
Quality and Cost Control of Rehabilitation Programmes

**A Practical Guide on Cost,
Effectiveness and Efficiency Assessment.**

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**UNITED NATIONS DEVELOPMENT PROGRAMME, GENEVA |
SWITZERLAND**

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FOREWORD

This book is part of a series of publications concerning the management of Community-based rehabilitation programmes in developing countries. The guidelines given in this book are "global". It will be necessary to develop individual models for each country. These should be based on the existing and planned public service organizations in the education, health, justice, labour and social sectors.

The author welcomes comments and suggestions for changes and examples of national adaptations of the Guidelines in this book. These should be addressed to the author address see below, or to email ehelander@mail.telepac.pt

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BACKGROUND AND EXECUTIVE SUMMARY

By the year 2000, the **number of persons with a moderate or severe disability (PWDs) reached some 335 million**. Out of them, about 100 million live in the developed regions of the world and 235 million in the less developed ones.

In one generation's time, **by 2035, there will be an estimated 525 million such persons in the developing and about 140 million in the developed regions**.

Consequently, about **10 million persons with moderate or severe disability are added to the total each year, or about 25,000 every day**.

For these people the situation has in the past become worse each year. Most of them are found among the poorest of the poor. Services set up for them are quantitatively and qualitatively static, so their availability in relation the need is rapidly deteriorating. **At present at least one million of them – many of them mentally retarded children – are confined to inhuman residential centers, neglected, abandoned and maltreated by those who are supposed to care for them. Nothing much is planned to compensate for the enormous increase foreseen. We have on our hands a growing moral, social, health and economic problem of vast proportions, which we seem to be incapable of dealing with**

25 years ago the concept and programme of Community-based Rehabilitation (CBR) was launched. It has over these years become widely known and - on a mostly small scale – practiced almost everywhere. Three years ago, the World Health Organization reported that programmes using the title of CBR existed in about 90 countries. **The strategy of CBR is now well known and accepted – but not enough practiced**. Evaluations of rehabilitation programmes have never seemed to be much concern to those who raise the funds. Donors in the industrialised countries spend an estimated US\$ 300 to 400 million each year for rehabilitation programmes carried out in the developing countries. **For this handsome amount, much more could be achieved**. It is urgent that these organisations, and governments become more serious about the control of quality and costs of their projects. If not, their credibility will be at stake.

This Guide forms part of a series of books about planning and management of rehabilitation programmes. It deals with the subject of **Quality and Cost control**. It introduces managerial tools on how to calculate costs, effectiveness and efficiency of programmes for PWDs. It seeks to install the idea of "a bottom line" for these services and knowledge of how one may compute that line.

Chapter 1 (p5-6) reviews the reasons for the call for better quality and cost control systems. Chapter 2 (p.6-7) defines the managerial terms used in this Guide. In Chapter 3 (p 7-15) and Annex I (47-51) there are detailed presentations of the systems for cost calculations. It proposes to allocate the costs to 1) programme development and training; 2) service delivery; and 3) administration. Chapter 4 (p 15-25) follows with the initial description of five effectiveness indicators 1) number of trained intermediate level co-coordinators (ILCs), 2) number of trained community rehabilitation facilitators (CRFs), 3) population covered by services; 4) number of PWDs receiving services and 5) number of steps of progress made by these PWDs. A method is proposed to make reliable and quantifiable assessments of the indicators. It employs scales to measure functions and activities of the PWDs. The initial situation and the progress during the rehabilitation process are shown with the help of a simple "staircase" system, involving 27 different functions or activities (p. 23-25). CRFs can easily record these. Techniques for how to calculate these five indicators of cost-effectiveness appear in Chapter 5 (p.26) and in Annex II (p. 48-53). Chapter 6 (p 26-38) deals with efficiency. There are presentations of several managerial tools to ensure a more efficient planning (p. 27-35), and to assess efficiency of field service programmes (36-38). Chapter 7 describes the process of monitoring and evaluating effectiveness and efficiency (38-44). In Chapter 8 (p44) methods for assessment of the quality of training programmes are discussed. Chapter 9 (p.44-46) takes up some questions about cost control regarding the use of expatriates, transportation, premises and salary levels. Annex III (p.56) presents the subject of attrition, and Annex IV (p. 57) gives a model of a Work plan for a CRF.

Finally, Chapter 10 (p.46) seeks once again to emphasize the close relationship between sustainability, credibility and the efforts to compute a “bottom line”.

ABBREVIATIONS

a.i	=	annual increase
CBR	=	Community-based Rehabilitation
CRF	=	Community Rehabilitation Facilitator
CC	=	Community Rehabilitation Committee
F/A	=	Functions And Activities
ILC	=	Intermediate Level Co-ordinator
IST	=	In-service Training And Supervision
MRT	=	Multiple-disability Resource Teacher
NGO	=	Non-governmental Organisation (Civil development organisation)
p.d.	=	Per day
PERT	=	Project Evaluation and Review Technique
PWD	=	Persons With Disabilities
RS	=	Indian Rupees
S	=	School
SOPS	=	Steps Of Progress
TCPD	=	Training in the Community for People with Disability (Technical Manual from WHO)
US\$	=	United States Dollar
VIP	=	Very Important Person

QUALITY AND COST CONTROL OF REHABILITATION PROGRAMMES

A Practical Guide on Cost, Effectiveness and Efficiency Assessment.

1. INTRODUCTION

In the past, few efforts have been made to calculate costs of rehabilitation services in the developing countries and relate these to their effectiveness and efficiency. Rehabilitation has been seen as a humanitarian programme, mainly motivated by charity. Authorities have mostly perceived the services as yielding marginal effects at a high cost.

The absence of a harmonised system for cost accounting and for the assessment of achievements in relation to the costs deprives the providers of rehabilitation services of the most useful evaluation tool. It hinders a rational use of the funds available. Such use would imply a shifting of the preference to those services that have a higher effectiveness at a lower cost.

The conventional way of reporting on the outcome of programmes for people with disabilities has been to:

- either account for how much money was spent (sometimes the specific costs for personnel, facilities, food, transportation, etc.), and/or
- account for the number of beneficiaries during the reviewed period.

This type of reporting concerns the administrative efficiency in providing the allocated input as foreseen and at the time planned. However, the most pertinent questions, necessary to evaluate the quality of programmes remain unanswered.

The evaluation questions should be: did the services provided lead to

- 1) improvements for people with disabilities, such as a reduction of functional and activity restrictions and dependency ?
- 2) better access to opportunities such as education, ability training, jobs and income ?
- 3) better security and protection of human rights ?
- 4) increased social integration and participation ?

The conventional type of reporting reflects the fact that planning has mostly been top-down, superficial, and lacking emphasis on sustainability and sensitivity to cost control. The issue of sustainability has recently come to the foreground. One now realises that in many field programmes, it would have been more prudent to provide small funds - seed money - rather than big amounts. A very large proportion of development programmes other than those mentioned here shares this problem. Because of the lack of cost sensitivity among donors, these programmes have entered the scene with expenditure components that can never be maintained by national resources. The damage to sustainability is often irreparable.

When choosing a procedure to analyse the results of a programme for people with disabilities, one is not able to calculate as businesses do - the cash profit or "bottom line".

Many services or functions of our societies do not have an economic benefit that can be easily accounted for. This is a situation in e.g. many sectors financed by the public. What is, for instance, the economic value of having a defense system, education for all, primary health care, religious services, sport events and prisons?

The costs for such services and functions can easily be calculated. However, it is a political decision - as much as a moral one - to spend funds for their development and maintenance. The benefits have no clear-cut "money value".

As mentioned above, programmes for people with disabilities have conventionally been looked at as a “charity” with no or only symbolic benefits for the target groups. The public at large has the perception that such programmes will not lead to much gains, that whatever is done will rarely contribute to an independent and productive life for a person with a disability. Consequently, the donors seldom ask for results. A large proportion of the available charitable funds have been used to set up residential institutions to keep people with disabilities “out of sight and touch”. This system has increased the levels of non-acceptance and prejudice towards persons with disabilities. The institutional system has lacked a proper monitoring of its effectiveness. For this reason, even the most catastrophic deterioration of function among “disabled inmates in institutions” has gone under-reported. Lack of evaluation has prevented the phasing out of the “warehousing” of persons with disabilities under inhumane conditions.

This Guide proposes a methodology that will monitor the costs in relation to the direct and indirect achievements seen among the people with disabilities who receive services.

The method proposed will measure quantified units (steps of progress) of effectiveness per unit of cost. This has the advantage that one can:

- * compare various alternative rehabilitation programmes, such as those carried out in the community and those provided in institutions;
- * compare the performance of personnel in different catchment areas;
- * set realistic targets for coverage, quality and efficiency based on field experience.

Factors related to efficiency will also be analysed, as follows:

- 1) the approach to resource planning using a systematic approach
- 2) the monitoring process proposed to continuously follow up efficiency
- 3) specific efforts to control costs, while keeping effectiveness unchanged.

2. DEFINITIONS OF TERMS

The most important terms are defined as follows, in alphabetical order:

- * effects: changes in knowledge, attitude, behaviour/practice;
- * effectiveness is the quality reached in conformity with set goals and objectives. Here, one has to consider the degree to which disabled people improved their functional abilities, and the time it took to obtain the respective results;
- * efficiency is a measure that concerns the competent use of resources - meaning that a given service was achieved with the least expenditure or waste. For instance, a certain center in which children are given functional training employs 3 physiotherapists and 2

aids for 25 clients. In another center, with the same number of children, identical training is provided with comparable outcomes, but here 4 physiotherapists and 3 aids are employed; consequently, the latter center is less efficient;

- * goals: planned impacts;
- * impacts: changes in society at large, affecting the disabled person;
- * objectives: planned outcomes;
- * outcomes: all changes (outputs, effects and impacts) resulting from the programme;
- * outputs: products and services provided;
- * process: activities to produce services;
- * sustainability: maintaining something that already exists, without outside support.

3. COST ANALYSIS

3.1. Principles

We will first deal with some principles of which costs to include in the accounting:

a) The full value of donations or gifts will be included **if these are needed for regular services and functions**. Examples are:

- * donations of land, buildings, basic equipment, furniture and similar,
- * donations of cash,
- * voluntary personnel (with exceptions, see below).

It is usual to use **“the shadow price”** (the normal market price of these items if they would have been paid for) for these resource inputs. For example, when a therapist donates his/her time to train personnel, the shadow price is the amount one would pay for hiring him/her for the job.

It is sometimes necessary to modify the shadow price. For example, an expatriate specialist donated his work for 3 months. The real shadow costs are equivalent to 3 months of his salary, his travel and per diem. If, however, it would be possible to acquire a national specialist to do exactly the same work, the proposed shadow price should be set to equal the cost of the national.

b) Donations of gifts that concern **functions and services that are only partly needed will be given a reduced shadow price**. Those that are **not needed will be excluded**. Examples are:

- art for decoration;
- set of Western toys or equipment for child stimulation;
- equipment that is not normally needed or has marginal value: electro-myographs, ultra-sound, diathermy, myo-electrical prostheses, etc.;
- books without value for the services (ex. an outdated textbook on the radiology of brain tumors, donated to a primary health care center);
- second-hand appliances for which repairs are more expensive than the local manufacturing costs or that cannot be used at all.

c) It is proposed to **not account for the costs** related to the **training undertaken by a person with a disability for him/herself or by his/her family** to help. Similarly, some functions, such as **self-help groups, day-care jointly organised by the parents** and other voluntary, and other non-paid services are not included.

d) public services, such as health care, schooling, programmes for rural and urban development etc. are open to everyone. For this reason, it is proposed not to include the costs when people with disabilities use these mainstream programmes. For example: diagnostic services; regular maternal and child health care (including immunizations), surgery for cataract, polio contractures, club foot, harelip and cleft palate; medical treatment of leprosy, epilepsy, mental disease, tuberculosis; all schooling; ability (vocational) training; access to capital for small enterprises; land improvements; water supply, etc.

Very simple annual service cost calculation.

Sometimes it is very time-consuming to calculate costs. It might be useful to consider a very rapid method: ask for all the salaries, add these together and multiply by 2 (the idea behind is that the salaries are about 50% of the costs). The validity of the 50/50 (or so) rule can be established by carrying out the detailed estimations on a few representative examples of similar projects.

3.2. Cost all

The following worksheet for cost allocations will facilitate the cost analysis and identify changes that are needed to increase effectiveness, efficiency and sustainability of service delivery.

WORKSHEET FOR COST ALLOCATION

Sub-project expenditure Budget line items	1.. Programme development and training		2. Service delivery		3. Administration	
	Central	Field	Central	Field	Central	Field
A. Premises						
B. Personnel						
Nationals						
Expatriates						
C. Transportation						
Nationals						
Expatriates						
D. Other equipment						
E. Other costs						
Subtotals						
Total						

Explanations to Fig.1 Columns showing sub-project expenditure

These relate to different inputs to a rehabilitation programme:

1. programme development, including the training of personnel and staff of other sectors; information and sensitisation programmes for the general public etc.
2. service delivery to people with disabilities, including their individual programmes as well as access to mainstream programmes such as rural and urban development, health, education, employment, security
3. administrative overhead costs.

Budget line items, such as rent or personnel may be shared between several columns.

To calculate the distribution between the different columns, the following principles are followed:

1. Programme development and training
--

Development costs include all preparations needed for the political ground-work, for informing political leaders and decision-makers, for the setting up and maintenance of demonstration projects, for testing the system for evaluation of results and forecast budget requirements. These costs are sometimes difficult to calculate, and one might choose to just roughly estimate these or exclude them. Sometimes external donors, such as NGOs may have contributed. A very important part of development is the production of manuals, textbooks, training packages and audiovisual materials.

Training costs include all those for CBR personnel, such as ILCs and CRFs. In addition, seminars and workshops, will be needed to inform personnel of the sectors, who are, or will be, involved in or need information about CBR activities. Training need to be continuous and built on in-service evaluation of service delivery short-comings and needs for introduction of upgraded technologies.

Training may include the cost sharing of, for instance, capital assets, staff, transportation, recurrent expenditure, equipment, purchase or development of training materials and tools with other organizations. Finally, the training costs may include the preparation of teaching staff through fellowships, study tours, driving lessons, etc.

Training costs are in the above worksheet divided up between those incurred for the central levels (above the community) and those for the field (= community).

Information and sensitisation of the public may consist of:

- press interviews
- TV and radio programmes
- lectures, seminars, public meetings
- meetings with political and community leaders, other significant people
- advertisements
- printing and distribution of leaflets, newsletters, brochures
- participation in conferences and congresses
- representation costs for VIP visitors.

Very often, the programme staff carries out the information activities. Then the share of costs should be entered. If special staff is recruited, their salaries, travel, etc. will appear as a cost. It should be useful to provide a separate budget to meet these development costs.

2. Service delivery

➔ **For the field** in the CBR system, it is proposed to arrange for community participation to meet these costs.

It should be mentioned that a large part of the rehabilitation is self-training carried out by the person with a disability himself/herself.

The family members who assist not paid for their work. They may see their contribution as an investment: a well-trained person with a disability will be less dependent on family help in the future, and this will lead to time savings and sometimes directly or indirectly to increased production. For this reason, the shadow costs of the family's work are not included.

There may be other unpaid community contributions - out of solidarity. These may include self-help groups, volunteers for a day center, apprenticeship training, etc. The shadow costs for these are not proposed to be entered into the accounts.

➔ **At the central level**, there might be costs for:

- referrals and technical advice
- * monitoring, quality and cost control
- * planning and co-ordination
- * information

3. Administration

Under this budget column, one will enter the costs for the staff that deals with budgeting, processing of all expenditure, personnel (contracts, support, leaves, administrative action, negotiations), maintenance of assets (buildings, transport, equipment, etc.) and auditing.

Some of these functions might be on a cost-sharing basis.

It should be mentioned that the administrative costs shown do not include other overheads. A government providing a budget has certainly cost for collecting taxes and other income, for its budgeting processes,

accounting and auditing. In the same manner, a NGO providing funds has costs for fund-raising, for assessing and controlling projects, accounting an auditing.

As these calculations are complex, they are not included in this Guide.

Sometimes the easiest way to calculate administrative costs is to just use a standard percentage of the total, e.g. 15 per cent. Indications of administrative costs may be available from the Government.

Explanations to Fig. 1. Rows showing budget line items

For each of these, explanations follow.

A. Premises

The simplest way of cost accounting is when premises are rented. To the rent should be added:

- * utilities: costs of electricity, water and sewer systems, heating, etc. insurance and security (e.g. night guards), and
- * maintenance and repair (if not included in the rent).

If the building is bought or donated, we need to know the present “shadow price” for the construction. When this is known, one needs to know the market interest for a bank loan to pay the shadow price. To the annual interest, one should then add the depreciation (see below).

If the land is bought or donated, one would calculate the annual interest for a loan to cover the present shadow costs. No depreciation is normally needed, as land seldom loses its value.

Box 1. EXAMPLES OF ACCOUNTING OF ANNUAL COSTS FOR PREMISES	
<u>1. Premises at central level (rented)</u>	
	US\$
Annual rent of premises	24,000
Electricity	2,000
Water and sewers	1,500
Heating	1,800
Insurance	2,000
Security (night guard)	1,200
Repairs, modifications of rooms, etc.	<u>3,500</u>
TOTAL	36,000
<u>2. Premises at central level (own land and buildings)</u>	
Here, the cost for buying the land and paying for the construction will be included in the calculations. If donated, the shadow costs will be estimated.	
For the <u>land</u> , an annual interest on the initial cost will be charged. The interest rate should be same, as local banks will charge. In this example, this has been set to 10%. No depreciation is needed.	
For the <u>buildings</u> , an annual interest on the initial cost will be charged. As above, it is set to 10% in the example. As the building will last a limited time, a depreciation charge will be made. If the building is projected to last for 50 years, the annual charge is 2% per year. If it will last for 20 years, the charge is 5%, etc. In the example below, we estimate that the building will stand for 25 years, thus depreciation is 4% per year.	
	US\$
Land (initial value US\$ 20,000), interest at 10%	2,000
Building (initial value US\$ 150,000)	
interest at 10%	15,000
depreciation at 4%	6,000
Electricity	2,000
Water and sewers	1,500
Heating	1,800
Insurance	2,000
Security (night guard)	1,200
Repairs, maintenance	<u>4,500</u>
TOTAL	36,000
For the central premises, there might be a cost-sharing arrangement, for instance:	
- Training	80%

- Service delivery	10%	
- Administration	10%	
3. Premises at district and community level		
In our example, each <u>district</u> (pop. 300,000) has three ILCs; these share an office with the personnel of the social welfare unit.		
Rent, inclusive of utilities	3 x 1,200	US\$ 3,600
In each <u>community</u> , some rooms in a local school and part of a community hall are used, whenever these are free. As these do not add costs to the community, no specific charge is proposed in our example.		

B. Personnel

Salaries and benefits in the personnel are charged as the total of the following:

- * salaries, paid to employees;
- * benefits in kind, such as free food, lodging, clothes,
- * employer's contributions to social security (sickness benefits, health care, pension fund and similar);
- * benefits for the family (education grants for children, widow's pension, etc.);
- * travel grants (for home leave, etc.);
- * other benefits, not specified above.

Personnel costs should be specified under the different columns (development and training, service delivery and administration). Costs for night guards are charged under premises, and drivers under transportation.

It is proposed to differentiate between personnel expenditures for nationals and for expatriates. Expenditure for expatriates could be accounted for as shadow costs. However, if national resources do not exist, then it would be justified to enter the total cost = salary and other benefits, travel, transportation, administration etc. as a cost.

+Box 2. EXAMPLES OF ACCOUNTING OF ANNUAL COSTS FOR PERSONNEL		
1. National personnel, central level		US\$
Salaries, 25 persons x US\$ 1,200		30,000
Value of free lodging 25 x US\$ 800		20,000
Social security 15% of 30,000		<u>4,500</u>
		54,500
Distribution		
Development and training	20%	
Service delivery	70%	
Administration	10%	
2. Expatriate personnel		US\$
Salary, 1 person		60,000
Social security 40%		24,000
Rent		10,000
Education grants		10,000
Home-leave travel		<u>24,000</u>
		128,000
Distribution		
Development and training	70%	
Administration	30%	
3. National personnel, community level		
Salaries 100 community facilitators x US\$ 200		20,000
Contributions in kind		<u>10,000</u>
		30,000

Distribution

Service delivery 100%

Costs related to expatriates may be seen in several ways:

as a development cost, if the expatriate's function is related to the initiation of the programme and the training of national personnel. In this case, the expatriate will stay for a limited period of time;

as an administrative cost, if the role of the expatriate is to deal with the administration of personnel, and the budget for the programme (if, for instance, it is donated by overseas agencies or NGOs),

as service delivery, if the role of the expatriate is to technically supervise the field personnel or to provide specialist services for referrals.

a combination of the above.

C. Transportation

Transportation includes:

- * rent of means of transportation (taxis, buses, etc.);
- * purchase of means of transportation (cars, buses, motorcycles, cycles, etc.). In this case, an annual interest rate will be charged, and a depreciation rate set based on the predictions of how long the car, cycle, etc. can be used. Normally this time is between 3 and 5 years in a developing country. In our example, the interest has been set to 10% and the depreciation to 25% per year (for 4 years duration);
- * gasoline, diesel, oil, tires, etc.; maintenance and repairs, insurance; driver;

Costs should be separately calculated for central and community levels, and for nationals and expatriates.

Box 3. EXAMPLES OF CALCULATIONS OF ANNUAL COST OF TRANSPORT	
1. Cost of rented vehicles (taxis, buses)	
These costs have to be locally estimated. Long-term contracts can often be made at reduced prices. Cost comparisons should be made with the costs for a purchased vehicle (see below).	
2. Cost of a purchased 4x4 vehicle or a bus	US\$
Purchase US\$ 50,000	
interest 10%	5,000
depreciation 25%	12,500
Gasoline, etc.	3,000
Maintenance and repairs	1,800
Driver	4,000
Insurance	4,000
	<u>29,000</u>
3. Cost of a purchased motorcycle	US\$
Purchase US\$ 4,000	
interest 10%	400
depreciation 20%	1,000
Gasoline, maintenance, repair, insurance, etc.	800
	<u>2,200</u>
4. Cost of purchased bicycles	US\$
Purchase of bicycle	100
Maintenance and repairs	50
	150

Transportation indemnities

It might be preferable to grant an indemnity instead of buying the cycles or motorcycles. Experience shows that problems associated with repairs and theft are common. The indemnity can either be per km or paid as a monthly indemnity based on the estimated number of kms

traveled. The employed person may be given a loan to buy a moped or a bicycle. The indemnity could be set so the person can pay back the loan over a period of, say, 2 years.

D. Other equipment

This might consist of:

- * furniture, library books, manuals and training packages, office machines, such as computers, fax machines, typewriters, calculators, stencil machines
- * equipment for diagnostic purposes, exercise and other training
- * manuals and training packages, tools for making appliances and aids for CRFs.

An annual interest rate (proposed to be 10%) should be charged on the purchase price and depreciation is usually made over a period of 5 years (=20% per year).

Box 4. EXAMPLE OF COST CALCULATION OF EQUIPMENT	
Purchase of	US\$
- furniture	15,000
- office equipment	6,000
- diagnostic and training equipment	8,000
- manuals, training packages and tools for community facilitators	<u>20,000</u>
	49,000
Interest at 10%	4,900
Depreciation at 20%	<u>9,800</u>
	Total annual cost 14,700

E. Other costs

These include:

- * stipends and per-diems for trainees
- * representation costs
- * advertising and printing of information material
- * provision of education material for trainees
- * fellowships
- * fees to board members etc.
- * supplies for office, etc.
- * mailing costs, telephone, fax, e-mail, etc.
- *

4. ANALYSIS OF PROGRAMME EFFECTIVENESS

An effective rehabilitation programme will produce a number of direct outputs. These are related to:

trained personnel

population coverage through the organised service system

progress made by the beneficiaries.

Standardised numerical indicators should be set to account for the outputs. There are also secondary effects or impacts, e.g. the reduction of prejudice, greater acceptance of persons with disabilities in the schools and

workplaces. In this context, these are not included - recognised and reliable measurements have not yet been developed.

The indicators proposed are five:

INDICATORS

Indicator 1: Trained ILCs, who passed their examinations and are at work within a year after graduation.

Indicator 2: Trained CRFs, who passed their examinations and are at work within a year after graduation.

Indicator 3: Population covered by CBR (in areas where an organised system is functioning).

Indicator 4: Number of persons with disabilities given services.

Indicator 5: Number of steps of progress made by all persons with disabilities given services in one year.

Indicator 1

CBR intermediate level coordinators (ILCs)

Specific targets of numbers of ILCs to be trained annually should be included in the programme objectives. The **first effectiveness indicator** is proposed to include the number of ILCs who passed the final examination, and were subsequently employed.

The suggestion to exclude those ILCs who did not pass their examinations puts an added responsibility to teachers for:

- * proper recruitment of ILC students
- * counseling and special efforts by the teachers to avoid that students fail

The suggestion to only include those who became employed is well motivated: if there is no job, the training costs were wasted. A deadline for the indicator is set in our proposal: to include those who are employed within one year of graduation. Emigrants should be excluded.

Indicator 2

Community rehabilitation facilitators (CRF)

Targets for training a specific number of community workers should be included in the objectives. The **second indicator** of effectiveness may in a simple way be to report the number of CRFs trained and subsequently employed.

The process of training community workers needs to be preceded by a commitment by the community to get involved in the CBR programme, and to commit some of their own resources. For this reason, the setting of a time-related specific target may sometimes not be possible.

Indicator 3

Population coverage by the service delivery system

This shows the size of the population covered the service system. This should include the areas where community level services are provided.

Indicator 4.

Number of persons with disabilities given services.

When setting realistic output levels for a CRF, one must take into account the population density. If this is high, the CRF does not lose much time traveling. If it is low, one should consider travel time. Better means of transportation will also increase the service delivery, but will carry a higher cost.

Indicator 5

Effects for the beneficiaries

This includes the measurable achievements of individual people with disabilities, related to changes in:

- * functional status
- * degree of activities
- * degree of social inclusion and participation in community life
- * protection against violence and abuse.

To measure the above-mentioned individual achievement, it is proposed to use the INDIVIDUAL ASSESSMENT/PROGRESS FORM. It appears on p 23-25.

This should be done through a series of questions, examinations and observations.

Details of the assessments of the needs of persons with disabilities, to design individual intervention programmes and measure their effectiveness.

The first step is to assess the initial – base-line – situation, as soon as a PWD has been identified.. The aims of the assessments are:

- 1) to identify and quantify the needs of each PWD for functional training, education, ability training, participation in mainstream opportunities such as community development, income generation, protection of rights and of security, empowerment programmes, and so on. Knowing these needs will help to design the individual rehabilitation programme.
- 2) to produce initial quantified information about the severity of disability and the outlook: will the available services and opportunities of a rehabilitation programme lead to improvements?
- 3) to monitor the results: continuously follow up the benefits of the programme, and when needed undertake changes of the technology, service delivery and managerial systems to improve progress.

In the early days of the CBR programmes, a very simple assessment form was proposed in the TCPD. A list of the functions and activities, which are important in daily life, was made. For each of these there was the question: *Can the person do this?* To be answered: *Yes or No*. The CRF filled out a form to record the result. A change from No to Yes was seen as progress. It was soon found out that this was not sensitive enough. Some PWDs improved partly. The change was often important and encouraging for the PWD and the family.

The CBR programme then extended the assessment of functions/activities to three levels, in general: The person 1) Cannot do this 2) Does this partly or sometimes and 3) Does this alone. This is the evaluation system in the 1991 edition of TCPD. A more detailed assessment using five steps was proposed in 1996 and is shown below.

The Assessment Form is the most important tool for the CBR programme manager. It should be filled out with the greatest precision and uniformity.

The questions, examinations and observations done during the identification phase of community surveys need to be expanded. Questions and verbal answers alone will not be enough. For instance, a person may state that

he or she is fully capable of moving around the village alone. This statement should (unless there are no doubts at all) be verified by asking the person to move around the village alone and observe the result.

The person who makes the assessment needs training. In CBR programmes, a community worker - the community rehabilitation facilitator - will undertake this assessment. Other well-trained staff, for example, rehabilitation professionals would have the competence to do it.

When assessing the functions and activities of a PWD, one should bear in mind what non-disabled persons of the same age and gender are able to do. The specific influence of local habits, culture, and of economic and social levels should be taken into account. For these reasons, the Form should be tested and adapted to for the country and for the population in the area, where it is will be used.

A PWD may have restrictions of a large number of functions or activities. 27 are listed in the Assessment Form. These are a selection of the common difficulties PWDs have. It would be possible to record fewer, more or different factors. The reason for this could be, for instance, that one plans to provide training programmes of a different type than those appearing in the TCDC¹. In order to ensure the reliability of the assessments, an evaluation system with community participation is proposed. An example is to involve the members of the community rehabilitation committee in an assessment. In this way, there will be local managerial control of the outcome

The Assessment Form uses a "staircase" with a specific scoring system. The concept of "a step up the staircase = a step of progress" is easily understood. It would, of course, be possible to monitor PWDs involved in CBR in a more detailed way. This can be done, if the programme has sufficient resources. However, the experience is that for recording practical progress in daily work, the proposed scoring system works rather well. It should be seen as an indispensable managerial tool. It allows the supervisor to follow the effectiveness of the programme in relation to the targets. Sometimes, organizations use very elaborate assessment systems that, however, seldom are used for anything.

Most of the 27 functions/activities (F/A) listed have 5 steps. In general, the simplest way of using these steps would be the following: the person can do the F/A

- At level 0 = all (100 per cent)
- 1 = about three quarters (75 per cent)
- 2 = about half (50 per cent)
- 3 = about one quarter (25 per cent)
- 4 = not at all (0 per cent)

This approach is useful as a guideline, but in reality, it is seldom this simple. A more detailed general approach to scoring is the following:

Level 0 shows that when carrying out this F/A the PWD has no restrictions and is independent. A rehabilitation programme to restore that function/activity is not needed.

Level 1 will be used when

- 1) minor help is needed, or
- 2) the person does not spontaneously do the F/A and has to be reminded, or
- 3) the person needs assistance, but not very often.

Level 2 will be used when

¹ The WHO has in 1992 published the "International Classification of Impairments, Disabilities and Handicaps." The Classification system lists about 1,000 different impairments, 300 different disabilities (which each are supposed to be graded on 10 different degrees of severity, and 10 degrees of outlook); and about 70 types of handicaps. All are graded 0 to 10. To complete an assessment using this model requires several hours for each person with disabilities. Thus, the system is more designed for scientists in the industrialised countries than for the CRF in the developing country. An even more complex WHO system has been designed and is now under trial.

- 1) help is needed on a regular basis, or
- 2) a great deal of assistance is needed, but not always, or
- 3) when the person can or will carry out about half of the F/A

Level 3 will be used when the PWD can or will only carry out a minor part of the F/A and needs daily assistance.

Level 4 will be used when the PWD cannot at all carry out this F/A and is totally dependent on assistance.

For F/As 5, 26 and 27, the scores are from 0 to 8. This is because these F/As are seen as very important, and given a higher rating. In a CBR programme, one can decide to apply a scoring systems different from those in our example. Such changes may depend on the importance a certain F/A has in that culture.

Standardisation of the Form.

Before starting using this Form, each step of all F/As should be standardised. It will be useful to keep a list of examples of "standard scorings" available. It should show the details of how, over a period, the scoring has been done. If the CBR programme is set up in the country as a whole, the system of scoring should be designed early, descriptions distributed and then applied uniformly. Standardisation of the scoring will lead to high reliability.

When it is proposed to add up all the scores, this is, of course, an arbitrary way of finding out the "combined severity of difficulties". It is proposed because it is simple. It can be done by CRFs and the family can provide most of the information.

Instructions for the Evaluator

When you fill out the form, start with the top and give all necessary information to clearly identify the person. Assess all the functions and activities and fill the date of the assessment in each square. Fill out all the assessments, even if the person has no problems (then the score is 0). Please note that there are age limits to several of the questions. If the person is not of the age indicated, leave the question unanswered. If, during the training the person enters the age indicated, then you start to fill out the assessment, beginning with that later date.

The squares are marked with numbers varying from 0 to 8. At the end of your assessment, go back to the first page. Add all the numbers and enter the total in the summary squares, with the date of the assessment indicated. This total is a sum; persons with more limitations will have higher sums than those with fewer limitations.

If the PWD is participating in a CBR programme, the same Form 2 will be used for assessing progress. After 3 months, repeat the assessment, fill out the squares and add the total again. If the total is less than before, then the person has made progress. The number of steps of progress is the difference between the total at the first assessment and the last one.

The assessment should be repeated about every three months, until the person does not make any more progress. At that time the PWD will, in most instances, be transferred to a follow-up group. Regular reports should be delivered to the technical supervisor (such as an ILC) and to the Community Rehabilitation Committee.

Comments on individual functions and activities.

Question 1 Feeds himself or herself

Should be assessed in relation to local habits, for example, eating by hand, using a spoon, fork and/or knife, chopsticks, etc. Drinking out of a cup or glass or out of the hand. Level 0 applies, even if the person does not fetch the food or drink (this might be due to a moving problem), but includes whether or not the person will lift the glass or handle the spoon etc., him/herself, once the food and drink is put in front of the person. Children will start feeding themselves before the age of 2, but might not be able, for instance, to cut up the food until later.

Question 2 Keep himself or herself clean

Level 0 indicates that the person does these functions independently (even if the water for washing has to be fetched by someone else). Cleaning teeth might not be a daily function everywhere. Children gradually learn to keep clean.

Question 3 Dresses and undresses

Take into consideration that children under the age of 5 might not be able to do everything (such as buttons, shoelaces or complex dresses in cold climates). Use level 0 if the child does as well as other children of the same age. If heavy dresses are used in the winter and light in the summer, some children may be able to put on summer dresses early in life, but will not learn how to cope with winter dresses until later.

Question 4 Uses the latrine

Take into consideration what other children and adults do. There might be latrines, or the person might "go to the nature". Level 0 indicates that the person is able to do this independently in the same way as others do.

Question 5 Controls urine and faeces

This question is for children above the age of 5, and for adults who have had a trauma or a disease or the problem might come by ageing. Please note that this question should be asked with care. Some people might not want to disclose the problem at once. The levels 8 to 0 have been used. This is because more importance was given to this difficulty.

Questions 6-7 Understands instructions and expresses needs

Some children may develop slower than others and will have difficulties. Compare them with children of the same age. Adults and elderly may have had a disease or an accident, which has led to difficulties. For them compare the situation with what they could do before the disability occurred. Ageing may cause this problem.

Questions 8-11 Communication

It is sometimes difficult to find out, if a child has difficulties with hearing and/or speech. The child might just be delayed in its development. This may be caused by a recent disease or malnutrition. In families with a person, who has such problems, there will be a spontaneous system of communication. Observe signs and test lip-reading ability. With age, all children learn to communicate gradually. Those who have difficulties learn alternative ways of communication. Diseases of the brain might also cause communication problems.

Questions 12-13 Sitting and standing.

To assess these functions, make several observations. The results may differ from time to time, for instance if the person has pain.

Questions 14-16 Mobility

What counts is whether the person is able to move independently. Either the person does this alone and without moving aids (=0), or uses assistance from another person or moving aids (1 to 4). It is allowed to use all types

of moving aids and appliances. Improvement may be the result of training alone. It might come after the person has been given aids/appliances and trained how to use these.

Question 17 Aches and Pains

Aches and pains in the back or the joints are quite common. Many persons think that it is “normal”, because of age, or what they do at work. Careful questioning is necessary to find out. Seasonal pain exists. It might depend on the weather or related to a part-time job. Most of this could be recorded under 1 or 2. Improvements may come after treatment with medicaments, or change of job, or a training programme. Progress should be recorded, irrespective of what was done as rehabilitation.

Question 18 Plays like other children

This question might be difficult to answer. It is about the development of the child. It should not be used to just note whether the child plays. This question is to assess whether the child has reached the same development level as other children. For this reason the play of the child is observed. An assessment of (4 to 1) will indicate that the child is seen as slow, or does not respond as others. The child may play as children of a lower age do. Mothers, who have older children, are most often able to see if the child has “fallen behind” by observing the spontaneous play. If unsure, the detailed descriptions in TP 26 of the TCPD can be used.

Questions 19 Strange behaviour

The description of what is meant by “strange behaviour” appears in TCPD, training package 19-20. One is looking for symptoms of a serious mental disease. If this condition exists, improvement may be achieved by a combination of treatment with medicaments and training. Any of these or both together may lead to a reduction of the difficulties/limitations. This should be noted as progress.

Question 20 Has fits

The PWD may not be aware that he/she has had fits. Most family members will understand, what is meant with a fit, but it is not always easy to get a reply to this question. This condition may call for treatment with medicaments. In children, fits are quite common and for many they will disappear spontaneously. Persons, in who fits appearing for the first time in adult age, should be referred to the health services. What is scored is just the frequency of fits.

Question 21 Goes to school

School age may mean different ages in different countries. Some will have a pre-school system. Often this might not be for everyone. In our scoring system, just record schooling starting from primary school. In most countries, such schooling is in principle obligatory. Enter 0, if the disabled child is attending a regular class. Score 2 might be used, if the child is at school at daytime in a special school. It can also be used if the child is boarding and does not live at home.

Questions 22-24 Joining in family/social/household activities

Compare the level of activity with those of non-disabled persons of the same gender and age. Level 0 indicated that the person shows the same degree of activity as others.

Question 25 Level of skills for income-generation

Each community should set up an “internal scale” with examples of what “qualified”, “moderately qualified”, and “simple” jobs will mean.

Question 26 Income

Here again an "internal scale" will be needed. If there is a legal or practiced "minimum salary", this should be set as equal to level 0. Please note that the scoring is from 8 to 0.

Question 27 Protection against violence and abuse

It is common to see that people with disabilities, like so many other poor persons, do not get their rights. Their property may be stolen, their land illegally confiscated, physical and psychological abuse is common, as is rape and other sexual crimes. Children with disabilities are often targets for verbal and physical abuse at school and in the community. Other children may be responsible for this.

The family and the community should ensure protection and full security. The degree of achievement will be reflected in the answers to this question. Scoring from 8 to 0.

4.2. Interpretation of changes in the scores

A change from higher to lower scores shows improvement. A change from a low score to a higher one shows that the person has now a more pronounced disability than before. An improvement may be due to

- 1) the rehabilitation programme, such as the training and opportunities provided
- 2) technical equipment, such as walking or hearing aids, eyeglasses.
- 3) medicaments, for instance for leprosy, fits, mental disease or rheumatic conditions
- 4) "normal" growth and development, for example, when a child grows it will be better able to dress, walk, and communicate.

A worsening of the situation may be due to

- 1) progress of the disease or other factors that caused it
- 2) ageing
- 3) external conditions, such as when the PWD is kept in a boarding institution

4.3 Calculation of steps of progress (SOPs)

The calculation of **steps of progress** (SOPs) are made by adding up the total points of functional/activity limitations:

- * at the start of the programme
- * at regular intervals, such as every 3 months.

INDIVIDUAL ASSESSMENT/PROGRESS FORM (Form 2)

Name: _____ Reg.No: _____

Community: _____

District: _____ Local Facilitator: _____

Type of disability: _____

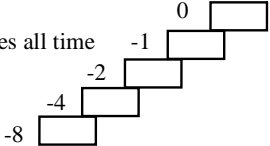
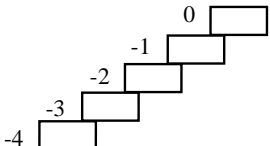
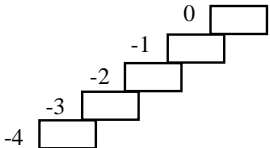
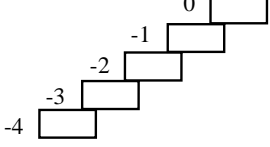
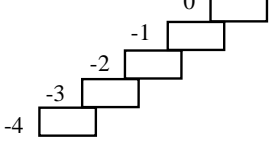
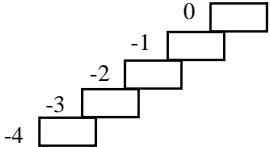
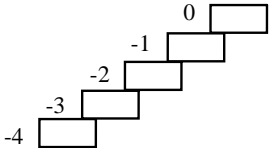
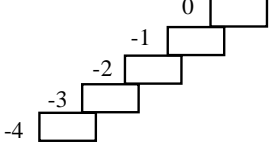
Sex: _____ Age at start: _____ First assessment date: _____

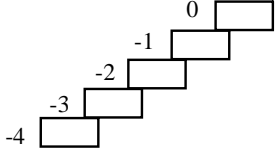
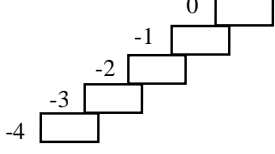
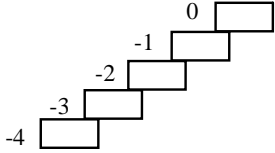
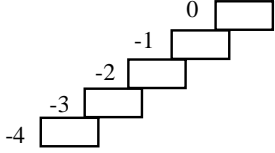
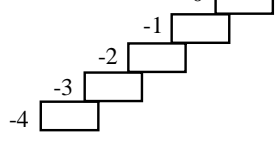
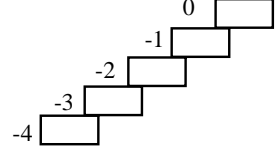
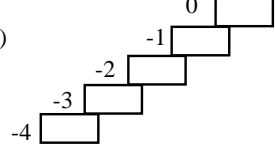
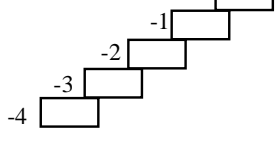
Training started: _____ Family Trainer: _____

Training finished: _____ Observation continues: Yes: No:

Summary	TOTAL POINTS FUNCTION/ACTIVITY LIMITATIONS:
At start	[] Date: []
After 3 months	[]
After 6 months	[]
After 9 months	[]
After 12 months	[]

FUNCTION/ACTIVITY	LEVEL
1. Feeds himself or herself? (including eating & drinking) (Over 2 years)	Alone With little help With some help or sometimes With a lot of help Not at all <div style="text-align: right; margin-top: 10px;"> 0 [] -1 [] -2 [] -3 [] -4 [] </div>
2. Keeps himself or herself clean? (including washing, bathing and cleaning teeth) (Over 2 years)	Alone With little help With some help or sometimes With a lot of help Not at all <div style="text-align: right; margin-top: 10px;"> 0 [] -1 [] -2 [] -3 [] -4 [] </div>
3. Dresses and undresses? (Over 2 years)	Alone With little help With some help or sometimes With a lot of help Not at all <div style="text-align: right; margin-top: 10px;"> 0 [] -1 [] -2 [] -3 [] -4 [] </div>
4. Uses latrine? (Over 2 years)	Alone With little help With some help or sometimes With a lot of help Not at all <div style="text-align: right; margin-top: 10px;"> 0 [] -1 [] -2 [] -3 [] -4 [] </div>

<p>5. Controls urine and faeces? (Over 4 years)</p>	<p>Controls both all the time Controls urine most of the time, faeces all time Frequent problems to control urine Cannot control urine at all Cannot control faeces</p> 
<p>6. Understands simple instructions? (Over 1 year)</p>	<p>Easily With little difficulty With some difficulty With great difficulty Not at all</p> 
<p>7. Expresses needs? (Over 1 year)</p>	<p>Easily With little difficulty With some difficulty With great difficulty Not at all</p> 
<p>8. Speaks? (Over 2 years)</p>	<p>Easily With little difficulty With some difficulty With great difficulty Not at all</p> 
<p>9. Understands movements and signs for communication? (For hearing impaired) (Over 2 years)</p>	<p>Easily With little difficulty With some difficulty With great difficulty Not at all</p> 
<p>10. Lip reads? (For hearing impaired) (Over 2 years)</p>	<p>Easily With little difficulty With some difficulty With great difficulty Not at all</p> 
<p>11. Uses movements and signs for communication which others understand? (For hearing or speech impaired) (Over 2 years)</p>	<p>Easily With little difficulty With some difficulty With great difficulty Not at all</p> 
<p>12. Sits? Including sitting up from lying down with technical aid. (Over 6 months)</p>	<p>Alone With little help With some help or sometimes With a lot of help Not at all</p> 

<p>13. Stands? Including standing up from sitting. (Over 1 year)</p>	<p>Alone With little help With some help or sometimes With a lot of help Not at all</p> 
<p>14. Walks at least ten steps? (With help of walking aids) (Over 1½ year)</p>	<p>Alone With little help With some help or sometimes With a lot of help Not at all</p> 
<p>15. Moves inside the home? Including walking, crawling, using trolley, wheelchair etc. (Over 1½ year)</p>	<p>Alone With little help With some help or sometimes With a lot of help Not at all</p> 
<p>16. Moves around the village? Including walking, crawling, using trolley, wheelchair etc. (Over 4 years)</p>	<p>Alone With little help With some help or sometimes With a lot of help Not at all</p> 
<p>17. Has aches and pains in the back or the joints? (All ages)</p>	<p>Very rarely or not at all Sometimes but can still work Disturbs work but not sleep Disturbs sleep Cannot work at all because of pain</p> 
<p>18. Plays like other children at the same age? (Only for under 10 years)</p>	<p>Yes Plays slightly below his/her age Plays much below his/her age Plays very much below his/her age Does not play at all</p> 
<p>19. Shows strange or unusual behaviour? (Over 10 years)</p>	<p>Never Yes, but rarely (once a month or less) Yes, sometimes (once a week) Yes, often (every day) Yes, regularly (several times a day)</p> 
<p>20. Has fits? (All ages)</p>	<p>Never Yes, less than 3 times/year Yes, about once a month Yes, about once a week Yes, daily</p> 

5. COST-EFFECTIVENESS ANALYSIS

5.1. Personnel

For **indicator 1**: divide the costs for the training by the number of ILCs trained and at work = the cost for training per ILC.

For **indicator 2**: divide the costs for the training by the number of CRFs trained and at work = the cost for training per CRF.

5.2. Service delivery

For **indicator 3**: divide the total programme costs by the population covered = the cost for CBR services per inhabitant

For **indicator 4**: divide the total programme costs by the number of persons with disabilities given services = the cost for CBR services per disabled person.

5.3. Beneficiaries

For **indicator 5**: divide the costs for service delivery by the number of steps of progress = the cost for one step of progress.

An example of how to do the calculations appears in Annex II.

6. EFFICIENCY ANALYSIS

6.1. Introduction

The analysis of efficiency seeks to examine each component of the programme to see if the most efficient use is made of the available resources. This efficiency must not lead to lower quality of services. Therefore, an efficiency analysis cannot be done in isolation; it needs to be complemented with an effectiveness study. Furthermore, whatever savings may be possible should not affect the sustainability of the programme.

The efficiency analysis should be part of an organised monitoring - and form part of evaluation. However, it also raises other issues:

- * did the operational planning aim at the highest possible efficiency?
- * does the programme manager have any tools to continuously monitor efficiency?

As these subjects are important, this Guide includes some proposals for how the planning and monitoring procedures can be set up.

6.2. Planning

Operational planning has two phases: a) the preparatory one before the start of implementation; b) the continuous one to follow-up, continue to build up capacity, monitor achievements and problems and adapt to the realities by making the necessary changes.

There are several different ways of planning operations. They all aim at finding the most efficient use for personnel, money, material, time, and all other resources that have been set aside for a programme. It is the duty of the programme manager to plan so he/she can achieve the objectives using these resources.

6.2.1. Operational planning technique

This Guide proposes to use the Project Evaluation and Review Technique (PERT). It uses network diagrams to describe the planned events. We will describe how such a network planning technique can be applied to the CBR programme.

It contains examples of forward and backward planning, of simple and more complicated sequences of events. It further describes the timing of events and how to set up a schedule. It contains advice on how to find and overcome constraints and identify the critical path.

The subject of scheduling is followed by the designation of staff members responsible for each event. Their reporting/monitoring process is laid out. A review technique for detecting overload of personnel and other resources, and taking action to correct it is described. Briefings and consultations are discussed as well as the need to seek approval from the responsible manager.

(A) Simple, forward planning

We will start by an example of simple, forward planning networks.

Fig. 3 Planning network (simple, forward)

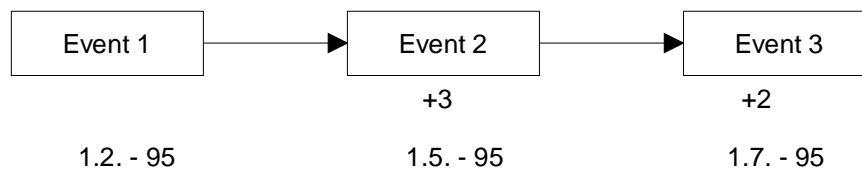


Fig. 3 illustrates a simple sequence of events:

1. The Ministry decides to buy a minibus; purchasing procedures (advertising etc. starts)
2. Bids have been collected from several dealers, one is chosen; and the contracts signed.
3. The minibus is delivered and paid.

We have also introduced timing into the network. Time units should always be the same (days, weeks, or months). Here we have used months as the unit. An event without a time or "O" (zero) indicates that it requires only a fraction of the time unit and need not be included in the calculations.

The +3 below Event 2 signifies that we expect the event to occur three months after Event 1, and the +2 below Event 3 signifies that it will take two months.

Consequently, five months will elapse between the day the Ministry decision to buy a minibus is received and the day it is delivered

If we receive the Ministry's decision to buy a minibus on 1 February 1995, we can log the following:

Target dates	Details of events (time required)
1 February 1995	Government decision received (0)
	Purchasing procedure (3)
1 May 1995	Decision made to purchase (0)
	Contract signed with dealer (0)
1 July 1995	Minibus delivered (2)

The dates marking the end-point of each event can be added under each of them as shown in Fig. 3.

Of course, each of these events can be further detailed, as, for instance, in regard to purchasing:

- a) the responsible manager advertises in several newspapers, inviting bus dealers to contact its purchasing department;
- b) the dealers contacting the purchasing department are given the minibus specifications;
- c) the dealers deliver their bids in sealed envelopes before the deadline date of 20 April
- d) all envelopes are opened by a panel of purchasing officers;
- e) the bids are discussed and compared;
- f) a proposal is made by the panel;
- g) the Chief of the Purchasing Department accepts the proposal;
- h) all bidding dealers are informed of the outcome;
- i) a contract is signed with the lowest bidding dealer.

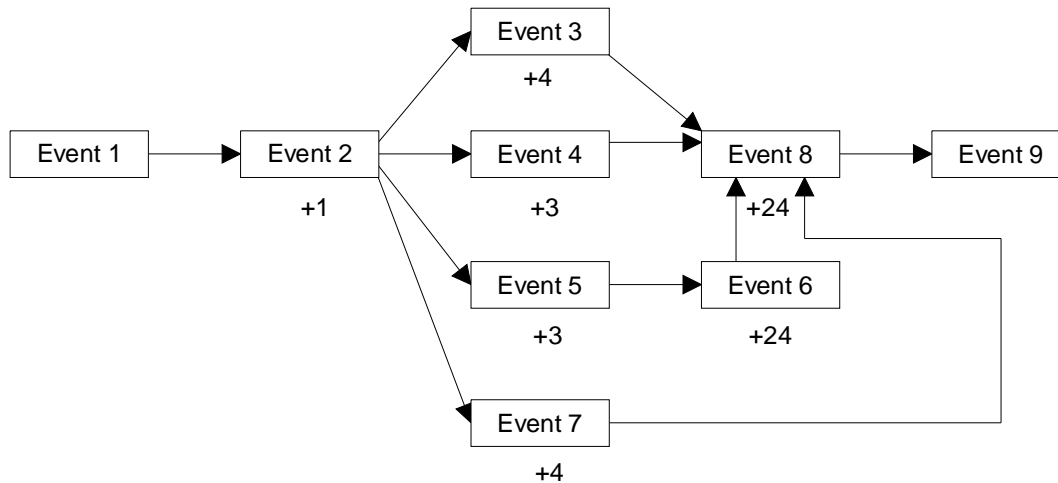
When a series of events is repeated many times, an administration would choose to formulate a standardised procedure to follow. This reduces the workload for the person in charge, as he/she will not need to explain to his personnel every time on how to go about the job.

Standardised procedures form the backbone of any implementation of countrywide programmes. We will return to this subject later.

(B) **Complicated, forward planning**

Networks may take a more complex form, see Fig. 4. (Note that Events 3 through 7 are **parallel, not alternative** events. They must all take place before Event 8 is implemented).

Fig. 4 Planning network (Complex, forward)



This example refers to the:

- Decision made to start CBR
- Decision made to train ILCs
- Curricula produced
- Teachers recruited
- Decision made on school locations
- Construction of schools completed
- Training advertised and students selected
- Classes/courses undertaken
- First group of ILCs passed their examinations.

Target dates	Events (number)
1 February 1996	Decision made to start CBR (1)
1 May 1996	Decision made to train ILCs (2) Procedure started to decide on school locations (5)
1 June 1996	Curricula production started (3) Decision made on school locations (5) School construction started (6)
1 July 1996	Curricula delivered (3)
1 February 1998	Recruitment of teachers started (4) Recruitment of students started (7)
1 May 1998	Teachers recruited (4)
1 June 1998	Schools ready (6) Students recruited (4) Schools started (8)
1 June 2000	First group of ILCs graduate and start delivering services (9)

If we look at the timing, we can see that the parallel, independent events take different times to implement. Event 4, for example, takes only 3 months; Event 3 takes 4 months; and Events 5 and 6 together take 27 months. No time has been set for Event 9, it comes after the end of Event 8.

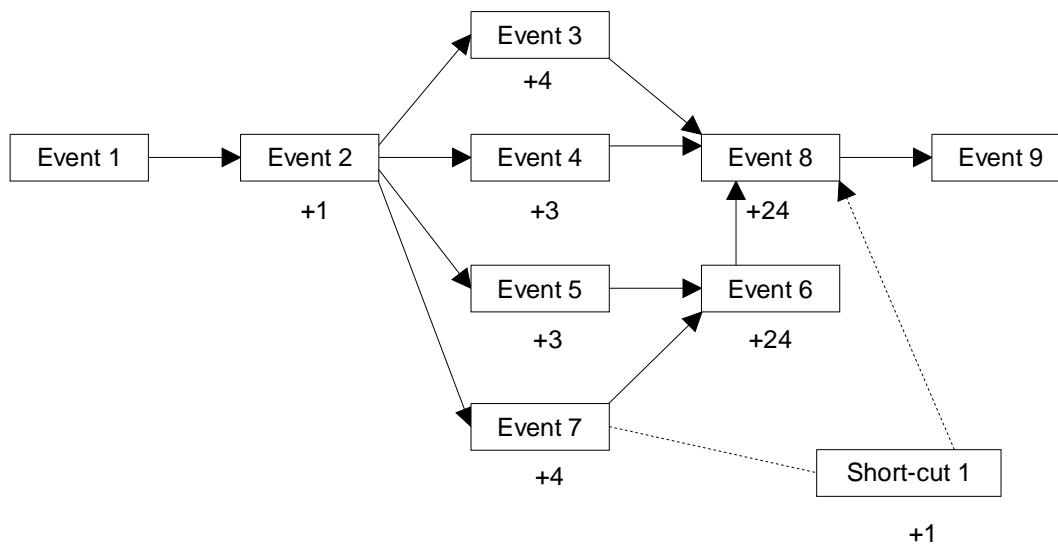
Obviously, we should quickly initiate Event 5 and then go on to undertake Event 6. There is no reason to delay Event 3, as curricula produced at an early date would pose no problems.

Events 4 and 7, on the other hand, should be delayed. It does not make sense to start recruiting teachers and students too early. The ones chosen might change their minds and drop out. Therefore, this event should be put off until Event 6 is well underway.

Here we have touched upon a valuable tool for planning: **constraints analysis**. The constraint for Event 8 is obviously the duration of Event 6. Students cannot be recruited until the building has been constructed. This path in the network is called **the critical path** that should be closely monitored in order not to delay the final event.

Every time we come upon a constraint, we must ask ourselves: can we overcome the problem? It may trouble us that it takes such a long time to build the urgently needed school so we may instead decide to rent rooms temporarily in an adjacent building rather than wait for the school to be built. This will give us a planning network like the one shown in Fig. 5.

Fig. 5 Short-cut planning network



An event to overcome a constraint is a "**short-cut**".

This short-cut allowed the school to begin operations (Event 9) 2 years earlier. Of course, Events 4 and 7 must now not be delayed while waiting for Event 6. The Schedule will now read:

Target dates	Events (number)
1 February 1996	Decision made to start CBR (1)
1 March 1996	Decision made to train ILCs (2)
	Curricula production started (3)
	Recruitment of teachers started (4)
	Recruitment of students started (7)
	Procedure started to decide on school locations (5)
1 June 1996	Teachers recruited (4)
	Decision about school locations made (5)
	Temporary school building rented (short-cut) (7)
1 July 1996	Students recruited (7)
	Schools started (8)
1 July 1998	First group of ILCs graduate and start delivering services (9).

(C) **The forward and backward planning techniques**

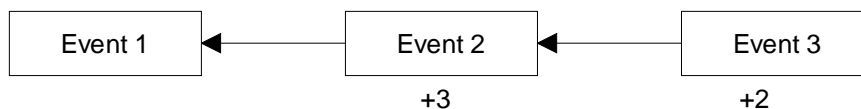
We will employ the network technique in two directions:

- a) forward planning and
- b) backward planning.

In the forward planning system we start with the present situation and follow up the events in chronological order, as shown in Figures 3 and 4.

In the backward planning system, we use the reverse technique.

Fig. 6 Planning network (simple, backward)



We assume the events to be the same as in Fig. 3. We will now ask:

Event 3: We need a minibus. How soon can we have it?

Answer: It will take the company two months from the signing of the contract to delivery. However, before this happens you must go through Event 2, the purchasing process. The purchasing office will need three months after Event 1, the Ministry's decision.

Obviously, it will take you five months to get your bus after the Ministry has decided.

This technique applied to the example in Fig 4 where we rescheduled events 4 and 7.

With the **backward planning technique, you should take the programme targets as the starting points.** For example, we have targeted that **x** persons with disabilities will be given the CBR home-training programme during year **y**. Our planners question is: What events are needed to put this into effect and when ?

We have thought of the following:

- a) the availability of trained CRFs,
- b) the availability of the manual **Training in the Community for People with Disabilities**,
- c) the existence of a supervisory network, and
- d) the availability of referral services and a clear understanding of their functions, etc.

Each of these events could then be analysed backwards, pinpointing the details to consider. For instance:

(b) If the manual is to be available in the communities during the implementation, prior to this it must (in backwards order) have been:

- * distributed,
- * printed,
- * there must be a budget to pay the printer,
- * field-tested for the purpose of adaptation,
- * translated before field-testing,
- * adapted to fit local needs,

* authorised by the publisher or copyright owner to be translated, adapted, and printed.

In the process of network analysis, many other people and their organisations are involved, meaning that they must be consulted. They may point out events of which you might be unaware of, e.g. that you may be required to submit all government-sponsored publications to a central authority for approval. When timing the events you may find some of them taking a long time, so you propose short-cuts to overcome the constraints.

You should work with both techniques, forward and backward planning, to come up with **one** network. In most cases, you will use the backward planning to confirm the forward planning or the reverse.

The products of your operational planning should consist of:

- a) one flow chart for each component of the programme,
- b) a description of each event in each flow chart,
- c) a schedule to tell you the timing of all the events, and
- d) a monitoring system to show if you are on schedule.

6.2.2. Setting up an operational system at all levels

Once the monitoring system is streamlined, standard forms for reporting should be produced and printed. Procedures should be laid down for reporting.

One of the early requirements for the implementation is to train staff in operating the system. With the standardisation suggested above, in addition to proper training, it should not be difficult to make it work.

You should, through consultations with some communities, try to make a common flow chart that can be used in all communities. You should consult at district and provincial levels to arrange a similar system there. It is necessary to introduce a unified operational system at all levels. This will facilitate the decision concerning the tasks to be done (as many as possible) at the peripheral level. Having a common operational system greatly facilitates the management.

6.2.3. Monitoring

The national programme manager might decide to monitor all the events. He might have to report to the central authorities from time to time, and he will be responsible if the programme falls behind schedule. A system for monitoring should be set up.

It could be:

- a) **simple**: all managerial staff produces a schedule and a flow chart. At the end of each month, the managers "down the line" do not report if they are on schedule, only if they are lagging behind and explain why. This is called "management by exception".
- b) **complex**: you report the progress of all events during each month.

6.2.4. Assigning responsibilities for events

As already indicated, all events (tasks) listed in the checklist should be distributed among the managerial staff and there should be a list of those responsible (all responsibilities added up will amount to a job description). Let us go back to the list of events reproduced in Fig 3.

List of events	Person responsible for acting
1. The Ministry decides to buy a minibus.	Chief of Purchase
2. Bids are invited from several dealers and one is chosen.	Supply Officer (Vehicles)
3. The minibus is purchased and delivered.	Chief of Finance Vehicle Maintenance Officer

In Event 1, the Chief of Purchases is responsible. He has to make sure that normal procedures have been followed, that the person with authority to sign the decision has signed the necessary papers. He then gives the

order to the Supply Officer (Vehicles), who handles the procedure, advertises, collects the bids, and gives them to the panel. Finally, the Chief of Finance signs the contract (who is authorised to do so) with the chosen dealer (after having made sure that there are funds available). The vehicle maintenance officer then makes sure that the bus is delivered in perfect order.

In the same way, all events that appear in all plans should be assigned to a responsible person. We will give one more example, using the lists on p. 31.

List of events	Person responsible
1. Decision made to start CBR	Responsible Minister
2. Decision made to train ILCs	National Co-ordinator
3. Curricula produced	Principal of Training Center (with help of a consultant)
4. Teachers recruited	Principal of Training Center
5. Decision made on school locations	Chief of Personnel Training Facilities, Ministry
6. Construction of schools completed	Chief of Building Management, Ministry
7. Students recruited	Principal, School of Rehabilitation
8. Classes/courses undertaken	Principal, School of Rehabilitation
9. First group of rehabilitation supervisors graduated	Principal, School of Rehabilitation

Each of the people responsible will have their own, detailed lists of the events for which he/she is responsible. All managers responsible should ask their staff to report on the progress of the work.

A similar list of events and list of responsible persons, with a precise timetable could be made for the start and implementation of the field CBR programmes.

6.2.5. Review of task distribution and workload

Before all the tasks are finally distributed among the staff, the programme manager should review the checklists and answer following questions, regarding efficiency:

- Have the tasks been assigned to a person who has enough time, competence, and staff to carry them out as scheduled?
- Have I overloaded any one person? If so, what can be done to make the workload reasonable (e.g. shift some tasks to someone else, give the person responsible more training/skills/knowledge before or during the period of scheduled work, assign more staff to him/her to cope with the work)?
- Does this person have other duties (given by myself or someone else), which would interfere with the responsibilities proposed?
- Is the scheduling uneven, so the person is sometimes over-loaded, sometimes under-loaded?
- Do we need more personnel?

To answer these and other pertinent questions, it is always a good idea to discuss the matter with the staff member in question and find out the situation. A similar efficiency analysis could be made of the field personnel (ILC and CRF), of for instance transportation and equipment.

6.2.6. Briefing and consultation of the staff

When all planning networks are finished and when all tasks are assigned to responsible people and all scheduling is finished, then it **is time to call a general staff meeting.**

The plans should now be presented to the staff, not necessarily by the programme manager, as this might make the more timid members of the staff or of those who are directly involved. The following questions should be asked:

- Are the objectives well understood by all?
- Have we remembered all the details?
- Does the scheduling appear realistic?
- Can we cope with the job?

- What would we do if we had problems (contingency¹ plans)?
- Who needs to know about our plans?

It is important not to push through a plan; the manager must listen to all and provide an atmosphere that invites critical appraisal. This briefing and consultation should be repeated at all levels of services and training programmes.

6.2.7. Briefing of all involved

All involved who do not work in the office of the programme manager (and were briefed, as described under point 7) should be informed and asked for comments. This is especially important for personnel of other sectors, who are partners in the enterprise. This could be done:

- through receiving an information copy of the plan, with the parts underlined in red which concern each of them, or
- through meetings.

The same questions as listed under 6.2.6. apply. A deadline for giving comments should be determined.

6.2.8. Approval of work plan

After briefing and consultations, final approval should be sought from the responsible manager.

6.2.9. Implementation of management

No plans will be followed to 100%. Even if the process described above or a similar one has been worked out, there will be a number of questions in every day management that have to be answered, such as:

1. are there any procedures that are often repeated, if so, one should provide some standard rules to follow;
2. a process of decentralisation should be encouraged, this may imply training of the managerial staff down the line, and setting up adequate monitoring;
3. unforeseen events do happen, and solutions have to be found;
4. monitoring **may reveal that a part** of the system does not function as expected. Changes have to be made;
5. new policies or guidelines may have to be implemented.

BOX 5. Advice for the manager: Get to know your most important resource: your staff, cultivate their co-operation and reward their criticism.

One of the most important requirements of a manager: to know the staff, meet everyone at the start personally, find out their education/training, qualities and experience. Unfortunately too many managers do not seem to apply this basic rule. Most managers, who come to a new job, do not bother to get to know the qualifications and aspirations of their staff, and this very often upsets the relationships and degree of staff motivation right from the beginning. The staff thinks that the boss does not even know who they are and what they can do.

Most managers also do not use enough time to listen to their staff and some do not even allow criticism or suggestions for changes. Many serious errors could have been avoided if the manager had encouraged staff participation in discussing the daily work and propose changes; in reality most often those who criticize run the risk of being dismissed from their jobs.

6.3. Efficiency of field service delivery

6.3.1. Efficiency in use of human resources.

The field service personnel will in our models be assigned to specified geographical areas. For example, the CRF may be assigned to one or several villages, or - if these are big - to a part of a village. Other CRFs may work in urban blocks. The ILC will technically supervise a number of CRFs.

By evaluating the efficiency, the manager (such as the ILC) will know that the resources for a given service were used in the most economic way. The following methods can be used for this.

1) Make a map of the area, for which a CRF is or will be assigned. The map should include the entire assignment area. It should show the main public buildings, such as the office of the local council, schools, health centres and religious buildings. The roads and main pathways should be marked. Agricultural land, forests, rivers, hills/mountains and important landmarks should be shown. This map will form an important part of the recording system kept in each village/block by the CRF.

2) On this map, the houses or groups of houses, in which the population lives, should be shown.

3) After having done a community survey, the CRF will mark the houses where there is a household member with a disability. Later on, the map will indicate the homes of those PWDs in the community, who are at that particular time involved in the CBR programme, including those who are being followed up.

4) The time requirements for a visit to each PWD will now be estimated. During the first weeks of the start of the participation of a PWD in CBR, the CRF may, for instance, visit three times a week and spend one hour each time. Later on, these visits may be reduced to 15 to 30 minutes. When the training programme is well understood and well done by the family trainer, visits may require only about 15 minutes. For PWDs in follow-ups, it will, for example, be sufficient with a visit of about 15 minutes per month or less.

5) When the CBR programme is in its "mature phase" (this is after 2-3 years, when the initial back-log of large needs among PWDs have been met), the estimation is that about 0.5 per cent of the population will be engaged in the CBR programme at any one time, and 1.0 per cent will be in follow-up. If the population is, for example 5,000, there will be about 25 new PWDs each year in the active phase of participation in a CBR programme, and 50 in the follow-up group. The CRF needs time to make not only the visits, but also the assessments, evaluation reports, and annual statistics concerning all those engaged in CBR.

For the assessment of efficiency, **the total time needed for the technical CBR work can now be added up.**

6) When this has been done, one will estimate the time needed for the CRF to travel to the PWDs. At the beginning, all PWDs will probably be visited at home. Later on, some changes can be made to gain efficiency. For instance, disabled school children can be seen at school, PWDs who work can be seen at their work places. Some PWDs may be engaged in self-help groups, so several can be seen at the same time.

Based on these calculations, **the total travel time may be estimated.**

7) Besides from working with direct contact with PWDs, the CRF also needs to set aside time for other duties. Among these are: meeting with the Community Rehabilitation Committee, meetings with community leaders, teachers, health workers and the ILC. Time has to be allotted to in-service education, visits by administrators and other.

The total time requirements can now be calculated. Similar calculations can be made for the ILC. Here the time set aside for travel and meetings will be more important.

When the time available for the personnel is fully used, the field programme personnel are efficient.

6.3.2. Efficiency of use of other resources.

The field programme will have other resources, such as means of transportation, tools, books and training packages, offices and office materials. There may also be resources set aside for per-diem, in-service training of the personnel, cultural events, radio programmes, contacts with and training for personnel from other sectors, contacts with employers. The use of these budgets should be reviewed to make sure that these are used for the purposes foreseen.

6.3.3. Conclusions about efficiency of field programmes.

A manager who looks into **field programme efficiency needs to use a lot of common sense**. The fact that the personnel is fully busy and that all budget items have been used up, does not indicate that the programme is successful. The information must be **complemented with an assessment of its cost-effectiveness**.

It is common to see that in real life those who are prudent in spending their budgets get punished. Local managers, such as the CRF and ILC may be told, "As you did not spend a certain part of the budget, it will be withdrawn next year." The reasons for not spending the budget should be looked into. These may be many. It is well known in developing countries that the bureaucracy is very slow, and that getting things done takes more time than estimated. Prudence should be encouraged and not punished. **Local managers should be given a degree of flexibility, and one should not insist that they must spend the available resources if this is against the common sense.**

7. MONITORING EFFECTIVENESS AND EFFICIENCY

A monitoring system will help to continuously follow the effectiveness and efficiency of the programme. Monitoring is a very important management tool. It provides the supervisory control over how resources are used and over the outcome of the programme.

Programme monitoring is indispensable, because it is the only way in which information and data can be put to direct use: to pinpoint problem areas and re-direct resources to achieve full effectiveness and efficiency.

Monitoring comprises the following main factors:

- making sure that reporting is complete; and that reporting forms are accurately filled out;
- finding out if reports are reliable;
- processing data on reports to produce statistics, and
- controlling the programme to see that the outcome corresponds to planned targets.

We will briefly review each of these points.

7.1. Completeness of data

Many people do not like reporting and filling out forms and might therefore not do any of it.. Such staff should be told the reasons why reporting is required. Non-reporters might have to be sanctioned, or some other person in the community (other than the CRF) might have to do the reporting.

7.2. Accuracy of report forms

Forms have to be explained in detail, and filling them out needs to be practiced. The first few times it might be advisable that the ILC teaches this subject with great care. It is best to ask the person reporting to fill in a zero ("0") in all empty columns rather than leave them blank.

7.3. Reliability

The problems related to reliability are important. Some people tend to fill out forms with fake numbers. Such a person either does not bother to find out the real numbers or is lazy and has not achieved much during a certain month. Some CRFs do not want to lose face, so they fill out what they think their supervisor wants to read. Others know the targets and fill out numbers as close to the targets as possible. Examples - although rare - exist of personnel who have been known to fill out forms a whole year in advance.

How can one check this? There are several means.

First, the Community Rehabilitation Committee should examine copies of all reports of the CRFs. It would be reasonable to assume that the Committee will not let a CRF get away with faked data.

The ILC checking the data should make it a habit to now and then go through all the records on PWDs - those trained at home, those in school, those with jobs. The ILC should spot-check a few of them to test the reliability of the data.

Further, the source of unreliable data may be higher up, above the level of the CRF. An ILC who does not receive data from a CRF may be tempted to copy those of a previous month, or just invent figures. Thus, the next level supervisor needs to spot-check the reliability.

When there are reliability problems, it is better to try to motivate everyone concerned or to put a more highly motivated person (e.g., a disabled community member) in charge of data reporting. There must also be recognition for honest reporting, even if targets are not met or the expected quality is not achieved.

7.4. Processing of data

The processing of data should be standardised. It is relatively easy to develop forms that allow the adding up of community data in order to provide district data and so on. One such quarterly report form appears as Fig 7. on p 41. No judgments should enter the presentation of basic data at this point. The judgments are part of the evaluation of data that comes later. A useful tool for monitoring is to compare the figures presented by different staff. For instance, the CRF in one district may report a consistently low number of persons with disabilities involved in CBR.

In another district, this figure may be double that of the first. Such a difference must have an explanation: are reporting techniques different? Do they work in a different way? The programme manager might first find out the average quantitative results and then single out two groups of CRFs: those who seem to perform well and those who seem to perform poorly. In what ways do these two types of CRFs differ?

Another valuable tool is to compare quality (achievements). One CRFs records may show, for instance, that 90 per cent of all people given a home training programme (over a specified period of time) improved, and another CRF may record only 20 per cent as showing improvement. Is the latter choosing his/her trainees badly because he is lacking experience, or is he/she just giving all persons with disabilities a chance to join the programme, even if only some of them will succeed? Is the first very clever at judging which PWDs to offer the programme, or is he/she just skimming the easiest ones off the top while neglecting the rest?

Some CRFs might be overly interested in PWDs with moving difficulties and totally ignore others, e.g., those with strange behaviour. This again might depend on fear or prejudice. Monitoring will detect such attitudes.

Monitoring the opinions of the Community Rehabilitation Committee might also lead to discovery of similar disparities in results. Some communities might always express satisfaction with everything. They may not want any controversies. They may lack the courage to cope with the difficult situation where services suffer and a CRF should be replaced in the interest of all. Such an attitude reflects poor management and will often create problems that are bound to worsen with time. The contrary might be true of other communities. Among the committee members might be a group of "complainers" for whom nothing is ever satisfactory. Keep them as members of the Rehabilitation Committee!!

While monitoring quality, it is a good idea to compare technical achievements with the views of the consumers. A pleasant CRF may be technically incompetent and achieve no real improvements, but may be highly appreciated for his/her good manners and empathy. In order to solve problems like the ones above, some CRFs should perhaps attend an in-service training course.

Monitoring does not give advice on what to do. It only provides a tool for analyzing what is happening. This will be explained below.

FIG 7. QUARTERLY REPORT FORM

Quarter Year
 To ILC, District of
 From CRF, Community

1. Number of PWDs in the CBR programme (quantity).

PWDs in active programme carried over from last quarter			+	<input type="text"/>	
new this quarter			+	<input type="text"/>	
transferred to follow-up programme for other reasons			-	<input type="text"/>	left
				<input type="text"/>	

PWDs in active programme at end-quarter				<input type="text"/>	
PWDs in follow-up programme at end-quarter				<input type="text"/>	

2. Progress (quality)

Number of PWDs, who made progress this quarter	<input type="text"/>
Number of steps of progress for whole group	<input type="text"/>

Explanations:

PWDs are transferred to follow-up when:

- 1) the expected progress has been made for the short term; and
- 2) it is desirable to make sure that the functional ability, personal protection and conditions of daily life do not decline;
- 3) progress (e.g. in education, ability training, economic situation) is expected to continue with a minimum of direct supervision.

PWDs may leave the programme for variety of reasons, such as lack of time or motivation, migration, death. The above quarterly report could be supplemented by an annual report from each CRF. Annual reports could show, for instance, age, gender and type of disability distribution.

7.5. Controlling the programme

We have mentioned above that monitoring can be used for checking local targets, "productivity" of CRFs, teachers and community leaders. On a higher level of supervision, monitoring becomes a management tool. We will use the following network to explain how it could work.

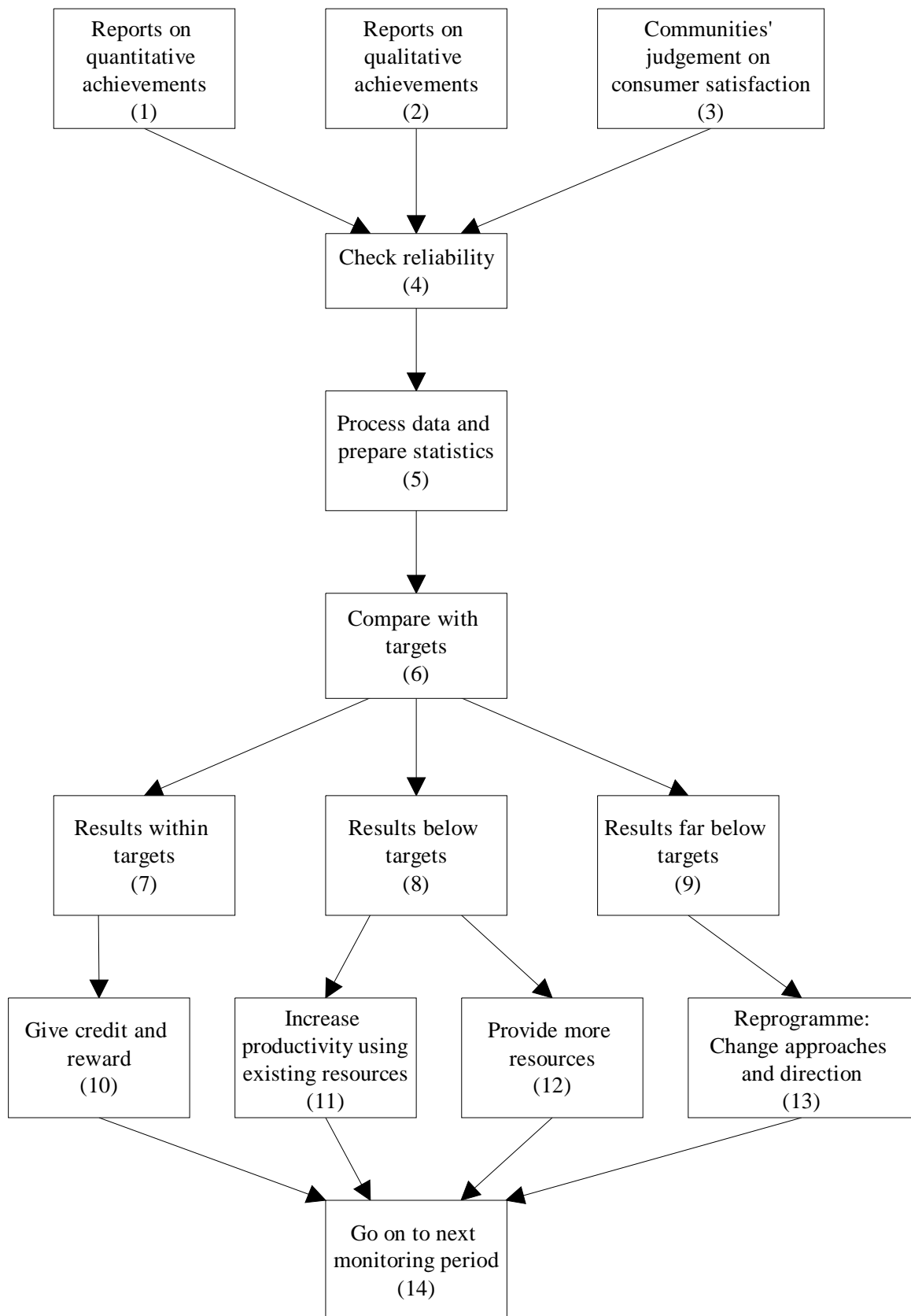
Explanations the figure 8 on next page:

- 1 ➔ Reports on quantitative achievements include:
(a) the report forms on services delivered in the community, and
(b) the report form on referral services.
- 2 ➔ Reports on quantitative achievements are based on the individual records (comparing objectives and results of the training applied while relating the achievement to the time period during which training was given).
- 3 ➔ The members of the community rehabilitation committee will judge the degree of consumer satisfaction.
- 4 ➔ The reliability of the data will be checked as mentioned above.
- 5 ➔ All data for each district, each province, and the whole country will be consolidated systematically into statistics.
- 6 ➔ These data (5) will be compared to the specified targets.
- 7 ➔ If results are within targets, there should be no problem (see 10).
- 8 ➔ If results are below targets, action must be taken (see 11).
- 9 ➔ If results are far below targets, action must be taken (see 12 and 13).
- 10 ➔ Give credit and reward to those who have done well.
- 11 ➔ If results are below target and if you think that the targets can be achieved, try to increase the productivity using existing resources.

12 ➔ If results are unlikely ever to reach targets, you should first try to provide more resources.

- 13 ➔ If the preceding approach (12) is not possible, a reprogramming process must start.
- 14 ➔ From the preceding monitoring period (e.g., 3 months), you go on to the next.

Fig. 8 Monitoring process showing how to control a programme



What has been described above is the ideal **monitoring process**. It may take some time to develop such a process and make it functional on a permanent basis.

However, this is what should be seen as the final goal. In the end, you will not be a successful manager unless you fulfill the requirements of an effective monitoring cycle. When you have set up this process, you will have achieved the most efficient use of the resources for the programme.

8. QUALITY OF TRAINING PROGRAMMES

This Guide proposes a method for checking the quality of training programmes. This is not common to see, even in the industrial countries.

In the above text, we have paid attention to the planning and monitoring aspects as tools for costs, effectiveness and efficiency. However, we should also try to reach deeper by asking the following questions about the training programmes (a review of the options for education of the operational field personnel is available in : E. Helander: A Service delivery system for Community-vase Rehabilitation, IIRM, 2001)

- * Do we train our personnel in the most efficient way and do we train them to be efficient in their jobs?
- * Have they learned what they need for their jobs? Did they acquire the desirable effectiveness, - are the achievements of the beneficiaries (the PWDs) those that were expected?
- * Did the training include components for which there was no or only marginal practical use?
- * Does the present training course require changes to include new subjects that are needed for the fieldwork?
- * Are the personnel adaptive enough to the needs of disabled individuals? Do they have adequate communication skills?

All course contents need to be constantly revised. A process for this could be to systematically interview the personnel after 2 years of fieldwork. A seminar could be a useful forum for discussion on how to change the course contents to be more adequate.

If a large proportion of ILC or CRF students fail the examinations, one should review the processes for selecting applicants, the competence of the teachers, the examination procedures, etc.

9. COST CONTROL

The next point is to evaluate the spending of each of the budget lines. Can savings be made somewhere? One should avoid savings that may lead to decreased quality of results. The review is not proposed primarily for decreasing the expenditure. It is rather to make changes so these resources are used in an optimal way. Some specific items are mentioned below.

9.1. Expatriates

In our example, the cost of one expatriate, including transportation, amounts to about half of the budget (that covers some 125 nationals and their transportation).

Expatriates may be needed for the initial period to perform certain functions and train nationals to do the job. To reduce the costs, one can consider shortening the period to the necessary minimum. Some international NGOs may, however, assign expatriates for very long periods, such as 5-10 years or they stay forever in the same place.

The transportation of expatriates is often costly, and alternatives may be considered. If the expatriate is only in a training center and lives close by, the provision of an expensive vehicle used mostly for private

transportation should be seen as a benefit in kind to supplement the salary and not as a transportation cost to be charged in the programme.

Sending national personnel to courses in planning, management or rehabilitation technology can sometimes reduce the use of expatriates.

Another concern is the preparation of the expatriate. Some of them are posted in the field for the first time and may not be familiar with some basic tasks (e.g. training for polio, household duties, agriculture) in the developing country. Neither might they have the necessary insight into local culture and social systems. Some organisations give their expatriates language training, and some insight into the local culture. More emphasis is needed on this subject.

9.2. Transportation

In our example, a bus is purchased to transport ILC trainees to the field. The cost is high and alternatives may be considered, such as taxis, rickshaws, cycles, etc. Careful calculations can be made to estimate the alternative costs. At the planning phase, one should consider the extra costs, when a training center is built far away from the practice area. Even if there is a lower direct cost, when accepting the donation of a piece of land and/or for construction at a far away place, the cost consequences related to transportation may not be compensated.

In most developing countries, the costs for provision of 4x4 vehicles for national personnel are not sustainable. There are many examples where governments who receive donated vehicles lack funds even to pay for the gasoline.

In some programmes, national personnel are told to share already existing government vehicles with other employees. This is rarely a viable solution for a CBR programme.

9.3. Premises

The advantage of renting premises for a training center is that the initial cost is much lower. It also gives better flexibility. There are many examples of centers built outside a town, that 10 years later find themselves in the middle of urban development, with expensive transportation consequences.

If the programme manager in such cases is allowed to sell the land and the building, this might also lead to flexibility, but there might be legal constraints for this.

9.4. Salaries

Salaries should always be set to follow national standards. Salaries should be adequate and encourage personnel to stay in their jobs. If there is a very large attrition rate (see Annex III), the costs for training and employing substitute staff will be high.

BOX 6. NEVER PAY "MOTIVATION MONEY"

Foreign donors have often paid either bonuses or higher salaries to nationals. The reason given normally is that they find it difficult to start a programme. It might in reality also not be possible to meet the targets that the donor in the home country has set for them. Because in the first place the targets were unrealistic.

The experience of paying so-called "incentives" or "motivation money" is very negative. Such programmes are not sustainable; as soon as the bonuses are phased out, these personnel will seek other jobs. Many development organisations are now trying to phase out this approach - with very large difficulties.

Another disaster has been the sometimes-used methods of employing a national, who already has a salary for doing a full-time Government job. The method used by some international NGOs has been to pay that person for overtime.

Another example not to copy is the following: A Western NGO set up a rehabilitation center in the capital. They were looking for a good and experienced manager. They found one, and she was the principal of the country's nursing school. She was then offered, what the NGO considered as a rather reasonable salary in terms of what a similar person would expect in their home country. She happily agreed, because that was a salary twice as high as the Prime Minister's.

10. SUSTAINABILITY, CREDIBILITY AND THE "BOTTOM LINE".

Sustainability analysis is a complex subject. It is dealt with in other publications of this series. The question is: will the programme continue to be maintained by available community and national resources, after the initial phase? Is it technically and culturally appropriate and financially safe? What will happen should the contributions from the national Government and/or from overseas cease? Are the programmes and the managers credible?

Some of the questions have been raised above and many more are needed. Is the basic concept appropriate? **Certain strategies or programme components may be introduced without recognition of the damage they will do to sustainability.** Examples are: **indiscriminate use of Western technology, equipment and transportation; introduction of types of personnel for whom training cannot be sustained in the country; management styles that do not fit the culture; engagement of national personnel with temporary "motivation money" or of those who already have too much to do.** Most mistakes are made during the initial period. Governments or national authorities may in reality not have committed themselves. However, they have problems to say no to foreign donors, even as they know that they should decline. The world is full of examples of development projects where many things have gone wrong, and those are better closed. **It would help many service development programmes, such as rehabilitation, to achieve better sustainability and credibility, if they had a "bottom line". It is hoped that at the end of this Guide the reader has become able to compute that line.**

Annex I. EXAMPLES OF COST CALCULATIONS FOR A NATIONAL BUDGET.

(1) Service delivery at the community level

In this example the service delivery system personnel consist of CRFs at the community level and ILCs at the intermediate level. Using realistic examples, it is estimated that - with "normal" terrain and road system, and a population density of 20 or higher per sq. km - one full-time CRF can undertake the necessary CBR tasks in a population of 5,000. The CRFs in this example will have no other duties, and will be assisted by and under the management of the Community Rehabilitation Committee. The committee will be especially engaged in tasks related to ability training (social and technical components) and identification of income generating activities. For functional training, care and security issues, there will be self-help groups. The teachers of the regular school will be in charge of all education for disabled children; MRTs will give preparation before and assistance during the phase of inclusive education.

The CRF will need the TCPD manual, some equipment (such as tools for making walking aids, small repairs, etc.) and a bicycle for transportation (in more densely populated areas, e.g. urban marginal settings, walking by foot is feasible).

At the intermediate level an ILC will be in charge of the technical supervision of the CRFs, the in-service training, contacts with referral facilities, authorities, reporting system, monitoring outcomes etc.) In the circumstances mentioned above, one ILC can supervise about 20 CRFs. For this reason it is in our example calculated to employ one ILC for a population of 100,000.

In the example below, salaries for the CRFs are calculated to be about 50% of the local service delivery costs, an equal amount has been set aside to cover the costs for transport, manuals, tools etc. For the intermediate level, the salary represents 35 % of the costs, and the remaining 65 % are for other costs.

Example of annual costs for CBR service delivery in a population of 100,000	US \$
20 CRFs, salary US \$ 400 x 20	8,000
Other costs (transport, manuals and other written material, equipment) US \$ 400 x 20	8,000
1 ILC, salary US\$ 700	700
Other costs US \$ 1,300	1,300
TOTAL	18,000
Annual cost per capita of population	0.18
Annual cost per disabled person	12

(2) Costs for inclusive education

In an area with a population of 100,000, there will in a developing country be about 20,000 children of primary school age. Out of these, about 2 % or some 400 will have a disability. This implies that each

year we might expect 50 to 70 such children to enter the primary school. Half of them may have a moving disability (with no other difficulties) and they will require some physical assistance (e.g. With transportation to the school) and adaptation in the school (such as of the toilet/latrine). To better accommodate them, the local teacher could benefit from an orientation seminar, but a MRT will not be needed. For the other 25 to 35 new disabled children each year it is recommended to have 3 full-time MRTs. They will prepare the new children for inclusive education, and assist those, who are already in school. The MRTs will need transportation by motorcycle; some equipment, the salary levels and other costs are calculated in the example as for ILCs.

Annual costs for inclusive education in a population of 100,000	US \$
3 MRTs, salary US\$ 700 x 3	2,100
Other costs US\$ 1,300 x 3	3,900
Total	6,000
Annual costs per capita	0,06
Annual cost per disabled child (400 beneficiaries)	15

(3) Training of ILCs

The costs for training of the ILCs depend on the length of training, and on local costs, if students receive a stipend etc. It will be most practical to locate an ILC training centre in a small town, close to a rural area with access to a nearby CBR programme (see also Ch. 11 regarding the scaling up of small projects to national programmes). Alternatively, a "rehabilitation village" can be built. Such a village will have some of houses built in the traditional style. Persons with disabilities are invited to stay, while the students carry out the preparatory part of their training at the training centre. About one third of the training period for an ILC should be spent in direct contact with a CBR field programme so the students understand the role of the community leadership, the CBR committee, the school, income-generation, access to community development programmes, interventions in the environment, empowerment of disabled persons, human rights problem etc.

Below follows a budget example of an 18-month course developed for the State of Karnataka in India. The costs have been translated to US \$, using a rate of 1 US\$ to 40 Indian Rs. In the Indian budget system, costs are increased each year by 5 to 10 % to take care of automatic salary increases and inflation.

Students are admitted once a year, the first and second year below there are 30 students admitted, during the third year 60. Note that both capital and current expenditure are included.

Example of annual cost calculations in US \$ for an ILC course in Bangalore, India

A. Personnel

Budget Heads	Basis	Year 1	Year 2	Year 3
1 Course Director	2,250 + 5% a.i.	2,250	2,360	2,481
3 Master Trainers	1,875 + 5% a.i.	5,625	5,906	6,202
Resource persons for teaching	Cat. 1: 10 p.d. Cat 2 : 30 p.d.	2,500	5,000	5,000
1 Hostel warden	1,200 + 10% a.i.	1,200	1,320	1,452
1 Assistant Hostel warden	600 + 10% a.i.	-	600	660
1 Manager	900 + 10% a.i.	900	990	1,089
1 Secretary	600 + 10% a.i.	600	660	726
1 Driver	600 + 10% a.i.	600	660	726
1 Cook	540 + 10% a.i.	540	594	653
2 Kitchen helpers	360 + 10% a.i.	600	660	726
2 Watchmen	360 + 10% a.i.	720	792	871
2 Office boys	450 + 10% a.i.	900	990	1,089
Subtotal		16,435	20,535	21,675

B. Stipends, Canteen Expenses, Infrastructure and Equipment

Stipends	25 p.m + 10% a.i	9,000	14,850	21,780
Canteen expenses		10,125	16,875	24,750
Rent of Buildings		7,500	-	-
Construction of Hostel buildings		25,000	37,500	-
Training aids and equipment, furniture		2,500	2,500	-
Bus, purchase		12,500	5,000	
Bus. Maintenance cost/diesel/ insurance etc.	2,750 p.a + 10% a.i	-	-	-
		-	2,750	3,025
Subtotal		66,625	79,475	49,555

C. Training materials and library

Training materials development		5,000	5,000	5,000
Library furniture		2,500	2,500	1,513
Books and journals	1,250 p.a + 10% a.i	1,250	1,375	
Subtotal		8,750	8,875	6,513

D. Utilities, stationary, and miscellaneous

Utilities Telephone Fax, Email, Water, Electricity, etc.	1,800 p.a + 10% a.i	1,800	1,980	2,178
Stationary, postage etc.	2,500 p.a + 10% a.i	2,500	2,750	3,025
Miscellaneous		2,500	2,500	2,500
Subtotal		6,800	7,230	7,703

TOTAL COSTS

		Year 1	Year 2	Year 3
--	--	--------	--------	--------

		103,650	118,615	85,445
--	--	---------	---------	--------

The budgets for the first two years include some capital costs. During the third year, where there are no capital costs, the total for training of 60 students are annually US\$ 85,445, equivalent to US\$ 1,424 per student per year. The cost for training one ILC for a period of 18 months is about US \$ 2,100.

It will be seen from the tables above that the highest costs during the third year is for stipends and canteen, which represent 54 % of the total. Teaching staff on the other hand only costs 16% of the total. It might be useful to increase this staff; the added cost is small and will have a positive effect on the quality.

(4) Costs for the training of MRTs

If one assumes that the MRTs are already trained as schoolteachers, the subsequent training period to become a MRT could be about one year.

The costs for this training are likely to be similar to the annual costs for training an ILC or in example, or about US\$ 1,400.

(5) Costs for the training of CRFs

Realistic budget calculations of alternative approaches to this type of training have been made for some 30 countries. All show that the most cost-effective approach is to training 3-5 CRFs in the area, where they live and are going to work. The ILC undertakes the training. Other alternatives, such as using a training centre, or individual training are more costly; using a training centre is the most costly and likely to produce lower quality.

Budget calculations have to be made locally, and should for a 10-week course include, as an example

	US\$
Salary for ILC/trainer, 10 weeks	170
Per diem (US\$ 5 x 50 days) and travel, the ILC/trainer	280
Lunches for the trainees (4 x US\$ 1 x 50 days)	200
Total	650

To this should be added miscellaneous costs: manuals and other written instruction materials, report and assessment forms, equipment etc. These costs are included in the service delivery costs above. In the above example the cost for training one CRF is US \$ 163.

(6) Costs for referrals

As stated above, costs for referrals to public services, open to all citizens, are not part of the CBR budget. For instance: health care (including primary health care, immunisations, nutrition and women and child programmes, treatment of infectious or non-communicable diseases, surgery for cataract, contractures and so on), schooling in regular schools, literacy, participation in development programmes, such as ability/vocational training, jobs and other income-generation, security and law enforcement etc.

Some specific services for disabled people are needed, and their budget should be included. Examples of these are: appliances and aids from orthopaedic workshops, tricycles and wheelchairs, provision of eyeglasses for severe sight impairment, hearing aids etc.

It should be noted that 80% to 90% of the production of appliances in orthopaedic workshops in some countries are now aimed at victims of polio. As polio is soon to be eradicated, a cautious approach to the building up of such workshops is recommended. Wheelchairs and tricycles of very good quality are now manufactured at a cost of US\$ 50 to 100 in some countries. Smaller countries should preferably

import these items, rather than setting up their own manufacture. Eyeglasses now cost less than US \$ 5 and hearing aids can be made for some US\$ 25 to 50.

In each country, specific calculations have to be made to find out the costs for the referrals mentioned.

SUMMARY

The above examples are chosen to illustrate how costs calculations can be made. The examples have to be recalculated to each country, and then the total costs estimated. The total costs for training and service delivery can be divided up in increments, over a longer period of implementation, such as 10 to 15 years.

ANNEX II. EXAMPLE OF EXERCISE

HOW TO CALCULATE COSTS FOR SERVICE DELIVERY, AND COST-EFFECTIVENESS INDICATORS

It is assumed that the Government is considering a policy, which implies that in 14 years time all the basic needs of the PWDs will be met. You are asked to tell them how this can be achieved and what it would cost. You also need to explain how the Government can monitor the outcome through cost-effectiveness indicators.

STEP 1.

Calculate the population over the next 14 years, using Table 1.

The country now has 34 million people, its population grows by 2% each year. Calculate the ILCs needed, under the assumption that there will be one per 100,000.

TABLE 1

Year	Population	Nr. of ILCs needed
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		

Population at end of 14th year = P

STEP 2.

Make a plan for the development of ILCs. How many ILCs do you need to train each year to arrive at the planned number during the 14th year.

Please remember that it is most economical to train the same number of ILCs each year. With the school/training center premises and the personnel will remain the same. When you do these calculations, it would in most countries be normal to calculate that a certain number of students would fail during the course or would not finish it for other reasons. This is called attrition (for details see Annex I II). You could, when the attrition rate is known add a few extra students to avoid that you fall short of personnel at the end.

There is one more factor to think of. At the end of the 14 years, you will not need such a large input of new personnel each year. You only need to compensate the attrition during work years. As a manager, you would have to plan ahead to avoid serious problems with the staff working as trainers/teachers of the ILCs. They should, when not needed any more (for instance at the end of the 14 year expansion period), be offered other jobs. They could be in charge of e.g. in-service training programmes, programme monitoring or administrative jobs in the rehabilitation sector. When they are employed for the first time (for instance at the beginning of the first course), their contracts need to reflect such a change in their working conditions.

In the table below you will calculate how the service provision increases each year. Assume that there will be 20 CRFs for each ILC.

TABLE 2

Year	ILCs trained this year	Total ILCs in service at the end of the year	Total number of CRFs in service	% of population covered
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

STEP 3.

When this is finished, set an annual salary level for each ILC. This should be based on knowledge of salaries for national personnel, which have an equal level of training and educational background. This salary should include the costs for social security, pension schemes, family allowances paid by the employer and for housing, in conformity with the situation at home.

Enter this number:(A). This corresponds to US\$(B)

then assume that the salary is 50% of the costs. Other costs are for travel, per-diems, manuals etc., (in reality you will have to do some research at home to find out, if this is indeed a reasonable number).

Enter here the annual cost for one ILC (salary and other costs) US\$(C)

Use table 3 to show your calculations over the implementation period of 14 years. For the time being, we neglect the inflation rate. In some countries there are annual automatic increases of salaries, here we neglect theses also, if you do these calculations at home, you need to find out how other service systems calculate their cost including annual salary increases and inflation and housing.

TABLE 3

Year	Number of ILCs at	x annual cost per ILC	Total costs for ILCs
------	-------------------	-----------------------	----------------------

	work this year	(= C)	
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			

Now note the number at the 14th year in the far right column US\$.....(D)
 Enter this number on page 6 under 2 SERVICE DELIVERY. Central

STEP 4.

We will now calculate the Costs for Service delivery: Field

Set an annual salary for the CRF.....(E). In US\$.....(F)

Assume that the salary is 50% of the total costs, each CRF will cost US\$.....(G). Enter this in Table 4.

TABLE 4

Year	Nr. of CRFs in Service	x Annual cost per CRF = (G)	Total annual cost
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			

STEP 5.

Add the Central and field costs $D + H = K$, in US\$.....

and you have the total cost for service delivery. You can add a component for administration, such as 10%, or what is usually considered as a realistic overhead costs.

(There are other costs to consider. These include referrals, education, vocational training, and participation in rural development/poverty alleviation programmes. The principle is that PWDs have the same right as other

citizens to receive health care, education and development funds as others. Thus the proposal is to charge all the costs mentioned to the various sector budgets, such as health, education, labour, social welfare, rural development, etc. we will not go into the details in calculating these items, it will be very complex and is very different in each country.)

STEP 6.

We will now assume that each CRF will bring services to 1.5% of the population. These are all PWDs. Enter the number of these persons at the end of the 14th year (P see Step 1).

Enter 1.5% of P here:(J)

STEP 7.

Divide the total service delivery costs K by the total population P.

Enter the result here:US\$ per capita = K

This corresponds to the cost-effectiveness indicator 3.

STEP 8.

Divide the total service delivery costs K by number of PWDs receiving services (J)

Enter result here:US% per PWD receiving services (L)

This corresponds to cost-effectiveness indicator 4.

STEP 9.

Assume the each PWD has made an average of 16 steps of progress (SOPs). (Of course, this number has to be based on realities, based on reports) Divide L by 16.

Enter result here:US% per SOP

This corresponds to cost-effectiveness indicator 5.

ANNEX III ABOUT ATTRITION

All CBR programmes will lose some of its trained personnel from time to time. This reduction is called attrition, and is caused by many factors: some persons move to other places, get married and many may not want to work any more, some will get other jobs or a promotion.

Attrition is usually calculated as attrition rate, or the percentage of personnel that you lose during one year, for instance (as percentage of the total personnel of this category) that you employed at the end of the previous year.

When you plan for the training the personnel to start and expand the programme, you need to consider the attrition rate. It might not be easy to guesstimate this rate, so you can ask for attrition rates among health and education personnel (who are as similar as possible in degree of education, gender and salary). Generally in the CBR programme, (and this concerns especially the CRF) you will find that the attrition is higher among men than women, higher among younger (e.g. under 25) than older personnel (e.g. over 40).

Let us take an example

A plan has been made to expand the CBR programme by training 400 ILCs over the next 10 years. The expected attrition rate is 5 per cent. During the first year, we expect to lose 2 personnel (= 5 per cent of 40), etc. After the tenth year, we expect to lose 20 personnel. This means that, if you train 40 per year, your total losses will be 100 during the 10 years of the programme. So you will have 300 ILCs in service, not 400 as planned.

This loss could be compensated by adding 2 more the second year, (then 42 will be trained), next year add 4 more (to 44), etc. However, this is expensive, because then you will have to annually expand the premises, employ more teachers and other personnel at the training center and increase its budget. It is cheaper and simpler to keep the same intake of trainees each year over the planned period of 10 years.

The best and least costly solution is to calculate the total attrition during the planned period of 10 years and add the annual average to the annual intake. In this case the average loss by attrition is 10 per year, so we would need to plan to increase the annual intake of trainers from 40 to 50. With this, we will arrive at 400 personnel trained and retained at work after the planning period of 10 years. If we do not have the required intake, we will end up on the short side.

Next factor to consider is how we handle the situation at the end of the planned expansion period lasting 10 years. The training center will now have to reduce its annual output. It will not be closed, because in the "mature period" that follows the expansion phase, you need to go on training enough personnel to replace those, who go out by attrition. Therefore, the training center should then reduce the number of trainees to 20 per year. This means that the premises can be smaller, the personnel reduced to about half. On the other hand, if the attrition is zero, you will have to plan for closing the entire training center.

As manager, you need to plan for this change. It might be illegal and for sure brutal to just terminate the personnel. So there has to be ways to find other jobs, perhaps in technical administrative posts, to strengthen evaluation, to give orientation and information courses for personnel from other sectors (health, education, social, etc) , in which this very competent professional personnel can be used. For general service staff it should be less difficult to find jobs. Premises may perhaps be kept, and extra rooms used e.g. for meeting of the local DPOs.

ANNEX IV. WORK PLAN FOR COMMUNITY REHABILITATION FACILITATOR

Month

Year

Day	New PWDs this month	Time	PWDs from last 12 months	Time	Follow-up from previous year	Time	Travel time	Total Time	Remark
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
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23									
24									
25									
26									
27									
28									
29									
30									
31									

CC= Community Rehabilitation Committee **S**= School **IST**= In service training and supervision

Name of Community Rehabilitation Facilitator.

Area

WHAT IS THIS GUIDE ABOUT?

This Guide deals with the quality and cost control of rehabilitation programmes. It proposes to analyse costs, effectiveness and efficiency, employing a simple system of assessments of the basic functions and daily activities of persons with disabilities. It can be used directly by community workers. The system will allow comparisons between, for instance, the outcomes of rehabilitation institutions and community-based rehabilitation programmes.

Techniques for calculating costs are shown. It is proposed to then calculate five indicators of cost-effectiveness. Managerial tools for improving programme efficiency are described. Applications are made for the planning and field service delivery. Another set of managerial tools are described for reporting and monitoring of programme achievements in relation to targets; quality of training programmes, cost control and sustainability.

WHO IS THIS GUIDE FOR?

The Guide can be used by rehabilitation managers and supervisors - from the national to the local levels.

It can also be used for quality and cost control, and for cost-effectiveness and cost-efficiency monitoring by donor and development agencies, which provide resources for rehabilitation in the developing countries.

THE AUTHOR.

Dr Einar Helander graduated as MD from the University of Gothenburg in 1953. In 1957, he took a doctorate in biochemistry.

He worked in Sweden as a specialist and University professor of rehabilitation, and has a long experience both from medical and vocational services. He was for six years responsible for rehabilitation at the Swedish Government's Board of Health and Welfare. In 1974, he was recruited by the World Health Organization to take charge of its rehabilitation programme. While at WHO's Geneva Headquarters, he in 1975 introduced the concepts of disability prevention and community-based rehabilitation (CBR). The first details of the innovative CBR programme appeared in 1979 with the experimental technology Manual, entitled "Training in the Community for People with Disabilities" (with P. Mendis and G. Nelson). After retiring from WHO, Helander worked from 1990 to 1998 as Co-ordinator for the Disability Action Group of the United Nations Development Programme. He has also been an Advisor to the World Bank. He has conducted a very large number of courses, seminars and workshops on the planning and management of CBR; these have been attended by representatives for 85 countries.

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