

CHAPTER-5

COST BENEFIT ANALYSIS

- * General and Specific Objectives**
- * Trainer's Notes and Guidelines**
- * Self-Learning Package for the
Trainees and Assignments**

GENERAL OBJECTIVE

The participant will apply Cost Benefit Analysis to youth projects.

SPECIFIC OBJECTIVES

The participant will : -

- a) Become familiar with the concepts involved in Cost Benefit Analysis.
- b) Identify Costs and Benefits involved in familiar projects.
- c) List indicators for intangible Costs/Benefits.
- d) Determine Benefit-Cost Ratio for the familiar projects.

**TRAINER'S NOTES
AND
GUIDELINES**

COST BENEFIT ANALYSIS

THEME OF THE CHAPTER

A significant analysis that should be a component of all project proposals, namely Cost Benefit Analysis is the theme of this Chapter. A satisfactory analysis in which all Costs and Benefits are considered and a Benefit - Cost Ratio computed provides the following advantages to the project team managing the project.

- Clarity to the project Costs and Benefits
- Highlighting of the attractiveness of the project for funding agencies, beneficiaries and youth volunteers
- Basis for evaluation of project implementation

PREREQUISITES

- (i) The participant should have gone through Chapter - 2 on Planning and Chapter - 3 on Network Analysis.
- (ii) The participant should have been involved intimately in several projects so that he is aware of the nature of costs and benefits in welfare projects.
- (iii) The Tutor should have managed a number of projects involving justification of expenditures.

PREPARATORY ACTIVITIES FOR TUTOR

- (i) The Tutor should have gone through the Chapter intensively and attempted the assignments completely.
- (ii) It is desirable that the Tutor should have studied References 1 and 5.

INSTRUCTIONAL GUIDELINES

- (a) The Chapter is in the Self - Learning mode and includes 4 illustrations and 2 assignments.
- (b) The schedule of activities for this Chapter estimated to require 4 1/2 hours, is given below.

Sl. No.	Activity	Time in hours
1.	Introduction to the Chapter by the Tutor using OHP Transparencies 5.1 and 5.2	1/2
2.	Learning of the Chapter by participants upto Assignment - Two	2
3.	Assignment - Two under Tutors's guidance along with Report Back and Tutor's summarisation	2

- (c) The Tutor will introduce the Cost Benefit Analysis technique using O.H.P Transparencies 5.1 and 5.2 and providing examples to clarify the concepts of Willingness to Pay, Benefit - Cost Ratio and Sources of Intangibles.
- (d) During the learning of the Chapter by the participants, the Tutor will offer assistance in reinforcing the understanding of concepts.
- (e) The Tutor will encourage the participants to think creatively for identifying specifically intangible Costs and Benefits and for providing justifications for the assumptions made in the analyses.
- (f) Two OHP transparencies are provided for enabling the Tutor to introduce the Chapter.
 - 5.1 Overview of CBA Analysis.
 - 5.2 Steps in quantification of intangibles.

SUGGESTED RESPONSES TO ASSIGNMENTS

Assignment-One:

The Tutor will examine the responses of the learner groups based on the information provided in the Chapter and on his own experiences with youth and community development programmes and offer appropriate feedback.

Assignment - Two :

The Tutor will organise the group work and the 'presentation' session effectively to ensure a high level of learner participation. The participants may be encouraged to 'stretch their imagination' and to provide justifications for the assumptions they may have to make in arriving at a Benefit - Cost Ratio. It has to be emphasised that though this ratio is 'subjective', it has high utility for justifying the project as a whole.

REFERENCES

1. "Guidelines for Project Evaluation" - United Nations , Oxford and IBH, Delhi, 1972.
2. "Management Handbook for Public Administrators", Edited by Sutherland, Van Nostrand Reinhold Company, New York, 1978.
3. Instructional Package prepared by Educational Management Centre, TTTI, Bhopal for use in Departments of the State Government of Madhya Pradesh, India, 1988.
4. "Cost Benefit Analysis" By E.J. Mishra, George Allen and Unwin, 1975.
5. "Youth Work Service - No. 5" By Banmala, Viswa Yuva Kendra Publication, Delhi, India, 1976.

**SELF-LEARNING PACKAGE
AND
TRAINEE'S ASSIGNMENTS**

COST BENEFIT ANALYSIS

Many worthwhile and feasible community welfare schemes can be proposed. However, all of them cannot be simultaneously taken up, mainly because of non-availability of adequate resources. The most important resource is funds and collecting or obtaining it in adequate quantities from governmental and/or non governmental sources generally poses problems and difficulties. And funding agencies may have to select schemes to support from amongst many which have been proposed. Thus a youth worker who has a necessary and useful scheme has to make it attractive enough to the funding agencies to be assured of adequate funds. Even when a campaign for funds from donors is mounted, the utility of the scheme has to be made clear to the donors. One technique that will greatly assist the youth worker in projecting the utility of the scheme and making the scheme attractive is called Cost Benefit Analysis (CBA).

Every scheme will involve expenditures (called Costs) and positive outcomes (called Benefits) resulting from implementation of the scheme. One criterion for judging the feasibility of a project is the ratio of Benefits, expressed in monetary units to the Costs which would normally be in

monetary units. This is called the Benefit-Cost Ratio. On the face of it, a scheme is viable only if the Benefit - Cost (B/C) ratio is larger than one. This may not always be the case, as will be discussed later in this Chapter.

A youth worker may generate ideas for several schemes. Then it is desirable that he carries out Cost Benefit Analysis for all the schemes to determine what scheme he must undertake and HOW BEST HE CAN ALLOCATE RESOURCES AT HIS DISPOSAL FOR MAXIMUM GOOD OF THE COMMUNITY.

Most of the costs involved in the implementation of schemes or projects are tangible or measurable, i.e. they can be expressed in monetary units. However, a few may not be easily converted into monetary units. They are called "intangible costs".

Benefits may be physical outputs (commodities or products) which are consumed by people OR services which people make use of OR intangible Benefits which accrue to the people. A particular project may result in one or more of these Benefits.

ILLUSTRATION - ONE :

Let us consider the project, "YOUTH EXCHANGE PROGRAMME". Some of the Costs and Benefits are as follows.

- COST :
1. Travel, Internal and External
 2. Boarding and Lodging
 3. Preparation
 4. Books, Stationery, etc.
 5. Equipment
 6. Separation from family, work and normal activities
 7. Adjustment to new cultures.

Item Nos 1 to 5 are tangible costs and 6 and 7 are intangible costs.

- BENEFITS :
1. Adding to life and work experience by living and working in another community/country
 2. Awareness of youth welfare programmes in other communities/countries
 3. Acquisition of new knowledge and skills
 4. Sharing of experiences of youth welfare projects
 5. Greater appreciation of one's own country.

All the above Benefits are intangibles.

ILLUSTRATION - TWO:

Some of the Costs and Benefits of a project, "TREKKING ADVENTURE" are given below.

COSTS

TANGIBLES:

1. Purchasing/Hiring equipment
2. Boarding/Lodging
3. Travel

INTANGIBLES:

1. Organisation
2. Opportunity cost due to loss of time in regular activities and other resources.

BENEFITS

TANGIBLES:

1. Promotion to 'trekking' business

INTANGIBLES:

1. Togetherness
 2. Oneness with Nature
 3. Relaxation from normal activities
 4. Trained/experienced trekkers.
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The illustrations provided indicate that a majority of benefits that result from youth projects are intangibles. However, it is useful to identify some tangible benefits from such projects.

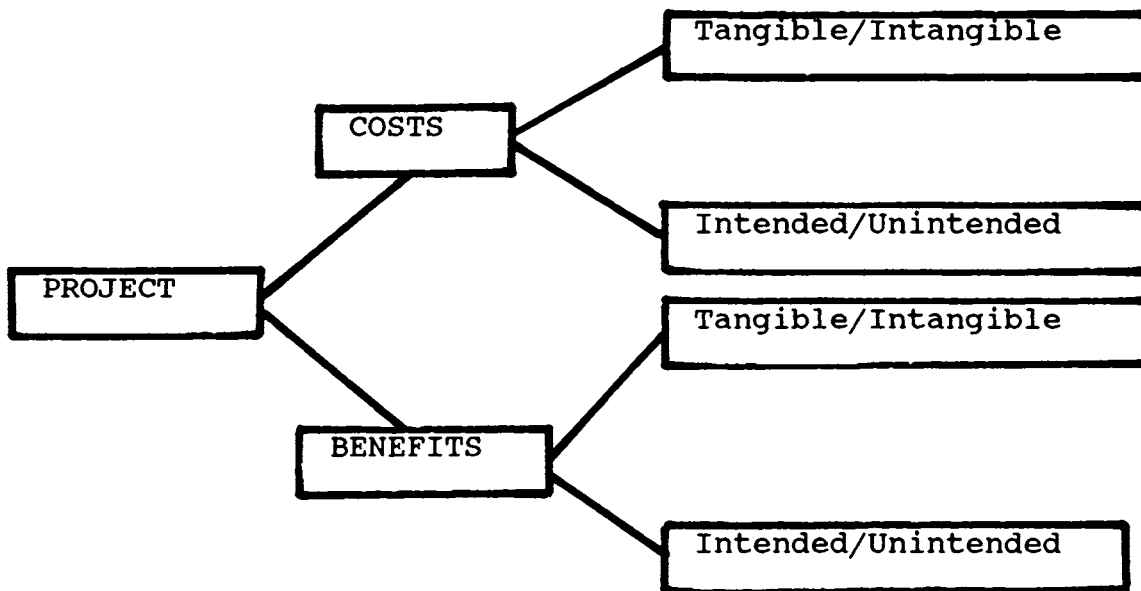
In an entrepreneurship development project, one tangible benefit is the estimated earnings of new entrepreneurs.

In the project on promotion of local resources, the estimated savings in not purchasing non-local goods and materials is a tangible benefit.

While identifying intangibles, it is necessary for the youth worker to think in a broad and diversified manner.

The initial viability of a project or scheme depends on certain Costs and Benefits associated with it. These are called 'INTENDED' Costs and Benefits. However, a more detailed analysis indicates that there will be other Costs and Benefits which have not been initially considered and which are by-products of the project implementation. These are called UNINTENDED Costs or Benefits. For example, in illustration - one, 'Adjustment to new cultures' is an unintended Cost and 'Greater appreciation of one's own country' could be an unintended Benefit.

Thus, the effects of a project can be indicated in the following diagram.



ASSIGNMENT - ONE

In groups of 5 to 7, identify and list the Costs and Benefits for any one of the following projects.

Further, classify them into tangibles/intangibles and intended/unintended effects.

PROJECTS

1. ARRANGING SKILLS TRAINING FOR VILLAGE YOUTH.
2. ORGANISING A TRAFFIC SAFETY WEEK.
3. ORGANISING A TRAINING PROGRAMME FOR YOUTH WORKERS ON PROJECT PLANNING AND MANAGEMENT.
4. ORGANISING A RALLY.
5. SETTING UP A GUIDANCE AND COUNSELLING CENTRE FOR DELINQUENT YOUTH.
6. ORGANISING A SPORTS MEET FOR A CLUSTER OF FIVE COMMUNITIES.

After finishing the exercise, check with the Tutor.

WILLINGNESS TO PAY

Having identified the effects of a project in the form of Costs and Benefits, it will be necessary to convert them into monetary units. The tangibles (costs and benefits) do not present difficulties as measurement units will be clear, the unit rates prevalent at the time of analysis known and also the estimated quantities. However, the prevalent unit rates may have to be modified in a few special cases, when the products, i.e. outcomes of the project are consumed at a time much later than the time at which Cost Benefit Analysis is made. Then an estimate of the possible unit rate may have to be made based on data available and on present value of the unit rate in the analysis.

ILLUSTRATION - THREE: Considering social forestry, though trees may be planted today, they will bear fruit may be only five years later. Hence the value of benefits (bearing fruit) will depend upon the value placed on them by the beneficiaries at that time i.e five years later.

Since the product is consumed by people, the unit rate is governed by what they are prepared to pay for the product. This is termed WILLINGNESS TO PAY. The factors that affect the willingness to pay are:

- Features of the product/service/intangible benefit
- Age of the purchaser

- Economic status of the purchaser/beneficiary group
- Time when the benefit is made available to the consumer
- Alternatives available to the consumer
- Unanticipated events.

Thus the willingness to pay is not an absolute value but a relative one and depends partially on data and partially on subjective assumptions. For example :-

In a project, "SKILLS TRAINING FOR ENTREPRENEURSHIP", estimates of willingness to pay by a trainee will depend on his perception of how easily he can obtain a job (and consequently earn a regular income).

In a project, "INOCULATION CAMPAIGN FOR A COMMUNITY", the willingness to utilise (i.e consume) the service may be dependent on several factors. For example, if a family has suffered in the past because of the disease, a higher willingness to pay should occur.

'Willingness to pay' plays a crucial role in the quantification of intangibles, i.e. in the fixation of unit rate for either Costs or Benefits. Since this may depend on assumptions, it is 'subjective'. In the illustration that is presented later in the Chapter, the unit rates assumed are the willingness to pay. The consumers of the intangible benefits may be the youth group itself or the beneficiaries or the society at large.

The quantification of benefits from intangibles as compared to tangibles like products is more complex. The steps involved are shown in the diagram below.

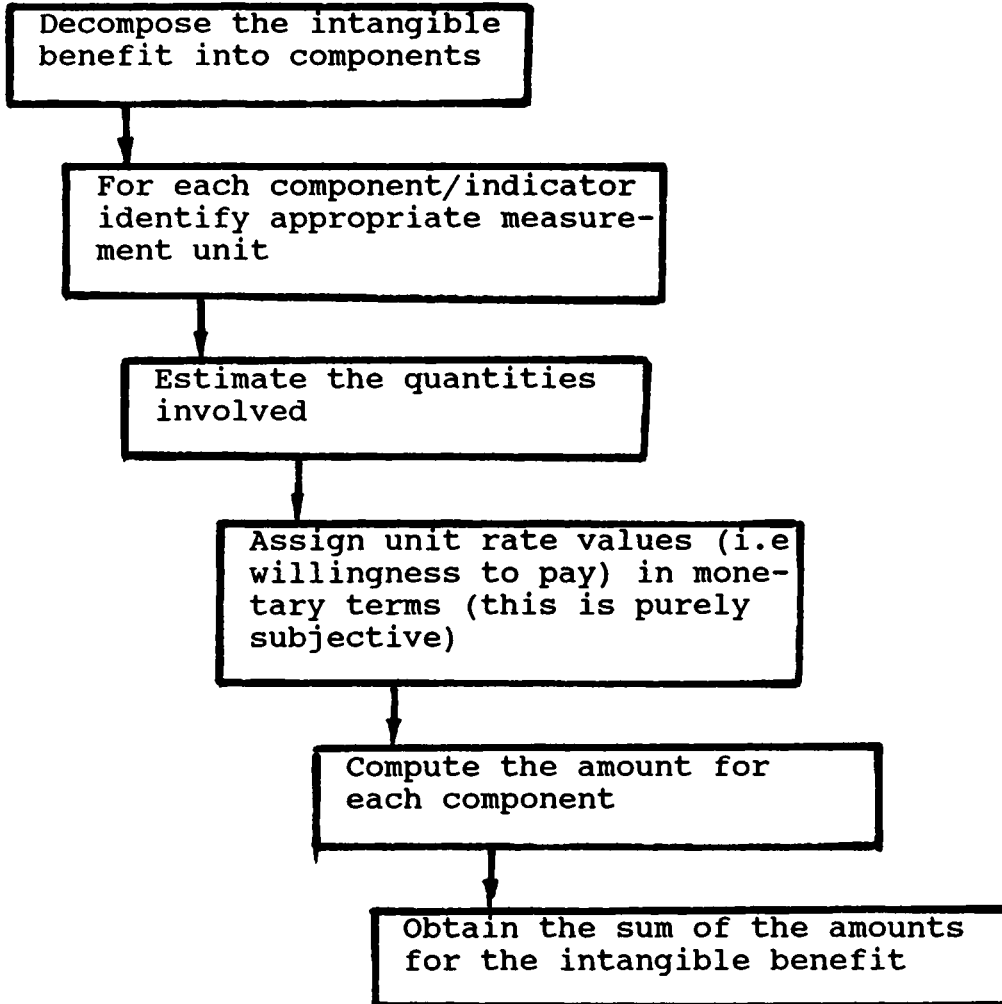


ILLUSTRATION - FOUR:

Let us consider the Benefits from an 'Inoculation Campaign'. The computation of Benefits are given in the table below. It is to be noted that the unit rate is a subjective decision of the youth worker in charge of the campaign.

Sl. No.	Indicator	Measurement Unit	Qty	Unit Rate	Amount
1.	Children inoculated	Number of children	60	10	600
2.	Removal of fear or concern of being affected by disease	Number of families	40	25	1000
3.	Publicity for activities of youth centre resulting from campaign	Lumpsum	-	-	1000
4.	Satisfaction of doing good to community	No. of youth involved	10	100	1000
5.	Savings from future medical expenses	Probable number of affected children	5	500	2500
TOTAL AMOUNT =					6100

The possible measurement units in quantification of Benefits are :

a) Length unit, i.e meters or kilometers

example : length of good road made available to a community due to a 'Road Building' Project

b) Area unit, i.e square meter or square kilometers

example : area of slums cleared in a 'slum clearance' project

c) Volume unit, i.e cubic meters

example : volume of garbage/dirt removed in a 'cleaning the community surroundings' project

d) Time unit, i.e minutes, hours, days, etc

example : Time saved in the use of appropriate technology devices in a community
Time of utilisation of the facilities of a youth club.

- e) Weight Unit : Kilogram
example : The quantity of local resources utilised as
a consequence of a project implementation
- f) Numbers :
example : The number of youth who become entrepreneurs
as a result of a skills training programme
- g) Lumpsum : Used where it is not possible to identify an
appropriate measurement unit and the youth
worker making a CBA has to assign an amount to
the component/indicator.

Sometimes combination of units may be desirable like :

- * man days (product of number of youth volunteers
and average days of contribution to project)
- * area hours (product of area of an adult literacy class
and average hours of use)

Quantities involved in the quantification of Benefits are estimated quantities and are part of the detailed plans prepared for the project. These may require as prerequisites certain data collection/information.

The specification of the unit rates is the most difficult part of the quantification of the process and therefore is better determined by a group, rather than by an individual youth worker.

SOURCES OF INTANGIBLE BENEFITS

The benefits from a project, particularly related to intangible benefits arise from the following sources.

- a) Physical outputs/consumables :
e.g. Handicrafts, potable water, enterprise goods, etc.
- b) Services consumed by beneficiaries :
e.g. healthcare, guidance and counselling on agricultural practices, employment opportunities, obtaining bank loans, etc.
- c) Physical satisfaction of (i) youth workers/volunteers
(ii) beneficiaries of youth projects
- d) Mental satisfaction of youth and beneficiaries
- e) Publicity
- f) Health and childcare
- g) More congenial surroundings
- h) Interpersonal relationships and resources sharing
- i) Better future
- j) Acquisition of knowledge and skills
- k) Better awareness of self and environment
- l) Keeping in tune with the times
- m) Preservation of tradition and culture
- n) Appreciation of nature
- o) Team working

- p) Local resources (goods, materials) utilisation
- q) Leadership development
- r) Promotion of national and ethnic integration
- s) Better time utilisation
- t) Self Reliance
- u) Preparation to cope with disasters, crises
- v) Appreciation for art, music, culture, etc.
- w) Liaison with government and other agencies
- x) Safety and security
- y) Attitude change

For a particular project, the relevant sources of benefits can be identified and the monetary value of the benefits computed.

The costs involved for a project can also be computed. If intangible costs are present, they have to be converted into monetary terms in a manner similar to that of conversion of intangible benefits.

Finally, when the benefits of a project are divided by costs, we obtain Benefit - Cost Ratio. For example, if the Benefits of a project are 6000 monetary units and the costs are 5000 units, then the Benefit - Cost Ratio for the project is $6000/5000 = 1.2$.

While for industrial and technological projects, it is necessary for this ratio to be always greater than one, for welfare projects, this may not be treated as the limiting constraint. However, amongst several feasible projects, the one having the largest Benefit - Cost Ratio may be chosen.

ASSIGNMENT - TWO

In groups of 5 to 7, carry out a Cost Benefit Analysis for the project chosen by you in ASSIGNMENT-ONE and arrive at a Benefit - Cost Ratio. The group spokesman will present the group consensus providing justifications for assumptions and unit rates to the whole group of participants and seek their suggestions for improving the quality of the analysis.
