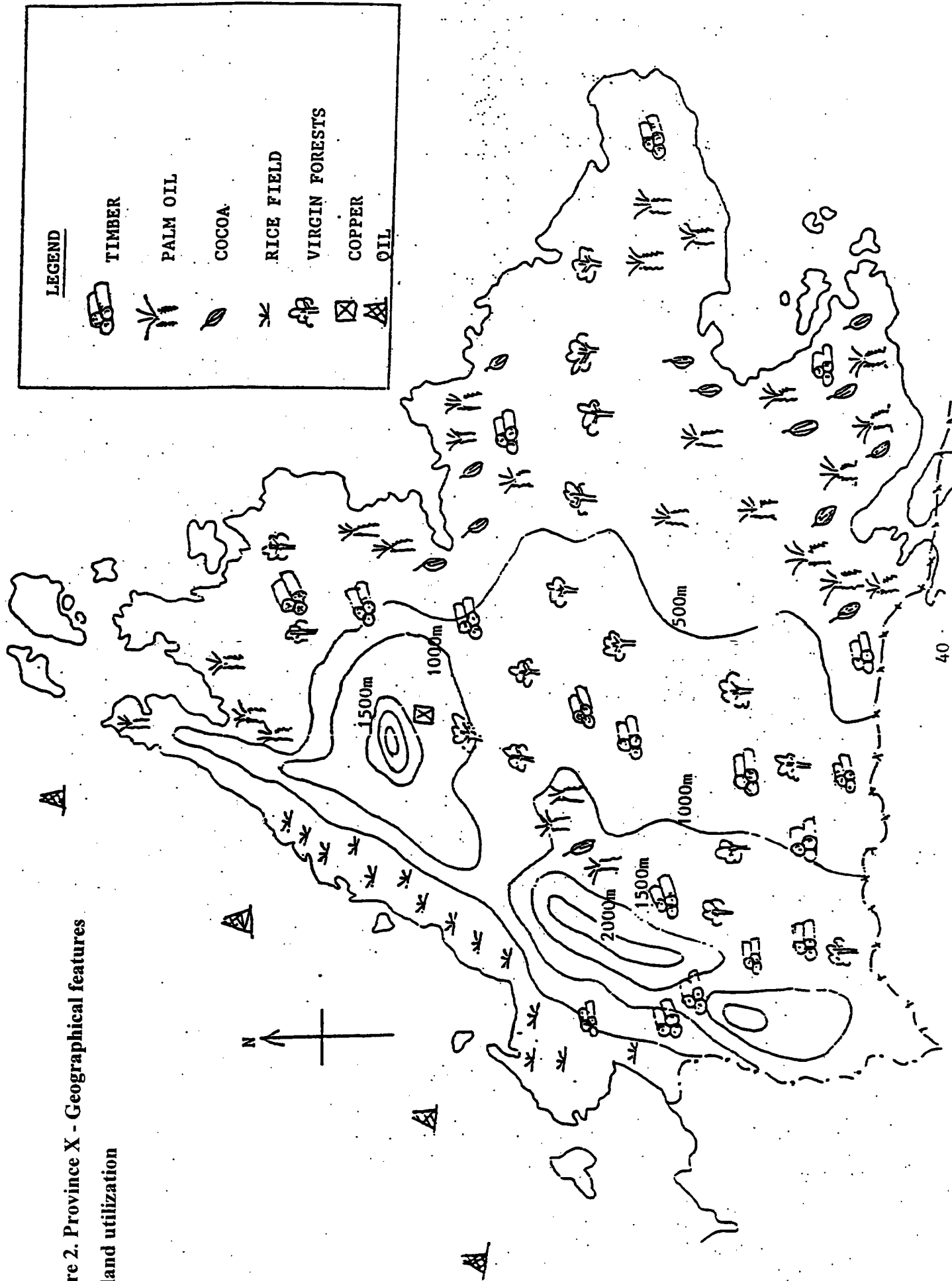


Figure 2. Province X - Geographical features and land utilization



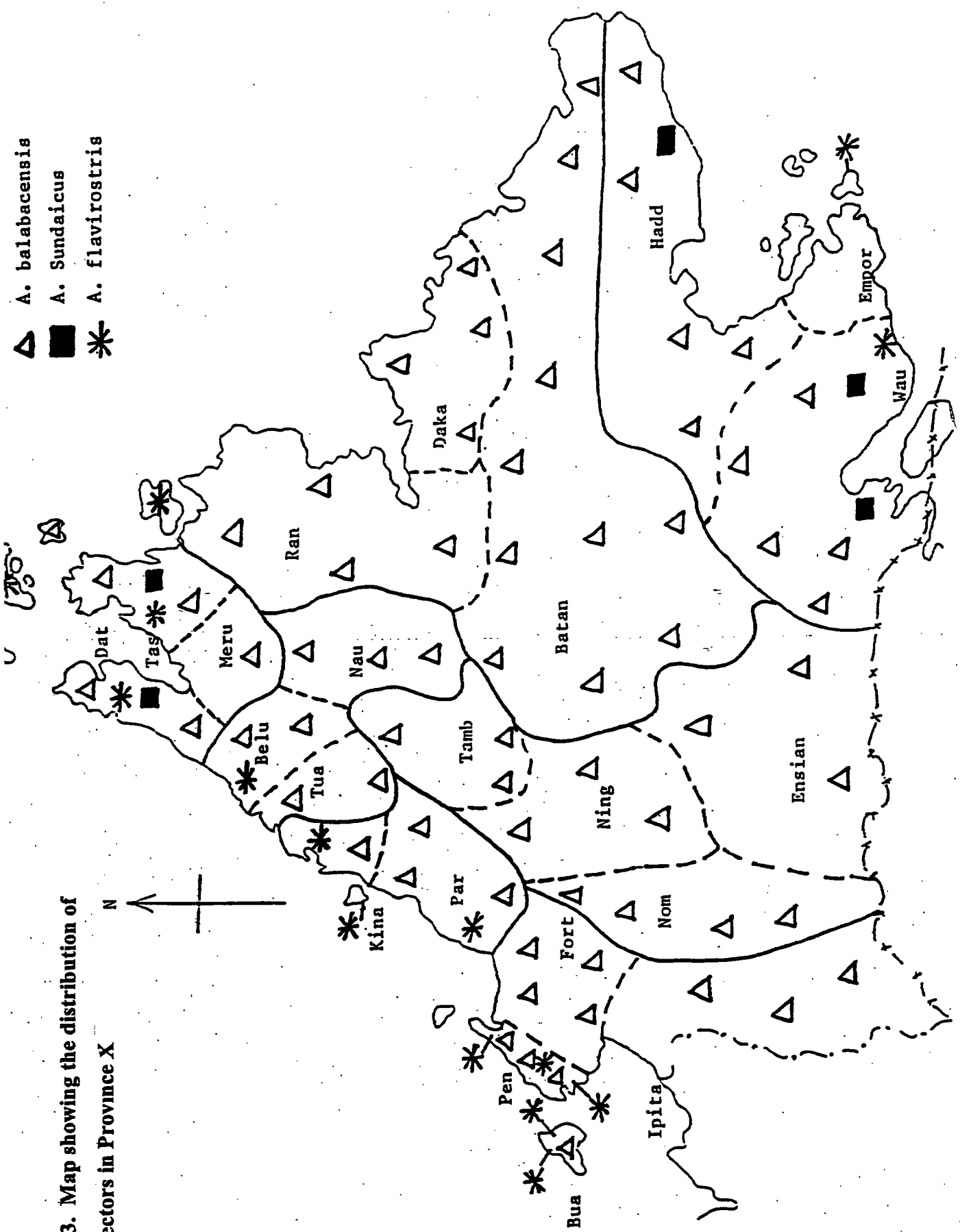
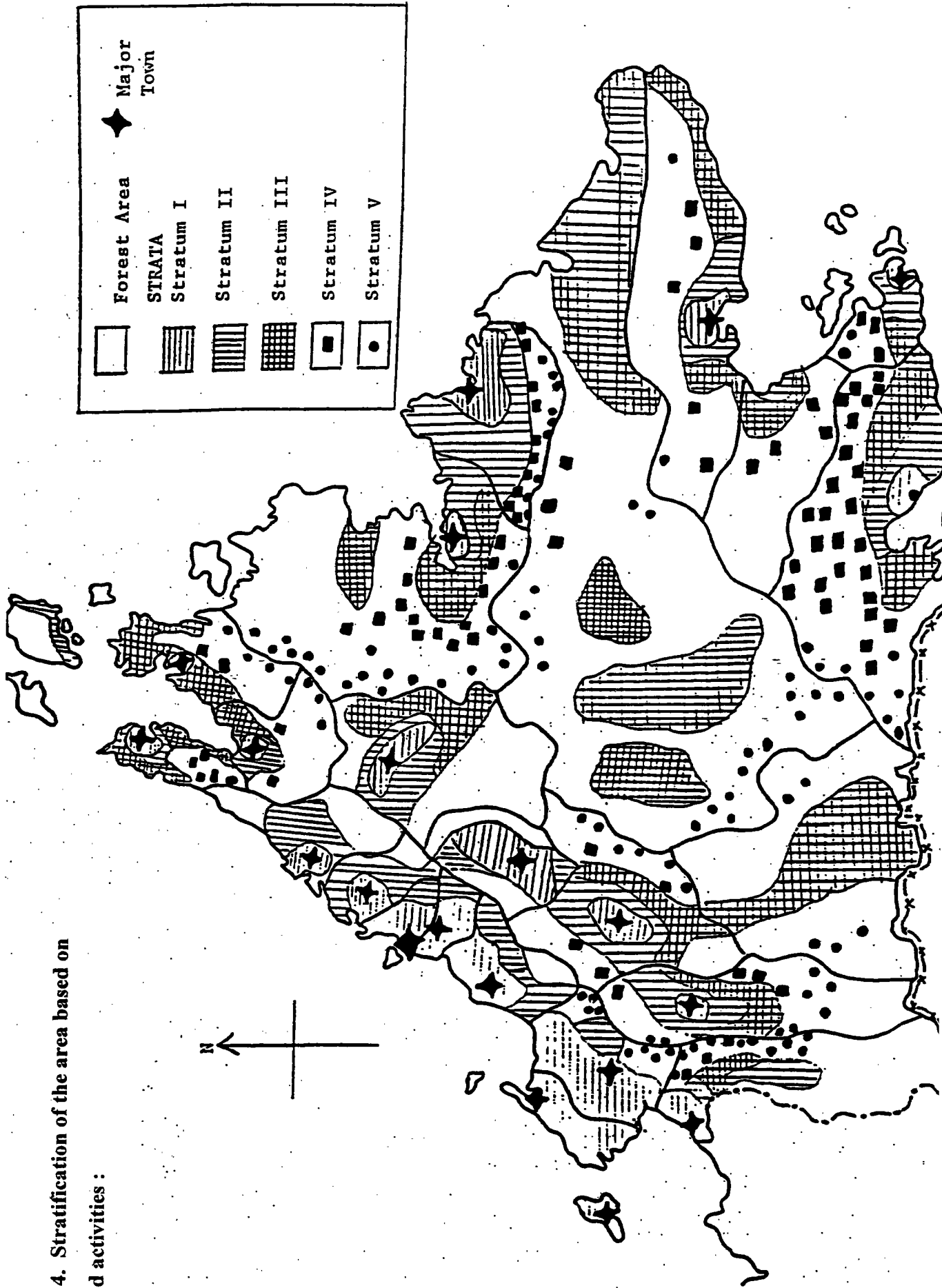


Figure 3. Map showing the distribution of main vectors in Province X

Figure 4. Stratification of the area based on

API and activities :



Selection of malaria control measures

Learning objectives:

The learning objectives for this Unit are for the learners to be able to:

- list the available antimalarial measures
- select measures that can physically be implemented, are technically effective and which suite the local epidemiological conditions
- assess the feasibility of a measure

What you will need to prepare

- overhead of the learning objectives
- overhead of Table 2 from the Learner's Guide, the main characteristics and control priorities in different malaria situations
- overhead of Figure 5 from the Learner's Guide
- overhead of Figure 6 from the Learner's Guide
- you may wish to have overheads on the approach to selecting malaria control measures and feasibility analysis
- a set of five to ten searching questions on this subject, especially regarding the first part of the Learning Unit such as:

What general prescription of antimalarial measures are applicable to all ecological conditions?

What is required to be able to tailor the approaches to malaria control to the local conditions?

If different methods are required under different conditions what are the limiting factors?

What are the most important criteria for the choice of preventive malaria control measures?

What indirect measures would have a profound effect on malaria?

How would you go about selecting malaria control measures?

Timeframe

Allow two hours for this session. However, it is both important and time consuming so much time can be saved by ensuring that all participants have themselves read the Learner's Guide before the session begins. You will need to allow 20 minutes for the exercise and another 20 minutes for the presentation and discussion of the outcome. Time will be precious.

Introduction

This will be helpful in fashioning the time available. Do not spend more than 10 minutes on this.

Start by putting up an overhead of the learning objectives as before and going through them carefully, one by one, for complete understanding by all trainees.

Next ascertain the sum knowledge of the subject by asking as many trainees as possible the questions you have prepared ahead of time, but now answering or discussing them. Such questions may include both positive and negative aspects for instance, what should stratification be for it to be practical and useful? and what general prescription of antimalarial measures are applicable to all ecological conditions? Note the responses. If it appears that there is a large knowledge gap in any particular issue, then follow this up with additional questions to determine the scope of the deficiency, which you will have to remedy in your presentation and discussion.

Presentation and discussion

Concentrate on the weak points. You can spend up to one hour on this part of the session. Bring out the pyramid and note the phase in planning.

It is essential that the participants have understood the basic philosophy behind selecting control measures, and that it is an important aspect of planning closely linked to the situation analysis and stratification process. You will not have time to go through the contents of the first few pages in the Learner's Guide except to take them as read and to make the following seven observations:

- there are no general prescriptions of malaria control measures applicable to all ecological conditions
- approaches have to be "tailor made" to the prevailing conditions
- this part of the planning process requires special human knowledge and skills
- the number of truly different measures appropriate for malaria control is very limited

- the how, to what extent, when and where to apply measures are as critical as the measure itself
- for guidance, an analysis of which measures were successful in the past and under which conditions will be helpful
- stratification to be useful needs to be simple and based on variables which are easily observable and which have an epidemiological and/or operational importance

Ask if there are any major questions or points not well understood in the Learner's Guide.

Now turn to the overhead of Figure 6 from the learner's guide - Spectrum of malaria control objectives. Mention that objectives will be dealt with in Learning Unit 10. Explain the basis of this spectrum and the essential issue in practice, of moving along the spectrum in pace with services and infrastructure development. When you are satisfied that this is well understood then turn to the overhead of Figure 5 from the learner's guide - Measures applicable for malaria control.

Note first of all that this follows the sequence of the spectrum of objectives and that it is assumed to be accumulative which explains the numbers at the side of each objective and corresponding measures. Go carefully through this figure with the trainees inviting discussion and questions.

Now turn to the overhead, approaches to selecting malaria control measures, and discuss these thoroughly before going through Table 2, Main characteristics and control priorities in different malaria situations.

Next you need to go through the feasibility analysis in some detail in order to adequately prepare them for the exercise.

Small group exercise

Allowing 20 minutes for the exercise described in the Learner's Guide, make sure that all groups understand what they have to produce at the end. The facilitators may guide them in this to make sure that the best use is made of the time. Allow 20 minutes for presentation and discussion of each group's work in plenary session. An example of the outcome of an obstacle analysis is provided for your guidance only (Table 2 Tutor's Guide).

Conclusion

During the last 10 minutes, summarize the main issues about selecting malaria control measures to suit the local situation. Explain that they will have a chance to develop this skill whilst developing their own plans, once they have decided on the objectives to be attained.

Go through the learning objectives with the trainees to ensure that they have been achieved.

Please remind all trainees to read the next Learning Unit ahead of the time they will be dealt with according to the timetable.

Table 2: Obstacle analysis

Identified obstacles	Underlying causes	Possible remedies
<p>Suspected malaria cases not recognized and not treated early enough to prevent mortality and severe morbidity, especially in children</p>	<p>a) parents and families unable to recognize symptoms of malaria b) parents and families do not seek appropriate health care c) parents and families do not take the drugs in the prescribed manner</p>	<p>a) – generate community support – ensure appropriate health education in schools – provide education to population on malaria b) – ensure communities are aware of availability, capability and location of health facilities c) – ensure availability and dissemination of suitable information materials – ensure availability of appropriate drugs in sufficient quantities – improve treatment follow-up</p>

Learning Unit 6

A critical analysis of existing malaria control problems

Learning objectives:

The learning objectives of this Unit are for the learners to be able to:

- define a problem relative to the control of malaria in their area of work
- identify and prioritize major problems impeding malaria control
- analyse a major problem and list its underlying causes
- construct a network of cause and effect and identify feasible intervention points to overcome the core problem

What you will need to prepare

- an overhead of the learning objectives
- your own examples of a problem
- an overhead of the synthesis of a malaria problem
- an overhead of Figure 7 from the Learner's Guide
- a set of 5 overheads for Figures 5a to 5e from the Tutor's Guide with different components that can be overlaid to build up a composite of the final Figure 8 from the Learner's Guide
- a set of 5-10 searching questions on this subject such as:

What is a problem?

Why must problems be clearly defined?

How would you analyze a problem?

How may problems be grouped?

Is the most direct cause of a problem the most important?

Time frame

Two hours should be sufficient for this Unit including 30 minutes for the small group work and 20 minutes for the presentation and discussion of the outcome from the group exercise.

Introduction

Go through the learning objectives on the overhead with the trainees.

Ascertain the sum knowledge about the subject by using the questions you have prepared in advance of this session. As before, simply pose the questions and solicit answers from as many trainees as possible. Note the responses and adjust your presentation and discussion accordingly.

Presentation and discussion

Using the pyramid on the overhead point out this phase in the planning process. Emphasize that this is particularly critical when revamping or replanning an existing programme.

Using the examples you have developed yourself explain in detail a problem and underlying causes. This is particularly difficult to grasp and is often confused. When you are satisfied that this is clearly understood move on to the proposed approach to a synthesis of the malaria problem and dwell on the problem analysis.

Go through Figure 7 from the Learner's Guide with the trainees posing questions to them and inviting comment. Regarding Figure 8 in the Learner's Guide this is not easy to grasp and can be simplified by starting with the problem (disease) the symptoms experienced by the population and the environmental factors, itself on a transparency (Figure 5a). Then superimpose an overhead of the consequences (Figure 5b) and discuss each element in turn. Then superimpose the health services aspect (Figure 5c) and the socio-economic factors (Figure 5d). Finally use a separate transparency of the entire chart (Figure 5e) to see clearly all the linkages. Ask the trainees to identify one point in this cycle where intervention would have the greatest impact. You will probably have consensus on environmental factors which would have a more long-lasting effect but would be initially expensive.

Make sure everybody understands the principles of the problem analysis and creating a cause and effect diagram before moving to the small group exercise.

Small group exercise

Allow 30 minutes for all three groups to carry out the exercise described in the Learner's Guide. The facilitator can guide them in this exercise. To help you and the facilitators two further examples of cause and effect charts are provided in Figures 6 and 7 for the underlying causes of poor health education and chloroquine *P. falciparum*.

You should ensure that the trainees do not waste time in getting started and each group should develop their cause and effect chart directly onto a flip chart or onto an overhead transparency. Warn each group that they will **not** be allowed extra time to copy out the results onto an overhead or flip chart before presenting in plenary.

Invite one participant from each group to present the outcome in plenary, preferably a person who has not done this before. Allow each group to display the results, describe them briefly and show clearly the point where intervention would have the greatest impact on the problem. Invite questions and discussion for five minutes before moving on to the next group.

Remind participants that they will each have a chance to develop this new skill when preparing their individual plans.

During the last ten minutes summarize the main issues about problem analysis and clarify any final difficulties the trainees may have on this subject. Then move to the learning objectives and ensure that all are satisfied that these have been accomplished.

Please remind all trainees to read the next Learning Units ahead of the time they will be dealt with according to the timetable.

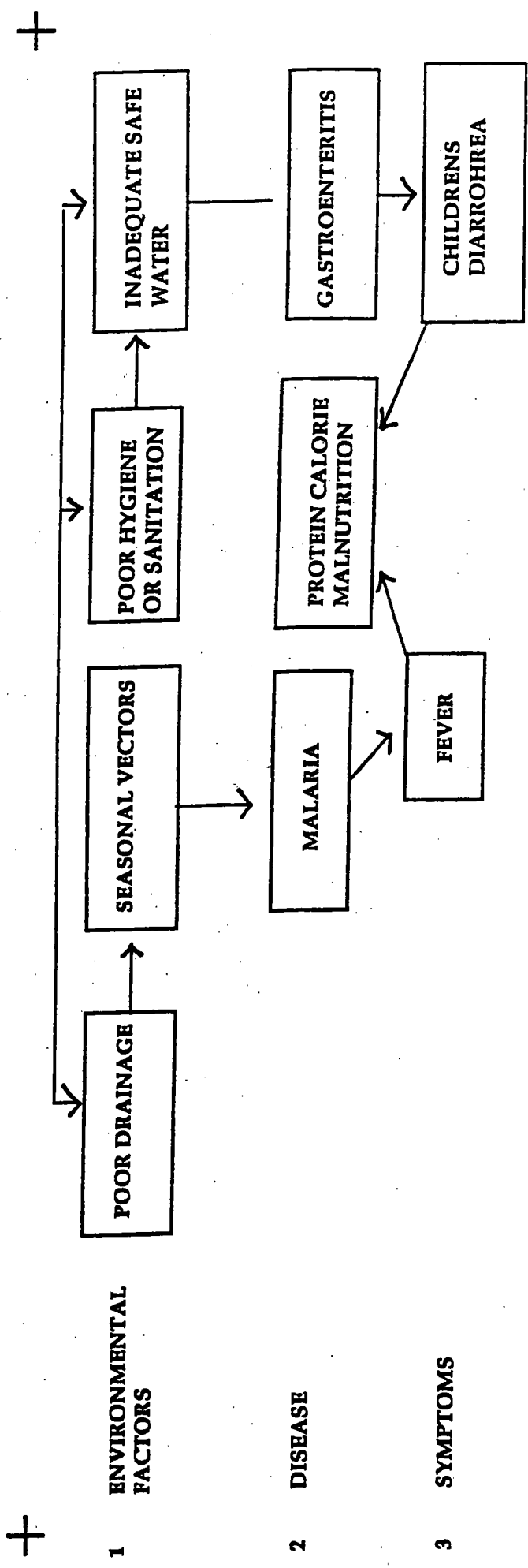
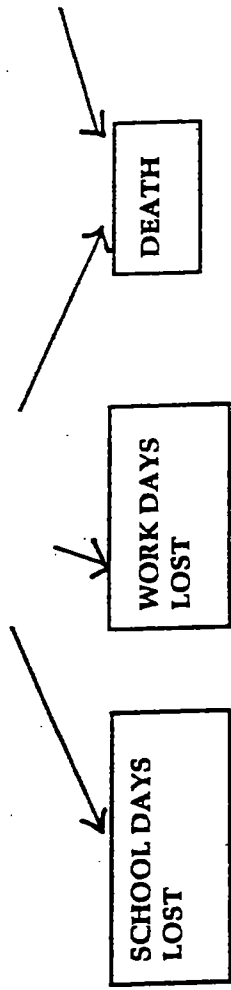
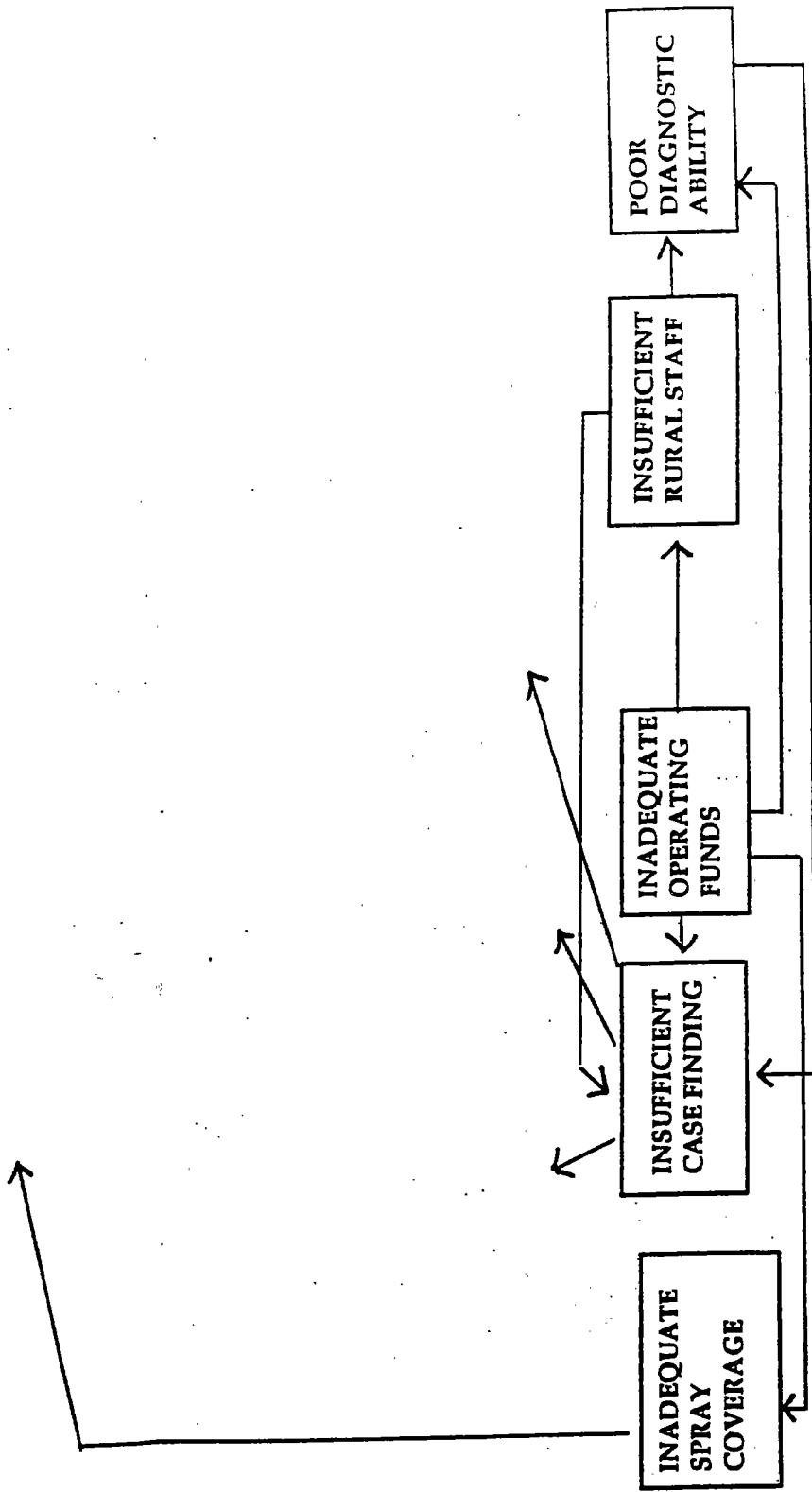


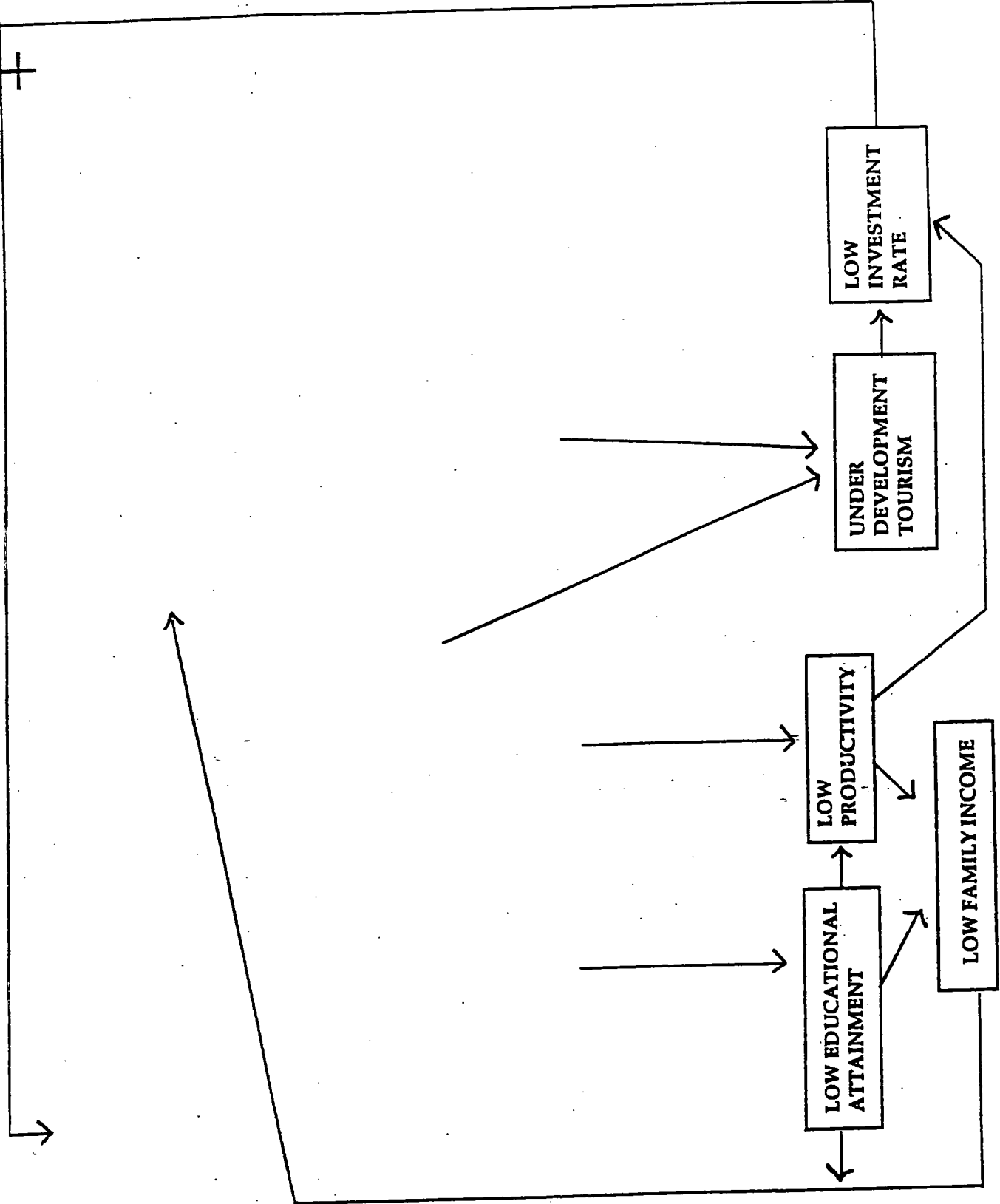
Figure 5. Underlying causes of chloroquine-resistant falciparum malaria and its effects

4 CONSEQUENCES





5 HEALTH SERVICES ASPECT



6 SOCIO ECONOMIC FACTOR

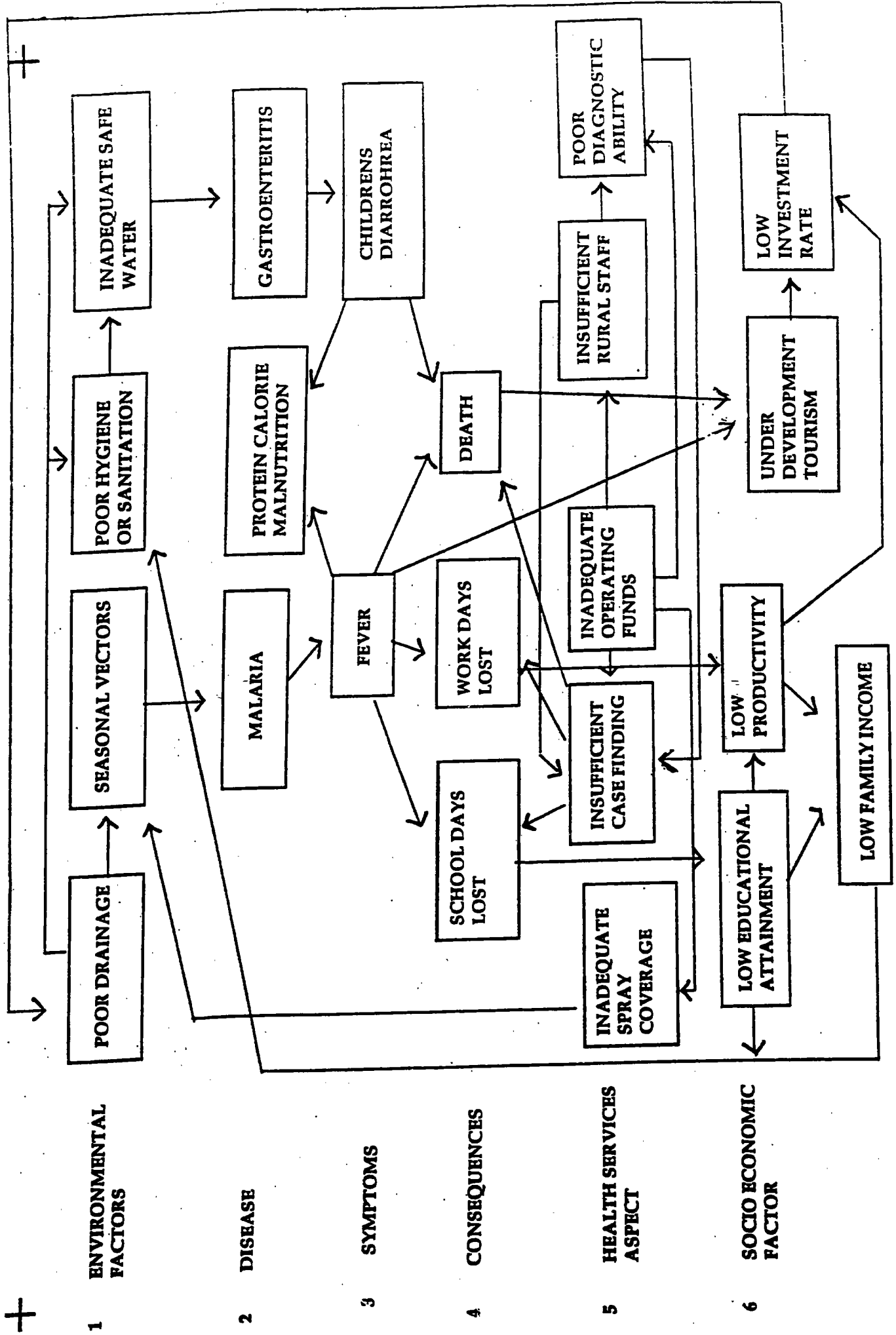


Figure 6. Underlying causes of poor health education on malaria in the community

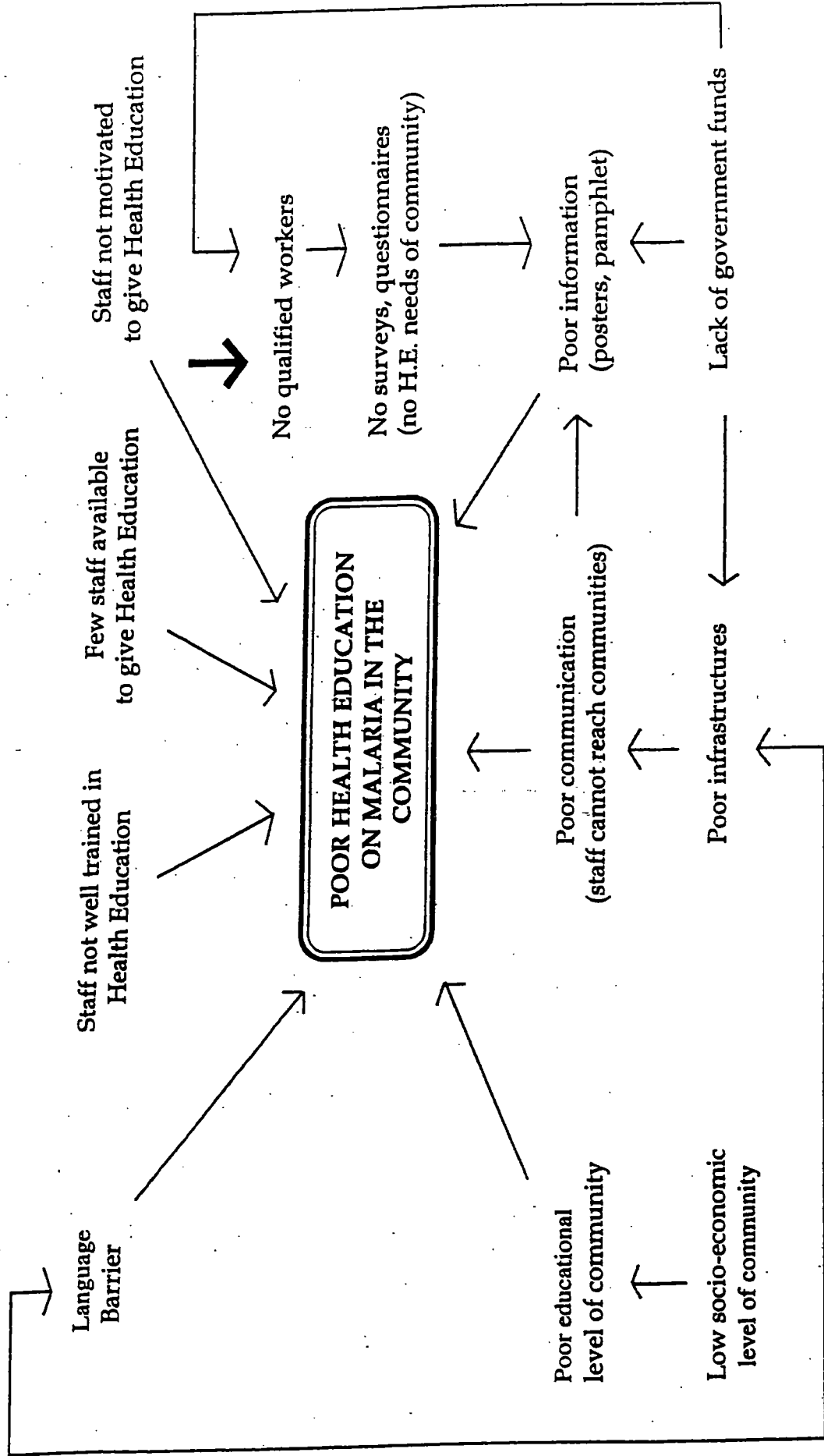
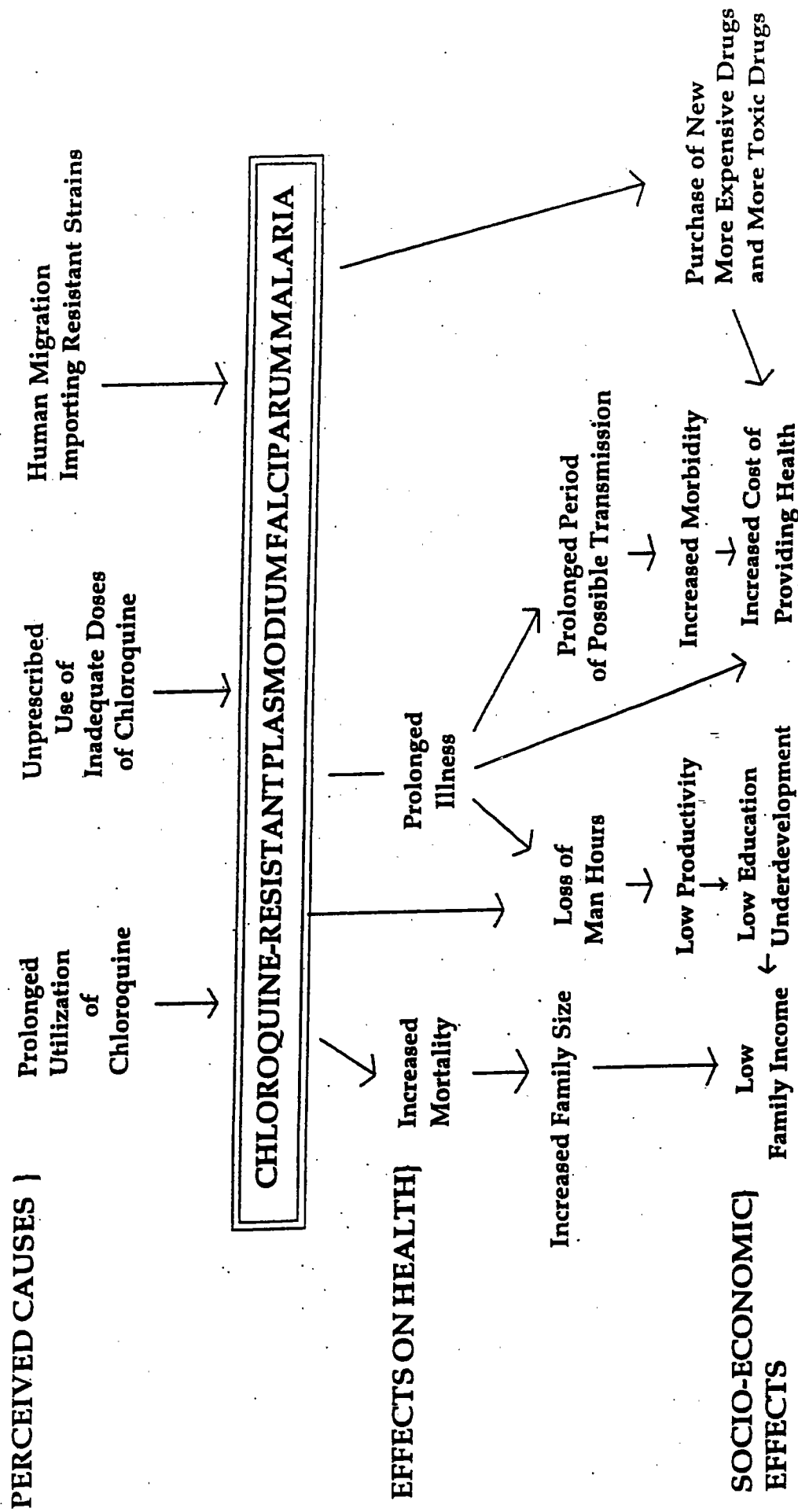


Figure 7: Underlying causes of chloroquine-resistant falciparum malaria and its effects



Learning Unit 7**Development and implementation of a national antimalarial drug policy****Learning objectives:**

The learning objective of this Unit are for the learners to be able to:

- define a national antimalarial drug policy
- state its purpose
- enumerate the essential components
- formulate an antimalarial drug policy
- enumerate actions for implementation

What you will need to prepare

- an overhead of the learning objectives
- overheads of the other major sections that will facilitate learning

Timeframe

Allow 1 hour for this Learning Unit

Introduction

Hopefully all trainees would have already carefully read the Learner's Guide.

Go through the learning objectives with the trainees to ascertain the expected outcome from this Learning Unit.

Ascertain the knowledge and experience in this field among the trainees by asking each of them to describe the antimalarial drug policies in their country or area and identify difficulties in its implementation. Allow only 10 minutes for this.

Presentation and discussion

Start by explaining that this is not a step in the planning process but must be taken into consideration when planning an antimalaria programme especially since disease

management is one of the principal components of the global malaria control strategy and will form part of any national programme.

Based on the outcome of the introductory session spend 30 minutes presentation and discussion on definition, purpose, component, responsibilities, implementation and some essential facts about drug resistance and its determination. Allow another 10 minutes general discussion on the subjects, draw upon the experience of the trainees themselves as much as possible.

Conclusion

During the last 10 minutes summarize the main issues, go through the learning objectives to ensure they have been fulfilled. Impress upon trainees to think about the importance of having a national drug policy and its main features when carrying out the exercise of developing their individual plans.

Please remind all trainees to read the next Learning Units ahead of the time they will be dealt with according to the timetable.

Learning Unit 8

Primary health care: its meaning and malaria control

Learning objectives:

The learning objectives of this Learning Unit are for the learners to be able to:

- clarify what is meant by Health for All
- define primary health care
- visualize Health for All in the 21st century
- place malaria control in perspective in the context of primary health care

What you will need to prepare

- overhead of the learning objectives
- overheads of the other major sections that would facilitate learning
- a set of 5-10 searching questions on this subject such as:

What took place in Alma Ata in 1978?

What do you understand by health for all?

What is primary health care?

What is the philosophy behind primary health care?

Why is the level of primary health care important?

What are the essential features of a sustainable health system?

What essential issues must be considered when planning malaria control in the context of primary health care?

Time frame

Allow 1 hour for this Learning Unit.

Introduction

This is not a difficult subject, but there is a lot to think about in terms of the philosophy of primary health care and its practical relevance and application to malaria control. Also the thinking needs to be brought up to date based on experience, and we need now to look to the future. Hopefully all trainees will have read and understood this Learning Unit in the Learner's Guide.

Go through the learning objectives as before. Ascertain the knowledge and experience regarding Health for All, primary health care and malaria control by asking the questions you have prepared in advance. It will save a lot of time if there is already a good understanding of the principles and good experience amongst the trainees. Allow 10 minutes for this exploratory session.

Presentation and discussion

Point out that this is not a step in the planning process but is essential to understand as malaria control must be planned as part of the health care system of the country.

Present some key issues that appear not to be well understood. Then draw upon the practical experiences from the participants regarding the health care systems operating in their countries and the principles embodied in primary health care and Health for All. Discuss constraints and deficiencies. Discuss the future in the light of changing determinants of health and how this has affected malaria. Discuss the future challenge of sustainable health systems and the benefits it would bring to malaria control, elicit from the trainees what these benefits might be and what prospects they see for it happening in their country or area. Allow 40 minutes for this discussion.

Conclusion

Go through the conclusions in the Learner's Guide and see if any trainees could add to it.

Finally go through the learning objectives with the trainees to see if they have been attained to their satisfaction.

Please remind all trainees to read the next Learning Units ahead of the time they will be dealt with according to the timetable.

Learning Unit 9

The social and economic aspects of malaria control

Learning objectives:

The learning objectives of this Learning Unit are for the learners to be able to:

- define the relationship between malaria and social factors and economic development
- identify human behavioural aspects relative to malaria transmission in their place of work
- develop appropriate materials and programmes for the education of the community
- develop activities that will improve the communication between community and health services and the health services and other related sectors for sustainable malaria control

What you will need to prepare

- overhead transparencies of the learning objectives
- recent examples of the impact of malaria on development, and development on malaria
- a set of 5-10 searching questions on the subject such as:

In what ways does malaria affect social and economic development?

How can social and economic development affect malaria?

What human behaviour is conducive to malaria transmission?

What steps should be taken to expand community participation in malaria control?

What conclusions can we draw from our knowledge of the relationship between malaria and social and economic development?

Timeframe

Three hours will be sufficient for this Learning Unit including 2 hours for the small group work and plenary presentation and discussions of the outcome from each group.

Introduction

Go through the learning objectives on the overheads with the trainees.

Ascertain the sum knowledge and experience regarding the impact of malaria on social and economic development and of development on malaria, by asking the questions you have previously prepared, of as many trainees as time permits. Note the responses and use this knowledge to guide your presentation and discussion of the outcome from the working group session. Allow 10 minutes for this introduction.

Presentation and discussion

This subject is best learnt by the exercises carried out in group work. This presentation, therefore, should concentrate on correcting any misunderstanding as evidenced by the introductory assessment and making one or two points.

Start by pointing out that this is not a stage in planning, but like the previous session is germane to the planning process. It will be most useful in problem solving (underlying causes) and in feasibility analysis.

Emphasize that there is an interdependence between malaria, social factors and economic development and that rarely can the social and economic aspects be quantified. Endemic malaria gives rise to constraints to productivity and general development and conversely malaria control has no prospects of a lasting success unless there are clear signs of economic development.

Go through the five situations described in the Learner's Guide ensuring that the trainees understand the differences. Ascertain if the trainees can provide more recent examples and provide some yourself, that you have prepared ahead of time. Finally, discuss in some details community responsibilities and have the trainees share their experiences in this regard. Allow up to 40 minutes for this presentation before going on to the small group work.

Small group exercise

Most learning of this subject will take place during this exercise and the facilitators and yourself should ensure that all trainees actively participate. Assign one of the three topics to each working group and allow them 1 hour for the exercise to include preparing an overhead or flip chart to present the outcome in plenary. Impress upon all groups that no time is to be wasted on copying the outcome nicely onto an overhead or flip chart. This must be developed as they work through the exercise.

At the end of the hour, invite each group to present the outcome for 10 minutes and allow another 10 minutes for questions and discussion by the other trainees. As in most of these small group sessions, when the representative of a group has presented the outcome, ask members of the same group if they have anything to add before moving onto the discussion of that topic.

You will find that the majority of the trainees will enjoy this session, so much so that there is a danger they will overstep the time allotted, if allowed to do so.

Conclusion

Allow yourself 10 minutes at the end to conclude the session in the usual way by a resume by yourself, one of the facilitators, or better still by one of the trainees.

Then go through the learning objectives to make sure they have been achieved satisfactorily. On some occasions you may find that one or two trainees feel an objective has not been attained. If this is the case, see to what extent it is shared by the other participants. If it is a consensus, then you will have to arrange a session to remedy it, if it is only one or two persons, then an evening tutorial or extra reading by the trainees should be arranged.

Please remind all trainees to read the next Learning Units ahead of the time they will be dealt with according to the timetable.

Learning Unit 10

Formulation of disease reduction objectives

Learning objectives:

The learning objectives of this Learning Unit are for the learners to be able to:

- define an objective and distinguish it from a goal
- define a process for setting objectives

What you will need to prepare

- overhead of the learning objectives
- overheads of definitions
- several examples of well formulated objectives and examples of poorly formulated objectives
- a set of 5-10 searching questions on the subject such as:

What is a goal?

What is an objective?

How would you formulate an objective?

How would you quantify an objective?

Timeframe

One hour will be sufficient.

Introduction

Go through the learning objectives on the overhead with the participants.

Ascertain the extent of knowledge and experience on this subject using the questions you have prepared ahead of time and note any misunderstandings that will need to be corrected later.

You may already sense a feeling of concern about the contents of this Learning Unit especially if the trainees have read it through ahead of time. Trainees are usually very apprehensive about setting objectives and especially about quantifying them. There is no sound scientific formula that will allow you to calculate the level of achievement being predicted. There is no known mathematical correlation between the level of activity, determined by the operational targets and the achievement of the objective. It is empirical based on past experience and expectations.

Programme managers often perceive quantifying objectives as threatening as they are fearful that they may not be achieved and this would reflect adversely on their position. You, as the tutor, will have to allay these fears and stress that non quantified objectives are not practical and cannot be evaluated.

Allow 15 minutes for this introduction.

Presentation and discussion

You are now back into the planning process and using the overhead of the pyramid point out the stage in planning and that it, and the next Learning Unit, are pivotal to the planning process.

Start by clarifying the definition of a goal and an objective because this always creates difficulties. Stress that it is a convention in malaria programme planning to restrict the term objective to mean disease reduction objective, this simplifies the task and links evaluation of achievement of the objective to epidemiological parameters. Spend some time on the process and revert back to the problem analysis session. Spend time on quantification which will be difficult. Break off from time to time to pose questions of the trainees and stimulate discussion on the subject drawing upon experience in the classroom to reinforce your teaching.

The trainees will have a chance to put these skills into practice when developing their individual plans in class. Allow enough time for that. Remember the timetable should allow time not only for preparation of individual plans but also for trainees to present their plan at various stages of development as well as *in toto* at the end.

Allow 30 minutes for this presentation.

Conclusion

Allow 10 minutes reviewing the subject and making sure that all trainees have a good grasp of it. Finally go through the learning objectives to ensure they have been achieved.

Please remind all trainees to read the next Learning Unit before the session begins and to continue working on their individual plans every minute they have to spare. Also remind them at this stage that they should have been making copies of their plans and overheads for presentation as they complete each section, as they will not have time to do it all at once at the end. In addition the facilities will not support everybody trying to use the copying equipment and supplies at the same time.

Learning Unit 11**Development of approaches to achieve objectives****Learning objectives:**

The learning objectives of this Learning Unit are for the learners to be able to:

- define an approach
- list the elements of an approach
- formulate realistic approaches to achieve the objectives set for malaria control

What you will need to prepare

- overhead of the learning objectives
- overhead of definitions
- overhead of Table 3 from the Learner's Guide
- overhead to facilitate working through the example with the trainees
- a set of 5-10 searching questions on the subject such as:

How would you define an approach?

What are the essential elements of an approach?

What are the criteria for selecting an approach?

How would you cost an approach?

Timeframe

Two hours will be needed for this session to allow you to work through Table 3 (Learner's Guide) and the example of an approach.

Introduction

Go through the learning objectives for this Learning Unit with the trainees.

Ascertain the knowledge and experience amongst the trainees by posing the questions you have prepared ahead of time. Note the responses and use this to guide the rest of this training session. Allow 10 minutes for this introduction.

Presentation and discussion

This Learning Unit is very closely tied to the previous one. Point this out on the planning pyramid showing the stage in planning.

Deal with the definition of an approach first and point out that there is no difference between an approach and a strategy, but by convention we are using the term approach by preference.

Go through the formulation of an approach and the criteria for selecting feasible approaches. Spend some time on Table 3 (Learner's Guide) and ensure that all trainees understand it. Ask them to give you other examples. This could best be done by asking the group to spend 10 minutes discussing alternative objectives and on another occasion another 10 minutes developing an approach to achieve the objectives they developed earlier. This is good practice for them.

End your session by going through the example in the Learner's Guide very carefully, provoking discussion at every step. Again have the groups spend some time designing the activities for the approach they developed earlier in the session. Allow a good 15 minutes on this including the group activities.

Conclusion

During the last 15 minutes summarize the main points and go through the learning objectives as before.

**Please remind all trainees to read the next Learning Unit
ahead of time; they will be dealt with according to the
timetable.**

Learning Unit 12

Setting operational targets

Learning objectives:

The learning objectives of this Unit are for the learners to be able to:

- define a target for programme planning purposes
- list the components of a target
- define a process of setting targets
- relate targeting to disease reduction (impact) objectives

What you will need to prepare

- overhead of the learning objectives
- some additional examples to demonstrate the derivation of operational targets from the measures described in an approach, and the relationship of targets to objectives
- a set of 5 to 10 searching questions on the subject such as:

What criteria would you use for establishing malaria microscopy diagnostic services?

What criteria would you use for chemoprophylaxis as a measure?

Under what circumstances have insecticide treated mosquito nets been found to be effective?

What is the definition of a target?

What are the two components of a target?

Can you describe a process for setting targets?

Timeframe

Two hours is sufficient time to accomplish this.

Introduction

Go through the learning objectives for this Learning Unit on the overhead and make sure all trainees understand their scope.

Ascertain the sum knowledge and experience about target setting, by posing the questions you have prepared on the subject and noting the responses from the majority of the trainees. Allow 10 minutes for this introduction.

Presentation and discussion

This is a stage in planning that is logically associated with the objectives formulated and the approaches developed to achieve them. Point this out in relation to the planning pyramid.

Be prepared for some concerns by the trainees about the quantification of targets to achieve the required level of disease reduction, as stated in the objective to which the targets relate. There is no mathematical formula for this, however, a lot depends on the objective, approach and the outcomes to be achieved. For instance, it is well known that to have any epidemiological impact whatever at least 60% total coverage of houses are needed for residual insecticide spraying.

Discuss in some detail the characteristic of some malaria control interventions. As was stated earlier, our interventions are somewhat limited for malaria control, however, the activities are more varied. The intervention in the Learner's Guide will be used in most malaria control programmes in one way or another.

Then present the definition of a target and propose how targets might be derived. Then ask the small groups to develop some targets for a given objective and approach that you have prepared ahead of time. Give each group a different set of objectives and approaches. Let them derive the targets and the activities to achieve the targets. Give them 20 minutes for this exercise.

After discussing the results of the small group work, go through the intervention and targets in the Learner's Guide and invite discussion on them.

Point out that they may find the tables in this Learning Unit in the Learner's Guide helpful for their planning exercise. However, in practice they should check up on the local prices and availability of the insecticides if they are to be used at all in the programme.

Conclusion

Allow yourself 10 minutes at the end to summarize the Learning Unit, or preferably ask a trainee to do so. You should correct any misunderstanding at this stage and if the trainee has left out any important issues be sure to correct this omission.

Go through the learning objectives to ensure they have been achieved.

Mention that the trainees will have an opportunity to select targets for their individual planning exercise.

Please remind all trainees to read the next Learning Unit ahead of the time they will be dealt with according to the timetable.

Learning Unit 13

Support activities and milestones

Learning objectives:

The learning objectives of this Unit are for the learners to be able to:

- identify relevant programme support activities
- describe modern approaches to training
- list the elements of a needs assessment
- define a milestone
- set milestones for malaria control

What you will need to prepare

- overhead of the learning objectives
- a set of 5 to 10 searching questions on this subject such as:

What are support activities?

Can you give some examples of support activities?

What are some elements of IEC?

What is a milestone?

Can you give some examples of milestones?

Timeframe

One hour will be sufficient for this Learning Unit.

Introduction

Go through the learning objectives with the participants in the usual manner.

Using the questions prepared ahead of time, determine the extent of knowledge and experience in this aspect of the planning and note the responses. Use the outcome to guide your presentation and discussion. Allow 10 minutes for this session.

Presentation and discussion

This is a straight forward continuation of the previous Learning Unit 12 on setting operational targets. Explain that this is a continuation of the target setting and that it specifies certain activities which are common to most approaches and that it specifies fixed (immovable) targets as milestones upon which other targets depend.

Invite questions and discussion. If there are no questions from the trainees, then you pose questions for them to answer and discuss. Within 30-40 minutes all trainees should have grasped the concept of support activities and milestones and the reasons for singling these out for special attention.

Conclusions

Allow 10 minutes at the end for summarizing the session, preferably by a trainee with supplementation where necessary from you.

Analyze the learning objectives with the trainees to ensure that they have been successfully achieved.

Please remind all trainees to read the next Learning Units before the sessions begin and to use all possible time to complete their individual plans for malaria control and to be ready to present the objectives and approaches in the plenary session.

Learning Unit 14

Programme budgeting

Learning objectives:

The learning objectives of this Learning Unit are for the learners to be able to:

- define a process of programme budgeting
- calculate the resources needed to implement a plan for malaria control
- conduct a cost analysis

What you will need to prepare

- overhead of the learning objectives
- some additional and more up to date examples of indicative costs appropriate to malaria control
- three different sets each of an objective, approach, and two targets.
- a set of 5 to 10 searching questions on the subject such as:

What is the main purpose of programme budgeting?

What are the major issues regarding budget control procedures?

What are some major elements of the budgetary process?

What factors may assist the assessment of cost efficiency?

Timeframe

Two hours should be allotted for this Learning Unit.

Introduction

Go through the learning objectives for this Learning Unit with the trainees and ensure they all understand the scope.

Determine the experience and knowledge among the trainees in this particular subject. You should find many trainees who are quite experienced in providing budgets but they may very well not be deriving their budget starting with well defined targets. Draw upon their experience as much as possible to teach this subject. Note

the responses to the questions you pose and adjust the use of the time accordingly. Allow 10 minutes for this introduction.

Presentation and discussion

This is a stage in planning closely associated with targets and activities and it is useful to point this out on the planning pyramid.

Remind the trainees that they are planning within the resources available or that can definitely be mobilized. By the time they reach this point they will have decided on their objectives, approaches and targets for each stratum and also derived a list of activities for each target as well as support activities. This is the starting point for calculating the costs for achieving each target (on an annual basis) which will provide the information necessary to develop a budget for each year of the plan. The end result should be a table identifying the objective, approach, targets, activities and costs for each stratum, a table showing the support activities and their cost and another table showing a line-item budget for each year of the project.

Draw upon the experience in the room to quote examples to make a point during your presentation. Allow questions to be asked. This should consume about 40 minutes.

Small group exercise

It is useful to have the small groups work through a complete example of an objective, approach and two targets, already prepared by you in advance. Ask each group to work through one set by listing the activities for each of the two targets and then to calculate costs for each target. They should then prepare two tables, one showing the objectives, approach, targets, activities, and costs, and the other a line item budget showing funds needed for personnel, travel, supplies, equipment, maintenance, training, research and other line items that they may consider relevant. Allow 30 minutes for this exercise. Allow another 10 minutes for each group to present the outcome of their work and for discussion.

To accomplish this in the time will necessitate delegation of responsibilities within each group. Facilitators should guide the groups in this respect.

Conclusion

Allow ten minutes at the end for a summary of the subject by one of the experienced trainees, with interventions from you as and when necessary.

Finally, review the learning objectives with the trainees to ensure they have been achieved.

Please remind all trainees to read the next Learning Units ahead of the time they will be dealt with according to the timetable.

Learning Unit 15

Selection and definition of evaluation methods in malaria control

Learning objectives:

The learning objectives for this Learning Unit are for the learners to be able to:

- define evaluation in the context of disease control
- describe the general principles of programme evaluation
- list some general purposes of programme evaluation
- describe some different types of evaluation investigations
- select appropriate indicators for evaluation

What you will need to prepare

- overhead of the learning objectives
- overhead of the group exercise instructions and subjects
- some overheads of key issues
- work out some example answers to the group exercises
- a set of 5 to 10 searching questions on this subject such as:

Can you define evaluation?

Can you define effectiveness?

Can you define efficiency?

Can you define performance?

Can you state some general principles of programme evaluation?

Timeframe

Provided the learners have read the Learning Unit in the Learner's Guide two hours will be sufficient including a group exercise, which they will all find helpful.

Introduction

Go through the learning objectives with the learners. Pose various questions, which you have already prepared, to estimate the knowledge gaps and to determine those who are experienced in programme evaluation. Make full use of this knowledge in the presentation and discussion session and for the review at the end. Allow 10 minutes for this exploratory session.

Presentation and discussion

Impress upon the learners the importance of this stage of the planning process and point it out on the planning pyramid.

Remind trainees that evaluation and data collection costs money and that planning evaluation systems must be done economically. This is a large subject and time will be precious. Make sure there is agreement on the terms effectiveness and efficiency as this will be needed for the small group exercise. Review the principles of evaluation and spend some time on the selection and definition of evaluation methods both operational and epidemiological. Do not spend time on the tables suggesting various indicators as these will have to be used by the working groups. However do spend time on the interpretation of evaluation results as this may not be well understood. Make full use of the experience amongst the trainees. Spend 45 minutes on this session.

Small group exercise

The group exercise described in the Learner's Guide is designed to help select indicators for evaluation of the measures described in an approach and the required activities. This, like most of this module, is dependent upon the learners having a good knowledge of malaria, which must be a requisite for this training.

Ask the trainees to work in their assigned groups, each group working on a different approach. Allow 30 minutes for the group work and preparation of an overhead or flipchart presenting the results. Allow 10 minutes for each group to present and discuss their work, the facilitators to help guide the groups as necessary.

Although tables 10, 11 and 11a on pp.215 to 217 of the Learner's Guide will be helpful, some answers (not exhaustive) to the group exercises on the evaluation of effectiveness for different objectives of disease management are provided in the table below as a guide.

Objectives	Indicators
To reduce the incidence of severe malaria	<ul style="list-style-type: none"> - no. of cases of severe disease per year - proportional severe malaria admission rate - proportional under 5 years severe anaemia admission rates
To reduce malaria mortality	<ul style="list-style-type: none"> - number of malaria deaths among in-patients per year - proportional mortality rate of malaria in hospitals - case fatality rate of malaria in patients - number of deaths caused by severe anaemia in children under 5 years occurring among in-patients per year
To reduce the incidence of malaria disease	<ul style="list-style-type: none"> - institutional fever rate ($\frac{\text{no. of fevers/year}}{\text{no of consultations per year}} \times 100$)
To prevent epidemics	<ul style="list-style-type: none"> - $\frac{\text{no. units reporting epidemics}}{\text{no. reporting units}} \times 100$
To reduce malaria mortality in epidemics	<ul style="list-style-type: none"> - weekly mortality rate (all cases) during epidemics ($\frac{\text{no. of deaths per week in populations}}{\text{total population of the reporting unit}} \times 10\,000$)
To reduce the incidence of malarial disease in epidemics	<ul style="list-style-type: none"> - institutional fever rate $\frac{\text{no. of cases febrile disease per week in health facilities}}{\text{no. consultations in epidemic area during same week during the epidemic}} \times 100$
To prevent adverse effects of malaria in pregnancy by chemoprophylaxis	<ul style="list-style-type: none"> - prevalence of low birth weight - prevalence of anaemia in pregnancy - incidence of acute malarial disease in pregnancy

Similarly for measuring efficiency of disease management indicators that might be used are tabulated below:

Planning malaria control programmes: Tutor's Guide

Target	Indicators
Diagnosis:	Proportion of health workers who correctly apply criteria for diagnosis of malaria for patients of target group who present with fever according to the norms of the national policy.
Treatment:	Proportion of health workers who provide treatment in accordance with national policy to patients of target groups whom they have diagnosed as having malaria.
Patient education:	Proportion of health workers who explain the treatment regimen to the patients (mothers and children) of target groups diagnosed as having malaria.
Referral:	Proportion of health workers who refer patients of target groups to a referral centre where conditions correspond to the national criteria for referral of a malaria-related case.

For measuring efficiency of the programme to implement measures to modify human attitudes and behaviour some indicators that could be used are tabulated below:

Target	Indicator
Recognition:	Proportion of mothers who state that fever in a child requires prompt treatment.
Action:	Among mothers of children with fever the proportion who report that treatment was started within 24 hours of fever onset.
Compliance:	Among mothers of children seen for fever in a health facility, proportion of mothers who report that children completed the nationally recommended course of treatment.

Similarly you can develop the evaluation indicators for residual house spraying, impregnated mosquito nets and environmental manipulation from Table 12, pp. 220 in the Learner's Guide.

Some possible indicators for measuring the efficiency of the programme to implement antivector measures of personal protection, indoor residual spraying and environmental manipulation are tabulated below:

Targets				
Outcome	Amount			Indicators
	1998	1999	2000	
Families accepting to use personal protection measures	60%	70%	80%	<ul style="list-style-type: none"> – proportion of the at-risk population using mosquito coils – proportion of the at-risk population using impregnated mosquito nets – proportion of houses in endemic areas with at least one mosquito net
Houses in malaria endemic localities sprayed with residual insecticides	70%	80%	90%	<ul style="list-style-type: none"> – proportion of houses in the village sprayed within established time frame – proportion of sprayed houses completely sprayed – proportion of endemic villages with more than 70% houses sprayed
Permanent and temporary vector breeding sites in villages eliminated	50%	60%	70%	<ul style="list-style-type: none"> – proportion of known temporary vector breeding sites filled in – proportion of known permanent vector breeding sites eliminated – proportion of villages where more than 50% of permanent and temporary breeding sites eliminated

Conclusion

For the last 5 minutes allocated to this Learning Unit make a résumé of the subject and go through the learning objectives to ensure they have been accomplished.

Please remind all trainees to read the next Learning Units ahead of the time they will be dealt with according to the timetable.

Learning Unit 16

The research and development approach

Learning objectives:

The learning objectives of this Learning Unit are for the learners to be able to:

- describe a process for planning a formal operational research study
- develop a research protocol
- organize a system to document experiences
- identify subjects suitable for a research and development approach
- begin to analyze critically published research

What you will need to prepare

- overhead of the learning objectives
- three operational research problems currently of concern to malaria programme managers
- copies of a relevant published research paper and your own analysis of it
- copies of the paper by Alonso *et al.*, referred to in the Learner's Guide
- a set of 5 to 10 searching questions on this subject such as:

What do you understand to be the meaning of research?

There are different kinds of research, what are they?

What would be the components of a research process?

What are some components of a research protocol?

What should the acquisition of experience in malaria control concentrate on?

Timeframe

This Learning Unit can be taught in 2 hours including a small group session which is strongly advised.

Introduction

Display the learning objectives in front of the trainees on the overhead and ensure that they are aware of what will be accomplished with you over the next 2 hours.

Using the questions you have already prepared determine the extent of knowledge and experience in conducting operational research in the field. You will almost certainly have at least one trainee knowledgeable and experienced in research in one form or another. Note the strong and weak points among the trainees and concentrate on the weak areas in your presentation and discussion. Although you have prepared set questions to ask of the trainees very often the responses may prompt you to ask impromptu questions to explore in more depth a particular aspect of the subject. This is the normal exploratory method to be used in this short introductory period of about 10 minutes.

Presentation and discussion

This is not actually a step in the planning process, but the research element of the plan is of considerable importance as it is expensive and time-consuming so must be very carefully thought out.

Impress upon the trainees that operational research in the field on subjects identified by workers on the ground, is the concern of a malaria programme and not basic research to discover a vaccine, drug or new insecticide. Go carefully through the role of research in malaria control programme and the research process. Distinguish between formal research requiring a study design, formal protocol and substantial budget and the careful documentation of experiences during the programme implementation and a research and development approach.

The learners will find in their guide an annex to this Learning Unit providing guidance on how to develop a protocol. Make the point of distinguishing clearly between a study design for the purpose of securing funding, a research proposal (the format required by the funding agency to satisfy their decision-making processes) and a research protocol (very detailed explanation of the research which field staff can follow to implement the research).

Finally the Learner's Guide touches upon the assessment of the value of published articles to draw awareness to the problem if interpretation of results for determining their value to the programme being planned or implemented. It would be

useful to either go through some of the summary points that you feel are very relevant to malaria control or ask the trainees to identify points that they would like to discuss in more depth. Allow a good 40 minutes for this session.

Small group exercise

It is highly recommended that you conduct a small group exercise on this subject. This has not been included in the Learner's Guide so that you have the flexibility to decide on what would be most useful for them based on the exploratory introduction and how the discussion has gone.

It is suggested that you either:

- have each group identify the principal constraints to malaria control in the countries or areas where they work and identify those to which the solution would render the programme more cost-effective, list the problems which would best be the objective of operational research and rank them in order of priority

OR

- ask each group to analyze the same published research paper and compare responses in plenary

Both are useful exercises, the former being much simpler than the latter. You may wish to ask the trainees which they would prefer to do. There is no reason why some groups do the former and others the latter or if time permits they all do both.

Regarding the analysis of a published paper, you may choose any paper but you should have prepared your own analysis of it well in advance. One paper and exercise is proposed in the Learner's Guide and you may wish to use that for a group exercise or leave it to the trainees to do it in their spare time and carry out a group exercise on a different paper.

If you do use the Alonso paper, it is strongly suggested that you complete, ahead of time, all the answer fields in the table of results of the analysis provided in the Learner's Guide. This will be useful even if the trainees do it as an individual exercise in their spare time.

Allow 30 minutes for the group exercise and 10 minutes for each group to present and discuss their results.

Conclusion

For the remaining 10 minutes, review the contents of the session and the learning objectives with the trainees to ensure they have been achieved.

Please remind all trainees to read the next Learning Units ahead of the time they will be dealt with according to the timetable.

Learning Unit 17

General framework for programme management

Learning objectives:

The learning objectives for this Learning Unit are for the learners to be able to:

- define management as it pertains to disease control
- describe a logistics cycle applicable to malaria control in your location
- list the salient features of a formal management review
- ascertain corrective action to be taken
- define management of change
- describe a process to bring about effective programmatic change

What you will need to prepare

- overhead of the learning objectives
- overhead of Table 14, page 252 of the Learner's Guide on a systematic approach to change
- a management "balance sheet" based on your own experience or prepare overheads of the example annexed to this Learning Unit in the Tutor's Guide
- some overheads of different aspects in management that you would particularly like to stress
- an overhead of the logistics cycle chart (Figure 9) in the Learner's Guide
- 5 to 10 searching questions on this subject such as:

How might you define management?

What are the features of a management control system?

What are the elements of a management control system?

What is a logistics cycle and can you describe one?

What are some points about a formal management review?

What do you know about the management of change?

Timeframe

Allow two hours for this Learning Unit including a small group exercise.

Introduction

Start by going through the learning objectives with the trainees.

During the next ten minutes pose the questions you have prepared on this subject to as many trainees as possible. Make sure that all trainees participate and make their opinions and ideas known, it is only through this process that you will be able to ascertain at what level you need to begin with this particular subject. Note any bizarre responses or responses that are worth pursuing in more depth during the presentation and discussion session.

Presentation and discussion

Management pervades the whole planning process, into the implementation plan and implementation and evaluation. Demonstrate this on the overhead of the planning pyramid. It is not a phase in planning.

This can be a difficult subject to teach, because like planning itself, management is a way of thinking. For this reason you may wish to break up the presentation and discussion session with one or even two small group sessions.

Much of the programme planning in the Learner's Guide is by way of recapitulation and reinforcement and so you may wish to ask several trainees to explain the planning process and the planning steps when planning a malaria control programme. Time should be spent on programme implementation especially the management reporting system. Here you could break off and allow the small groups to spend 15 minutes going through the logistics cycle chart and invite each group to spend 5 minutes explaining and commenting on it. Based on the group experience point out the problem elements in practice.

Resume the presentation and discussion and spend some time on the management of change, using the overhead you have prepared, as this may not be well understood, but is important. Evaluation and management control priorities will also need some detailed discussion especially personnel management. Discuss with the trainees how cultural values are important in personnel management.

Allow one hour and ten minutes for this including the small group exercises.

Small group exercise

It is worthwhile asking the trainees to carry out the exercise described in the Learning Unit 17 of the Learner's Guide as a small group exercise with the facilitators guiding the sessions when necessary to keep them on track. If well organized, the group could spend 20 minutes on the exercise including writing out the management balance sheet on an overhead or flip chart. Display all the sheets at the same time and ask the trainees to comment and discuss any disagreements. Discuss constraints to improving

the *status quo*. You may well wish to share your own balance sheet with the trainees as part of the stimulus for discussion. The example of the management balance sheet annexed to this Learning Unit in the Tutor's Guide, page 102, is based on a mixture of programmes but does reflect many of the difficulties faced by programmes. Several things emerge from this particular balance sheet. Time is a major liability in this instance since structures take a long time to put in place. A management framework targeted to shortening time scales would be useful for malaria control.

Conclusion

For the remaining 5 minutes go through the learning objectives for consensus on achievement by the trainees. Ask one trainee to give you three major points learnt about programme management.

Please remind all trainees to read the next Learning Unit ahead of the time they will be dealt with according to the timetable.

Annex to Learning Unit 17 Tutor's Guide

MANAGEMENT "BALANCE SHEET"

ASSETS	LIABILITIES
<p>High commitment</p> <ul style="list-style-type: none"> - researchers - trainers <p>Cheap drugs</p> <p>Willing learners</p> <p>High quality information</p> <p>High quality training resources</p> <p>New telecommunication and telematics techniques</p> <p>Wide variety of donors</p>	<p>Drug resistance</p> <p>Poverty</p> <p>Lack of trained personnel</p> <p>Political corruption and/or ignorance</p> <p>Poor distribution systems</p> <p>Problems of intersectoral collaboration</p> <p>Inadequate funding</p> <p>Poorly developed health infrastructure</p> <p>Time:</p> <ul style="list-style-type: none"> - liberal attitudes - acceptance of family affairs interfering considerably in job performance and concept of time - punctuality <p>Difficult to change attitudes</p> <ul style="list-style-type: none"> - cannot be taught - need to be identified - must be challenged by new information - must try out themselves

Learning Unit 18**Guidelines for developing an implementation plan****Learning objectives:**

The learning objectives of this Learning Unit are for the learners to be able to:

- define an implementation plan
- list the elements of an implementation plan
- develop lists and tables enumerating the detailed operations necessary for implementing the programme
- establish operational evaluation mechanisms
- calculate precise resource requirements
- calculate costs of implementation

What you will need to prepare

- overhead of the learning objectives
- overhead of a Gaant chart an example of which is annexed here
- overheads of some major issues for discussion
- 5 to 10 searching questions on this subject such as:

What are the elements of an implementation plan?

What needs to be defined for evaluation activities?

What should the detailed budget contain?

What is a Gaant chart?

Timeframe

One hour for this subject should be sufficient since it is really only an introduction to developing an implementation plan.

Introduction

Go through the learning objectives as before.

Question the trainees on the subject to assess the general level of knowledge and experience of this subject. Allow 10 minutes for this.

Presentation and discussion

This is the final Learning Unit of this module and is intended as an introduction to prepare the trainees for the next step after planning the programme, which is translating the plan into action that can be carried out at the local level by the health services personnel. It should be seen in this light. It will be very obvious to the learner that it involves very detailed planning, even down to describing the techniques to be used if necessary. Certainly drug dosages and insecticide concentrations must be known by those developing the implementation plan.

Go through the main sections provoking discussion where possible and drawing upon the experience among the trainees. It is worth spending some time on how to develop a PERT or Gaant chart to display time lines.

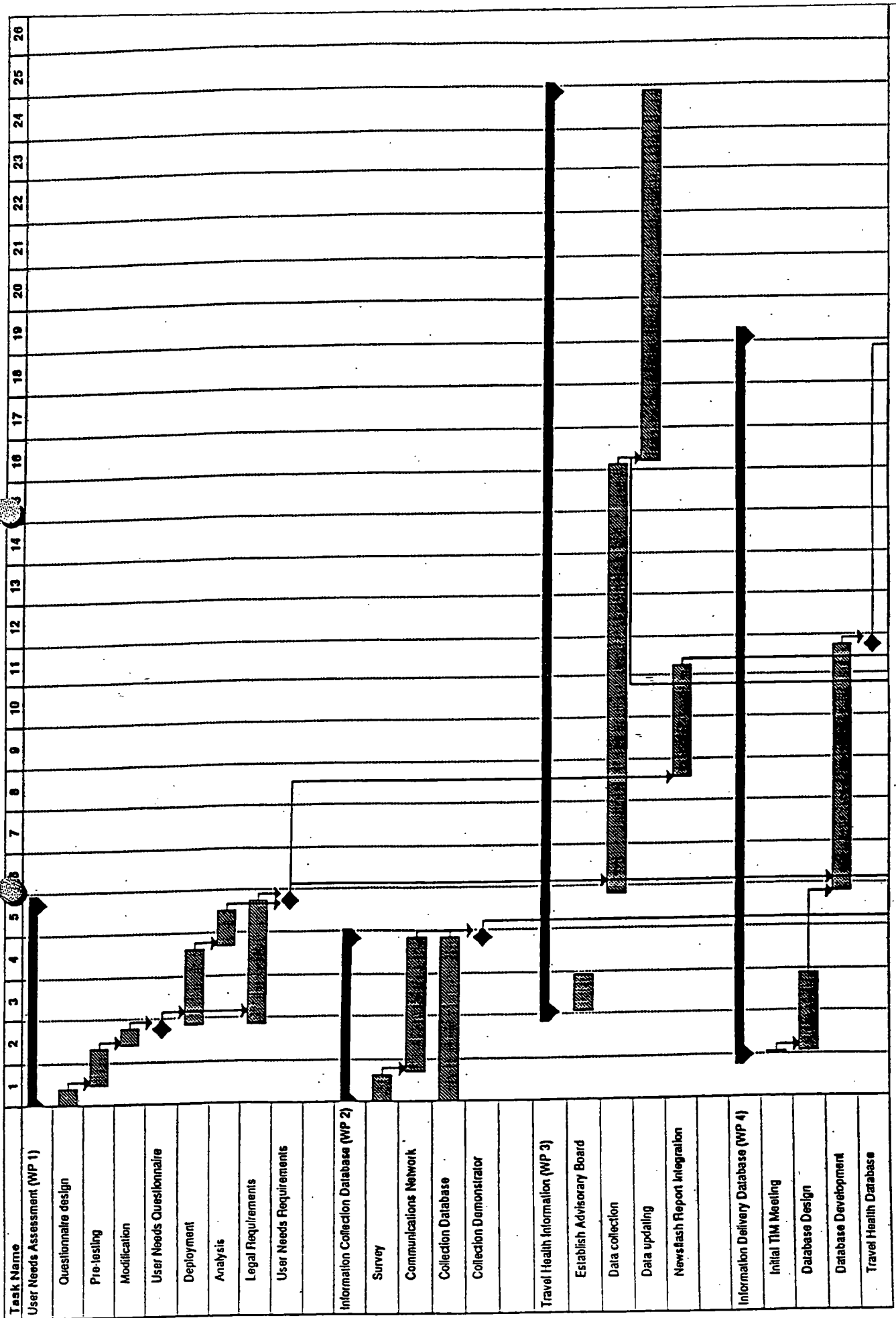
It is recommended that you go through the conclusions section in the Learner's Guide, with the trainees.

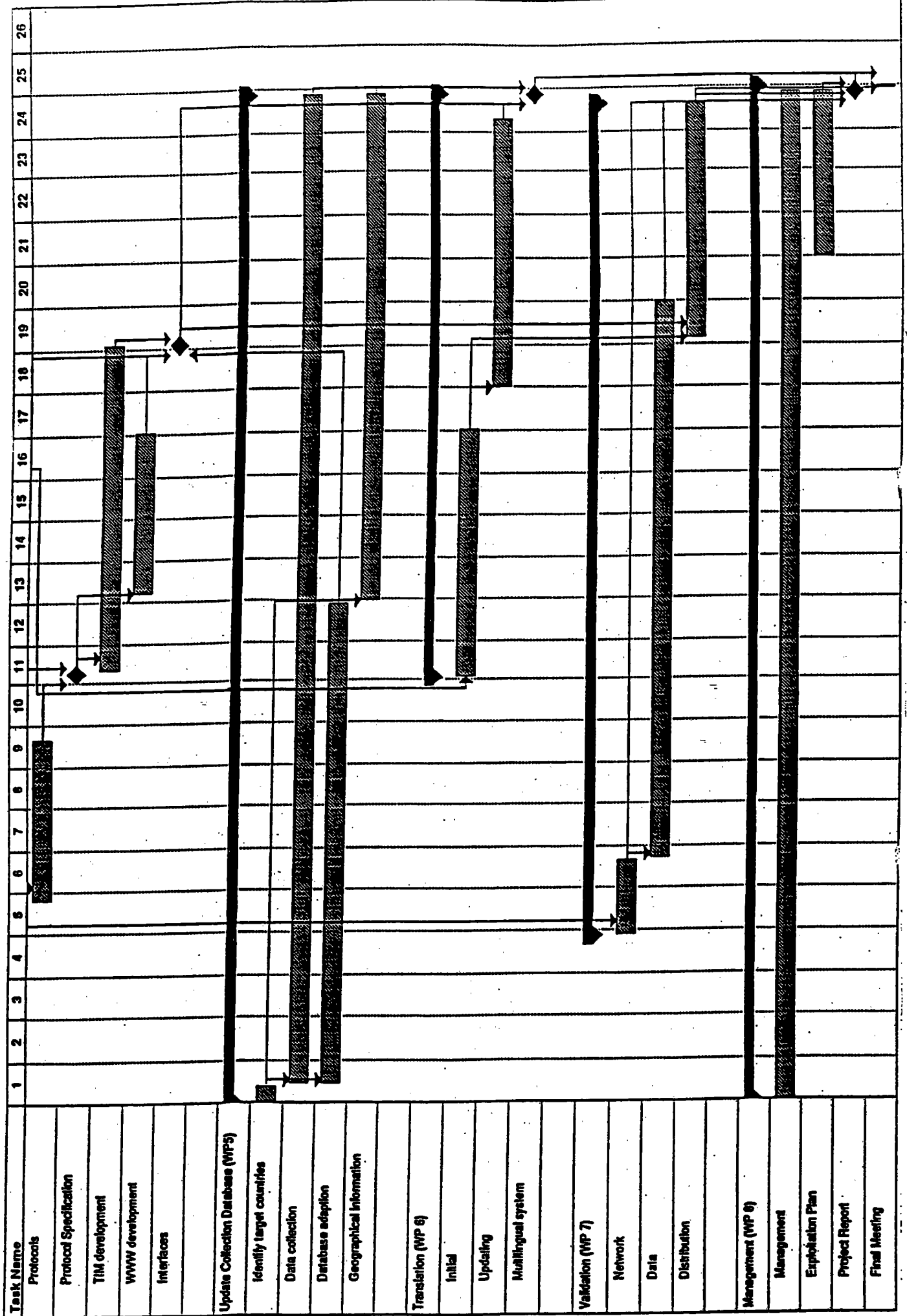
Conclusions

Invite one trainee to make a résumé of the salient points learnt, with your intervention and support when and if necessary

Review the learning objectives with the trainees.







ANNEX 1***Example of multiple-choice type question***

Evaluation by the use of multiple choice type questions has the advantage of some form of standardization of the monitoring, is less time-consuming for both learner and tutor and is beneficial for those who have difficulty in expressing themselves in the language being used or even in their mother tongue. It has the disadvantage of not being able to express alternative scenarios and this is a draw back especially in medicine where variations are rife. It is therefore a compromise that it is suggested, that the evaluation of the trainees' progress be measured by means of a series of multiple choice questions.

However, it must be said that in order to validate the questions they must be properly written, meaningful and as much as possible problem solving rather than recall of memory. Further, to be really valid they should not be designed in such a way as to offer a set choice. That is to say if the questions say which two of the following are correct then without knowing anything about the subject, you can achieve the correct answer in 20% of cases. To eliminate the bias and distinguish more clearly those who really know the subject and those who are guessing right, one would not indicate how many of the five might be correct but then negative marking will have to be introduced otherwise by checking all five total marks could be obtained. Negative marking however makes it much harder and is more complex to apply. It is suggested that for each wrong answer 0.5 of a mark or less be deducted and for each correct answer 1 mark be given.

Two other issues arise. The first is that if equal marking is to be used then the question and answer must have equal difficulty. The second is that to measure progress the pre- and post-test must be of equal difficulty. This can be achieved by offering the same questions in the pre- and the post-test by rearranging the proposed answers and questions in a different sequence.

If certain rules are adhered to, then writing multiple-choice questions is greatly facilitated although still a difficult task. The following are some suggestions:

- The body of each questions should be a complete statement (not just a single word) and the answer should not be dependent on the answer to any other questions on the page.
- Do not overburden the question with unrelated details and avoid negative statements, but if unavoidable then highlight them to draw them to the attention of the trainees.
- Use plausible or logical distracters in the possible answers, and each distracter must appear to have something to do with the question otherwise it looks nonsensical.
- Ensure that the distracters and the correct response are fairly similar in content or in the total number of words.
- Avoid clues that may suggest the correct answer and be cautious about the use of "some of the above" as a distracter or correct answer. This is especially important

- if you use the same question for the pre- and post- tests but then rearrange the sequence of possible answers.
- If it is not possible to obtain more than three plausible responses, do not waste time trying to invent others.
 - Items that have numerical answers should have them arranged in order from large to small or vice-versa.
 - Review the test paper as a whole and ensure that no letter or number corresponding to the correct answer appears more frequently than some other letter.

The following are some example types of multiple-choice questions. It is good practice to mix several different types in one examination paper.

One "best" response type**Question 1**

Careful programmatic planning and replanning are essential for effective malaria control and involves a series of coordinated activities. Which of the following does planning involve?

- A. Setting priorities
- B. Selecting tactical variants
- C. Deploying field personnel
- D. Conducting field research
- E. Arranging meetings

Multiple type response**Question 2**

An implementation plan should include certain sections. Five suggested sections are listed below (A - E). Select the sections which should be included in an implementation plan and indicate your answer in the boxes provided.

- | | | |
|--|--------------------------------------|--------------------------|
| A. The stratification process | (i) only A and B are correct | <input type="checkbox"/> |
| B. A description of strata | (ii) only B and C are correct | <input type="checkbox"/> |
| C. The objectives set in each stratum | (iii) only B, C, and D are correct | <input type="checkbox"/> |
| D. The approaches formulated to achieve the objectives | (iv) only B, C; D and E, are correct | <input type="checkbox"/> |
| E. The operational targets | (v) all are correct | <input type="checkbox"/> |

The "matching" type

These are more difficult to construct but in doing so remember to:

- Limit the number of entries to 10 or less
- Do not break items at the bottom of a page
- Have a longer list of questions than of possible answers but state in the directions that they may be used more than once

Questions 3 - 8

The group of questions (3-8) below, consist of numbered items and a list of lettered components of a definition for each numbered item. Select the one element of a definition that is most clearly associated with it and mark that letter in the answer column against the numbered item. Each letter heading may be selected once, more than once, or not at all.

- | | | | |
|----|--|--------------------------|---|
| 3. | Planning environment | <input type="checkbox"/> | c |
| 4. | Planning process | <input type="checkbox"/> | b |
| 5. | Analysis of the malaria situation | <input type="checkbox"/> | d |
| 6. | Stratification process | <input type="checkbox"/> | e |
| 7. | Criterion for selecting malaria control measures | <input type="checkbox"/> | a |
| 8. | Implementation plan | <input type="checkbox"/> | b |

- a) Safety to people and environment
- b) Objectives
- c) Lack of data
- d) Past malaria control activities
- e) Interpretation of data

The comparison type

The comparison type questions permit one to compare and contrast situations or events.

Each set of letter headings below is followed by a list of number words or phrases. Mark the answer column against each numbered word or phrases the following:

- a) If the item is associated with (a) only
- b) If the item is associated with (b) only
- c) If the item is associated with both (a) and (b)
- d) If the item is associated with neither (a) nor (b)

Questions 9 - 12

- a) Panning and replanning
 - b) Description of strata
 - c) Both
 - d) Neither
- | | | |
|-----|---------------------------------|-----|
| 9. | Evaluation | (a) |
| 10. | Implementation plan | (b) |
| 11. | - Analysis of malaria situation | (c) |
| 12. | Operational research | (d) |

True-false type questions should not be used and have never been included here. Where possible for the planning examination try to pose a problem situation, based on your own experience for instance, and then ask searching questions about what would you do and suggest the answers. The question can be of any of the types noted above.



ANNEX 2***Questionnaire for evaluation of training*****Instructions for completion of questionnaire**

Use the following code to indicate the extent to which you agree or disagree with each of the statements made in the questionnaire:

- 1 Disagree strongly
- 2 Disagree
- 4 Agree
- 5 Agree strongly

These numbers are printed alongside each question. You should circle the number that corresponds most closely to your opinion.

The difference between options 1 and 2 and between options 4 and 5 is one of degree only. To oblige you to express a definite opinion, no code 3 has been included (except for question 12); this allows a "satisfaction index" to be calculated for each question.

Take your time over completing the questionnaire. You do not have to put your name on it if you would rather not, but please answer the questions as frankly as possible.

Section I. Overall assessment of the training activity

1. Overall the organization of the training programme was satisfactory. 1 2 4
2. The training programme covered all the subject matter in adequate detail. (If you disagree with this, state which subjects should have been given greater coverage.) 1 2 4

Comments:

3. The tutors and facilitators for this training course had sufficient knowledge and teaching ability to provide you with the necessary skills and competence. 1 2 4

Comments:

4. The time allocated to each part of the training was adequate relative to the total time available. (If you disagree with this, state which particular topic should have been allotted more or less time.) 1 2 4

Comments:

Section II. Relevance and usefulness of the different teaching methods

5. Overall, the teaching methods used in this training course were effective .

1 2 4 5

Comments:

6. The use of the various teaching methods listed below was quite appropriate.

Large group presentations

1 2 4 5

Comments:

Practical demonstrations (laboratory)

124

Comments:

Laboratory work and facilities (including equipment)

124

Comments:

Field work

124

Comments:

Small group discussions

1 2 4 5

Comments:

Self-study

1 2 4 5

Comments:

Quizzes, tests and other evaluation exercises

1 2 4 5

Comments:

Section III. Assessment of teaching materials

7. The audio-visual materials (slides, overhead projection transparencies) used in the training were very helpful .

1 2 4

Suggestions for improvement:

8. The teaching materials provided were satisfactory in all respects .

1 2 4

Suggestions for improvement:

Section IV. Implementation of training; attitude of tutor and facilitators

9. The general atmosphere of the training course made this a good learning experience .

1 2 4 5

Comments:

10. Every effort was made to help you achieve the learning objectives .

1 2 4 5

Comments:

11. You were able to achieve all the learning objectives of the training programme

124

Comments:

Section V. Overall evaluation of the training

12. What overall rating would you give to this training programme? (Circle your response)

1 2 3 4 5

Lowest

Highest

13. With regard to this training experience, state the following giving actual examples):

(a) the three aspects that impressed *you most favourably*

(b) the three aspects that impressed *you least favourably*

14. Do you have any additional comments regarding any aspect of the training programme? If so, please make them below.

Analysing response to the questionnaire.

The following method will allow you to analyse the responses to the questionnaire quite simply and quickly. Take a fresh (uncompleted) copy of the questionnaire; against each question, mark the learners' responses.:

Example

Question. Overall, the teaching methods used in this training course were effective.

	1	2	4	5
			++++	++++
			++++	++++
				++++

This shows that two learners considered the teaching methods were not effective while 28 agreed that they were effective.

Now multiply the number of answers by the corresponding coefficient:

$$(2 \times 2) + (10 \times 4) + (18 \times 5) = 4 + 40 + 90 = 134$$

The "satisfactory index" is calculated as a percentage. For the above example, the number 134 is multiplied by 20 (i.e. 100 divided by the maximum coefficient, 5) and divided by 30 (the number of learners):

$$\frac{134 \times 20}{30} = 89.3\%$$

Since the satisfaction index is calculated in such a way that 60% represents "average" satisfaction, you should make a note of any questions for which the index is below 60% (if there is none, identify the five questions for which the index is lowest and the five for which it is highest). Let the learners know the results of this questionnaire at the final evaluation session on the last day of the training programme.

ANNEX 3***Commonly used methods of teaching and their objectives***

Teaching method	Purposes
<p><i>Audio tapes</i></p> <p>May be used with large or small groups of learners or by the individual learner.</p>	<ul style="list-style-type: none"> • To guide practical work. • As a variation in the method of presentation of material. • For the acquisition of new knowledge.
<p><i>"Brainstorming"</i></p> <p>Intensive discussion focusing on a single problem. Participants are asked to develop as many solutions as possible to a problem within a limited time - generally not more than 10 minutes. No critical evaluation of solutions is offered.</p>	<ul style="list-style-type: none"> • For developing new and creative ideas. • As a prelude to detailed, in-depth problem-solving.
<p><i>"Buzz-groups"</i></p> <p>Groups of 2-4 people discuss a particular topic for a short time - generally no more than 5 minutes - within the context of a large-group lecture.</p>	<ul style="list-style-type: none"> • To encourage all learners to participate. • To develop group cohesion and encourage learners to help one another. • To "rehearse" understanding and thus consolidate factual learning. • To stimulate creative thinking.
<p><i>Case discussion</i></p> <p>Real or hypothetical problems are analysed in detail. Learners are encourage to find solutions and make decisions.</p>	<ul style="list-style-type: none"> • To help in understanding the facts underlying the problems and to eliminate misconceptions. • To show how various principles are applied to real problems.
<p><i>Controlled discussion</i></p> <p>Under the control of the tutor, learners are encourage to ask questions, raise problems and make comments following a lecture.</p>	<ul style="list-style-type: none"> • To provide further consideration of factual learning. • To bring together and synthesize the contents of a lecture and provide feedback to tutor and learners.

Demonstrations

Certain procedures are performed by the tutor to demonstrate skills that must be acquired by learners.

- To help develop learners' power of observation.
- To provide knowledge of principles as a prelude to learners practising the skills for themselves.

Video tapes

- For development of skills in interviewing, counselling, etc.
- To allow learners to see themselves "in action".
- To provide learners with direct feedback.

Free group discussion

Discussion in which the content and direction are principally under the learners' control. The role of the tutor is that of an observer.

- To develop effective small-group functioning.
- To help learners establish the practice of self-learning.
- To allow the tutor to observe developments in the learners' problem-solving skills.

Group tutorial

Tutorial with 12-15 learners. The subject and direction are usually, but not invariably, under the control of the tutor.

- To facilitate understanding of particular topics, and bring together ideas.
- To develop group-functioning skills.

Projects

Varied in format and content, but generally submitted as a written exercise by a small group of learners or by individuals.

- To develop skills in gathering organizing, applying and illustrating information in the context of a particular problem.
- To provide practice in the presentation of data.

Private reading

- To assist in acquiring and understanding new information.
- To assist the development of critical thinking skills.
- To develop an ability to select and retrieve relevant information.

Role-playing

Learners are assigned or select certain roles (e.g. village leader, mosquito collector), then create and act out typical situations. It is essential that the content of the role-play is discussed at length by participants and observers; without this, the exercise has little value.

- To develop "self-awareness", i.e. to help the learner appreciate the effect that his or her attitudes have on other people.
- To improve attitudes and behaviour by encouraging the learner to "get into the skin" of another person.

Seminar

Presentation of material by one learner to a group of fellow learners, followed by critical analysis and discussion. It is not essential that the tutor be present.

- To present new information.
- To help with understanding of new material.

Individual tasks

The type of task assigned to the individual learner may vary, but it will generally be a problem to be solved within or outside the classroom situation.

- To foster active, direct learning.
- To develop problem-solving skills.
- To provide a context in which the tutor can help learners to remedy particular weaknesses.

Lecture

The "classical" lecture is an uninterrupted talk by the tutor to a group of learners, generally lasting about 1 hour. The form may be modified and used in conjunction with "buzz groups", syndicate groups, etc. into a coherent whole.

- To transmit information.
- To impart general background knowledge of a particular subject.
- To synthesize a wide variety of information

Practical classes

Learners perform experiments, write up their results, and draw appropriate conclusions.

- To develop powers of observation.
- To develop familiarity with equipment and skill in its use.
- To develop problem-solving through collection, analysis and evaluation of data.

Problem-centred groups

Problem solving in the classroom situation by groups of 4-8 learners, partly under the direction of the tutor.

- To develop skills in analysing and solving problems and in decision-making.
- For practice in applying theoretical knowledge to "real" problems.

Step-by-step lecture

A lecture format linked to an organized around, for example, a set of 35-mm slides or a number of multiple-choice question.

- To impart new information and reinforce its understanding.

Step-by-step discussion

Working with a small group (8-10) of learners, the tutor directs a discussion centred on a particular issue or a set of pre-prepared questions. The intention is to draw out from the learners the required information.

- To present a new factual material.
- To help learners in the process of scientific and deductive reasoning and of drawing appropriate conclusions.

Syndicate group

The class is divided into groups of 4-6 people; all groups work on the same, or closely related, problems, with occasional teacher contact. Each group prepares a report, which is presented to the rest of the class. The syndicate group technique can be used in conjunction with tutorials.

- To develop skills in seeking out, organizing and presenting information.
- To foster cooperation between learners in planning, writing and presenting a report.