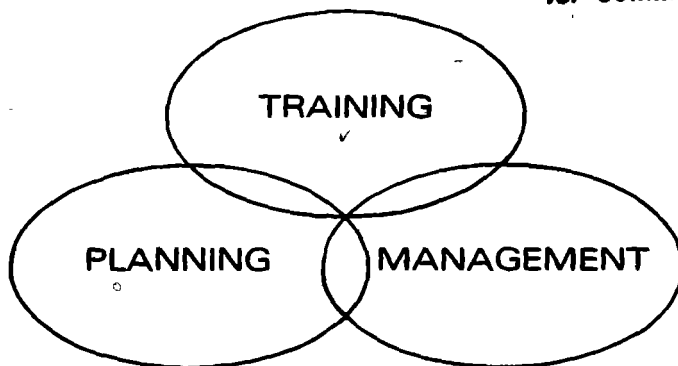WORLD HEALTH ORGANIZATION

HUMAN RESOURCES DEVELOPMENT
HANDBOOK

GUIDELINES FOR MINISTRIES & AGENCIES
RESPONSIBLE FOR WATER SUPPLY & SANITATION
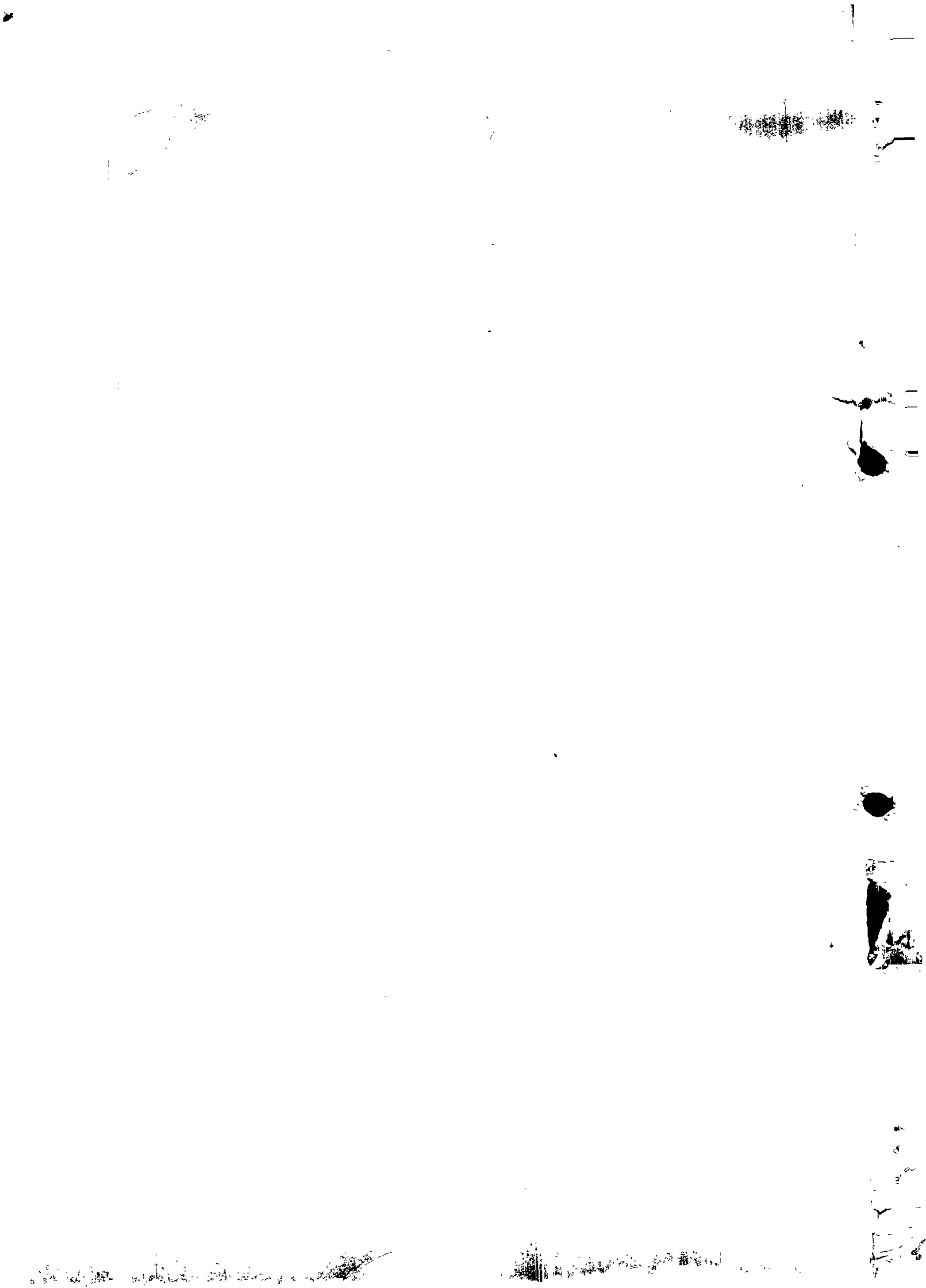
EDITED BY
NEIL CAREFOOT & HOWARD GIBSON

TRAINING

PLANNING   MANAGEMENT

INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE
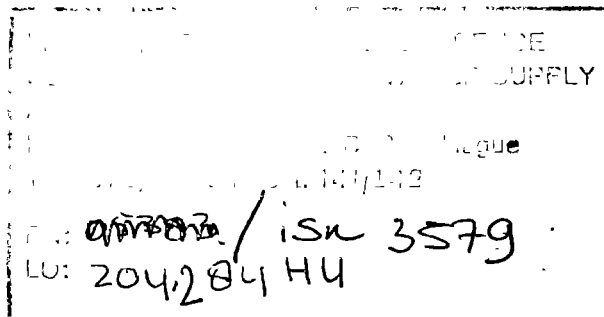
INTERNATIONAL WATER SUPPLY ASSOCIATION

STANDING COMMITTEE ON WATERWORKS PERSONNEL

ENDORSE THIS HANDBOOK AND RECOMMEND IT TO THEIR MEMBERS.

DIVISION OF ENVIRONMENTAL HEALTH

WORLD HEALTH ORGANIZATION

1211 GENEVA 27

1984

HUMAN RESOURCES DEVELOPMENT HANDBOOK

TABLE OF CONTENTS

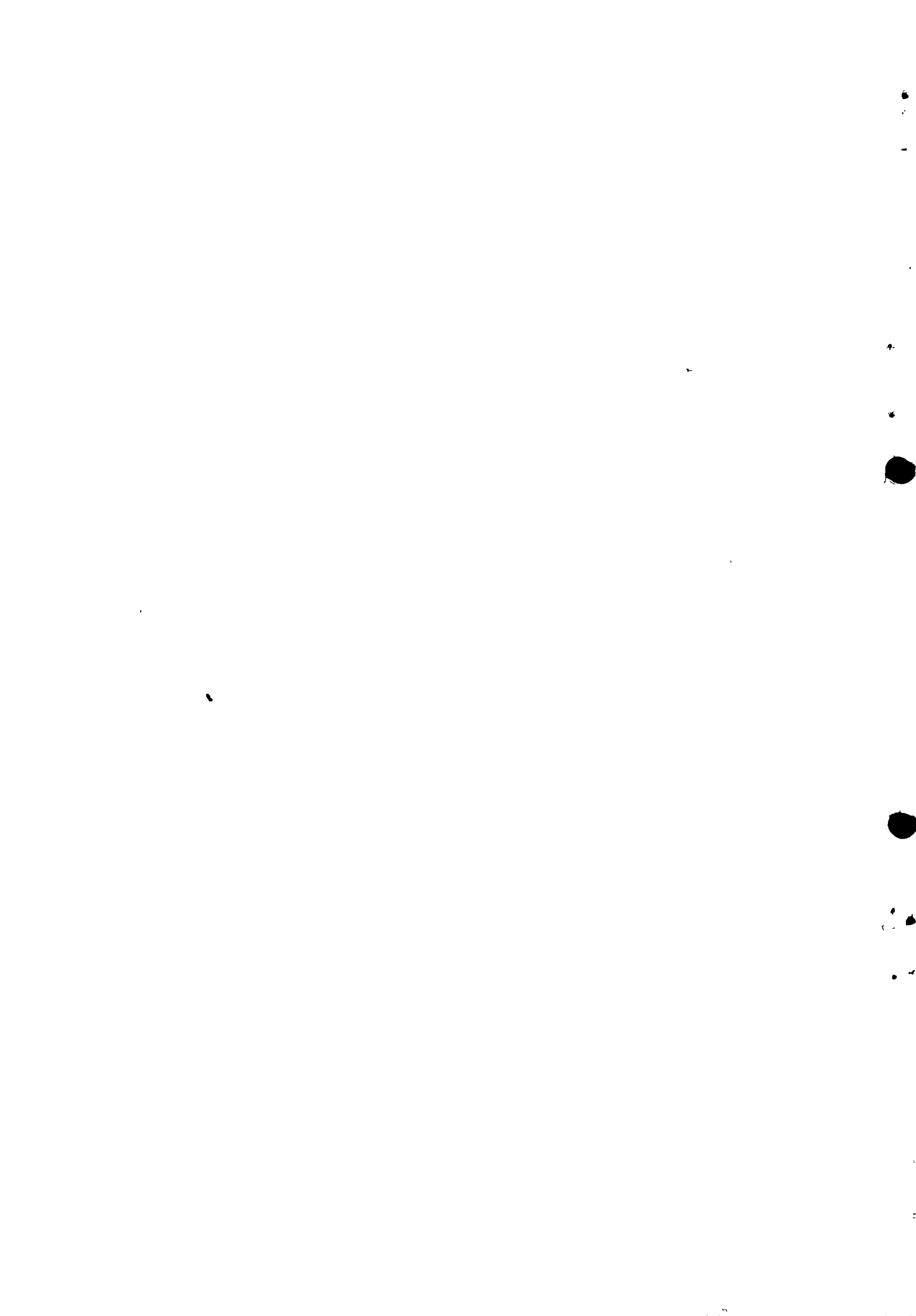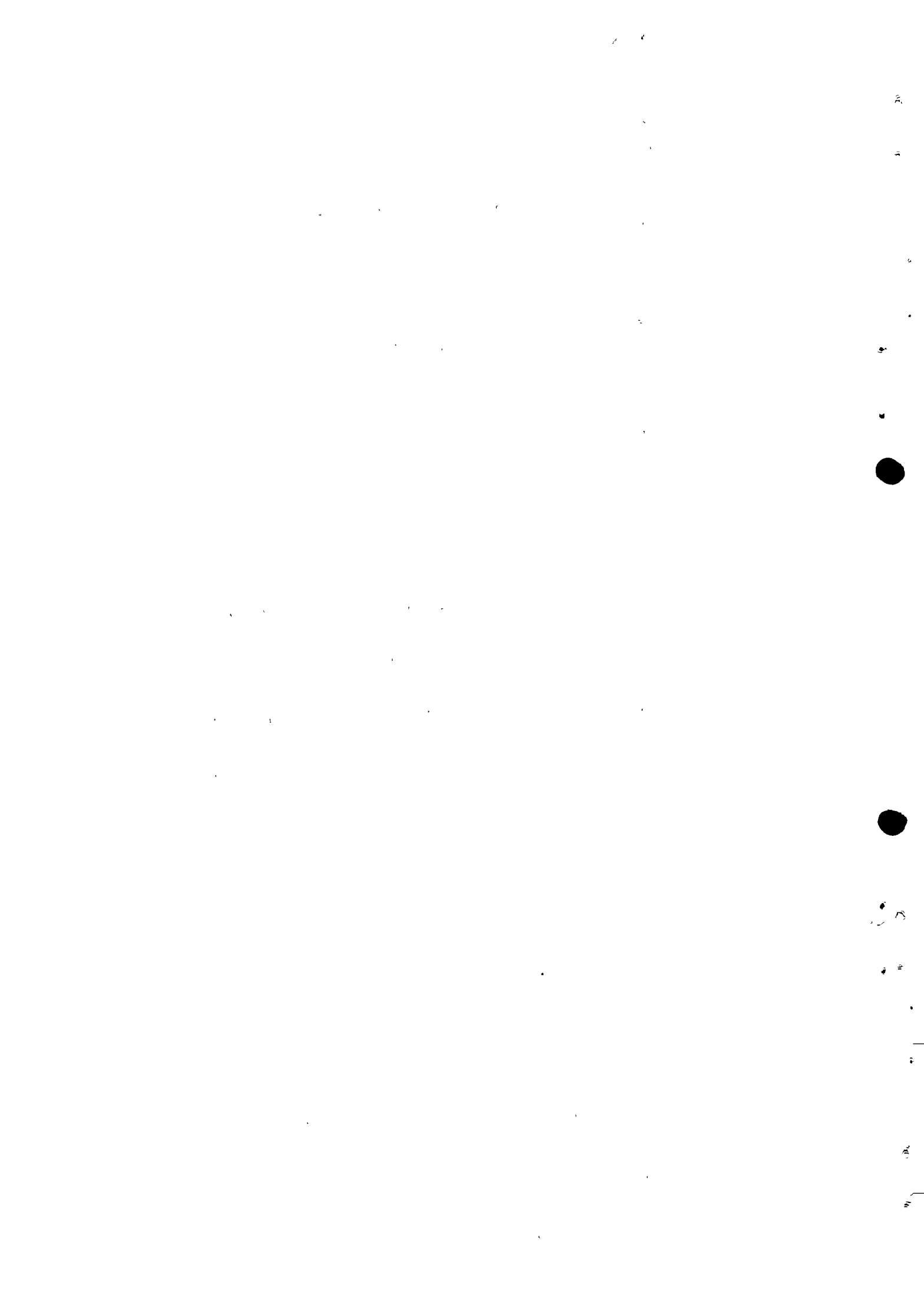For further details see contents pages at beginning of each chapter.
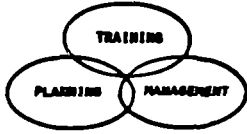
STOP!

> ARE YOU SATISFIED WITH THE RESULTS OF YOUR PRESENT EFFORTS
> IN HUMAN RESOURCES DEVELOPMENT? IF SO, YOU MAY WISH TO PASS
> THIS HANDBOOK ON TO SOMEONE ELSE. IF HOWEVER A GREATER
> RETURN IS DESIRED FROM THE INVESTMENT IN TIME AND MONEY
> PLEASE READ ON.

BACKGROUND

In April 1982 the Steering Committee for Cooperative Action for the International Drinking Water Supply and Sanitation Decade gave full endorsement to a paper entitled Basic Strategy Document on Human Resources Development[1]. The purpose of the Basic Strategy Document is to serve as an outline guide to decade human resource strategies and approaches for national and international agencies alike.

The Basic Strategy Document provides an overview of the three dimensional human resources development process, which comprises:

　　　　　　　　1. PLANNING;
　　　　　　　　2. TRAINING; and
　　　　　　　　3. MANAGEMENT.

This handbook, which is designed as a practical guide to implementing Human Resources Development, expands on the three dimensional process.

OBJECTIVES

The purpose of the handbook is threefold:

1. To clarify the Human Resources Development concepts in current use;
2. To show how these concepts can be applied to organizations operating in water supply and sanitation; and
3. To guide water supply and sanitation agencies/ministries toward a more systematic approach to Human Resources Development and away from ad hoc actions.

A brief description of each chapter follows:

Chapter 1: Overview Senior managers and training managers are provided with four major approaches for strengthening Human Resources Development within their agencies:

　　　　　　　　1. Human Resources Development (HRD) as a process;
　　　　　　　　2. The HRD Appraisal and Planning Guide;
　　　　　　　　3. The Dual-Focus Approach; and
　　　　　　　　4. The Systematic Approach to Training.

Chapter 2: Planning The 11-step Human Resources Planning Model for Planners and Senior Managers preparing a Manpower Development Plan.

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[1]WHO document EHE/82.35
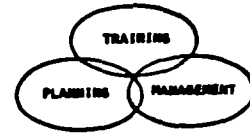
OBJECTIVES (cont'd)

Chapter 3:   Training   How to produce a training and development plan. Its
                        seven key elements. How to design a training and
                        development programme. How to formulate a training
                        programme for community-based workers.

Chapter 4:   Management The need for Senior Operational, Personnel and
                        Training Managers to integrate the Planning, Training
                        and Management of HRD to help ensure that the total
                        agency plan is achieved. The need to get the right
                        balance,   first   between   an   agency's
                        operational/business needs and the needs of its
                        employees and secondly across all the elements of its
                        personnel policy.

SCOPE OF THE HANDBOOK

    The Basic Strategy Document states that guidelines will be prepared in
order to "provide a general framework and measure of uniformity" in approaches
to HRD. The materials contained in this handbook represent a collection of
those guidelines. A broad range of approaches, tools and techniques are
presented for analyzing, planning, and developing human resource programmes.

    The handbook is not intended as a comprehensive treatise on HRD. On the
contrary, it presents only a limited number of notes and examples about some
of the elements — or ingredients — which together make up the HRD process.

WHY THE HANDBOOK HAS BEEN WRITTEN

    The handbook is intended principally as a working document for use by
practitioners in the field of human resources development in developing
countries, e.g. operational, personnel and training managers, and officers as
well as general managers in the sector who are looking for ways and means to
get a greater return on investments in HRD.

    The principles and approaches it recommends apply equally to all who work
in water supply and sanitation whether it be in rural or urban areas.

    Agencies/ministries in water supply and sanitation are at various levels
of development and sophistication. It is expected, therefore, that this
handbook will be used in a variety of different ways. For example, a ministry
that is about to conduct a manpower inventory for the first time could obtain
some guidance from the sample forms which appear in Chapter 2. On the other
hand, an agency with a training policy and a personnel policy may find some
desirable features in the samples given in Chapter 4 and wish to amend their
existing ones. In the case of an organization that has just created a unit
for manpower development and appointed an HRD officer, the entire handbook
could serve as a ready reference concerning the necessary components and their
corresponding elements which provide for an effective HRD process. Other
examples of how the handbook can be used are listed in the chart of possible
uses which concludes this preface p.5.
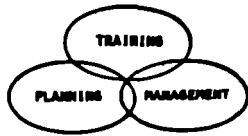
WHY THE HANDBOOK HAS BEEN WRITTEN (cont'd)

Whether strengthening an existing process or building-up a HRD process from scratch, change, in most instances, will be called for -- e.g. introducing an on-the-job evaluation system, or amending personnel policies, or training supervisors to be better trainers, etc. It is not intended that all changes and adaptations advocated in the handbook be made at once. Although the user of this book may indeed be an agent for change within the organization, he or she will recognize that some changes must occur slowly. Unless there is strong political support for rapid change, an incremental approach is suggested.

HOW TO USE THE HANDBOOK

IT IS INTENDED THAT THE GUIDELINES CONTAINED IN THIS HANDBOOK BE ADAPTED TO THE PREVAILING CONDITIONS IN THE NATIONAL OR LOCAL SETTING. USERS MUST BE REALISTIC AND CRITICAL IN MAKING USE OF THE HRD FRAMEWORK HEREIN DESCRIBED. THEIR OWN SPECIAL REQUIREMENTS AND/OR VALUES -- CULTURAL AS WELL AS POLITICAL -- WILL BE THE FACTORS WHICH FINALLY DETERMINE HOW THE GUIDELINES ARE BEST USED. THE PRINCIPLE, HOWEVER, OF FULLY INTEGRATING THE 3 COMPONENTS OF: PLANNING, TRAINING AND MANAGEMENT, SHOULD NOT BE COMPROMISED.

Careful thought too should be given to how much back-up instruction and presentation are required for the potential users of the handbook. In this connection WHO has designed a 3-Step Proposal. Its purpose is to prepare WHO regional staff (Step 1) to prepare senior agency managers, in their own countries, via an Orientation Workshop (Step 2), to run Action Planning Workshops (Step 3) for their management colleagues so enabling them to strengthen HRD on a systematic and enduring basis.

This is a handbook -- not a textbook. One is advised not just to read it from beginning to end, but rather to use it as is appropriate to meet ones needs. One is, nevertheless, encouraged to begin with a thorough reading of Chapter 1 "Overview". It is in this chapter that one will find explanations and definitions of terms and concepts as they are used throughout the handbook.

It is recommended that the work of updating and upgrading the human resources development process be implemented in stages at a pace to meet agency targets for coverage and service levels.

This handbook is part I of a two-part project. Part II is a compendium of case studies which is intended to augment the handbook. The cases will include examples of HRD in the rural sector, in community involvement and in a primary health care context. Part II is in the course of being compiled and is expected to be published within the next year. (A brief description of two films, one on Thailand, the other on Ghana, depicting how village communities were involved in the introduction of water supply and sanitation in a primary health care context is included in the bibliography).
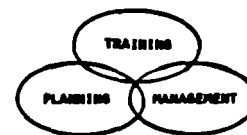
ACKNOWLEDGEMENTS

This handbook is the result of discussions with many Environmental Health and HRD professionals. Advice and opinions have been freely offered and gratefully received. We particularly acknowledge the contribution of our colleagues, around the world, who have reviewed the draft work and made valuable suggestions. They are:

WHO	WHO	OTHER AGENCIES*
Mr. S. Arceivala	Mr. F. Lima	Dr. J. Austin, US-AID
Dr. R. Ballance	Dr. A. Mejia	Mr. W. Barker WB
Dr. E. Becher	Mr. H. Otterstetter	Mr. E. Densham, ITS
Mr. P. Blizard	Mr. V. Pinto	Mr. E. Drucher, ILO
Mr. H. El Shamsy	Dr. A. Robertson	Mr. D. Hugues, WITA
Mr. G. Etienne	Mr. G. Schultzberg	Mr. J. Lawrence, RTI
Mrs D. Flanagan, STC	Mr. O. Sperandio	Mr. M. Potashnik, UNDP
Mr. E. Giroult	Mr. D. Steele	Mr. A. Redekopp, IDRC
Mr. A. Gonima	Mr. M. Suleiman	Mr. F. Rosensweig, WASH
Miss M. Hilsenrad	Mr. T. Tomassi	Mr. P. Shipp, KOBA/MSH
Mr. M. Jackson	Mr. S. Unakul	Dr. J. Wallace, ILO
Mr. A. Kane	Dr. G. Watters	
Dr. E. Lee		

For her patience and willing cooperation we thank our secretary Morwenna Lloyd and also her colleagues.

FUTURE EDITIONS OF THE HANDBOOK

This Handbook represents a first attempt to compile and present, under one cover, guidelines about all three components of the HRD process. Although most of the tools and methodologies described in this document have been utilized in other fields for a number of years, some of them are relatively new to water supply and sanitation agencies. Thus, adjustments for the specific needs of agencies will be essential. Some field testing has already taken place -- more is required. Against this backdrop we fully recognize that the Handbook will never be complete. There will always be something missing, something more to add or amend. Thus, the Handbook will and should be in a state of evolution. Users of the book will be able to provide additional notes and samples which will further enhance its value for others. Therefore, we sincerely invite the help of users to share with us their experiences so that future editions of the Handbook can be further improved. Please write to the address below.

Division of Environmental Health/ETS   Neil F. Carefoot
World Health Organization   Howard Gibson
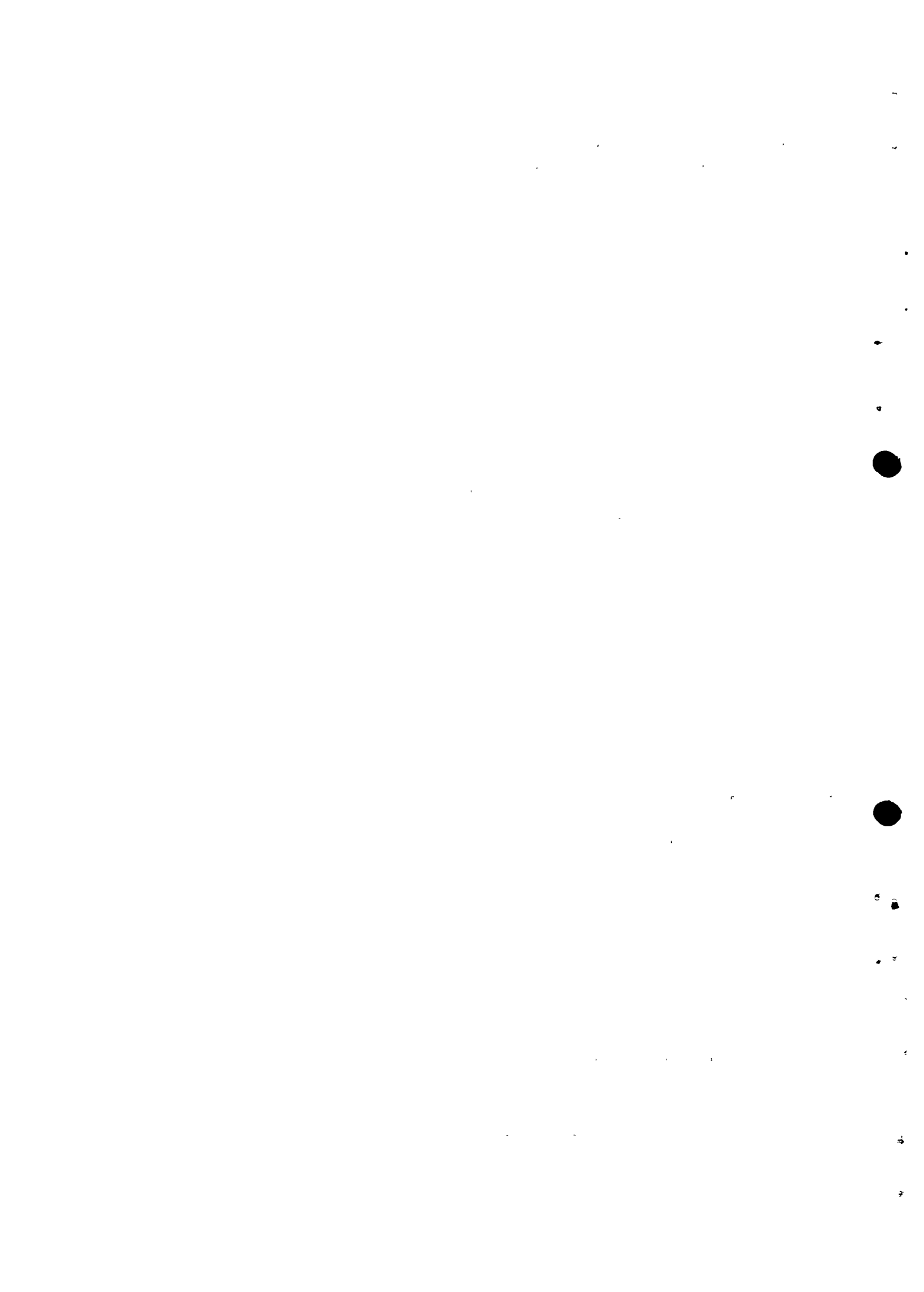1211 Geneva 27
Switzerland   September 1984

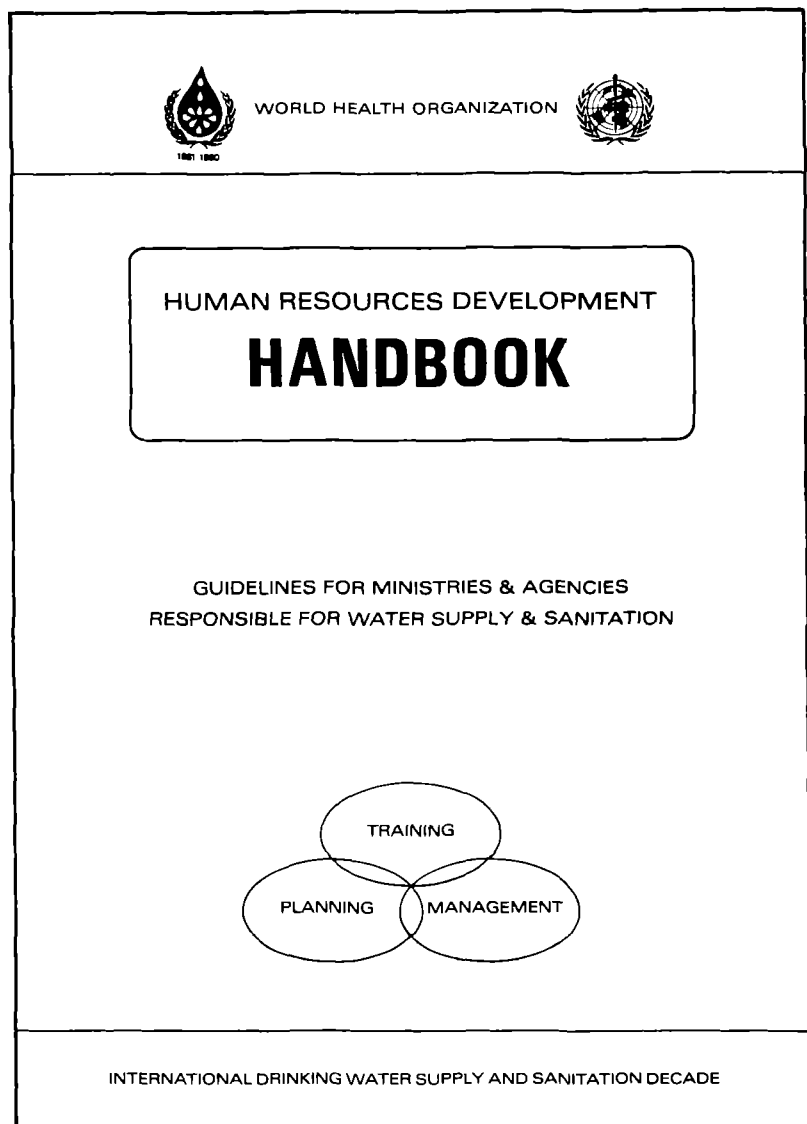POSSIBLE USES FOR THE HUMAN RESOURCES DEVELOPMENT (HRD) HANDBOOK

POSSIBLE USERS	EXAMPLES OF HOW THE HANDBOOK CAN BE USED	SPECIFIC REFERENCES
GENERAL MANAGERS and SENIOR LEVEL MANAGERS,	- To obtain a perspective of the totality of the HRD process in terms of its three components, viz.: PLANNING, TRAINING and MANAGEMENT.	p. 7 and all 4 Chapters.
e.g. Operational Managers, Personnel	- To obtain a check list of "key indicators" of the major strengths and weaknesses in present efforts to develop human resources.	Chap. 1, p. 11, 12 and 13.
Managers, etc. at state, regional or district level.	- As a frame of reference for a manager who has requested the preparation of a Manpower Development Plan (MDP) -- in terms of what is to be done, what to monitor during preparation and what data should appear in completed MDP.	p. 26 and Chap 2.
	- To obtain an overview of the analytical approach and type of basic information desired in developing a training and development plan.	Chap 3, p. 95-121.
	- As a helpful guide to the "systematic approach" to training.	Chap. 3, p. 122-136.
	- To obtain information on various management tools and techniques which can be used for more effective management of human resources.	Chap. 4. p. 156.
	- To obtain samples of "foundation" documents for effective HRD, e.g. a Training Policy, a Personnel Policy, a Career Development Guide.	Chap. 4, p.199, 164, 198.
TRAINING MANAGERS and COORDINATORS,	- As a model for manpower planning with sample sheets.	p. 26 and Chap. 2.
at state, regional or district level.	- As a guide with step-by-step details on how to prepare the Training & Development Plan.	Chap. 3, p. 95-121.
	- As a flow-chart guide and source of outline information on the "Systematic Approach" to training.	Chap. 3, p. 122-136.
	- As a source of information and examples of performance-based job descriptions.	Chap. 4, p.182-187.
	- As a reference guide and source of sample forms for performance appraisals.	Chap. 4, p.190-195.
	- As a source for reference materials which contain additional information about the various elements of the HRD process.	Chaps. 2, 3 & 4.
	- As a constant frame of reference concerning the basic components and some elements within each component which are required to make the HRD process an effective one.	All four Chapters.
TRAINERS,	- As a routine guide on how to determine "training needs".	Chap. 3, p. 97-99.
at state,	- As an introduction to task analysis.	Chap. 3, p. 100-106.
regional or district level.	- As a source of information on references which fully describe task analysis, writing performance objectives, methods of training, etc.	Chap. 3, p. 101. (two guides)
	- As an outline guide to the "Systematic Approach" to training.	Chap. 3, p. 122-136.
	- To obtain outline information and sample forms related to performance appraisal.	Chap. 4, p. 190-195.
	- As a source of information concerning references which would provide specific guidance in the development of training materials and actually implementing training.	Chap. 3, p. 101. (two guides)
	- As a reference for outline information and case study data on the "Dual-Focus" Approach to training.	Chap. 1, p. 16-19.
Donor and Lending Agency, Programme Officers	- Appraisal and evaluation of ongoing HRD projects.	Chap. 2, p. 10-15.
	- Design of HRD project proposals.	Chap. 2, p. 26-91)
	- Analysis of HRD project proposals.	Chap. 3, p. 94-136)

For general use of WHO Regional Office staff, field engineers and HRD short-term consultants.

Overview

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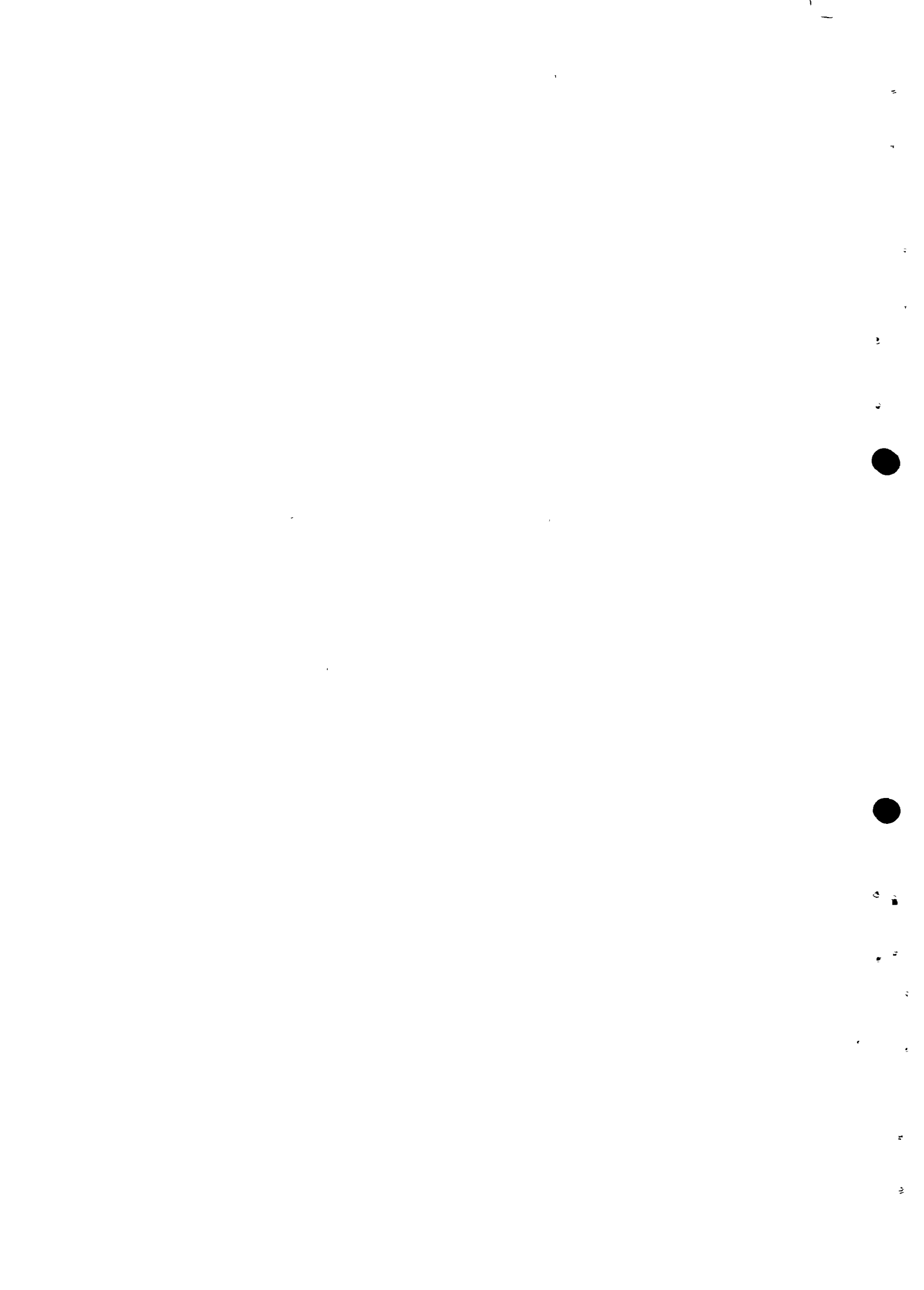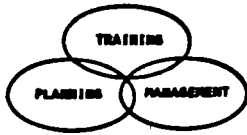
HUMAN RESOURCES DEVELOPMENT
HANDBOOK

GUIDELINES FOR MINISTRIES & AGENCIES
RESPONSIBLE FOR WATER SUPPLY & SANITATION

TRAINING

PLANNING   MANAGEMENT

INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE

TABLE OF CONTENTS

1. INTRODUCTION

This chapter provides the reader with an overall perspective of Human Resources Development (HRD). In order to avoid a piece-meal and uncoordinated approach to developing manpower in your organization, it is helpful to understand various ingredients of successful HRD. Chapter One discusses HRD as a process which involves three interdependent components Planning, Training and Management as our diagram above depicts.

This process and the approaches that we highlight here apply just as much to rural agencies as they do to those in urban areas, and perhaps more so to those that have a primary health care inter-sectoral relationship with other agencies and/or community involvement. The need for effective integration of the three components is equally crucial in all these differing circumstances if the agencies involved are to get the best out of their resources.

The objectives of the chapter are:

To familiarize the reader with:

1. HRD as a process;
2. The HRD Appraisal and Planning Guide;
3. The Dual-Focus Approach; and
4. The Systematic Approach to Training.

2. THE HRD PROCESS

The process by which human resources are developed has been described and interpreted in a number of ways. Some confusion, therefore, about the terms, the concepts and the most effective implementation exists. There are, of course, several approaches to Human Resources Development (HRD) -- some more effective than others. The approach that is advocated in this handbook is one that is the result of success stories in various parts of the world. Some water supply and sanitation agencies, both urban and rural, and many organizations outside the sector are actively pursuing an overall and systematic approach to HRD. Their experiences have contributed to the formulation of the HRD Process described in this handbook.

A table illustrating the difference between what we shall call the HRD Process and the more conventional approach to HRD follows.

CONVENTIONAL APPROACH TO HRD	THE HRD PROCESS
HRD means TRAINING	HRD means a combination of: - PLANNING, - TRAINING, and - MANAGEMENT

2. THE HRD PROCESS (cont'd)

The HRD Process is not complicated, mysterious or difficult.   The Process is a planned and systematic attempt to develop the people needed to do a job properly.   It involves more than just training people; it involves more than just planning for employees and, where appropriate, volunteers; it involves more than managing people.   Human Resources Development, if it is to be really effective -- if it is to be more than just a faddish imported idea -- involves a combination of the three components: Planning, Training and Management*.   The HRD Process requires a close and careful look at each of the three components.   It requires asking some hard questions about them and it may involve a re-orientation of each in order that the three will complement one another.   In other words, some effort will be necessary; some analyzing may be necessary; and some changes may be necessary in order to develop human resources in an effective manner.

The following table provides a simplified overview of some of the considerations to be taken into account in the water supply and sanitation human resource development process.   The column headings indicate the subject areas covered by chapters 2, 3 and 4.

---

* Management is not only the management of human resource planning and human resource training, but it is also the management of human resources in the fullest sense.   It embraces all managers who manage people whether they are designated as training, personnel, line, operational or general managers. They all have a responsibility for and a commitment to the development of the employees under their charge.

Overview of the Water Supply and Sanitation Human Resources Development Process

Overall Aim: To ensure that the human resources needed for water supply and sanitation programmes are available			
	Planning	Training/Production	Management
Goal	To provide the framework within which the water supply and sanitation human resource development process takes place.	To provide the human resources needed.	To make the best use of water supply and sanitation human resources.
Objective	To specify the number of installations and/or teams and their composition needed to improve the level of water supply and sanitation up to a proposed level.	To produce X people of Y types.	To determine human resource distribution and productivity standards, patterns of use and non-labour inputs.
Strategy	Regional, district and local planning and programming. Water supply and sanitation human resource project formulation.	Educational/training planning and programming, performance objectives and training delivery systems definition.	Reorganization: - regionalization, - integration of operation and maintenance of systems, - rural water supply and sanitation programming, - human resource project management.
Activities	Planning and programming Coordination Monitoring and evaluation Research and development	Recruitment, new entry definition, development of training delivery systems, evaluation of process and products.	Establishment and implementation of: - supervision system, - continuing training, - recruitment and selection procedures, - career development schemes, - assignment of personnel, - development of staffing patterns.
Targets	X teams or services or facililties of Y composition in operation by time T.	X trained personnel of Y type by time T.	X units of service of specified quality delivered to a particular population.

3. EFFECTIVE APPROACHES FOR FACILITATING HRD

There are many approaches that are useful in implementing the HRD process. The three that are specifically highlighted in this chapter are:

TECHNIQUE	PURPOSE
1. HRD Appraisal and Planning Guide	1. To detect strengths and weaknesses in the organization's HRD process.
2. Dual Focus Approach	2. To analyze the performance of both the employee and the system in which the individual must work.
3. Systematic Approach to Training	3. To first ensure that there is a need for training and second, that all necessary training is based on the requirements of the job.

3.1 THE HRD APPRAISAL AND PLANNING GUIDE

The three part HRD Appraisal and Planning Guide on pages 10-15 is a useful means for making a rapid assessment of the current state of HRD in your organization.

Completing Part 1 of the HRD Appraisal and Planning Guide, THE CHECK-LIST, will provide "indicators" of your present HRD strengths and weaknesses. Page 13 provides a summary of the findings in a country of about 50 million population where sector responsibilities are divided among eight separate agencies. The summarized findings, based on the completed Check Lists for each of the eight agencies, identify entry points for improving the HRD process in the sector. Such information facilitates the formulation of a programme to strengthen the process. You will want to make a similar summary. A sample form, Part 2 SUMMARY FINDINGS, is provided on page 14.

Because the key elements included as indicators of Planning, Training and Management are all significant to the development and support of a well-functioning HRD process, you can be sure that any weaknesses the appraisal detects will be worth your efforts to correct. Guidance for making such adjustments are to be found in the corresponding chapter of the Handbook. A simple form on which to outline required corrections is given on page 15 and is entitled Part 3 CORRECTIVE ACTIONS.

The three part HRD Appraisal and Planning Guide thus enables a brief assessment or overview of the current state of HRD in an organization. To facilitate a more detailed assessment, on the basis of this brief overview, a number of tools are described in the planning chapter, in Steps 1-11 of preparing a manpower development plan, including forms and worksheets designed to uncover information.

CHECK LIST

COUNTRY: .... MINISTRY/AGENCY. ....

In order to obtain a quick overview of your ministry's/agency's HRD process, please check the square (1, 2, 3, 4 or 5) which most appropriately indicates the current status with respect to the essential elements shown under PLANNING, TRAINING & MANAGEMENT. Also please circle the element considered to be top priority.

CODE. 1 = NO   2 = PROPOSED   3 = TECHNICAL COOPERATION REQUIRED   4 = BEING DEVELOPED   5 = YES

PLANNING	Is HRD planning, within the context of NATIONAL and SECTOR plans, based on:

1 2 3 4 5

- an INVENTORY of EXISTING MANPOWER?
- an ESTIMATE of MANPOWER NEEDS?
- an ASSESSMENT of MANPOWER PRIORITIES?
- an EVALUATION of TRAINING REQUIREMENTS?
- an INVENTORY of TRAINERS?
- an INVENTORY of TRAINING RESOURCES?
- the PROPOSED LEVEL of SERVICE?
- an APPRAISAL of the public sector's ABILITY TO PAY trained qualified manpower?

TRAINING	Is the implementation of sector training activities based on:

1 2 3 4 5

- a MANPOWER DEVELOPMENT PLAN?
- a NEEDS ANALYSIS?
- a DEFINED TRAINING METHODOLOGY?
- a MULTI-DISCIPLINARY TEAM of INSTRUCTORS?
- PERFORMANCE-ORIENTED INSTRUCTIONAL MATERIALS?
- a VARIETY of DELIVERY OPTIONS?
- ADEQUATE FACILITIES and SUPPORT?
- ADEQUATE TRAINING AIDS?
- EVALUATION of LEARNING?

MANAGEMENT	To what extent has training been institutionalized, e.g. so that people in charge of HRD, and management in general, benefit from:	QUALIFYING REMARKS

1 2 3 4 5

- an APPROPRIATE ORGANIZATIONAL CHART?
- an INTEGRATED PERSONNEL POLICY?
- PERFORMANCE-BASED JOB DESCRIPTIONS?
- a TRAINING POLICY?
- a TRAINING BUDGET?
- an EVALUATION of ON-THE-JOB PERFORMANCE?
- an EVALUATION of RESULTING LEVEL of SERVICE?

In addition check on GENERAL MORALE INDICATORS, e.g. percentage labour turnover, numbers of appeals against management, effectiveness of management - employee consultation.

Person interviewed ....

Interviewer ....

1981-1990

NOTES ON THE COMPLETION OF THE CHECKLIST

The CHECKLIST has been prepared to assist national personnel, as well as WHO staff, in obtaining a quick overview of current HRD work in the sector. The CHECKLIST illustrates that manpower development is influenced by many interdependent factors and thus requires a systematic approach similar in principle and application to the precision that characterizes good engineering. The elements shown on the CHECKLIST are considered essential for more effective development of human resources. It is not intended to be an all inclusive list but rather an indicator of the areas to be considered. You may well wish to add further questions of your own. Please let us know if and how your experience leads you to expand the list.

It is anticipated that users of the CHECKLIST will gain additional insights about the HRD in the water and sanitation sector in a number of ways, e.g. it should:

provide a sample of key "indicators" of the major strengths and weaknesses in present efforts to develop HR for the sector;

identify priority entry points and topics for future efforts in human resources development;

facilitate the planning of performance-oriented activities which will eliminate present deficiencies.

The objective is to obtain an overview of HRD work at the national level within water and sanitation agencies as well as through the formal education system. Where water supply and sanitation are the shared responsibility of several ministries and/or agencies, one CHECK LIST for each ministry/agency should be completed.

It is intended that the HRD CHECK LIST be completed during an interview with a national counterpart or counterparts. Thus, in order to obtain a countrywide perspective, a number of interviews will almost certainly be necessary.

When a "Yes" response is received to CHECK LIST questions, it is suggested that the interviewer ask follow-up questions which will further qualify the affirmative reply.

e.g. For the PLANNING function: if a Yes response is received relative to "the proposed level of service", subsequent questions could be -- What is the level of service proposed? -- What was it last year?

e.g. For the TRAINING function: if a Yes response is received regarding "a manpower development plan", it is suggested that a copy be obtained.

e.g. For the MANAGEMENT function: if a Yes response is received in connection with "a training budget", follow-up questions could be -- What was actually spent last year? -- In what areas?

Explanatory notes for completion of each item of the CHECKLIST have been compiled and are included as item 4 in the Reference Notes chapter, page 225.

SUMMARY FINDINGS -- EXAMPLE

STRENGTHS	WEAKNESSES
PLANNING	**PLANNING**
• Manpower inventories are available for all water and sanitation agencies. • Some manpower forecasting is being done for budgetary purposes. • There is a "freeze" on the number of employees in each governmental agency. This should stimulate some innovative ideas on how to make better use of existing HR. • Many of the agencies indicated that service level targets (coverage and quality) have been established. This is necessary baseline data for estimating manpower needs and priorities.	• Manpower needs and priorities do not appear to have been well thought through or based on any in-house analysis involving managerial/supervisory personnel. • Only a few mental inventories exist regarding qualified trainers and training resources. • No actual appraisal data is available to compare public and private sector salaries. Opinions varied all the way from "insignificant differences" to "appalling differences", but with no actual figures. • The manpower comparison index (ratio of employees to population served) indicates overstaffing e.g. PWA 1 : 540, MWWA 1 : 470.
TRAINING	**TRAINING**
• Among those interviewed, the attitude toward training is extremely positive. It is not only seen as necessary, but as a continuing activity. • Several sector agencies as well as the Nat. Inst. for Skill Dev. and the Voc. Ed. Dept. have enough performance-oriented training materials to pool together and begin a sector training library. • From the opinions expressed, it appears that many of the existing training aids and training facilities are under-utilized. • Strong emphasis is placed -- by several agencies -- on the training of community volunteers. • MWWA has a Training Centre, staffed with a full-time Director, Deputy Director and 10 Trainers. • The PWA has just appointed a full-time Manpower Dev. and Training Officer. • The Rural Water Supply Division of the Dept. of Health has a Training Section.	• With one exception, training is being implemented on an ad hoc basis. • With one exception, on-the-job, in-service and training of community volunteers is being done by personnel who lack the necessary preparation in techniques of instruction, etc., for their role as trainers. • With one exception, in-house training of staff for updating or upgrading purposes is extremely limited (non-existent in some cases). • There is almost total reliance on the formal education system to produce the technical and skilled manpower required for the sector. Comments from a number of officials indicate, however, that the knowledge and skill of these individuals is inadequate for the demands of their jobs. One must conclude that dialogue between sector agencies and the training institutions is insufficient. • The majority of officials interviewed assume that a substantial amount of on-the-job training is being conducted by supervisory staff in the sector. The actual extent and quality of such training is totally undocumented.
MANAGEMENT	**MANAGEMENT**
• Four of the seven agencies interviewed indicated that they have a training budget. • Four of the seven agencies indicated that they have a training unit. • Government has received a "Structural Adjustment Loan (SAL)" in the amount of US $150 million. Part of the loan funds will finance an Institutional Reform study which will examine the Civil Service Regulations, Classification and Career Development. Thus, the timing could be extremely advantageous in order to bring about some of the changes which will facilitate better management of HR. • The report of the PWA-USAID "Team Building Seminar" (1-5 November 1982) for thirty of the Authority's top managers, contains many recommendations which will impact -- in a positive way -- on HRD for that organization.	• None of the agencies have a training policy. • Most of the agencies indicated that they evaluate on-the-job performance of their employees. They advised, however, that although performance of some individuals may be poor there is little that can be done -- due to the Civil Service Regulations - to either stimulate better performance or dismiss the worker. • No attempt is made to correlate how training in any of the agencies affects the attainment of service level targets. Training is simply assumed to be beneficial. • The two largest employers indicated they do not have job descriptions for their staff (about 12,000 employees). • Degree and diploma requirements for some of the positions appear to be greater than the actual demands of the jobs. • HRD has not been institutionalized.

HRD APPRAISAL AND PLANNING GUIDE..........PART (2)

SUMMARY FINDINGS

The summary of "Strengths" and "Weaknesses" in the HRD process is based on the indicators reflected in PART (1).

STRENGTHS	WEAKNESSES
PLANNING	PLANNING
TRAINING	TRAINING
MANAGEMENT	MANAGEMENT

CORRECTIVE ACTIONS

This is a simplified form on which to record decisions of sector officials regarding the deficiencies noted in PART (2).

HRD PROCESS WEAKNESSES	CORRECTIVE ACTION PROPOSED	PERSON RESPONSIBLE
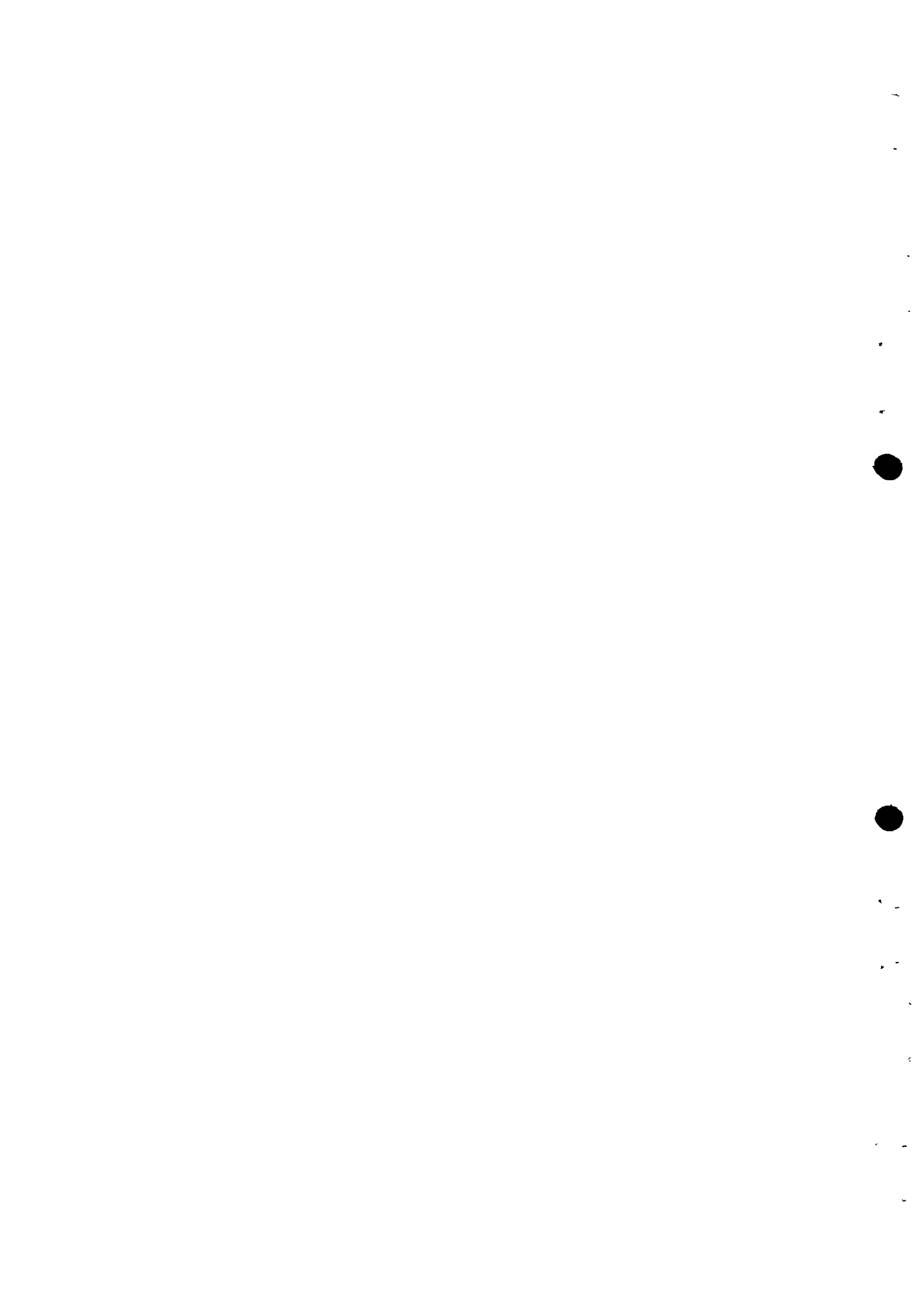
3. EFFECTIVE APPROACHES FOR FACILITATING HRD (cont'd)

3.2 THE DUAL FOCUS APPROACH

Another effective approach that is applicable to the HRD Process is the Dual Focus Approach. It recognizes that results achieved through conventional training have fallen well below expectations. It argues that the reason for this is that most training is done in isolation from the trainee's environment and therefore cannot be effectively used due to lack of environmental support. It is our contention that the effectiveness of training can be greatly improved when programmes are developed using a 'Dual Focus' approach. In brief, this means that solutions to performance problems are sought by focusing on both the individual and the system within which that individual works. In other words, the Dual Focus Approach combines employee training and organizational development to meet the demands for improved performance.

When faced with a performance problem, the manager using this approach, will examine not only the performance of the employees concerned, but he will also examine the performance of the system. He will take a careful look at the realities of the working situation. He may prescribe a training solution to the problem; or he may discover that the employees already know how to do their job and that the system is causing the problem. In that case, he must find an innovative way to remove system barriers. Often this creative manager will find that both the employee and the system need development.

A valid question at this point is: What does the organization get in exchange for these efforts? Are the results worth the time and energy expended?

To help you answer such questions, the following two case studies may be useful. Case Study No. 1 illustrates a common way of responding to a request for manpower development. The results will be familiar to many. Case Study No. 2, on the other hand, provides an illustration of the Dual Focus Approach. A cost comparison on a "per trainee" basis indicates that Case Study No. 1 is roughly the same as Case Study No. 2. However, the difference in the outome is much more dramatic.

Read the case studies and judge for yourself which approach to HRD is more suitable for your organization. How do you prefer to spend your HRD funds?

CASE STUDY NO. 1

1. Eight utilities identified the training of water laboratory technicians as one of their top priorities in connexion with water quality.

2. In response to their collective request a crash course was mounted to train prospective laboratory technicians in bacteriological testing using the millipore filter kit.

3. The course was conducted in two parts. The first was a combination of theory and practice for the trainees at the central laboratory. The second was on-the-job training with the trainee in his own laboratory with his own equipment.

4. A thorough performance evaluation of each trainee was conducted by the instructor to ensure that the technician could satisfactorily collect samples, carry out the test and report the results.

5. Each technician came through the on-the-job evaluation with flying colours. Additionally, they all appeared highly motivated.

6. Eighteen months later not a single technician remained in his/her post - there had been eight resignations over that period.

7. An investigation revealed that in each of the eight utilities the water quality testing system was, in effect, non-functional. After a period of time each technician became aware that his/her work was pointless, frustration set in and they opted out.

The training activity described in Case Study No. 1 could be termed a "successful failure". A diagnosis of the systems in which the laboratory technicians were to work would have revealed that organizational problems would negate the value of staff training.

Our second example -- illustrating a <u>dual focus</u> diagnosis -- has a happier ending.

CASE STUDY NO. 2

1. Eight national water utilities identified their top <u>training</u> priority as "accounting procedures".

2. A short-term consultant experienced in water utility. accounting was recruited to work with national counterparts to:

   (a)   assess specific needs in each Accounting Department, and

   (b)   recommend a course of action to satisfy the perceived needs.

3. One of the most significant findings of the assessment revealed that the existing accounting systems were antiquated and thus personnel training would be of little value until these systems were updated and streamlined.

4. A four-phase programme was recommended for each utility which would be implemented with the total involvement of national counterparts and would provide an Accounting Department Handbook as one of the outcomes:

   (a) Phase 1 - develop Chapter 1 on "General Accounting Procedures"
                  for the Handbook
                - train appropriate staff with Chief Accountant

   (b) Phase 2 - monitor day-to-day work of staff utilizing Chapter 1
                - develop Chapter 2 on "Inventory & Control"
                - train appropriate staff with Chief Accountant
                - fine-tune Chapter 1

   (c) Phase 3 - monitor day-to-day work of staff utilizing Chapter 2
                - develop Chapter 3 on "Billing and Collection"
                - train appropriate staff with Chief Accountant
                - fine-tune Chapter 2

   (d) Phase 4 - monitor day-to-day work on staff utilizing Chapter 3
                - develop Chapter 4 on "Financial Reporting"
                - train appropriate staff with Chief Accountant
                - fine-tune Chapter 3
                - monitor day-to-day work of staff utilizing Chapter 4
                - fine-tune Chapter 4

5. The eight Accounting Systems were updated and streamlined. All Accounting Department staff were involved and trained in the process.

6. At this writing, one year after the fact, both the systems and the employees are performing well. The only change in personnel is that one employee moved from one utility to another within the eight.

3. EFFECTIVE APPROACHES FOR FACILITATING HRD (cont'd)

3.2 THE DUAL FOCUS APPROACH (cont'd)

The Dual Focus approach which has been outlined here does not ignore the HRD process described in the Basic Strategy Document nor is it intended in any way as a substitute. On the contrary, the Dual Focus approach should be an integral part of a well organized system for HRD. It is mentioned here because it is a viable means of ensuring that "crash training" responds to actual needs. It rejects the premise that employee training is the answer in every case and forces us to broaden our perspective to include a systems management point of view.

3.3 THE SYSTEMATIC APPROACH TO TRAINING

The third effective approach relating to the training component of the HRD Process is Systematic Training. A systematic approach prevents common abuses of training in which e.g. employees are simply sent off to some vocational institute or offered a ready-made training seminar. Such training all too often subjects trainees to a great deal of inappropriate teaching. If training is to give results, it must be planned systematically so that:

1. The training course addresses the information and skills that the employee really needs in order to do his job better and ideally it should be based on a task analysis and sound job descriptions;

2. The right trainees participate in the right course;

3. The trainees have the pre-requisites to be able to grasp what is being taught.

4. The training is designed so that the employee not only learns about something but he actually learns how to do something. He not only learns how to do it -- but he is given ample opportunity to practice it.

5. The trainee is then assigned to work where he will employ the new skill.

6. The trained employee is given reinforcement on the job.

To ensure all of the above requirements for successful training, a systematic approach to training should be taken. The following diagram illustrates how systematic training decisions might flow from and be related to one another. Illustrative diagrams of this sort may give a static impression, or, alternatively, suggest that all that is required to be successful at the end of the process is to proceed systematically from Step 1 to Step 7. Those of us who have been involved in real life situations know it can be plagued with constraints which make the path less smooth. This further emphasizes the need to proceed systematically even though compromises may have to be made.

STEP 1 DETERMINE TRAINING NEEDS	*Study performance deficiencies within the organization. Determine which are due to a lack of skills and/or knowledge and will respond to a training solution*
STEP 2 ANALYZE TASKS	*Study the task. Determine precisely what skills are necessary for its accomplishment*
STEP 3 DEVELOP CURRICULUM	*. Determine precisely what the successful trainee must be able to do at the end of the proposed training in order to accomplish the task. Write objectives in terms of observable behaviour. Determine the necessary pre-requisites, the proper sequences of instruction and the instructional system components*
STEP 4 PREPARE ENVIRON- MENTAL SUPPORT	*Ensure that adequate facilities and training aids will be available. Support staff (e.g., secretarial help) should also be considered*
STEP 5 CONDUCT TRAINING	*Conduct training using activities that will enable the trainees to do the task described in the performance objectives*
STEP 6 FOLLOW-UP TRAINING	*Observe trainees to determine if they have achieved the course objectives and are applying the new skills back on the job. Give reinforcement and feedback*
STEP 7 EVALUATE AND ADJUST TRAINING	*Assess the training course to determine if it is adequately designed to eliminate the intended performance problem*

Chapter 2

Planning

WORLD HEALTH ORGANIZATION

HUMAN RESOURCES DEVELOPMENT
HANDBOOK

GUIDELINES FOR MINISTRIES & AGENCIES
RESPONSIBLE FOR WATER SUPPLY & SANITATION

TRAINING

PLANNING   MANAGEMENT

INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE

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*PWS - Planning Work Sheet.

**IS - Information Sheet.

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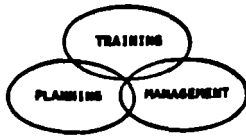
1. INTRODUCTION

This chapter concentrates primarily on HRD planning and not overall agency or indeed overall sector planning. Nevertheless, it should be understood that HRD planning cannot be optimal without it being fully integrated with the larger business and operating planning of the agency, of which it is a part. Putting it another way, a full business and operating plan of an agency is not complete without each of the functions (including HRD), that make up that agency, being involved in the build up of the plan. Only in this way can top management achieve balance across each of the functions, in terms of numbers and classifications of employees. Only in this way can it be determined not only how many of each type of employee can be afforded but whether trade-offs are necessary within the agency or indeed relative to the labour market generally. In this latter case e.g. one might opt for fewer employees or a smaller incease of employees and instead, improve working conditions or pay , or the benefits package. From this it can be seen how interdependent planning and management are. HRD planning, clearly, cannot exist in a vacuum. It requires to be managed in the integrated way just mentioned and alongside the other activities of the Personnel Function. This is described in the Management Chapter (page 152).

Manpower planning involves forecasting and planning for the right numbers and the right kinds of people at the right places at the right times and at the right costs to perform activities that will benefit both the organization and the individuals in it. Manpower planning is successful to the extent that it properly matches each of these elements.

There is a wide variety of manpower planning models and techniques, ranging all the way from simply using opinions (judgmental) to computer simulations[1]. This chapter is not intended as a review of current literature on the subject. However, users of the HANDBOOK are encouraged to study some of the documents available about such techniques -- their choice depends on the degree of sophistication of available data as well as the desired breadth of the final product. Specific reference is made to two WHO complementary publications: HMP: Principles, Methods, Issues[2] and Guidelines for Health Manpower Planning[3].

---

[1]BRYANT, D.R., HAGGARD, M.J. and TAYLOR, R.P. Manpower planning models and techniques, Business Horizons, April 1973, pp. 69-78.

[2]HALL, T.L., MEJIA, A. HMP: Principles, Methods, Issues, World Health Organization, Geneva, 1980.

[3]HORNBY, P., RAY, D.K., SHIPP, P.J., HALL, T.L. Guidelines for Health Manpower Planning, World Health Organization, Geneva, 1980.

Further references are featured in the WASH/USAID publication Human Resource Development, Annotated Bibliography for Water and Sanitation, WASH/USAID, 1984.

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1.   INTRODUCTION (cont'd)

The purpose of this chapter is to provide the reader with a framework for manpower planning accompanied by a set of sample worksheets* to facilitate the actual preparation of a manpower development plan (MDP). The diagram on page 24 illustrates a demand-supply model of a MDP which is considered appropriate for use by water and sanitation agencies. The diagram also provides a framework for a systematic and analytical approach to balance the demand for manpower with the supply. The concepts of supply and demand are complex ones used to describe market economies. For our purposes in this chapter, since the Water Supply and Sanitation sector is often run by the state, we simply use demand as meaning the manpower requirements of the sector. That is, the amount of the different occupational groups and skills required to satisfy a given set of agreed criteria about how the sector does, could or should function. Which of these three types of criteria are being used at any one time should always be stated. We use the term "manpower requirements", in the conventional sense, as a short way to describe the requirements for people, whether they be teenagers or adults, men or women.

Supply, on the other hand, we use to mean the opposite of demand. This is, the availability and the characteristics of services and manpower and the price of that manpower at a given or future time.

Once this information on Demand and Supply has been obtained, management decisions can be made. For example, how many of each type of employee can be afforded and whether trade offs are necessary within the agency or relative to the labour market generally, as was mentioned in the opening paragraph of the chapter.

Based on the findings of a number of appraisal missions to developing countries in recent years, it is recognized that an inadequate data base is often a major constraint to carrying out some of the steps noted in the model. It takes time to build up an information system which will not only facilitate the implementation of those activities shown in the model, but will also facilitate decision-making at critical points in the planning process. Thus, where shortcomings are identified in present manpower planning practices (as indicated by use of HRD check list, Chapter 1), it is suggested that sector agencies work in stages toward the establishment of a manpower planning process.

Frequently, manpower planning is confined to personnel employed by sector agencies. The position of the HRD Task Force is that such planning should include all the human resources available to the sector, as stated in the BASIC STRATEGY DOCUMENT:

"The term, human resources, is intended to include youth as well as adults, women as well as men, providers of services as well as consumers, paid employees as well as volunteers. It includes decision-makers and managers, planners, technicians, scientists, researchers, clerical and accounting staff, skilled and unskilled labourers. It includes those, who create facilities, who operate and maintain them, who support, monitor, and control the quality, and who educate and train. It includes people working in other programmes which support the water supply and sanitation sector.
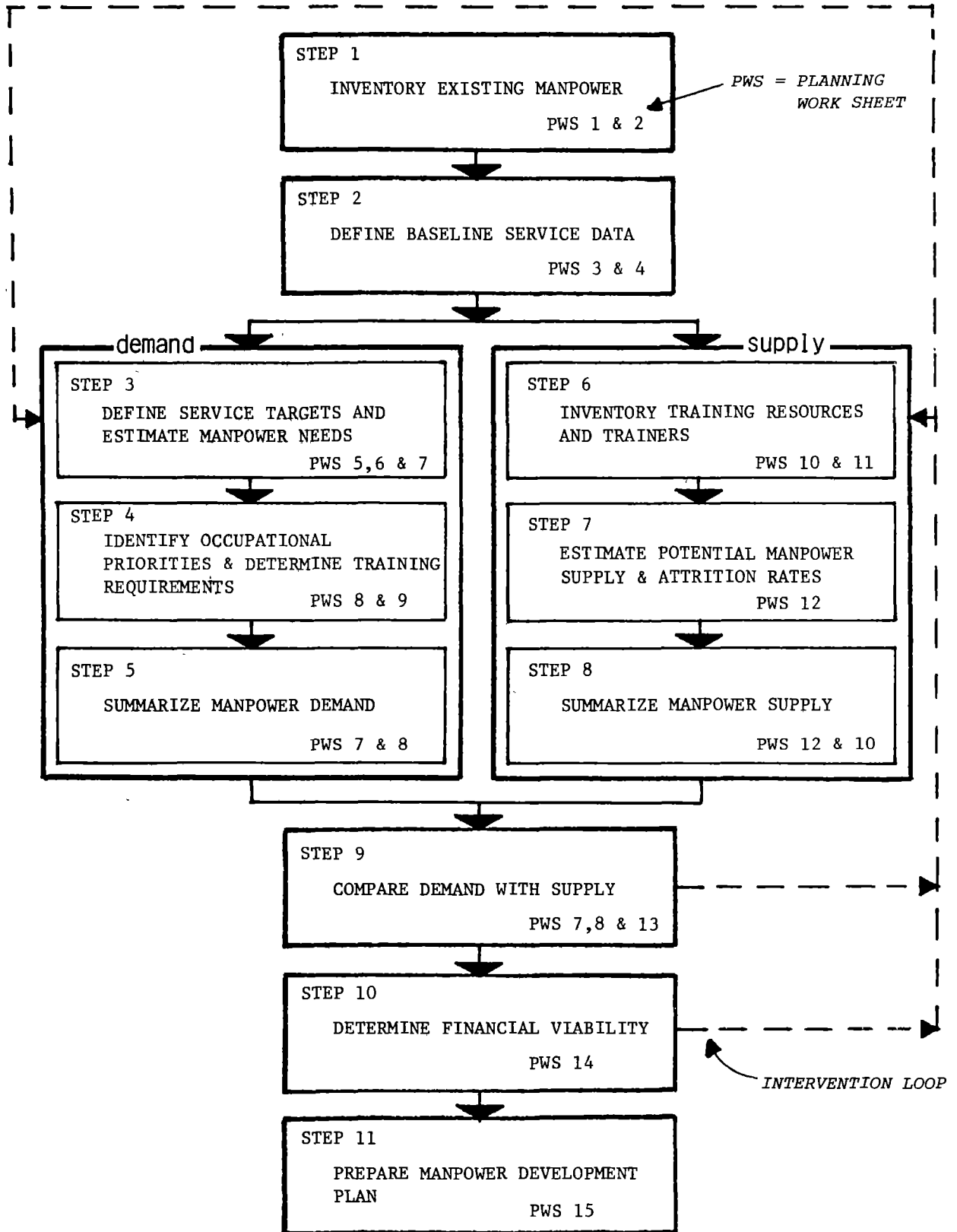
```
STEP 1

    INVENTORY EXISTING MANPOWER                   PWS = PLANNING
                                                         WORK SHEET
                                PWS 1 & 2
```

```
STEP 2

    DEFINE BASELINE SERVICE DATA

                                PWS 3 & 4
```

demand / supply

```
STEP 3                                 STEP 6
    DEFINE SERVICE TARGETS AND             INVENTORY TRAINING RESOURCES
    ESTIMATE MANPOWER NEEDS                AND TRAINERS
                    PWS 5,6 & 7                            PWS 10 & 11
```

```
STEP 4                                 STEP 7
    IDENTIFY OCCUPATIONAL                  ESTIMATE POTENTIAL MANPOWER
    PRIORITIES & DETERMINE TRAINING        SUPPLY & ATTRITION RATES
    REQUIREMENTS                                           PWS 12
                    PWS 8 & 9
```

```
STEP 5                                 STEP 8
    SUMMARIZE MANPOWER DEMAND               SUMMARIZE MANPOWER SUPPLY

                    PWS 7 & 8                              PWS 12 & 10
```

```
STEP 9

    COMPARE DEMAND WITH SUPPLY

                                PWS 7,8 & 13
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STEP 10

    DETERMINE FINANCIAL VIABILITY

                                PWS 14
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INTERVENTION LOOP

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STEP 11

    PREPARE MANPOWER DEVELOPMENT
    PLAN
                                PWS 15
```
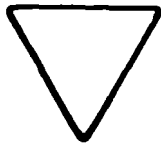
Having studied the Planning Model on the preceding page, you may be overwhelmed by the amount of data required. Some of the information may be available and some may not. Please remember, however, that the process of developing a MDP begins wherever you are -- with whatever information you have.

You can develop your MDP using the Planning Model as a guide -- perhaps using only those steps that are specifically appropriate to your situation. Initially, you may have to rely on a lot of subjective judgements, but over time, as your data base improves, each plan will not only become easier to produce but also more meaningful.

Be assured that even your early efforts will pay dividends in terms of:

1. providing better direction for the development of manpower in your organization, and

2. providing improved manpower data upon which to base sound decisions.

2. HUMAN RESOURCES PLANNING MODEL

GENERAL

The diagram on page 26 shows the steps required to prepare an effective manpower development plan. The duration of the plan varies from one organization to another but as an annual operating plan it often is for two years, with the first year more detailed than the second. This is then updated on an annual basis, or more often as required. Should it be a strategic plan it more often is on a 2-5 year basis (or even longer in the case of an IDWSS Decade Plan). This latter refinement and indeed the subsequent integration of a strategic and an operating plan are also developments that only need follow in time after the basics have been satisfactorily achieved.

The plan first requires an inventory of existing manpower to be made (Step 1), and then the baseline service data to be defined (Step 2), after which the demand for staff is examined by steps outlined on the left hand side of the diagram, (Steps 3, 4 and 5) while the supply of staff is estimated by steps outlined on the right hand side (Steps 6, 7 and 8). The dotted line around the diagram shows points of intervention which planners and decision-makers may use to reconcile the demand for staff with the supply. For example, training departments could be expanded and/or their programmes modified in order to provide suitable changes in their trainee output.

HUMAN RESOURCES DEMAND CONSIDERATIONS

In order to calculate demand, the planner first defines the service targets and then estimates manpower needs by year for a specific planning period (Step 3). This is followed by the identification of occupational priorities and the determination of training requirements (Step 4). Step 5 simply summarizes the manpower demand including training requirements for existing and additional staff.

HUMAN RESOURCES SUPPLY CONSIDERATIONS

On the supply side, given the inventory of existing manpower, one starts with an inventory of training resources and an inventory of trained trainers Step 6. The training resources include those available externally as well as internally. They may range from formal training institutions to ad hoc training courses, and include possibilities for re-training and continuing education. Next, potential manpower supply is estimated, as are the attrition rates of existing employee groups. (Step 7). The manpower supply situation, that is, the projected potential availability of personnel, and the courses and programmes available, internally and externally, are summarized in Step 8.

POINTS OF INTERVENTION

It is rare that the demand and supply are compatible, and that appropriate resources are available as calculated at the end of the first cycle of the manpower planning process (Step 9). If they are not compatible, the dotted line in the diagram shows various points of intervention at which action programmes can be considered in order to achieve balance. On the demand side, it could effectively be reduced simply by lowering future goals (Step 3). Other opportunities also exist. The demand for staff can be decreased by increasing the utilization or productivity of current staff

2.   HUMAN RESOURCES PLANNING MODEL (cont'd)

POINTS OF INTERVENTION (cont'd)

through better motivation, incentives, etc., or by a reduction in the levels of service (standposts versus house connections) requiring less manpower. On the supply side, if there is high staff attrition through resignation, management must consider how best to stop or reduce the number of "leavers". The appropriate actions can only be determined on the basis of an analysis of reasons for leaving but could include any or all of the following examples: enhanced career development, retirements could be decreased, although temporarily, by granting extensions of contract, the recruitment of staff can be influenced by expanding training facilities, re-training less skilled staff, attracting staff from other services or the private sector, or by providing scholarships to trainees (with the proviso that they will join the service for a defined number of years).

FINANCIAL IMPLICATIONS

When the demand for and the supply of staff is roughly in balance (Step 9), it is necessary to consider if there are enough financial resources to meet the total costs of all the requirements (Step 10). For example, to pay salaries, provide employee benefit programmes, buy necessary training equipment and materials, and meet the cost of training. Costs for training after the expiry of the MDP should also be considered, for example, provision would have to be made for any new training institution which was established as a result of the MDP. If there is enough money the plan can be put into effect. If not, further interventions and trade-offs will be necessary.

MANPOWER DEVELOPMENT PLAN (MDP)

The steps of the manpower planning process have been identified. These steps are concerned with establishing the relationship between demand and possible future supply of human resources. To achieve a balance between demand and supply, various points of intervention are identified in the model where adjustments to the demand and supply requirements can be made. Thus, the demand-supply balance is achieved through an iterative process which continues until a feasible MDP is produced. In order to prepare a broad manpower development plan (Step 11) for the planning period constant re-assessment and subsequent re-planning are essential features of human resources planning. The broad MDP should answer the following questions:

Who needs development/training and how many?   Step 3.

When should the development/training be done?   Step 3.

What development/training do they need?   Step 4.

What type of development/training should be done?   Step 6.

What are the estimated costs?   Step 10.

3.   STEP 1 -- INVENTORY EXISTING MANPOWER

WHAT IS IT?

A manpower inventory is a tabulation of human resources placed by grade (if used) and by job classification into job categories, and assigned to HQ and Regional Offices. The approved current staff establishment, whenever available, should also be provided for each job classification. The age distribution of current staff can be indicated to assist in forward planning for replacements due to retirements. The relevant blank worksheet, entitled "Human Resources Inventory", and a completed example denoting typical job classifications, on its reverse side, follows as Planning Work Sheet PWS-1. (The majority of the sample forms which appear in this chapter have been reduced in size for ease of presentation).

The inventory can also include municipal personnel, as well as personnel working only part-time, in the water and sanitation sector. This applies, for example, to volunteers, to Health Assistants and to Health or Sanitary Inspectors devoting part of their time to supervision of rural water supplies and sanitation facilities. The types of human resources which should also be included are described in Information Sheet IS-1.

Human Resources Planning Model

In addition, it is highly desirable to provide an indication of the distribution of manpower between HQ of sector agencies and its regional or provincial offices. This illustrates the emphasis or importance allocated by sector agencies to the development and operations/maintenance support to rural populations. A relevant worksheet entitled "Human Resources Inventory - Regional Distribution", is included as Planning Work Sheet PWS-2.

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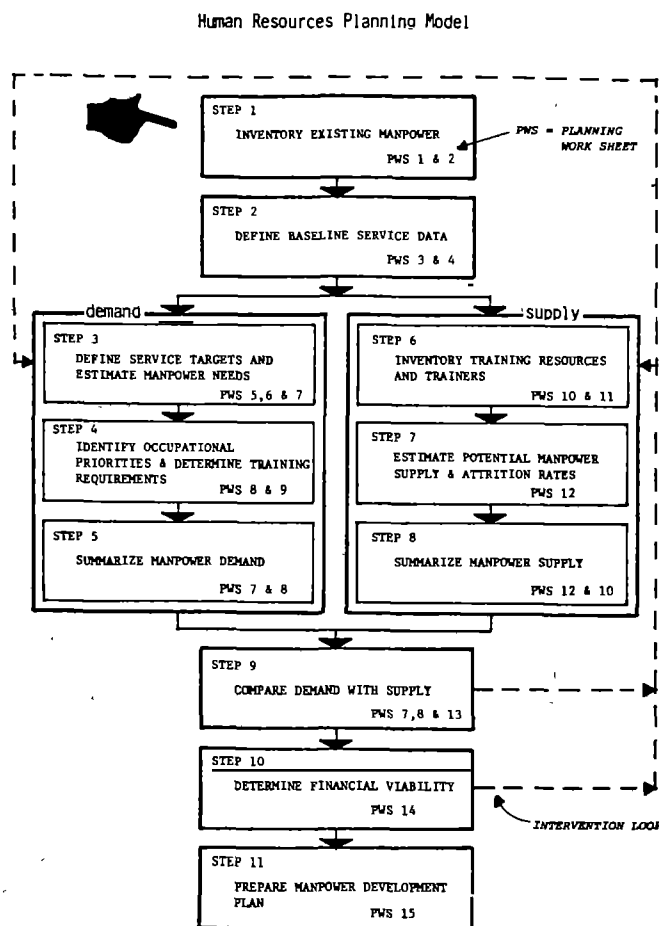
3.   STEP 1 -- INVENTORY EXISTING MANPOWER (cont'd)

WHY IS IT NEEDED?

A current staff inventory is an essential tool of sector managers and planners. It identifies the current staffing situation and focuses attention on the current staff requirements (vacancies). In addition, it provides an indication of the distribution of manpower between HQ and regional or provincial offices of the agencies. The data provided in the inventory should be used to develop manning ratios and staffing patterns, which can be used as a basis for determining future human resources requirements and possible re-distribution of staff.

Manning ratio is simply the ratio of current exployees to population served. It is denoted in the form, e.g. 1 : 600, indicating that 600 people are served by each employee in the agency. It is a useful indicator of productivity as is explained in Step 2.

Staffing patterns, for a given agency, plant, region, etc., denotes the make-up of the team needed to meet requirements, i.e., the types and numbers of staff in terms of skills, e.g. 1 superintendant, 4 plant operators, 1 labourer.

It is recognized that in many developing countries the baseline data for human resources planning is frequently incomplete. What is available may have been broadly estimated. Broad estimates will perhaps be adequate for an initial effort at manpower planning. However, as experience is gained in the planning process and as managers come to rely more and more on the MDP tool, more detailed manpower information will be desired. Lack of precise data should not deter the planner from developing a MDP, but as time goes on, every effort should be made to gather complete baseline data.

When gathering the basic manpower data, an effort should be made to identify the various manpower problems and issues which need to be addressed in the human resources planning process. This sets the stage for the identification of the appropriate interventions which will later have to be considered.

Types of problems that should be considered when planning for human resources are discussed in Information Sheet IS-2.

PWS-1....... HUMAN RESOURCES INVENTORY

WATER SUPPLY - SANITATION*

COUNTRY: _____   DATE: _____

AGENCY/MINISTRY: _____

POPULATION SERVED BY: HOUSE CONNECTIONS/SEWERS* _____

STANDPOSTS/ON-SITE DISPOSAL*. _____

COMPLETED BY· _____

JOB CATEGORY	Job Classification	Grade	Proposed or Approved Current Establishment	Number in Post According to Age				Vacancies
				Under 25	26 - 50	Over 50	Total	
1	2	3	4	5	6	7	8	9
A								
B								
C								
D								
E								
F								
G								
H								
Total								

(1) In the "Number in Post" columns -- (5)(6)(7)(8) -- indicate in brackets the number of expatriates including volunteers, contract employees, etc. working for the agency.

Legend: Job Category:
A - Senior Management
B - Profession - Senior Technical/ Admin./Clerical
C - Intermediate - Technical/ Admin /Clerical
D - Junior - Technical/Admin./Clerical
E - Craftsmen
F - Operator
G - Unskilled and semi-skilled
H - Community-based personnel

* It is intended that separate forms be utilized by the water supply and sanitation sub-sector agencies and ministries.

WATER SUPPLY - SANITATION*

COUNTRY: _____   DATE: _____

AGENCY/MINISTRY: _____

POPULATION SERVED BY: HOUSE CONNECTIONS/SEWERS*: _____

STANDPOSTS/ON-SITE DISPOSAL*: _____

COMPLETED BY: _____

JOB CATEGORY	Job Classification	Grade	Proposed or Approved Current Establishment	Number in Post According to Age				Vacancies
				Under 25	26 - 30	Over 50	Total	
1	2	3	4	5	6	7	8	9
A	DIRECTOR-GENERAL / DIRECTOR / GENERAL MANAGER / CHIEF ENGINEER / CHIEF LEGAL OFFICER / CHIEF CHEMIST / CHIEF							
B	ENGINEERS (Civil & Sanitary) / ENGINEERS (Mechanical) / ENGINEERS (Electrical) / HYDROLOGISTS / HYDROGEOLOGISTS / TRAINING OFFICERS / SENIOR SANITARY INSPECTORS / ADMIN./FINANCE OFFICER							
C	TECHNICIANS - Water Resources / - Water Supply Design / - Laboratory / - Operation/Maintenance / DRAFTING/SURVEYING / SANITARY INSPECTOR/SANITARIAN / TRAINING STAFF / ACCOUNTING/BOOKKEEPING / PURCHASING / STENOGRAPHERS / CHIEF OPERATORS/SUPERINTENDENT / SECRETARY							
D	TECHNICAL OFFICERS / JUNIOR SANITARIANS / LIBRARY ASSISTANT / STORE KEEPER / CASHIER / TYPISTS							
E	ELECTRICIAN / MECHANIC / PLUMMER/FITTER / CARPENTER/MASON / WELDER / PAINTER							
F	WATERWORKS OPERATOR / SEWERAGE-WORKS OPERATOR / SANITARY AIDS / DRIVERS							
G	LABOURERS / GUARDS/WATCHMEN / OTHER							
H								
Total								

(EXAMPLE)

(1) In the "Number in Post" columns -- (5)(6)(7)(8) -- indicate in brackets the number of expatriates including volunteers, contract employees, etc. working for the agency.

Legend: Job Category:
A - Senior Management
B - Profession - Senior Technical/Admin./Clerical
C - Intermediate - Technical/Admin./Clerical
D - Junior - Technical/Admin./Clerical
E - Craftsmen
F - Operator
G - Unskilled and semi-skilled
H - Community-based personnel

* It is intended that separate forms be utilized by the water supply and sanitation sub-sector agencies and ministries.

INFORMATION SHEET: IS-1 (REF. STEP 1)

TYPES OF HUMAN RESOURCES

The focus on under-served populations implies the need for planners to consider the development of a workforce including many new types of skilled and semi-skilled people. It is important to explore the human potential in under-served rural and urban populations, such as educated school leavers, who in many countries constitute a sizeable under-used resource. During slack seasons, many people in rural communities may be available to participate in the development of sanitation facilities and improved water supplies for their own communities.

The women's role in water and sanitation is key, and thus local women's organizations are especially important community-based resources. These organizations often exist as part of the traditional settings, and are concerned with many of the basic community and family welfare activities. Women can often serve as catalysts, linking water and sanitation and primary health care, because those concerns are central to their daily life. They do not consider water or sanitation or primary health care as separate sectoral programmes.

PWS-2 .... HUMAN RESOURCES INVENTORY - REGIONAL DISTRIBUTION

WATER SUPPLY - SANITATION

COUNTRY· _____   DATE: _____

AGENCY /MINISTRY:_____

POPULATION SERVED BY: HOUSE CONNECTIONS/SEWERS·* _____

STANDPOSTS/ON-SITE DISPOSAL:* _____

COMPLETED BY· _____·_____

Category	Job Classification	Grade	Proposed or Approved Current Establishment	Number in Post											Total	Vacancies
				HQ	Region/Province											
					1	2	3	4	5	6	7	8	9	10		
A																
B																
C																
D																
E																
F																
G																
H																
Total																

* It is intended that separate forms be utilized by the water supply and sanitation sub-sector agencies and ministries.

Legend·

Job Category·		
	A - Senior Management	D - Junior - Technical/Admin./Clerical
	B - Profession - Senior Technical/ Admin./Clerical	E - Craftsmen
		F - Operator
	C - Intermediate - Technical/ Admin./Clerical	G - Unskilled and semi-skilled
		H - Community-based personnel

Region/Province:		
	1. _____	6. _____
	2. _____	7. _____
	3 _____	8 _____
	4. _____	9. _____
	5 _____	10. _____

INFORMATION SHEET: IS-2 (REF. STEP 1)

HUMAN RESOURCES PLANNING CONSIDERATIONS

Listed below are problems commonly encountered, each of which requires a management action. The action that is most appropriate for each of these problems can only be decided on the spot but the problems have been written in such a way as to imply the required action.

1. Management/Training problems: Lack of staff to deliver the planned services is arising, or will arise, for the following reasons:

1.1 Shortage of trained staff in the country because of a lack of established posts or because there are not now, or will not be in the future, sufficient staff to fill the sanctioned posts.

1.2 Prolonged absence of staff for training, leaves a gap which is not built into the service plans and which even when filled by deputation, simply transfers the gap elsewhere.

1.3 Blocked posts because staff filling vacant posts on deputation retain their original appointments as well, effectively stopping the recruitment or promotion of other staff.

1.4 Deterioration in skills and knowledge of the more highly trained staff occurs because the work situation does not demand of these skills in rural areas. Staff tend to leave such areas as soon as possible. This trend will continue unless rural service is made a necessary step in the planned career programme and continuing education is provided.

2. Management/Inappropriate posting: Some staff are not posted according to their training, experience and capabilities. This can occur because:

2.1 No planned progression of staff occurs through a series of posts to develop abilities and experience and to make them fit for promotion or a particular appointment.

2.2 Unrealistic posting in which staff, particularly female staff, are posted into situations which are untenable both from a personal as well as a professional point of view.

2.3 Unattractive living conditions in rural areas cause the staff to leave such areas for urban areas. Lack of accommodation is one of the important reasons for lack of staff in rural areas. Lack of security is also an issue, particularly in the case of female staff.

INFORMATION SHEET: IS-2 (REF. STEP 1) (cont'd)

3.   **Management/Administrative problems:**   There are many administrative processes which are reducing the effectiveness of the individuals and hence of the water supply and sanitation services as a whole.   They include:

3.1   **Absence of human resources planning.**   The water supply and sanitation plans are prepared without adequate human resources planning, with the result that planned services are either not delivered or are distorted due to the lack of certain staff.

3.2   **Lack of manpower and personnel data** leads to great difficulty in planning.

3.3   **Lack of coordination** between suppliers and users leads to mismatches between the supply and demand of staff and to the possibility that the training of some staff has not been entirely appropriate to the jobs they are expected to perform.

3.4   **Lack of job specifications** inhibits the possibility of matching skills with needs, and leads to non-delivery of planned services.

3.5   **Unrealistic and impractical job specifications** leads to confusion at work and reluctance to take responsibility. This in turn causes conflict and encourages staff to leave their place of work or diminishes their attendance.

3.6   **Poor or undefined career prospects.**   Some groups of staff have no career prospects, while others have poor prospects. For many types of staff, the lack of career opportunity is no incentive to good performance, and for others lack of clarity as to the extent of career possibilities is a source of discontent.

3.7   **Promotion is not related to ability.**   Length of service has greater weight in the promotion system, and those with longer service tend to be promoted. While this practice is very natural, unless it is modified to allow for ability and performance, initiative in the service will be stifled and the more capable staff will leave for opportunities elsewhere.

INFORMATION SHEET: IS-2 (REF. STEP - 1) (cont'd)

3.8   **Shortage of staff in personnel administration.** Although the number of water supply and sanitation personnel has manifoldly increased, the staff handling them has not increased significantly, and this is leading to chaotic and uncoordinated personnel servicing.

3.9   **Delay in the sanction of posts.** Although the delivery of water supply and sanitation service is planned and approved, there are often long, unplanned periods of delays, sometimes a year or more, in sanctioning and processing the filling of posts, which result in the planned programmes becoming inoperable and in some cases meaningless.

3.10   **Absence of up-to-date personnel manuals.** The existing manuals are very old, have not been revised, and are not in many cases relevant. As a result, how water supply and sanitation agencies should function, what services they should provide, and what jobs various categories of present-day staff should perform, are no longer clear.

4. STEP 2 -- DEFINE BASELINE SERVICE DATA

Human Resources Planning Model

WHAT IS IT?

Baseline service data includes a summary of existing water supply and sanitation schemes and focuses on current coverage and levels of service provided. It also enables one to compare the current manning ratio (current manning from Step 1) with generally accepted ratios. The current water and sanitation schemes should be summarized by each sector agency on Work Sheets PWS-3 and PWS-4 entitled, "Present Water Supply Position 19__" and "Present Sewerage and Sanitation Position 19__", respectively*.

WHY IS IT NEEDED?

It is necessary for the human resources planner or sector manager to have an overview of the types of water supply and sanitation schemes in place and the populations served, in order to:

- calculate the current manning ratio, i.e. ratio of employees, to population served.

STEP 1 INVENTORY EXISTING MANPOWER PWS 1 & 2   PWS = PLANNING WORK SHEET

STEP 2 DEFINE BASELINE SERVICE DATA PWS 3 & 4

demand / supply

STEP 3 DEFINE SERVICE TARGETS AND ESTIMATE MANPOWER NEEDS PWS 5,6 & 7

STEP 6 INVENTORY TRAINING RESOURCES AND TRAINERS PWS 10 & 11

STEP 4 IDENTIFY OCCUPATIONAL PRIORITIES & DETERMINE TRAINING REQUIREMENTS PWS 8 & 9

STEP 7 ESTIMATE POTENTIAL MANPOWER SUPPLY & ATTRITION RATES PWS 12

STEP 5 SUMMARIZE MANPOWER DEMAND PWS 7 & 8

STEP 8 SUMMARIZE MANPOWER SUPPLY PWS 12 & 10

STEP 9 COMPARE DEMAND WITH SUPPLY PWS 7,8 & 13

STEP 10 DETERMINE FINANCIAL VIABILITY PWS 14   INTERVENTION LOOP

STEP 11 PREPARE MANPOWER DEVELOPMENT PLAN PWS 15

- review the current staffing patterns in relation to the various technologies employed, and

- use the data to develop new staffing patterns, if necessary.

Staffing patterns for various sizes of water treatment plants were developed recently in Malaysia. For your information they are described in Information Sheet, IS-3 entitled "Proposed Staffing Patterns for Water Treatment Plants in Malaysia".

STAFFING PATTERNS AND MANNING RATIOS

The development of staffing patterns and the determination of staffing requirements for the management, operation and maintenance of water supply and sanitation schemes should ideally be based on detailed job analyses and the resulting job descriptions. They should take into account the various technologies employed, e.g. types of water treatment - rapid sand/slow sand filtration, chemical treatment; tube wells, shallow wells with hand pumps, etc., types of energy sources used - low/high voltage electrical current, diesel generator sets, etc.

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*It should be noted that in some countries it will be difficult to obtain all of the data called for. In such cases, approximations would be used initially and the data base improved with time.
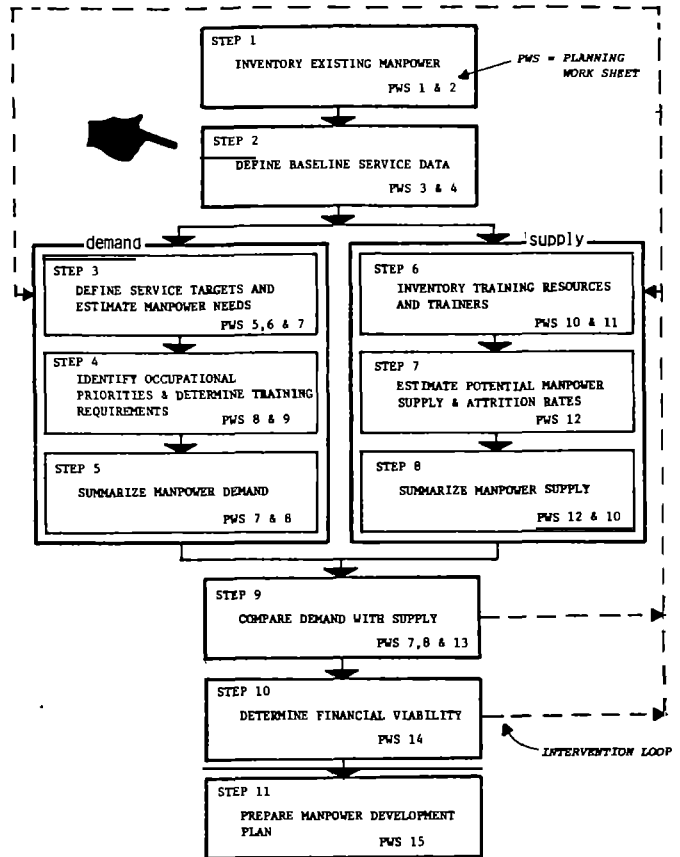
STEP 2 — DEFINE BASELINE SERVICE DATA (cont'd)

STAFFING PATTERNS AND MANNING RATIOS

Although desirable, it may be difficult, in the initial instance, to systematically develop detailed staffing patterns. It is therefore suggested that the initial assessment of human resources be made, using the manning ratios. Manning ratios developed by a number of countries, are provided in Information Sheet IS-4 entitled "Manning Ratios".

Manpower requirements for water supply agencies (developing and developed countries) fall generally into a broad range of one employee for 600 to 1,600 population served. Requirements are influenced by such factors as: government policy, management effectiveness, terrain, level of sophistication of systems, etc.. A commonly accepted "range" used by planners in developing countries is one employee per 600 to 1,000 population served. It has been noted however, that in a number of countries the ratio is well below 600, normally indicating over-staffing at the unskilled and semi-skilled levels.

The water supply/sanitation agencies may wish to review their approved current establishment of staff. A simple method of translating current service coverage and current levels of service into proposed Establishment is to determine a manning ratio. Each agency will need to establish its own staffing criteria based on its organizational structure, technology employed, and levels of service provided. If the present manning ratio is, for example, one employee per 300 population, and over-staffing at the low staffing levels is evident, the agency may decide to adjust the ratio to 600 by gradually phasing out unproductive and non-essential staff, or alternatively, to train and re-train such staff instead of hiring new staff in support of new or expanded systems.

PWS-3   **PRESENT WATER SUPPLY POSITION 19..**

COUNTRY _____   AGENCY:MINISTRY· _____   COMPLETED BY _____

DATE _____

AREA/LOCATION City, Town, etc	EST. 19.. POP OF SUPPLY AREA (000)	POP. SUPPLIED IN SUPPLY AREA (000)	SOURCE[1] B R RN S W	SOURCE CAPACITY m^3/day	EST. GROSS PRODUCTION m^3/day	TYPE OF[2] TREATMENT A D P S	SOURCE[3] OF ENERGY D E G	LENGTH OF MAINS (Km) Transmission	Distribution	NO. OF CONNEXIONS Private Metered	Unmetered	Public Standposts	NO OF HOURS SUPPLY /day	REMARKS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
TOTAL														

MANNING RATIO → 1 : _____

Total number in Post PWS1 / Population served PWS3

KEY   [1] Source

     B = Borehole
     R = River/Lake
     RN = Rainwater
     S = Spring
     W = Well with handpump
     I = Impoundment

[2] Type of Treatment

     A = Aeration
     D = Disinfection
     F = Filtration
     S = Settlement

[3] Source of Energy

     D = Diesel
     E = Electricity
     G = Gravity

[4] Remarks
If available include information on
(a) Number of Industrial Commercial connections
(b) Government, Institutional
(c) Storage provided in cubic metres
(d) Percent of unaccounted for water

PWS-4   PRESENT SANITATION POSITION 19..

COUNTRY: _____   AGENCY/MINISTRY·_____   COMPLETED BY: _____

DATE: _____

AREA/LOCATION City, Town, etc.	EST. POP. (000) 19..	WATERBORNE SEWERAGE SYSTEMS			SEWAGE TREATMENT		PRIVATE FACILITIES								BUCKET COLLECTION SYSTEMS			REMARKS
		No. of Connexions	Pop. Served (000)	Est. Length of Sewers km	Capacity of Works m³/day	Type of Treatment¹ A B C D X	Septic Tanks		Pit Latrines		Aqua Privies		Other		No. of Buckets	Pop. Served (000)	Type of Disposal	
							No.	Pop. Served²	No.	Pop. Served²	No.	Pop. Served²	No.	Pop. Served²				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
TOTAL																		

MANNING RATIO = 1 : _____

Total number in post PWS1
Population served PWS3

KEY: ¹Type of Treatment

A = Lagoon
B = Primary Settling
C = Trickling Filters
D = Activitated Sludge
X = Other - Specify

²Population Served

In thousands

INFORMATION SHEET: IS-3 (REF. STEP 2)

PROPOSED STAFFING PATTERNS FOR WATER TREATMENT PLANTS
IN MALAYSIA

Legend

WE   —   Water Engineer
TA   —   Technical Assistant
WPS   —   Water Plant Superintendent
WTPO —   Water Treatment Plant Operator
PO   —   Pump Operator
ED   —   Engine Driver
MF   —   Mechanical Fitter
CM   —   Chargeman
PL   —   Plant Labourer
SK   —   Store Keeper
LA   —   Laboratory Assistant
FF   —   Fault Finder (electrical)

I.   Water Treatment Plants - up to 0.5 mgd (24 hrs. operation)

Management   —   WE or TA
Person in responsible charge   —   WPS/Class C
    Inspects plant once a week
    On call 24 hours a day.

Total Residential Staff

(a) Plant equipped with electric driven pumps located at plant:

    1 WPS/Class C (part-time)
    4 WTPO
    2 PL.

(b) Plant equipped with diesel engine or generator set or either raw
     or treated water pump station located less than 1/4 mile from
     water treatment plant:

    1 WPS/Class C (part-time)
    4 ED/WTPO (appropriate certificate from Machinery Dept. as
       required)
    2 PL.

INFORMATION SHEET: IS-3 (REF. STEP 2) (cont'd)

I. <u>Water Treatment Plants - up to 0.5 mgd (24 hrs. operation)</u> (cont'd)

<u>Shift Distribution</u>

Case I (a)			Case I (b)	
Day	-	1 WPS/Class C (part-time)	1	WPS/Class C (part-time)
	-	1 WTPO, 2 PL	1	ED/WTPO, 2PL
Afternoon	-	1 WTPO	1	ED/WTPO
Night	-	1 WTPO	1	ED/WTPO

II. <u>Water Treatment Plants - 0.5-1.0 mgd (24 hrs. operation)</u>

Management   -   1 WE or TA
Person in responsible charge   -   WPS/Class C
        Part-time or full time
        On call 24 hours a day

<u>Total Residential Staff</u>

(a)   Plant equipped with electric driven pumps located at plant:

    1 WPS/Class C (part-time)
    1 Asst. WPS/Class C
    4 WTPO
    2 PL

(b)   Plant equipped with diesel engine or generator set <u>or</u> either
        raw or treated water pump station located less than 1/4 mile
        from water treatment plant:

    1 WPS/Class C (part-time)
    1 Asst. WPS/Class C
    4 ED/WTPO (appropriate certificate from Machinery
       Dept. as required)
    5 PL

INFORMATION SHEET: IS-3 (REF. STEP 2) (cont'd)

II. Water Treatment Plants - 0.5-1.0 mgd (24 hrs. operation) (cont'd)

Shift Distribution

Case II (a)			Case II (b)
Day	-	1WPS/Class C (part-time)	WPS/Class C (part-time)
	-	1 Asst. WPS/Class C	1 Asst. WPS/Class C
	-	1 WTPO, 2 PL	1 ED/WTPO, 2 PL
Afternoon	-	1 WTPO	1 ED/WTPO, 1 PL
Night	-	1 WTPO	1 ED/WTPO, 1 PL

III. Water Treatment Plants - 1-5 mgd (24 hrs. operation)

Management - WE or TA
Person in responsible charge - WPS/Class B
               On call 24 hours a day

Total Residential Staff

(a)   Plant equipped with electric driven pumps located at plant:

           1 WPS/Class B
           3 Asst. WPS/Class B
           4 WTPO
           1 MF
           6 PL (depending on size of intake/plant area)

(b)   Plant equipped with diesel engine and/or generator set or
           either raw or treated water pump station located less than 1/4
           mile from water treatment plant:

           1 WPS/Class B
           3 Asst. WPS/Class B
           4 WTPO
           4 PO/ED (as required by Machinery Dept.)
           7 PL (depending on size of intake/plant area)

INFORMATION SHEET: IS-3 (REF. STEP 2) (cont'd)

III. Water Treatment Plants - 1-5 mgd (24 hrs. operation) (cont'd)

Shift Distribution

Case III (a)		Case III (b)
Day	- 1 WPS/Class B - 1 WTPO, 1 MF - 2 PL	1 WPS/Class B 1 WTPO, 1 PO/ED 1 MF, 3 PL
Afternoon	- 1 Asst. WPS/Class B - 1 WTPO, 1 PL	1 Asst. WPC/Class B 1 WTPO, 1 PO/ED 1 PL
Night	- 1 Asst. WPS/Class B - 1 WTPO, 1 PL	1 Asst. WPS/Class B 1 WTPO, 1 PO/ED 1 PL

IV. Water Treatment Plants - 5-10 mgd (24 hrs. operation)

Management - WE or TA
Person in responsible charge - WPS/Class B
              on call 24 hours a day

Same staffing as for plants 1-5 mgd, except where the electrical code requires that a chargeman be resident at the plant, where generating sets/diesel engines are installed which requires a chargeman in compliance with LLN (NEB) regulations. The chargeman will be on day shift and on call for the rest of the day.

V. Water Treatment Plants - 10-50 mgd (24 hrs operation)

Management - WE or TA
Person in responsible charge - WPS/Class A
              On call 24 hours a day

Total Residential Staffing

(a)   Plant equipped with electric driven pumps located at plant:

          1 WPS/Class
          3 Asst. WPS/Class A
          8 WTPO
          2 MF
          1 LA
          1 SK
         15 PL (depending on size of intake/plant area)

INFORMATION SHEET: IS-3 (REF. STEP 2) (cont'd)

V. Water Treatment Plants - 10-50 mgd (24 hrs operation) (cont'd)

Total Residential Staffing (cont'd)

(b)   Plant equipped with diesel engine or generator set or either raw or treated water pump station located less than 1/4 mile from water treated plant:

    1 WPS/Class A
    3 Asst. WPS/Class A
    8 WTPO
    2 MT
    1 CM
    1 LA
    4 PO/ED
    1 SK
    17 PL (depending on size of intake/plant area)

Shift Distribution

Case V (a)		Case V (b)
Day	- 1 WPS/Class A, 1 LA, 1 SK	1 WPS/Class A, 1 LA, 1 SK
	- 2 WTPO	2 WTPO
	- 2 MF, 7 PL	1 PO/ED, 1 CM, 8 PL
Afternoon	- 1 Asst. WPS/Class A	1 Asst. WPS/Class A
	- 2 WTPO, 2 PL	2 WTPO, 1 PO/ED
		3 PL
Night	- 1 Asst. WPS/Class A	1 Asst. WPS/Class A
	- 2 WTPO	2 WTPO
	- 2 PL	1 PO/ED, 3 PL

VI. Water Treatment Plants - 50 mgd and above (24 hrs. operation)

Management   - WE or TA
Person in responsible charge - WPS/Class A
            On call 24 hours a day

INFORMATION SHEET: IS-3 (REF. STEP 2) (cont'd)

VI. Water Treatment Plants - 50 mgd and above (24 hrs. operation) (cont'd)

Total Residential Staff

    1 WPS/Class A
    4 Asst. WPS/Class A
    8 WTPO
    1 LA
    8 PO/ED
    4 CM
    1 FF
    2 MF
    1 SK
    25 PL (depending on size of intake/plant area)

Shift Distribution

Day	-	WPS/Class A
	-	1 Asst. WPS/Class A
	-	2 WTPO, 1 LA, 2 PO/ED
	-	1 CM, 1 FF
	-	2 MF, 1 SK, 15 PL
Afternoon	-	1 Asst. WPS/Class A
	-	2 WTPO, 2 PO/ED
	-	1 CM, 4 PL
Night	-	1 Asst. WPS/Class A
	-	2 WTPO, 2 PO/ED
	-	1 CM, 3 PL

Note: Pumping Stations

Where a raw water pumping station is located some distance from the
water treatment plant, ED's and/or PO's and PL's will be stationed
there. Staffing will depend on type and size of station, and the
dam area.

INFORMATION SHEET: IS-4 (REF. STEP 2)

MANNING RATIOS

WATER SUPPLY

Ratios of employees to service rendered have tended to evolve over time rather than having resulted from systematic calculations. Overall staffing in waterworks organizations fall generally in the range of one employee per 600 to 1,600 population served, depending on the level of development and degree of automation of its facilities. Staffing levels for stable, well-developed water works systems approach the mark of 1,600 population served.

+ + + + + + +

A recent sector study review in Pakistan indicated that the ratio had altered from 1 employee per 700 population in 1971, to 1 employee per 950 population by 1978.

+ + + + + + +

In Kenya the National Action Committee for the IDWSS Decade adopted the following (1980):

Professional	- 2.7 employees/100,000 persons
Sub-professional	- 9.1 employees/100,000 persons
Skilled level/Semi-skilled	- 41.6 employees/100,000 persons
	53.4 employees/100,000 persons

giving a manning ratio of 1 employee per 1,800 population served.

+ + + + + + +

For the preparation of the Environmental Sanitation Master Plan for Training and Education in Tanzania, the USAID/WASH team used a manning ratio of 1 employee to 1,600 population served, and suggested the following make-up (staffing pattern) of the water sector labour force:

Engineers	4%
Technicians	14%
Skilled labour	28%
Admin. and Accounting	22%
Unskilled labour	32%
Total	100%

+ + + + + + +

N.B. Care should be taken in comparing one country with another and one agency with another particularly so far as staffing patterns are concerned as job definitions/classifications are not standard. However, manning ratios and staffing patterns are good general indicators of productivity.

INFORMATION SHEET: IS-4 (REF. STEP 2) (cont'd)

        Staffing requirements for urban/urban-fringe water supplies for
different service levels in the Republic of Guinea were indicated in 1979 as
follows:

        Given   - 1 house connection serves: 15 persons
                    1 common yard connection serves: 75   "
                    1 standpost serves: 200   "

        Estimated Staffing Requirements   - 17 staff per 1,000 house
                                                  connections
                                               - 6 staff per 10,000 inhabitants
                                                  (common yard or standposts)

        Levels of Service

                High   - 95% house connections
                                               - 5% standposts

                Medium   - 50% house connections
                                               - 30% common yard connections
                                               - 20% standposts

                Low   - 10% house connections
                                               - 30% common yard connections
                                               - 60% standposts

                        +   +   +   +   +   +   +

        In the Uganda draft Decade Action Plan, concrete tube wells with
handpumps, and boreholes with handpumps, are proposed. Maximum depth for
concrete handpumps was assumed to be 10 metres, and the concrete rings used
are supposed to have a diameter of 1.2 metres. Construction units are to be
composed of 5 persons; a team leader, an assistant team leader, and three
skilled labourers (a mason, a mechanic for the pumps tripods, etc., and one
handyman). Initially, expatriates may need to be utilized as team leaders and
train the assistants on the job. It is assumed that each team will construct
one well per month (12 per year), and that each well will supply 200 persons.
Boreholes with handpumps are proposed where the water level is deep. A
percussion rig may produce 1 borehole per month, while a rotary may produce
5 boreholes per month. The same organizational structure as for the concrete
tube wells has been assumed in principle.

                        +   +   +   +   +   +   +

INFORMATION SHEET: IS-4 (REF. STEP 2) (cont'd)

        A manpower study in <u>Mozambique</u> proposed the following manpower
requirements:

It is foreseen that 2 masons/well builders can build an average of 10 dug
wells per year to serve a population of 5,000 (at the rate of 500 persons per
dug well) in 5 communal villages. Two construction teams or 4 well builders
will require the direct supervision of 1 foreman; this foreman may be chosen
among the rank of "tecnicos" level II with at least 2 years' field
experience. Thus, for 20 dug wells serving 10,000 persons, the required work
force is: 1 foreman and 4 builders or 5 man-years. Higher supervision is
desired and may be given by middle-level technicians operating at district
level, with 1 field supervisor to each 5 teams of 1 foreman and 4 builders.
Therefore:

                            1 supervisor
                            5 foremen
                            <u>20 builders</u>
                            26 man-years

to serve 50,000 persons:
For borehole construction, the actual manpower ratio is 24 to serve 22,000 or
1: 917, with the following staff composition:

                        2 engineers (hydrogeologists)
                        2 foremen
                       10 well drillers
                       <u>10 aids</u>
         or 24 man-years will produce 60 boreholes.

For borehole rehabilitation: 1 mechanic/operator and 3 aids, to rehabilitate
20 borehole/year; and 1 foreman to 5 mechanics/operators.
For pump installation: 1 mechanic to 50 pumps/year and 1 foreman to
10 mechanics.
Piped water systems construction: a team of 2 masons and 1 pipe layer for 4
systems to serve 4,000 persons/year; and 1 foreman/4 teams, say: 1 foreman,
4 pipe layers, 8 masons, to serve 16,000 people, or a manpower ratio of
1: 1 231.
Pump maintenance and repair: 1 mechanic to serve 120 hand pumps or 20 motor
pumps/year; and 1 foreman to 5 mechanics.
General inspection and maintenance. A general inspection of each piped system
will be carried out by a general foreman/supervisor who will oversee them at
the rate of 2/week, and extend the same to dug wells in villages. It may be
expected that 50% of all systems will need some repairs the first year, and
this will gradually decrease to 20% after the third year. One mason and
1 pipe layer/100 piped systems, and 1 mason/100 dug wells will be required per
year.

                    + + + + + + +

        In <u>Brazil</u>, the Brazilian Association of Sanitary Engineers (ABES)
estimated the manpower requirements for the water sector to be one employee
per 1,000 consumers. Manpower was divided (1974) into five major categories
with the following breakdown:

INFORMATION SHEET: IS-4 (REF. STEP 2) (cont'd)

	% of Total
High level administrative and technical personnel	5
Medium level	10
Middle to junior level administrative and financial personnel	10
Skilled and semi-skilled operators	45
Unskilled labour	30
	100

+   +   +   +   +   +   +

A recent study by the International Water Supply Association revealed the following manning ratios for a selected number of European cities:

	Employee/Population served ratio
Copenhagen	1: 1,350
Hamburg	1: 1,550
Madrid	1: 2,200
Bordeaux	1: 1,750
Wessex	1: 1,500

+   +   +   +   +   +   +

SANITATION

Information on manning ratios for sewerage and sanitation are not as readily available as for water supply.

+   +   +   +   +   +   +

A recent sector study review in Pakistan indicated that the ratio had altered from 1 employee per 750 population in 1971 to 1 employee per 1,000 population in 1978.

+   +   +   +   +   +   +

A rural water supply/sanitation manpower study conducted in Indonesia in 1975 indicated a requirement of 53.3 sanitarian man-years to assist rural population to construct latrines for a population of 100,000.

INFORMATION SHEET: IS-4 (REF. STEP 2) (cont'd)

Estimates of personnel needs for wastewater treatment plants as denoted in the Journal, Water Pollution Control Federation, Vol.48, No.2, February 1976, are given below:

Population Size of Group x 1,000	Employees Per 10,000 Population Served
10	5.14
10 - 25	3.76
25 - 100	2.80
100	1.53

+   +   +   +   +   +   +

The following breakdown in accordance with different job categories has been suggested for the management, operation and maintenance of urban sewage treatment plants in Korea (WHO/IBRD Sector Study).

Job Category	% of Total
1. Management/Professional	5
2. Technical/Administrative (Senior Level)	10
3. Technical/Administrative/ Clerical (Junior Level)	25
4. Craftsmen	10
5. Operators/Unskilled	50
Total	100

+   +   +   +   +   +   +

A WASH Field Report No. 58 (September 1982) on the subject of Environmental Master Plan for Training and Education in Tanzania indicated the following staffing guide:

- One public health engineer - 10,000 population in urban areas

- Five public health technicians per public health engineer

- One health educator per town, and

- Four health officers per town involved in the sewerage and sanitation sector.

5. STEP 3 -- DEFINE SERVICE TARGETS AND ESTIMATE MANPOWER NEEDS

WHAT IS IT?

Future service targets represent an objective on the part of Government to extend coverage and/or to improve the quality of existing levels of service (e.g. upgrade from standposts to house connections) over a specific period of time such as the country Five-Year Plan or the IDWSS Decade Plan. Such information should be available in sectoral or IDWSS Decade planning reports and documents. Sample Planning Work Sheet PWS-5 for water supply, and PWS-6 for Sewerage/Sanitation, may be used to summarize data on the projected schemes.

In addition to the current staff vacancies as indicated in column 9 of PWS-1, the demand for staff includes an estimate of projected human resources requirements to meet identified service targets as summarized in PWS-5 and PWS-6. This projection should include:

STEP 1
INVENTORY EXISTING MANPOWER
PWS 1 & 2

PWS = PLANNING WORK SHEET

STEP 2
DEFINE BASELINE SERVICE DATA
PWS 3 & 4

demand   supply

STEP 3
DEFINE SERVICE TARGETS AND ESTIMATE MANPOWER NEEDS
PWS 5,6 & 7

STEP 6
INVENTORY TRAINING RESOURCES AND TRAINERS
PWS 10 & 11

STEP 4
IDENTIFY OCCUPATIONAL PRIORITIES & DETERMINE TRAINING REQUIREMENTS
PWS 8 & 9

STEP 7
ESTIMATE POTENTIAL MANPOWER SUPPLY & ATTRITION RATES
PWS 12

STEP 5
SUMMARIZE MANPOWER DEMAND
PWS 7 & 8

STEP 8
SUMMARIZE MANPOWER SUPPLY
PWS 12 & 10

STEP 9
COMPARE DEMAND WITH SUPPLY
PWS 7,8 & 13

STEP 10
DETERMINE FINANCIAL VIABILITY
PWS 14

INTERVENTION LOOP

STEP 11
PREPARE MANPOWER DEVELOPMENT PLAN
PWS 15

- an evaluation of the utilization of staff over a period of time,
- shortages of skilled labour, and
- an identification of the priority job classifications.

These considerations will be discussed in Step 4.

HOW IS IT DONE?

In order to estimate manpower needs, it is suggested that either the direct method (interview with key senior staff) be used, or that appropriate manning ratios be developed and utilized. Reference can be made to IS-4, which provides examples of manning ratios. The manning ratio selected should take account of proposed future utilization of staff. As noted earlier, if the present manning ratio for water supply is, for example, one employee per 300 population served, the agency may wish to improve its staff utilization by reducing the ratio to one in 600 over a period of time.

Having selected the appropriate ratio, the planner should prepare the Planning Work Sheet PWS-7 entitled "Manpower Forecast and Annual Recruitment Rates". See IS-5 for an example which gives detailed instructions for determining the annual recruitment rates. In that example, a staff to

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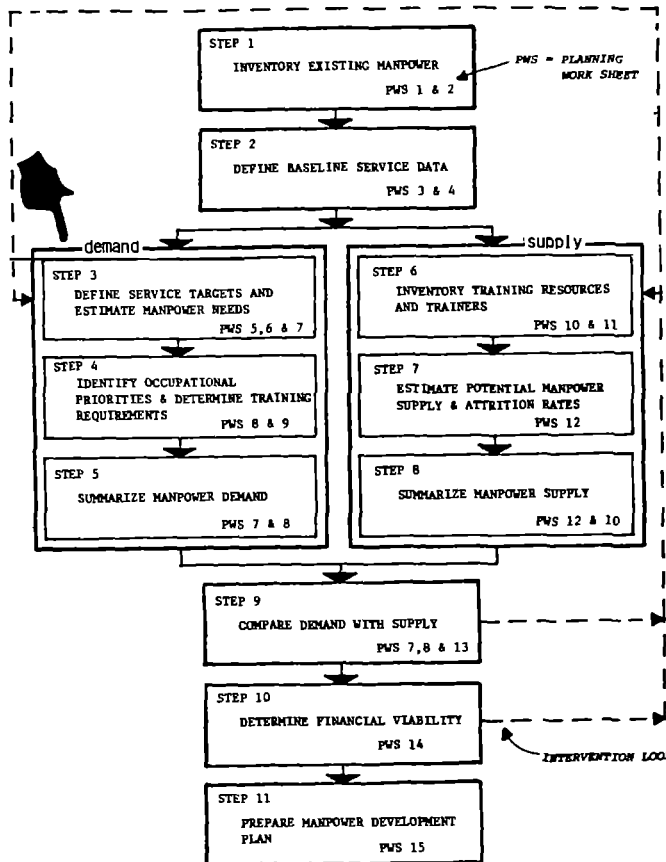
5.   STEP 3 -- DEFINE SERVICE TARGETS AND ESTIMATE MANPOWER NEEDS (cont'd)

HOW IS IT DONE? (cont'd)

population served ratio of 1 to 625 was used. Based on a growth factor of 2.0 (population served increases from 750,000 to 1,500,000 between 1983 and 1990), the overall staffing shortfall over the period of 1983 to 1990 was obtained, and the annual recruitment rate base figure calculated. Using an assumed labour turnover rate of 3%, the annual recruitment rates for 1985, 1988 and 1990 were calculated. Although this approach to manpower forecasting is somewhat simplistic, it should provide the planner with reasonable manpower figures to enable him to calculate relevant annual recurrent costs and determine the affordability of schemes proposed.
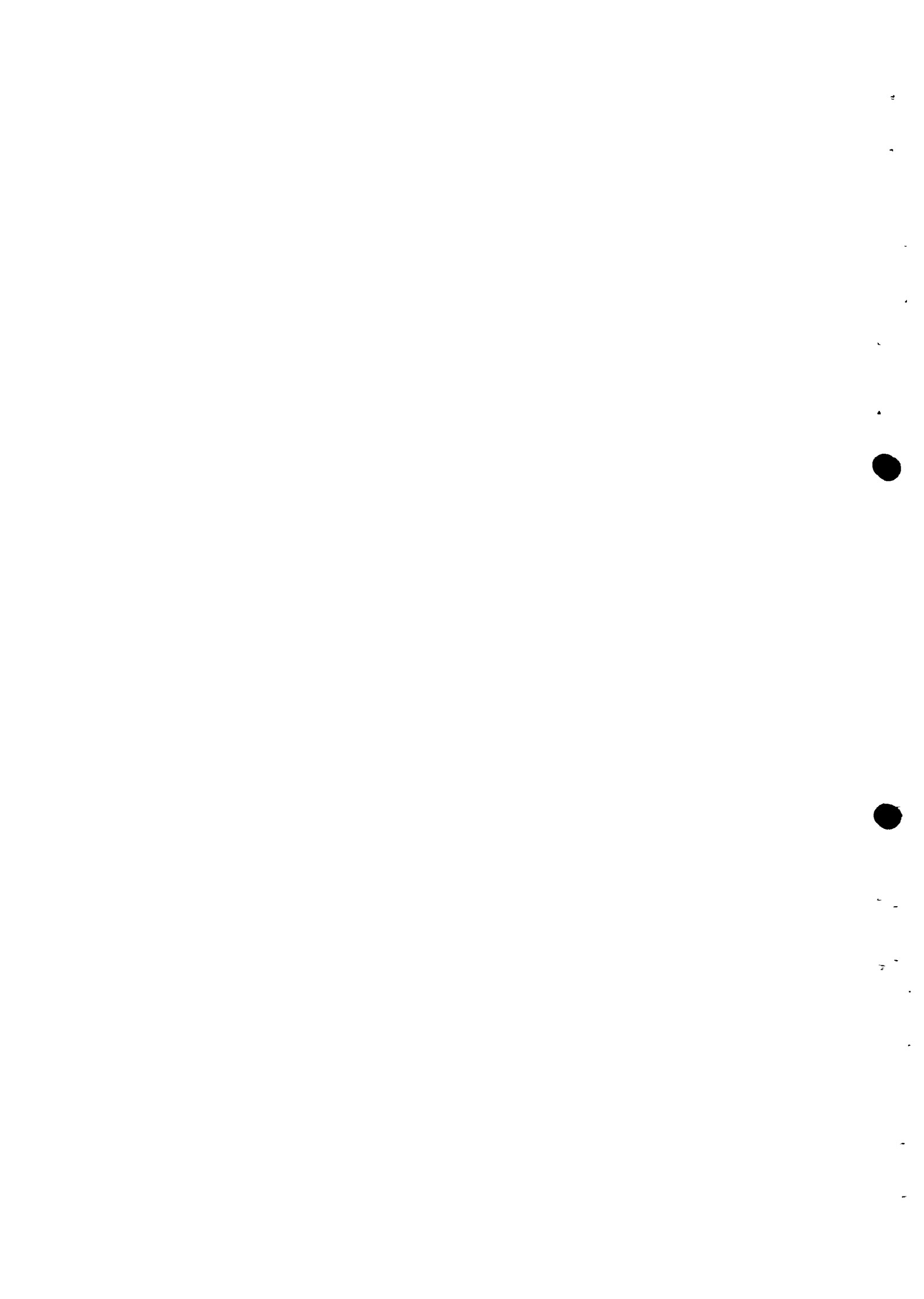
PWS-5   FUTURE WATER SUPPLY POSITION

COUNTRY: AGENCY/MINISTRY: Completed by:
                                                               Date:

AREA/LOCATION City, Town, Etc.	POPULATION PROJECTION (000)			WATER SUPPLY PROJECTION									REMARKS
				198.			1985			1990			
	198.	1985	1990	m^3/day (2)	Source (1)	Pop. Served (000)	m^3/day (2)	Source (1)	Pop. Served (000)	m^3/day (2)	Source (1)	Pop. Served (000)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
TOTAL													

(1) Source:
    B - Borehole
    R - River/Lake
    RN - Rainwater
    S - Spring
    W - Well with handpump
    I - Impoundment

(2) Water demand

PWS-6....FUTURE SANITATION POSITION

COUNTRY· _____   AGENCY / MINISTRY: _____   COMPLETED BY: _____

DATE: _____

AREA/LOCATION City, Town etc.	POPULATION PROJECTION (000)			FUTURE POSITION										REMARKS
				19..			1985			1990				
	19..	1985	1990	Waterborne Sewerage[1] Pop. Served	Private Facilities		Waterborne Sewerage[1] Pop. Served	Private Facilities		Waterborne Sewerage[1] Pop. Served	Private Facilities		
					Type[2]	Pop. Served[1]		Type[2]	Pop. Served[1]		Type[2]	Pop. Served[1]	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
TOTAL													

KEY.   [1] Population Served In thousands

[2] Type of Private Facility
A = Aqua Privies
B = Bucket Collection
S = Septic Tanks
P = Pit Latrines
X = Other - Specify

PWS-7 .... MANPOWER FORECAST AND ANNUAL RECRUITMENT RATES
WATER SUPPLY - SANITATION*

COUNTRY: _____

AGENCIES/MINISTRIES:_____

DATE: _____

COMPLETED BY: _____

Job Category	Job Classification	Grade	Present Situation 1983			Annual Recruitment Rates							Estimated Staff
			Proposed or Approved Establishment	Current Staff	Vacancies	1984	1985	1986	1987	1988	1989	1990	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
A													
B													
C													
D													
E													
F													
G													
H													
Totals													

Legend Job Category

A - Senior Management
B - Profession - Senior Technical/ Admin./Clerical
C - Intermediate - Technical/ Admin /Clerical

D - Junior - Technical/Admin./Clerical
E - Craftsmen
F - Operator
G - Unskilled and semi-skilled
H - Community-based personnel

* It is intended that separate SUMMARY forms be prepared for the water supply sub-sector and the sanitation sub-sector respectively.

INFORMATION SHEET: IS-5 (REF. STEP 3)

MANPOWER FORECAST AND ANNUAL RECRUITMENT RATES

WATER SUPPLY EXAMPLE

For this water supply example, assume a population supplied of 750,000 in 1983. (Source - a completed PWS-3.)

1.   Enter manpower data from a completed PWS-1 sheet on PWS-7

    (a)   Proposed or Approved Current Establishment;
    (b)   Total Number in Post (1983), and
    (c)   Vacancies.

For this example assume:

    (a)   Approved Current Establishment   = 1,200
    (b)   Total Number in Post   = 1,041
    (c)   Vacancies   = 159

2.   Calculate manning ratios:

    (a) $\dfrac{\text{Approved Current Establishment}}{\text{Population Served}} = \dfrac{1,200}{750,000}$ or 1: 625

    (b) $\dfrac{\text{Total Number in Post}}{\text{Population Served}} = \dfrac{1,041}{750,000}$ or 1: 720

Both ratios are considered to be in the appropriate range for developing countries.

3.   Calculate 1990 Growth Factor assuming that population to be supplied in 1990 will be 1,500,000. (Source - a completed PWS-5.)

$$\text{1990 Growth Factor} = \frac{\text{Estimate of population to be supplied}}{\text{Current population}} = \frac{1,500,000}{750,000} = 2$$

INFORMATION SHEET: IS-5 (REF. STEP 3) (cont'd)

MANPOWER FORECAST AND ANNUAL RECRUITMENT RATES (cont'd)

WATER SUPPLY EXAMPLE (cont'd)

4.   Calculate the estimated staff needed to ensure the supply of water to 1990 population.

Approved Current Establishment   x   Growth Factor
1,200   x   2   =   2,400 Employees

Enter 2,400 into the totals box in column 9 of PWS7 (see appended Table page 61) and distribute this number among the 7 staff categories* by using the ratio

$$\frac{\text{Total Estimated Employees in 1990}}{\text{Total Number in Post in 1983}} = \frac{2,400}{1,041} = 2.3$$

For example: Estimated number of operators in 1990 = 2.3 x 400 = 922

5.   Calculate overall staff shortfall for period 1983-1990.

Estimated Employees in 1990 - Total Number in Post in 1983
2,400   -   1,041   =   1,359

6.   Calculate annual recruitment rate base figure.

$$\frac{\text{Overall staff shortfall}}{\substack{\text{Number of years between present} \\ \text{and proposed situation (1983-1990)}}} = \frac{1,359}{7} = 194$$

---

*   The distribution can only be made in the way described in item 4, above, if the current staffing pattern is correct. If there are existing imbalances they must be taken into account before the distribution is made. Otherwise the imbalances will also appear in the subsequent manpower targets. This method of distribution also presupposes that the current staffing pattern will be appropriate for the future. This could well be the case if, for example, no major changes of technology are planned. Clearly if they are planned and part of the plan is to alter the mix of job categories, this must be taken into account too in the projections.

INFORMATION SHEET: IS-5 (REF. STEP 3) (cont'd)

MANPOWER FORECAST AND ANNUAL RECRUITMENT RATES (cont'd)

WATER SUPPLY EXAMPLE (cont'd)

7.   Calculate annual recruitment rates for 1985 - 1988 - 1990 using formula:

Recruitment Rate = A + y where:

A = annual recruitment rate base figure
x = number of years between present and proposed situations
      1982 to 1990 = 7 years
y = (current staff + Ax) x Labour turnover %

Recruitment Rate 1985 = 194 + (1,041 + (194 x 2)) x 3% = 194 + 43 = 237
     "   "   1988 = 194 + (1,041 + (194 x 5)) x 3% = 194 + 60 = 254
     "   "   1990 = 194 + (1,041 + (194 x 7)) x 3% = 194 + 72 = 268

Labour Turnover Rate is assumed to be 3% in this example. In reality it is often much higher.

Similarly, recruitment rates could be calculated for the other years between 1983 and 1990.

8.   Enter the figures for annual recruitment rates in the totals boxes of PWS-7 (see appended Table columns 6, 7 and 8 page 61).

Complete the distribution of the totals of each recruitment year for each of the 7 staff categories by using the ratio:

$$\frac{\text{Totals of recruitment year (say 1985)}}{\text{Totals number in post}} \quad \frac{237}{1,041} \quad = \quad 0.228$$

e.g. Annual recruitment of operators for 1985
      Ratio x Number in post
      0.228 x 400 = 91

9.   Review the figures and make any reasonable adjustments up or down according to future perceptions. For any major adjustments, give reasons supporting the decision. The desired/proposed per cent distribution by job category may influence the calculations.

INFORMATION SHEET: IS-5 (REF. STEP 3) (cont'd)

MANPOWER FORECAST AND ANNUAL RECRUITMENT RATES*
WATER SUPPLY EXAMPLE

| Staff Category | Grade | Present Situation - 1982 | | | Annual Recruitment Rate | | | Estima-ted |
		Current Establish-ment	Number in post	Vacan-cies	1985	1988	1990	staff 1990
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A	12-16	25	20	5	5	5	5	46
B	8-11	61	50	11	11	12	13	115
C	7-8	48	40	8	9	10	10	92
D	3-6	254	210	44	48	51	54	484
E	4-7	36	30	6	7	7	8	69
F	2-5	485	400	85	91	98	103	922
G	1-2	291	291	0	66	71	75	672
Totals		1,200	1,041	159	237	254	268	2,400

Legend: Job Category   A - Senior Management
                          B - Professional - Senior Technical/Admin/Clerical
                          C - Intermediate Technical/Admin/Clerical
                          D - Junior Technical/Admin/Clerical
                          E - Craftsman
                          F - Operator
                          G - Unskilled and Semi-skilled.
                          H - Community and/or volunteer workers

*Adapted from the Nigeria IBRD/WHO Sector Study (June 1979).

6. STEP 4 -- IDENTIFY OCCUPATIONAL PRIORITIES AND DETERMINE TRAINING REQUIREMENTS

Human Resources Planning Model

WHAT IS IT?

In Step 3 the service targets (populations to be served with water supply and sanitation) were defined, broad manpower forecasts made, and annual recruitment rates estimated. In this step, planners and sector managers are requested to review the broad manpower forecasts and identify occupational priorities among the various job classifications listed in PWS-1. For existing employees, determining occupational priorities will involve the identification of performance deficiencies and the corresponding training which will be necessary to eliminate the deficiency. For the definition of occupational priorities (priority job classifications), the direct or judgmental approach is suggested in which the sector manager makes his selection based on previous experience.

HOW IS IT DONE?

The criteria to consider when selecting occupational priorities are:

- the types and complexity of existing and proposed water supply and sanitation schemes, and

- the type of manpower which is critical to the proper functioning of the agency.

Consideration will focus particularly on key job classifications where shortages are being experienced and where existing staff lack the necessary knowledge and skills (e.g., engineers lacking knowledge of hydrology or water plant operators lacking skill in process control).

The sector manager should be able to identify those occupational groups in his agency requiring priority training e.g., engineers, accountants, water system foremen, well drillers. When these have been identified, column 2 of PWS-8 (Assessment of Manpower Priorities) should be completed.
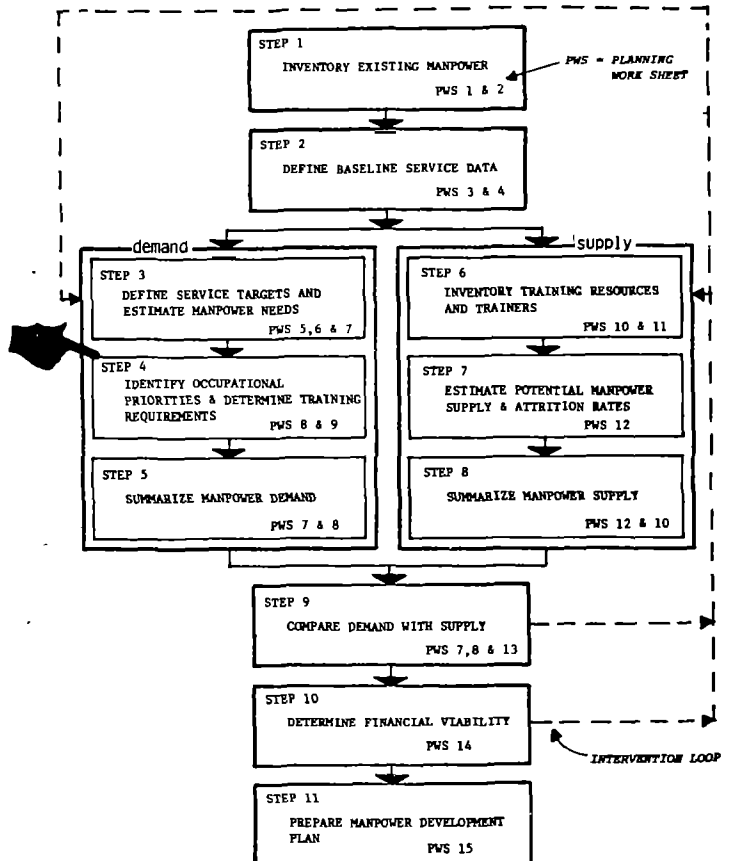
6. STEP 4 -- IDENTIFY OCCUPATIONAL PRIORITIES AND DETERMINE TRAINING
    REQUIREMENTS (cont'd)

HOW IS IT DONE? (cont'd)

Within each job classification that has been identified, there are many
areas where training might be indicated. In order to determine precisely what
training is necessary for the identified jobs, a performance deficiency
analysis should be conducted. A performance deficiency analysis is based on a
task analysis. A task analysis is a careful examination of the skills
involved in the correct performance of a job. When it is known what is
required for mastery performance, one can then identify in which areas workers
are not performing as effectively as desired. This process is the performance
deficiency analysis.

An initial assessment of performance deficiency for a particular job
classification such as a pipe fitter could be made by an experienced pipe
fitter foreman or the distribution system manager, using PWS 9 entitled
"Performance Deficiency by Job Classification". See the example, page 67).

When Performance Deficiency Analyses have been completed for each job
classification, the planner can complete column 3 of PWS-8 (Assessment of
Manpower Priorities). This column, entitled Training Priority, asks for the
general training needs that have been identified for each job classification.

If for reasons of time or lack of manpower, PWS-9 (Performance Deficiency
by Job Classification) is not used, column 3 of PWS-8 (Training Priority)
should be estimated by sector managers based on their general knowledge of
their present employee's knowledge, skill and attitude deficiencies.

For each one of the training priorities listed, the type of training
intended should be indicated in column 4 of PWS-8. At this stage of planning,
the type of training required is only estimated. Later a training plan (see
Chapter 3) indicating specific training arrangements will be made by selecting
from the following categories:

(a)   On-the-job training
(b)   Training within sector agency (in-service)
(c)   Training outside sector agency (local)
(d)   Training outside sector agency (regional)
(e)   Training outside sector agency (external/overseas)
(f)   Self-instructional or correspondence courses.

All of this implies some sort of organization to bring it about, that is
a training function, with a manager responsible for its work. It will also be
responsible for producing training manuals, audio-visual and instructional
materials. It will require space for its staff, instructional as well as
administrative, classrooms and whatever else need demands. All of the above
is part of the training requirement and has a cost which will need to be
budgeted for.

PWS-8 .... ASSESSMENT OF MANPOWER PRIORITIES
WATER SUPPLY - SANITATION

COUNTRY _____   DATE· _____

AGENCY _____   COMPLETED BY _____

Category	Job Classification	Training Priority	Present Staff	1984	1985	1986	1987	1988	1989	199
1	2	3	4	5	6	7	8	9	10	11
A										
B										
C										
D										
E										
F										
G										
H										
Total										

Legend: Job Category
A - Senior Management
B - Profession - Senior Technical/ Admin /Clerical
C - Intermediate - Technical/ Admin /Clerical
D - Junior-Technical/Admin /Clerical
E - Craftsmen
F - Operator
G - Unskilled and semi-skilled
H - Community-based personnel

Types of Training
(a) On-the-Job Training
(b) Training within sector agency (in-service)
(c) Training outside sectory agency (local)
(d) Training outside sector agency (regional)
(e) Training outside sector agency (external/overseas)
(f) Self-instructional or correspondence
Use column 4 to identify the type of training proposed

NOTE· It is intended that separate SUMMARY forms be prepared for the water supply sub-sector and the sanitation sub-sector respectively

PWS-8 ..... ASSESSMENT OF MANPOWER PRIORITIES

Date: _____

Country: _____

Agency: _____

Completed by: _____

Job Category	Job Classification	Training Priority Specialty	Priority and Number of Persons Involved								
			Present Staff	Future Staff							
				1984	1985	1986	1987	1988	1989	1990	
1	2	3	4	5	6	7	8	9	10	11	
B	CIVIL ENGINEER	HYDROLOGY		1/1							
F	WATER PLANT OPERATOR	PROCESS CONTROL	2/10								
C	LABORATORY TECHNIC.	PROCESS CONTROL	3/2	7/1							
C	SUPERVISOR	COMMUNICATION TECHNIQUE	4/3								
F	WATER PLANT OPERATOR	PUMP MAINTENANCE	5/21								
F	WATER PLANT OPERATOR	HYDRAULICS	6/21								
C	ENGINEERING ASSIST.	HYDROLOGY *		8/1							
C	DRAFTSMAN	HYDROLOGY *		8/1							

* Induction Training

EXAMPLE

Legend: Job Category:

A - Senior Management
B - Profession - Senior Technical/ Admin./Clerical
C - Intermediate - Technical/ Admin./Clerical

D - Junior Technical/Admin./Clerical
E - Craftsmen
F - Operator
G - Unskilled and semi-skilled
H - Community and/or Volunteer Workers

PWS-9 .... <u>PERFORMANCE DEFICIENCY BY JOB CLASSIFICATION</u>

COUNTRY: _____ DATE: _____

AGENCY: _____

COMPLETED BY: _____

JOB CLASSIFICATION: _____

TOTAL NUMBER OF PERSONS IN CLASSIFICATION: _____

PERFORMANCE DEFICIENCY	NO. OF PERSONS WITH DEFICIENCY

PWS-9 ········ <u>PERFORMANCE DEFICIENCY BY JOB CLASSIFICATION</u>

COUNTRY: <u>BARBADOS</u>   DATE: <u>1 FEBRUARY 1979</u>

AGENCY: <u>WATER DEPARTMENT</u>

COMPLETED BY: _____

JOB CLASSIFICATION: <u>WATER DISTRIBUTION PLUMBER</u>

TOTAL NUMBER OF PERSONS IN CLASSIFICATION: <u>50</u>

PERFORMANCE DEFICIENCY	NO. OF PERSONS WITH DEFICIENCY
Unable to cut pipe square	16
At least 5% of threads cut are not usable.	3
2% or more connections made leak within 1 week	10
Unable to determine direction of flow through a stopcock	26
Unable to select fitting when given name of fitting	6

NOTE: <u>Training Coordinator's Handbook</u> from the Caribbean Basin Water Management Project.

7.   STEP 5 -- SUMMARIZE MANPOWER DEMAND

Human Resources Planning Model

WHAT IS IT?

If Manpower Development Plans are being prepared for several regions or several sector agencies, it may be desirable to combine the information gathered from those studies and make a national summary of manpower and training requirements. These elements of human resources demand will later be compared with a summary of material supply of manpower (step 9)

HOW IS IT DONE?

It is suggested that a summary PWS-7 be prepared for the water sector as a whole, and similarly for the sanitation sector. In addition, summaries of PWS-8 should be prepared in a similar fashion. The PWS-7 Summary (Water Supply) and PWS-7 Summary (Sanitation) will provide information on the total manpower demand. The PWS-8 Summary (Water Supply) and PWS-8 Summary (Sanitation) will specify the priority job classifications and the anticipated training needs over a specified period of time. These worksheets will form the basis for comparisons on the supply side of the Human Resources Planning Model. In order to prepare the summaries, data should be compiled from all regions and/or sector sources.

PWS-7 .... MANPOWER FORECAST AND ANNUAL RECRUITMENT RATES
WATER SUPPLY - SANITATION*

COUNTRY: _____

AGENCIES/MINISTRIES: _____

DATE: _____

COMPLETED BY: _____

Job Category	Job Classification	Grade	Present Situation 1983			Annual Recruitment Rates							Estimated Staff
			Proposed or Approved Establishment	Current Staff	Vacancies	1984	1985	1986	1987	1988	1989	1990	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
A													
B													
C													
D													
E													
F													
G													
H													
Totals													

Legend: Job Category

A - Senior Management
B - Profession - Senior Technical/ Admin./Clerical
C - Intermediate - Technical/ Admin /Clerical
D - Junior - Technical/Admin./Clerical
E - Craftsmen
F - Operator
G - Unskilled and semi-skilled
H - Community-based personnel

* It is intended that separate SUMMARY forms be prepared for the water supply sub-sector and the sanitation sub-sector respectively.

PWS-8 .... ASSESSMENT OF MANPOWER PRIORITIES
WATER SUPPLY - SANITATION

COUNTRY: _____   DATE _____

AGENCY: _____   COMPLETED BY: _____

Category	Job Classification	Training Priority	Priority and Number of Persons Involved							
			Present Staff	Future Staff						
				1984	1985	1986	1987	1988	1989	199
1	2	3	4	5	6	7	8	9	10	11
A										
B										
C										
D										
E										
F										
G										
H										
Total										

Legend:

Job Category	A - Senior Management	D - Junior-Technical/Admin./Clerical
	B - Profession - Senior Technical/ Admin./Clerical	E - Craftsmen
		F - Operator
	C - Intermediate - Technical/ Admin./Clerical	G - Unskilled and semi-skilled
		H - Community-based personnel

Types of Training:
(a) On-the-Job Training
(b) Training within sector agency (in-service)
(c) Training outside sectory agency (local)
(d) Training outside sector agency (regional)
(e) Training outside sector agency (external/overseas)
(f) Self-instructional or correspondence
Use column 4 to identify the type of training proposed

NOTE: It is intended that separate SUMMARY forms be prepared for the water supply sub-sector and the sanitation
        sub-sector respectively.

8. STEP 6 -- INVENTORY TRAINING RESOURCES AND TRAINERS

WHAT IS IT?

An inventory of training resources is a compilation of the classrooms, workshops and laboratory facilities; the training programmes in universities, specialized colleges, technical/ vocational/trade-training institutes; and commercial schools in the country which produce skilled manpower of direct interest to water supply and sanitation agencies. An inventory also includes the identification of qualified trainers particularly within sector agencies and relevant public and private organizations. The information thus gathered provides a basis for estimates of potential manpower supply, and also indicates where present staff may be trained.

STEP 1 INVENTORY EXISTING MANPOWER PWS 1 & 2 (PWS = PLANNING WORK SHEET)

STEP 2 DEFINE BASELINE SERVICE DATA PWS 3 & 4

demand — supply

STEP 3 DEFINE SERVICE TARGETS AND ESTIMATE MANPOWER NEEDS PWS 5,6 & 7

STEP 6 INVENTORY TRAINING RESOURCES AND TRAINERS PWS 10 & 11

STEP 4 IDENTIFY OCCUPATIONAL PRIORITIES & DETERMINE TRAINING REQUIREMENTS PWS 8 & 9

STEP 7 ESTIMATE POTENTIAL MANPOWER SUPPLY & ATTRITION RATES PWS 12

STEP 5 SUMMARIZE MANPOWER DEMAND PWS 7 & 8

STEP 8 SUMMARIZE MANPOWER SUPPLY PWS 12 & 10

STEP 9 COMPARE DEMAND WITH SUPPLY PWS 7,8 & 13

STEP 10 DETERMINE FINANCIAL VIABILITY PWS 14

INTERVENTION LOOP

STEP 11 PREPARE MANPOWER DEVELOPMENT PLAN PWS 15

HOW IS IT DONE? (Inventory of Training Resources)

In broad terms, training requirements for priority job classifications were identified in column 3 of PWS-9. Planning Work Sheet PWS-10 entitled "Inventory of Training Resources" is intended to gather information on facilities and training courses/programmes which are available in the country and can be used directly (or suitably modified) to meet the training requirements for priority job classifications. It may be that appropriate courses/programmes are not available within the country, but new courses/programmes can be established. In many developing countries it will be difficult to meet the identified training needs using existing courses/programmes. To be effective, training must be performance-oriented and relevant to sector needs.

Column 15 of PWS-10 requires an estimate from an informed individual, such as the course director or the institution's administration officer, as to how many of the course graduates are likely to be available to sector agencies. Based on information in columns 14 and 15, the planner can estimate the availability of graduates for the planning period (column 16). The information in column 16 will be utilized in the estimate of potential manpower supply.
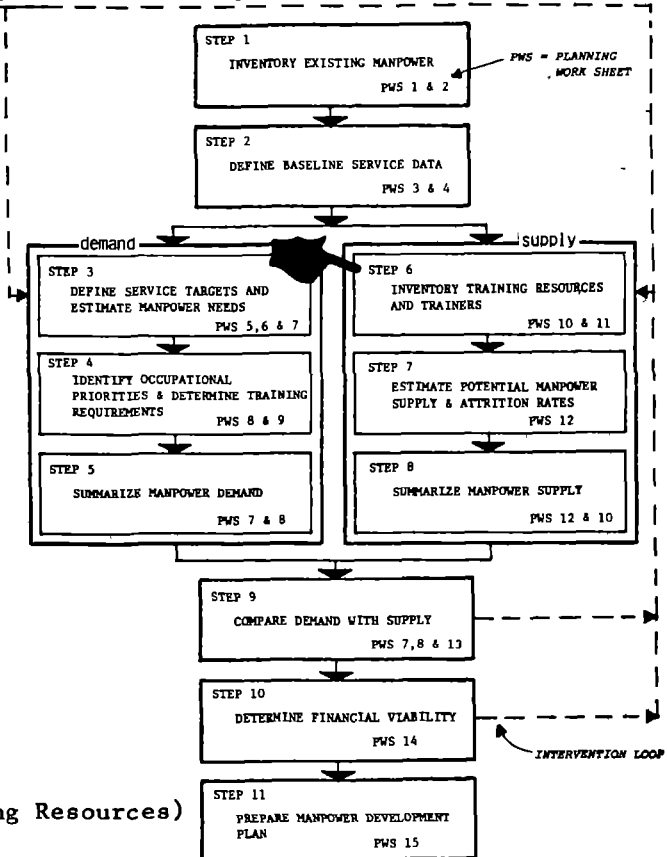
8.   STEP 6 -- INVENTORY TRAINING RESOURCES AND TRAINERS (cont'd)

HOW DO WE DO IT?   (Inventory of Trainers)

        The Inventory of Trainers (PWS-11) is intended to provide a listing of
trained trainers engaged either on a part-time or full-time basis. These may
be trainers from outside institutions which produce manpower of particular
interest to the Water Supply and Sanitation Sector or they may be trainers
from within the sector itself. In this regard, the planner or sector manager
should be aware of the need for training some technical and/or supervisory
staff to function as part-time trainers. If the sector agency has not been
offering in-service or on-the-job type training using its own staff as
trainers, it is overlooking a valuable training resource. (See Chapter 3,
Training, for details). Similarly, if the sector agency "trainers" have not
participated in behaviour-oriented training, they will not be as effective as
they could be.

        Completing the Inventory of Trainers, then, provides the planner with two
important opportunities:

   (1)   it allows him to investigate the availability of skills of trainers
         throughout the community (or nation), and

   (2)   it allows him to examine the supply and/or need of trainers within
         the Water Supply and Sanitation Sector.

One result of the Inventory of Trainers (PWS-11) may be a decision to add a
Training of Trainers Course to the Training Priorities listed on PWS-8.

PWS-10 .... INVENTORY OF TRAINING RESOURCES

COUNTRY· _____   DATE: _____

NAME OF INSTITUTION: _____

COMPLETED BY _____

(1) Nature of Institution			(2) When Established (year)	(3) Age (range)	ENTRANCE REQUIREMENTS							
					Background Education (No of years)	Field Practice (No. of years)	Competitive Examination			Academic Qualifications		
Higher Education	Technical	Vocational					Written	Oral	Inter views	Diploma	Degree	Certi-ficate
									.			

* * * * * * * * * * * * * * * * *

(4) STUDENTS (entering)				(5) TEACHING STAFF				(6) TRAINING PROGRAMME		
Sex		Age (average)		Foreigners		Nationals				
M (number)	F (number)	M	F	Full-time	Part-time	Full-time	Part-time	Traditional	Objective -oriented	Other (specify)

* * * * * * * * * * * * * * * * *

(7) TRAINING METHODS								(8) SUPPORTING SERVICES (evaluation)														
Lecture	Work-Shop	Job Training	Case Study	Role Playing	Laboratory Training	Programmed Instruction	Correspond -ence	Library			Equipment (Lab.)			Equipment (Didactic)			Equipment Workshop			Training Records and Feedback		
								G	F	I	G	F	I	G	F	I	G	F	I	G	F	I

* * * * * * * * * * * * * * * *

(9) CAPACITY				(10) INSTITUTION'S MEANS OF EVALUATING STUDENTS' PERFORMANCE							
Students' enrolment (No)		Output (No. of graduates)									
Av. No. last five years	No. current acad. year	Av. No. last five years	Expected No Grad. this acad. year	Written test	Oral test	Thesis/ Essay	Projects	Field Practice	Interviewing former trainees	Other (specify)	

* * * * * * * * * * * * * * * *

(11) BUDGET ALLOCATION		(12) CREDENTIALS DELIVERED BY THE INSTITUTION (recognized by the Civil Service Commission)				(13) DOES (12) QUALIFY HOLDER FOR IMMEDIATE PRACTICE		
1 year ago $ US	This fin.year $ US	Degree	Diploma	Certificate	Other (specify)	Yes	No	License required

(14) OTHER RELEVANT INFORMATION _____

_____

_____

NOTE. This form has been designed so that a check mark or a number will -- in most cases -- suffice as an answer

PWS-11.......... <u>INVENTORY OF TRAINERS</u>

COUNTRY: _____   COMPLETED BY: _____

AGENCY: _____   DATE: _____

NAME	SPECIALTY	AVAILABLE FOR INSTRUCTION			
		FULL TIME	PART TIME	IN PARENT AGENCY	IN OTHER AGENCIES

SAMPLE

REF: Training Coordinator's Handbook
      Caribbean Basin Water Management Project.

9.   STEP 7 -- ESTIMATE POTENTIAL MANPOWER SUPPLY AND ATTRITION RATES

WHAT IS IT?

An estimate of the potential manpower supply is an estimate of the availability of personnel by job category and priority job classifications for each year of the planning period. The planner needs to consider three ways in which manpower is commonly made available:

- new and untrained recuits
- experienced staff coming from outside the Water Supply and Sanitation Sector
- new graduates from training institutions.

When making estimates, the planner should also be aware that the supply of trained manpower may be influenced by many factors, including:

- existing incentive schemes in the Water and Sanitation agencies,
- promotion prospects for employees,
- salaries,
- the economic situation of the country, and
- government policies.

Human Resources Planning Model

Another important consideration for the planner concerns those job classifications in which the available manpower is scarce. Such classifications might include, e.g., engineers, technicians, accountants and sanitary inspectors. People who fill such posts are often in demand by other employers. Therefore, the attrition or labour turnover rate, particularly for these scarce job classifications needs to be established and taken into account when estimating the availability of personnel.

The attrition rate can be calculated in the following manner:

$$\% \text{ attrition} = \frac{\text{Total number of leavers in job category}}{\text{Average number in post in job category}} \times 100$$

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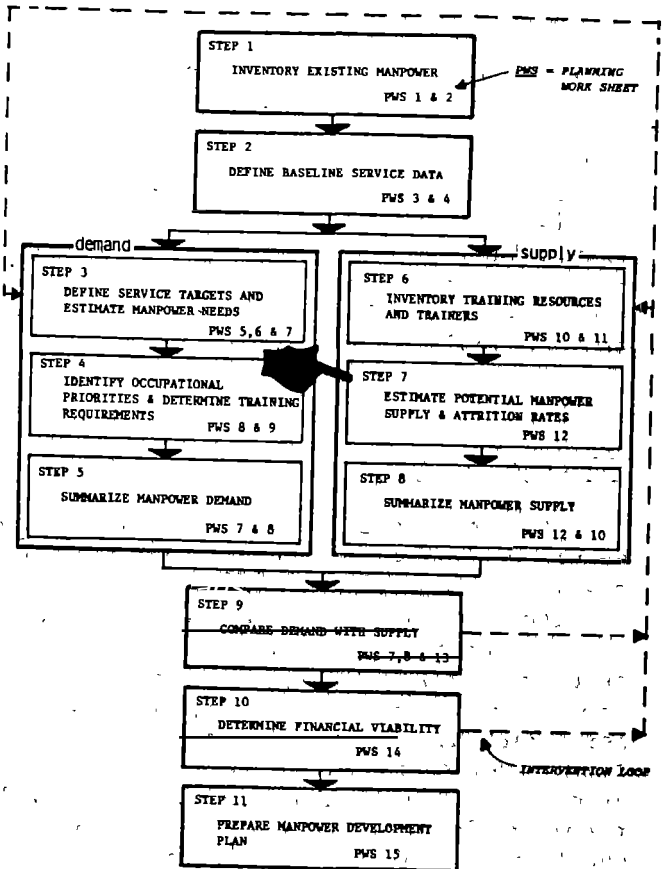
9.   STEP 7 -- ESTIMATE POTENTIAL MANPOWER SUPPLY AND ATTRITION RATES (cont'd)

HOW IT IS ESTIMATED?

In order to estimate potential manpower supply, the direct approach is suggested where the managers estimate from past experience the number of graduates they are likely to attract from the relevant training institutions (estimated on the basis of information on PWS-10) and from outside the service for each year of the planning period. Those who leave training institutions before graduation, but with some acquired skills, should not be ignored as they are sometimes larger sources of supply for a given occupation than graduates. Attrition/labour turnover rates should be incorporated into the supply estimates by adding in the number of people required to replace attrition, e.g. a 3% attrition rate on a 500 employee base is 3 x 5 = 15. Planning Work Sheet PWS-12 entitled "Estimate of Manpower Available" has been prepared to enable the planner or sector manager to record the estimates for the availability of manpower.

SUPPLEMENTAL NOTE

A comprehensive model of forecasting the availability of manpower is provided in WHO's Guidelines for Health Manpower Planning*. Ideally, quantitative measures of graduates from various relevant educational/training institutions should be supplemented by more qualitative interpretation of key factors that affect the labour market behaviour, such as comparative wage structures or hiring patterns. For example, although the country's educational institutions may be graduating 100 civil engineering technicians per year, the national water authority may not be able to attract any of them. Moreover, data on supply are not limited just to numbers of students graduating, but should consider the skill levels of the graduates and the time required for practical on-the-job training. Sector managers should be in a position to make the appropriate judgments on the prevailing labour market, and the quality and quantity of graduates of educational/training programmes which may be available to sector agencies.

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*HORNBY, P., RAY, D.K., SHIPP, P.J., HALL, T.J., Guidelines for Health Manpower Planning, Geneva, World Health Organization, 1980.

ESTIMATE OF MANPOWER AVAILABLE
- Potential Supply from Institutions and from outside Sector Agencies -
WATER SUPPLY - SANITATION

-- SUMMARY --

COUNTRY· _____

AGENCIES/MINISTRIES· _____

COMPLETED BY _____

DATE: _____

JOB CATEGORY	JOB CLASSIFICATIONS	POTENTIAL MANPOWER																																		
		1984					1985					1986					1987					1988					1989					1990				
		K	L	M	X	T	K	L	M	X	T	K	L	M	X	T	K	L	M	X	T	K	L	M	X	T	K	L	M	X	T	K	L	M	X	T
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
A																																					
B																																					
C																																					
D																																					
E																																					
F																																					
G																																					
H																																					
Total																																					

NOTES·
1. Column 2 should focus on the priority job classifications
2. Legend K,L,M - Estimated number of graduates from 3 selected educational/training institutions available for employment by sector agencies   These institutions will likely be different for different job classifications e.g. for civil engineers it may be 3 different universities   The institutions in question for each job classification should be denoted in an annex to this Planning Work Sheet
   X   - Estimated number of already trained personnel which may be available to the sector agency.
   T   - Total.
3. If more than 3 educational training institutions are to be recorded additional worksheets need to be used.
4. It is intended that separate forms be utilized by water supply and sanitation sub-sector agencies and ministries.

Legend:
A - Senior Management
B - Professional - Senior Technical/Admin./Clerical
C - Intermediate - Technical/Admin./Clerical
D - Junior - Technical/Admin./Clerical
E - Craftsmen
F - Operator
G - Unskilled and semi-skilled
H - Community-based personnel

10. STEP 8 -- SUMMARIZE MANPOWER SUPPLY

WHAT IS IT?

Human Resources Planning Model

It is a national summary of the total supply (projected potential availability) of manpower, with particular reference to priority job classifications for each year of the planning period.

HOW IS IT DONE?

It is suggested that a Summary PWS-12 be prepared for the water sector as a whole, and similarly for the sanitation sector. The PWS-12 Summary (Water Supply), and PWS-12 Summary (Sanitation), will provide information on the total national manpower supply which will be available to meet the demand, or a portion of the demand, as summarized in the respective Manpower Demand Summary Sheets (PWS-7 from Step 5).

All the available courses /programmes denoted in PWS-10 (Inventory of Training Resources) sheets should also be summarized in a PWS-10 Summary (Water Supply), and a PWS-10 Summary (Sanitation), by completing only columns 12-16.

These summaries, when compared with the PWS-8 summaries (Step 5), indicate the gap, if any, between the training resources available and those required to meet the needs of the priority job classifications.

PWS-12 .... ESTIMATE OF MANPOWER AVAILABLE
- Potential Supply from Institutions and from outside Sector Agencies -
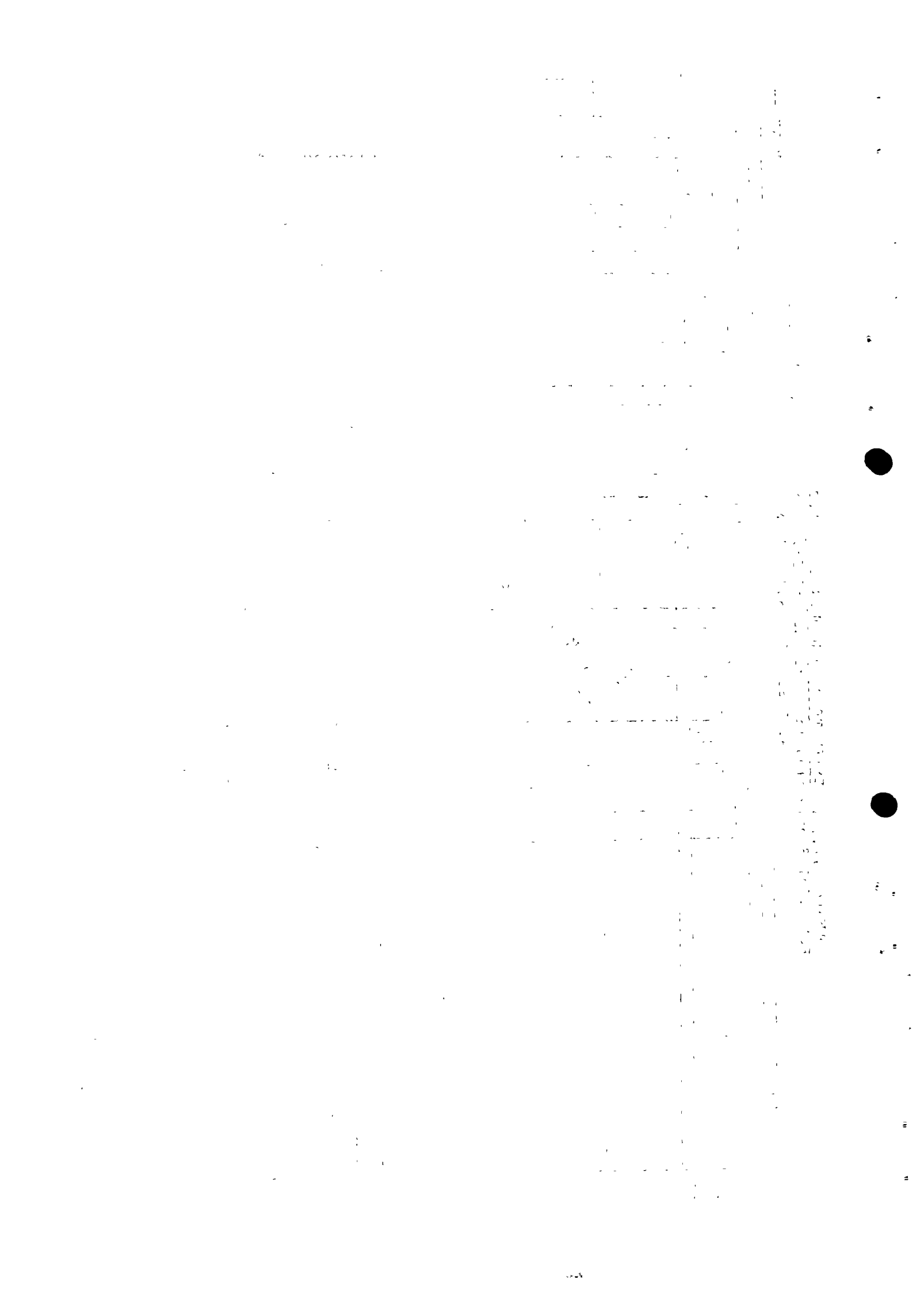WATER SUPPLY - SANITATION

-- SUMMARY --

COUNTRY·
AGENCIES/MINISTRIES:

COMPLETED BY:
DATE·

JOB CATEGORY	JOB CLASSIFICATIONS	POTENTIAL MANPOWER																																	
		1984					1985					1986					1987					1988					1989					1990				
		K	L	M	X	T	K	L	M	X	T	K	L	M	X	T	K	L	M	X	T	K	L	M	X	T	K	L	M	X	T	K	L	M	X	T
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
A																																				
B																																				
C																																				
D																																				
E																																				
F																																				
G																																				
H																																				
Total																																				

NOTES: 1 Column 2 should focus on the priority job classifications.
2. Legend K,L,M - Estimated number of graduates from 3 selected educational/training institutions available for employment by sector agencies. These institutions will likely be different for different job classifications e g for civil engineers it may be 3 different universities The institutions in question for each job classification should be denoted in an annex to this Planning Work Sheet

X   - Estimated number of already trained personnel which may be available to the sector agency
T   - Total

3. If more than 3 educational training institutions are to be recorded additional worksheets need to be used.
4. It is intended that separate forms be utilized by water supply and sanitation sub-sector agencies and ministries.

Legend	A - Senior Management	E - Craftsmen
	B - Professional - Senior Technical/Admin./Clerical	F - Operator
	C - Intermediate - Technical/Admin./Clerical	G - Unskilled and semi-skilled
	D - Junior - Technical/Admin./Clerical	H - Community-based personnel

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PWS-10 .... INVENTORY OF TRAINING RESOURCES

COUNTRY: _____   DATE: _____

NAME OF INSTITUTION: _____

COMPLETED BY: _____

(1) Nature of Institution			(2) When Established (year)	(3) ENTRANCE REQUIREMENTS								
				Age (range)	Background Education (No. of years)	Field Practice (No. of years)	Competitive Examination			Academic Qualifications		
Higher Education	Technical	Vocational					Written	Oral	Inter views	Diploma	Degree	Certi- ficate

(4) STUDENTS (entering)				(5) TEACHING STAFF				(6) TRAINING PROGRAMME		
Sex		Age (average)		Foreigners		Nationals		Traditional	Objective -oriented	Other (specify)
M (number)	F (number)	M	F	Full-time	Part-time	Full-time	Part-time			

(7) TRAINING METHODS								(8) SUPPORTING SERVICES (evaluation)															
Lecture	Work- Shop	Job Training	Case Study	Role Playing	Laboratory Training	Programmed Instruction	Correspond -ence	Library			Equipment (Lab.)			Equipment (Didactic)			Equipment Workshop			Training Records and Feedback			
								G	F	I	G	F	I	G	F	I	G	F	I	G	F	I	

(9) CAPACITY				(10) INSTITUTION'S MEANS OF EVALUATING STUDENTS' PERFORMANCE						
Students' enrolment (No.)		Output (No. of graduates)								
Av. No. last five years	No. current acad. year	Av. No. last five years	Expected No. Grad. this acad. year	Written test	Oral test	Thesis/ Essay	Projects	Field Practice	Interviewing former trainees	Other (specify)

(11) BUDGET ALLOCATION		(12) CREDENTIALS DELIVERED BY THE INSTITUTION (recognized by the Civil Service Commission)				(13) DOES (12) QUALIFY HOLDER FOR IMMEDIATE PRACTICE		
1 year ago $ US	This fin. year $ US	Degree	Diploma	Certificate	Other (specify)	Yes	No	License required

(14)   OTHER RELEVANT INFORMATION _____

_____

_____

NOTE: This form has been designed so that a check mark or a number will — in most cases — suffice as an answer.

It is intended that separate SUMMARY forms be prepared for the water supply sub-sector and sanitation sub-sector respectively.

Human Resources Planning Model

11.   STEP 9 -- COMPARE DEMAND WITH SUPPLY

WHAT IS IT?

This step involves comparison between the demand for manpower based on the identified service targets (Step 3), and the supply of manpower. This comparison may be made on an agency-to-agency basis, or on a sector-wide basis, one for the water supply sub-sector and another for the sewerage/sanitation sub-sector. If the supply does not meet the demand, then a number of options (the intervention process) to close the gap can be considered. One approach might be to reduce the service targets, or adopt simpler technologies. Other options should also be considered. It is important to note that whatever change is made, the implications of that change should be fully explored as to its effect throughout the human resources planning cycle.

STEP 1
INVENTORY EXISTING MANPOWER
PWS 1 & 2

PWS = PLANNING WORK SHEET

STEP 2
DEFINE BASELINE SERVICE DATA
PWS 3 & 4

demand   supply

STEP 3
DEFINE SERVICE TARGETS AND ESTIMATE MANPOWER NEEDS
PWS 5,6 & 7

STEP 6
INVENTORY TRAINING RESOURCES AND TRAINERS
PWS 10 & 11

STEP 4
IDENTIFY OCCUPATIONAL PRIORITIES & DETERMINE TRAINING REQUIREMENTS
PWS 8 & 9

STEP 7
ESTIMATE POTENTIAL MANPOWER SUPPLY & ATTRITION RATES
PWS 12

STEP 5
SUMMARIZE MANPOWER DEMAND
PWS 7 & 8

STEP 8
SUMMARIZE MANPOWER SUPPLY
PWS 12 & 10

STEP 9
COMPARE DEMAND WITH SUPPLY
PWS 7,8 & 13

STEP 10
DETERMINE FINANCIAL VIABILITY
PWS 14

INTERVENTION LOOP

STEP 11
PREPARE MANPOWER DEVELOPMENT PLAN
PWS 15

HOW IS IT DONE?

Summaries of manpower demand were prepared in Step 5, and summaries of manpower supply in Step 8. The initial comparison for total numbers for each of the eight job categories can be made by transferring the appropriate figures from the PWS-7 Demand Summary (Water Supply) and PWS-12 Supply Summary (Water Supply), onto the Planning Work Sheet PWS-13, entitled "Comparing Demand and Supply of Manpower by Job Categories". A similar comparison can be made for sanitation. The columns in PWS-13 marked DIF will provide an indication of the general manpower situation and will form the basis for the intervention process.

For a closer look we will need to focus on the priority job classifications, their training requirements, (PWS-8), and the likely availability of courses/programmes (PWS-10), which may be able to meet those needs. It is difficult to design one work sheet which will show all the relevant information. It is suggested that the PWS-8 and the PWS-10 sheets be sorted in terms of water supply and sanitation, and then a side-by-side comparison made. The attempt to find suitable courses annotated on PWS-9 to match the training priority speciality on PWS-8, will provide an indication of the existing gap and will guide the planner in choosing appropriate intervention strategies.

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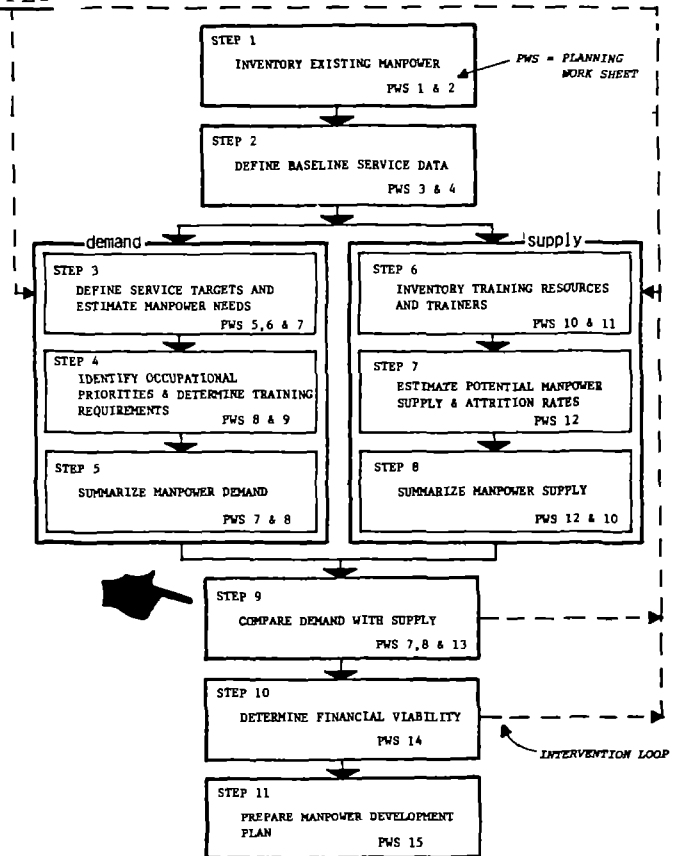
11. STEP 9 -- COMPARE DEMAND WITH SUPPLY (cont'd)

WHAT ARE THE INTERVENTION STRATEGIES?

The intervention process, i.e., making adjustments to the demand and supply to bring them into balance, could include making changes in:

- utilization of manpower (e.g. improving manning ratios);

- staff wastage (turnover);

- recruitment procedures;

- training institutions and curricula;

- future goals and future service levels.

In order to achieve balance between the supply of manpower and the demand for it, some kind of intervention is required. Each situation will require innovative approaches of its own. What follows are merely a few suggestions of some types of interventions that could help bring supply in line with demand.

(1) Better utilization of staff could be considered by adjusting the staff to population served ratio from, for example, a ratio of 1:350 to 1:700 and planning all the productivity improvements that this implies.

(2) If a major constraint to meeting the manpower demand has insufficient funds, reducing future goals and service coverage might be considered.

(3) Again, when funds are a problem, substituting highly qualified personnel with less qualified staff for some of the same tasks could be considered. Civil engineering technicians, for example, could be used instead of civil engineers.

(4) It may be possible to overcome staff shortages by not enforcing the retirement rule and/or by improving recruitment procedures.

(5) Crash training programmes may provide a short-term solution to some staff shortages. In-house training using supervisory/technical staff as trainers should be considered. For the long term, existing training facilities could be better utilized or expanded.

In most manpower planning situations, it is likely that some combination of possible interventions will be necessary to achieve the desired balance between supply and demand. In one way or another, they all involve more effective management.

The final task in this step is to review the manpower and institutional problems and the policies and programmes (including, perhaps, a re-assessment of the country's or agency's service targets done in consultation with the IDWSS Decade's National Action Committee). Then, a revised PWS-7 (Manpower Forecase and Annual Recruitment Rates), and a revised PWS-8 (Assessment of Manpower Priorities), are produced for the water supply and sanitation sub-sectors, respectively. The manpower and training requirements identified in these forms should reflect the limitations identified in the manpower supply side of the Human Resources Planning Model.

PWS-13   COMPARING DEMAND AND SUPPLY OF MANPOWER BY JOB CATEGORIES
WATER SUPPLY - SANITATION

COUNTRY _____   DATE _____

AGENCY _____

COMPLETED BY _____

JOB CATEGORY	JOB CLASSIFICATION	PRESENT SITUATION 1983			PROJECTED MANPOWER DEMAND/SUPPLY SITUATION																				
					1984			1985			1986			1987			1988			1989			1990		
		Proposed or Approved Establishment	Current Staff	Vacancies	DEMAND	SUPPLY	DIF	DEMAND	SUPPLY	DIF	DEMAND	SUPPLY	DIF	DEMAND	SUPPLY	DIF	DEMAND	SUPPLY	DIF	DEMAND	SUPPLY	DIF	DEMAND	SUPPLY	DIF
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
A																									
B																									
C																									
D																									
E																									
F																									
G																									
H																									
Total																									

NOTES: 1) Job Categories: A - Senior Management
                   B - Professional - Senior Technical/Admin./Clerical
                   C - Intermediate - Technical/Admin /Clerical

      D - Junior - Technical/Admin./Clerical   G - Unskilled or semi-skilled
      E - Craftsmen   H - Community-based personnel
      F - Operator

2) Projected Manpower Demand-Supply Situation : DEMAND = Manpower Demand from PWS-06 water supply or sanitation summary; SUPPLY = Manpower Supply from PWS-11 water supply or
    sanitation summary; DIF = Difference between demand and supply - either negative or positive.
3) It is intended that separate forms be utilized for the water supply and sanitation sub-sectors respectively.

PWS-7 .... MANPOWER FORECAST AND ANNUAL RECRUITMENT RATES
WATER SUPPLY - SANITATION*

COUNTRY: _____

AGENCIES/MINISTRIES:_____

DATE: _____

COMPLETED BY: _____

Job Category	Job Classification	Present Situation 1983				Annual Recruitment Rates							Estimated Staff
		Grade	Proposed or Approved Establishment	Current Staff	Vacancies	1984	1985	1986	1987	1988	1989	1990	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
A													
B													
C													
D													
E													
F													
G													
H													
Totals													

Legend·

Job Category

A - Senior Management
B - Profession - Senior Technical/ Admin./Clerical
C - Intermediate - Technical/ Admin /Clerical

D - Junior - Technical/Admin./Clerical
E - Craftsmen
F - Operator
G - Unskilled and semi-skilled
H - Community-based personnel

* It is intended that separate SUMMARY forms be prepared for the water supply sub-sector and the sanitation sub-sector respectively.

PWS-8 .... ASSESSMENT OF MANPOWER PRIORITIES
WATER SUPPLY - SANITATION

COUNTRY: _____   DATE: _____.

AGENCY: _____   COMPLETED BY: _____

Category	Job Classification	Training Priority	Present Staff	Future Staff 1984	1985	1986	1987	1988	1989	1990
1	2	3	4	5	6	7	8	9	10	11
A										
B										
C										
D										
E										
F										
G										
H										
Total										

Legend:

Job Category.
A - Senior Management
B - Profession - Senior Technical/ Admin./Clerical
C - Intermediate - Technical/ Admin./Clerical
D - Junior-Technical/Admin./Clerical
E - Craftsmen
F - Operator
G - Unskilled and semi-skilled
H - Community-based personnel

Types of Training:
(a) On-the-Job Training
(b) Training within sector agency (in-service)
(c) Training outside sectory agency (local)
(d) Training outside sector agency (regional)
(e) Training outside sector agency (external/overseas)
(f) Self-instructional or correspondence
Use column 4 to identify the type of training proposed

NOTE: It is intended that separate SUMMARY forms be prepared for the water supply sub-sector and the sanitation sub-sector respectively.

12. STEP 10 -- DETERMINE FINANCIAL VIABILITY

WHAT IS IT?

In Step 9, the demand and supply of manpower were compared, and the iterative intervention process applied in an attempt to close the gap between supply and demand. Revised Summary PWS-7 and PWS-8 forms were produced. These are now used as a basis for the determination of the financial viability of the proposed programmes. Are funds available to support salaries, benefits, etc., of the additional staff to be recruited (PWS-7 revised)? Are there funds to support the necessary training resources for training present and proposed future personnel (PWS-7 revised)? A minimum two-week training period for each of the Training Priority Specialities (column 3 of PWS-8 revised) should be assumed for cost estimation purposes if it is not possible to be precise about the duration.

Human Resources Planning Model

HOW IS IT DONE?

Using the manpower demand figures identified in the Revised Summary PWS-7 forms (Step 9), a preliminary assessment of likely costs of staff for each of the plan years is made. The costs should be based on average salary figures, including any cost-of-living adjustments and other allowances likely during the plan period. To this should be added the capital and operating costs of sector-related training institutions/training programmes and fellowships that are related to the manpower priorities identified in the Revised Summary PWS-8 forms (Step 9).

These total annual costs over the plan period should be compared to the projected personnel and training funds over the plan period, including national and external funds. External funds would relate to support provided by multilateral and bilateral agencies for both capital expenditures (facilities, training materials, etc.) and expertise, both short-term and long-term. Planning Work Sheet PWS-14 can be used to record the cost estimates and compare the Funds Required and the Funds Available. Although it should be possible to estimate the required funds, it may be difficult to obtain an estimate for the funds which will be available in future years. Nevertheless, an estimate should be made for the initial determination of the financial viability of the manpower and training proposals.

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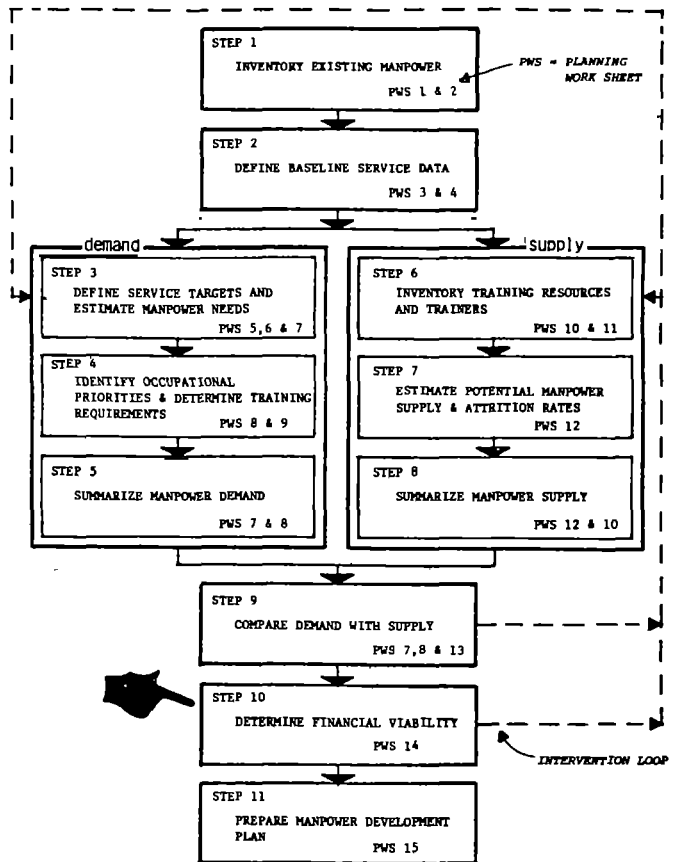
12.   STEP 10 -- DETERMINE FINANCIAL VIABILITY (cont'd)

HOW IS IT DONE? (cont'd)

If the total annual costs over the planning period exceed the annual funds available to personnel and training, the demand and supply situation must again be reviewed and suitable interventions made. The first approach would be to determine if current staff can be used more effectively. The second would be to increase the personnel and training budget by negotiation, preferably without adding to the total budget. The third approach would be to re-adjust the country's service targets. Alternatively, a combination of these approaches could be used. Summaries (PWS-7 and PWS-8) will again have to be revised in order to reflect such adjustments. These second revisions will then serve as the basis for the proposed Manpower Development Plan.

PWS-14   MANPOWER FUNDING

WATER SUPPLY -- SANITATION*

COUNTRY: _____   COMPLETED BY: _____

AGENCY: _____   DATE: _____

	1984	1985	1986	1987	1988	1989	1990
A. Fund Required							
1. Recurrent							
- Salaries/Allowances - Staff							
- Salaries/Allowances - Trainers							
- Training Supplies/Equipment etc.							
- Operating Cost of Sector-related Training Institution(s)/ Centre(s)							
Sub-Total:							
2. Capital and Development Costs							
- Salaries/Allowances Existing and new staff while undergoing training							
- Capital Investment in Training Institution(s)/Centre(s)							
- Short-term Training Programmes							
- Fellowships							
Sub-Total·							
TOTAL:							
B. Funds Available							
1. Recurrent							
- Salaries/Allowances - Staff							
- Salaries/Allowances - Trainers							
- Training Supplies/Equipment etc.							
- Operating Cost of Sector-related Training Institution(s)/ Centre(s)							
Sub-Total·							
2. Capital and Development Costs							
- Salaries/Allowances Existing and new staff while undergoing training							
- Capital Investment in Training Institution(s)/Centre(s)							
- Local							
- External							
- Short-term Training Programmes							
- Local							
- External							
- Fellowships							
- Local							
- External							
Sub-Total							
TOTAL·							

*It is intended that separate SUMMARY forms be prepared for the water and sanitation sub-sectors.

Human Resources Planning Model

13. STEP 11 -- PREPARE MANPOWER DEVELOPMENT PLAN

WHAT IS IT?

A manpower development plan (MDP) is the logical product of the planning exercise which was executed by going through Steps 1 to 10 of the human resources planning model. It will provide the sector manager with a human resources plan which can be presented as a component of the overall sector plan for a given planning period. It should be stressed that the MDP should not be viewed in isolation but as an integral part of the overall sector plan. The MDP should provide the sector manager with the necessary information to be able to defend his proposals for personnel and training requirements to meet existing needs and future service targets, and provide answers to the following questions:
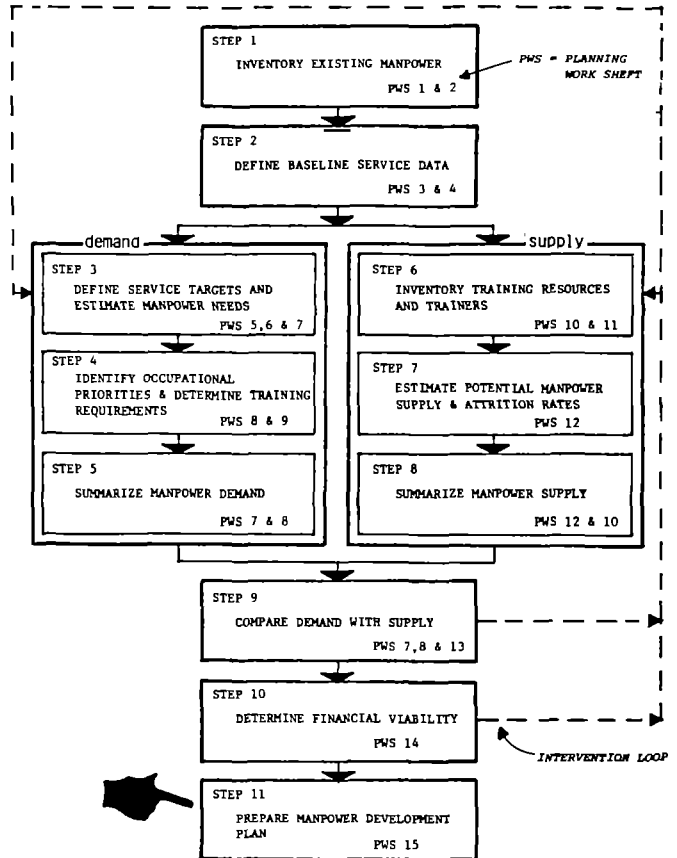
Who needs development/training and **how many?**	Step 3.
When should the development/training be done?	Step 3.
What development/training do they need?	Step 4.
What type of development/training should be done?	Step 6.
What are the estimated costs?	Step 10.

WHAT ARE THE COMPONENTS OF A MDP?

The essential components of a MDP are:

(a)   An outline of major human resources planning considerations and the resulting major human resources development recommendations;

(b)   An identification of training resources; and

(c)   An estimate of overall manpower needs by job catagory and by job classification and the respective estimated personnel costs (salary/allowances, etc.) and other recurrent costs, over a given planning period.
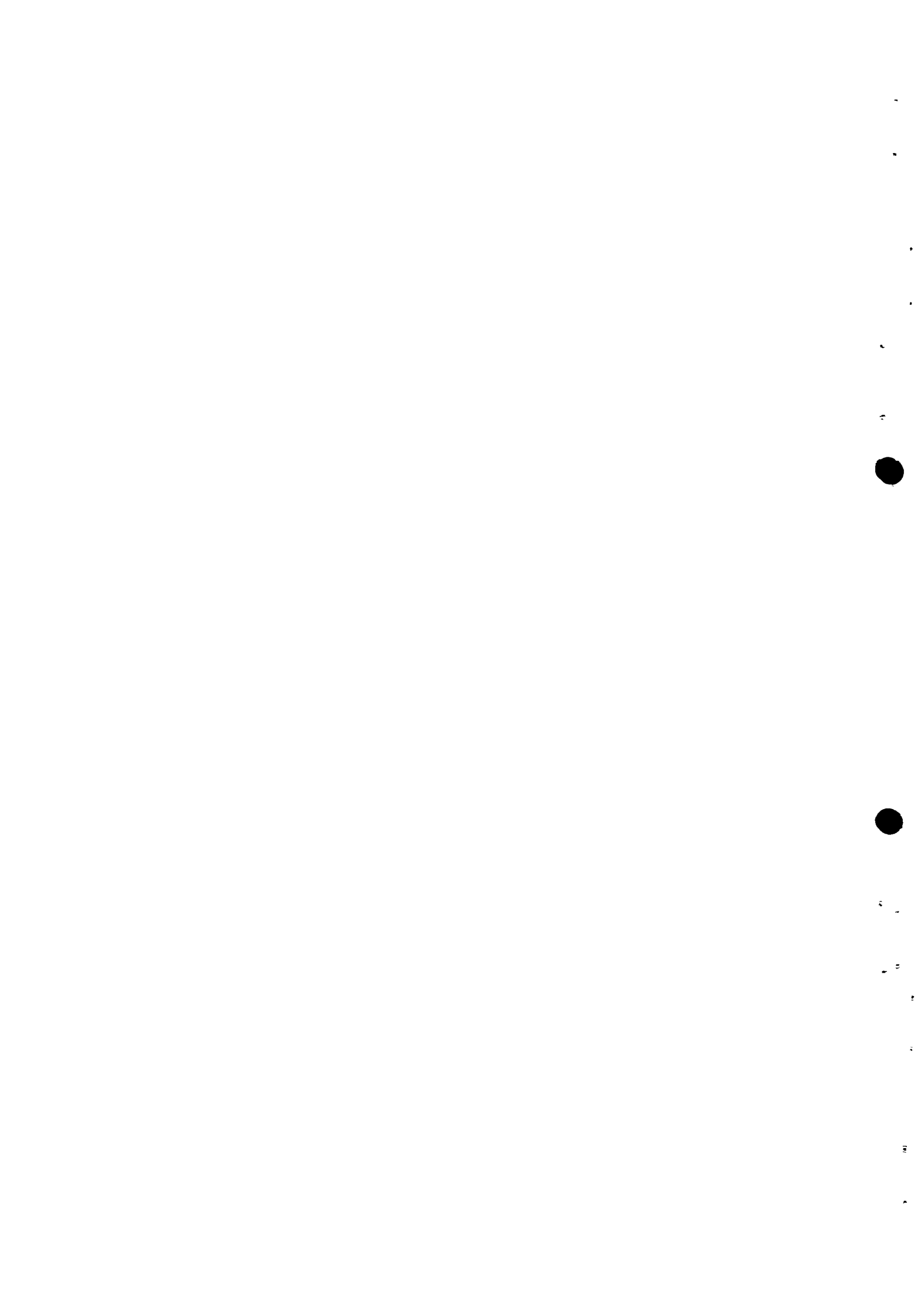
MANPOWER DEVELOPMENT PLAN

WATER SUPPLY - SANITATION

COUNTRY: _____ COMPLETED BY: _____

AGENCY/MINISTRY: _____ DATE: _____

Job Category	Job Classification	No. of staff		Training Priority	Type of Training	1983/1984				1984/1985			
		Exist-ing⁵	New			No. of trainees	No. of man/weeks	X	Y	No. of trainees	No. of man/weeks	X	Y
A													
B													
C													
D													
E													
F													
G													
H													
	Total:												

Notes:

1. Job Category: A - Senior Management Staff   D - Junior Technical/Clerical Staff   H - Community-based personnal
   B - Professional Engineers/Administrators/   E - Craftsmen
   Accountants   F - Operators
   C - Senior/Intermediate Non-Professional Staff   G - Unskilled and Semi-skilled Staff

2. Types of Training: (a) On-the-job   (d) Training outside sector agency (national)
   (b) Training within sector agency (in-service)   (e) Training outside sector agency (external/overseas)
   (c) Training outside sector agency (regional)   (f) Self-instructional or correspondence course

3. Annual Costs: X = Recurrent Costs (see PWS-14)
   Y = Capital and Development Costs (see PWS-14)

4. Plan Continuation: Similar planning forms should be made for all years covered by the planning period.

Chapter 3

Training

WORLD HEALTH ORGANIZATION

HUMAN RESOURCES DEVELOPMENT
HANDBOOK

GUIDELINES FOR MINISTRIES & AGENCIES
RESPONSIBLE FOR WATER SUPPLY & SANITATION

TRAINING

PLANNING   MANAGEMENT

INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE

TABLE OF CONTENTS

TABLE OF CONTENTS (cont'd)

INTRODUCTION

   The Planning Chapter dealt with the long and medium term demand and supply of manpower. In this chapter we shall deal with the further refinement of the Manpower Development Plan. This will involve the identification of performance problems you are facing, and a determination whether training and/or development should be a part of the solution for those problems. The TRAINING AND DEVELOPMENT PLAN extends and amplifies the Manpower Development Plan. What was a general training and development aim in the Manpower Development Plan leads to a specific training programme in the Training and Development Plan. If, for example, the Manpower Development Plan has identified the need to train 50 more plumbers in the task of installing new services, the Training Plan will specify WHICH plumbers need HOW MUCH training in precisely WHICH SKILLS for the installation of new services; WHERE and WHEN that training will take place; WHO will teach the course; and what the expected COST of the training will be. The development part of the plan is complementary to the formal training programmes. It is that part which is concerned with the personal development of individuals and which tends to take place on the job and is thus more the responsibility of managers and supervisors.

   This plan, with its training and development components, is the day-to-day expression of the overall training and development policy of the agency as agreed by senior management. This policy is described along with other Personnel Policies in the Management Chapter (page 152). In short, the Training and Development Plan provides more specific answers than the Manpower Development Plan to the following questions:

   Who needs it and how many?   Where should it be done?
   What do they need?   When should it be done?
   How much do they need?   Who should do it?
   What form would be best?   What is the estimated cost?

   From this can be seen how interdependent planning and training are. Neither of them can exist in a vacuum. They both require to be managed in an intergrated way, together with all of the other activities of the Personnel Function. This is described in the Management Chapter.

   This chapter also includes:
      - a section on the preparation of a training programme. Useful tips
        on the procedures of developing a systematic training event are
        included.
      - a section devoted to guidelines for formulating training programmes
        for community based workers to promote water supply and sanitation.*

WHO SHOULD DEVELOP THE TRAINING AND DEVELOPMENT PLAN?

   The Annual Plan is a detailed document. Eliciting the information for the plan can be time consuming. In a large ministry/agency, or one in which a great deal of training is contemplated, it is not likely that one person could or should have the entire responsibility of developing the plan. In most

   * Prepared by WHO, South-East Asia Regional Office, New Delhi.

INTRODUCTION (cont'd)

cases, determining the Plan will be the result of coordinated efforts by a number of people. Those whose help should be enlisted include: the training manager, officer or coordinator; managers; supervisors in areas for which training is proposed; and potential instructors. All will have areas of expertise which can help in the decision-making necessary in order to finalize the Training and Development Plan.

Managers, for example, and others who were involved in making the Manpower Development Plan can lend assistance when making decisions related to Step One, "Determine Training and Development Needs". Supervisors must have direct input in Steps Two and Three in which tasks are analyzed and trainees selected. Their familiarity with the task involved in the performance of the job plus their knowledge of their subordinates makes them the ideal candidates to conduct these steps. Potential instructors, managers and supervisors all will be able to give valuable assistance with Step Four, "Determine type of training and development that is appropriate". The instructors having specialized knowledge about both the skill to be taught and teaching methodologies can provide the basis for decisions about the formal programmes and courses. The managers and supervisors having the expertise for the equally important and complementary personal development that needs to take place "on the job". The training manager or coordinator will most likely conduct Steps Five, Six and Seven based on input from other sources. The staff of universities and local colleges providing support programmes for water supply and sanitation personnel are important sources of help. They should be kept informed of sector needs and be encouraged to adjust, and if necessary, tailor-make their programmes to meet these needs whether they be for managers, engineers, hydrogeologists, technicians or community-based workers/volunteers. Before describing the detailed steps of a training plan some explanation is necessary of how a training function can be organized. This will vary from one agency to another, in terms of both size of the agency and reporting structure within it, according to need. Whether, for example, it reports in to the General manager or the Personnel manager is for the agency to decide, effectiveness of operation being the prime factor. Whether the function is big enough to have its own manager and staff again depends on need.

In any case the function encompasses organization, implementation and evaluation of all the activities related to training, (e.g. in-service, short or long-term, vocational or academic, formal or non-formal, and production of instructional manuals and materials). It includes monitoring and determination of effectiveness of training in relation to the Agency's goals. In one form or another it requires the establishment of a well structured administrative entity, which, in turn, should be supported by an appropriate HRD policy.

SECTION 1: PREPARATION OF AN ANNUAL TRAINING AND DEVELOPMENT PLAN

A chart illustrating the steps necessary for the production of an Annual Plan follows. It is important to note that each of the first six steps must be carried out FOR EACH of the proposed training programmes for a specific job classification shown on the MDP. Thus, for a year in which 10 training programmes will be offered, the six steps will be conducted 10 times. The seventh step, "Prepare the Annual Training and Development Plan" is a summary of all other steps.

COUNTRY· _____

AGENCY/MINISTRY· _____

Job Category	Job Classification	No. of staff	
		Exist-ing⁵	New
A			
B			
C			
D			
E			
F			
G			
H			
	Total:		

WHAT

WHAT

WHO

HOW

WHERE, WHEN
BY WHOM

$

DATA FOR ALL TRAINING
AND DEVELOPMENT
PROPOSED DURING A
1-YEAR PERIOD IS
SUMMARIZED ON THE
ANNUAL PLAN

AND DEVELOPMENT PLAN

٦ue	Instructor	Type of Training and Duration											
		J	F	M	A	M	J	J	A	S	O	N	D

courses)

STEP ONE: DETERMINE TRAINING AND DEVELOPMENT NEEDS

WHAT IS IT?

It is a step that uses analysis to clarify what and how much training and development is needed and appropriate for the organization and the trainees.

WHY IS IT NEEDED?

It is necessary to determine needs in order to assist the WS&S sector to meet its goals of extending the coverage and improving the quality of service. In most cases, manpower will have to be trained or re-trained to meet those goals. A careful analysis of training needs is also important because training is often mistakenly applied as a solution to problems that do not, in fact, respond to training. Development of the organizational and/or managerial system may be much more appropriate in such instances.

HOW IS IT DONE?

The Manpower Development Plan developed in Chapter Two will give a clear idea of the number and classification of staff members who will be needed in the foreseeable future. You will use that information as a basis for a deeper analysis of needs. In some cases you will re-affirm the need for training as indicated in the Manpower Development Plan; in other cases, your closer look may determine that training is not appropriate at this time.

| STEP 1 |
| DETERMINE TRAINING AND DEVELOPMENT NEEDS |

| STEP 2 |
| ANALYZE TASKS |

| STEP 3 |
| SELECT TRAINERS |

| STEP 4 |
| DETERMINE TYPE OF TRAINING |

| STEP 5 |
| SELECT VENUE, INSTRUCTORS AND DATES |

| STEP 6 |
| DETERMINE COSTS |

| STEP 7 |
| PREPARE TRAINING AND DEVELOPMENT PLAN |

Reviewing the previously prepared Manpower Development Plan is the first, but not the only aspect of Step One. You may find that although there are currently enough employees working within the sector, their performance is not what it could or should be. Should you, therefore, give them more training? Should they be given fellowships? Sent on study tours or short courses? Will more training raise the level of their performance?

A Performance Deficiency Analysis, the second aspect of Step One, will help answer these questions. A Performance Deficiency Analysis looks at the cause of the problem in order to determine the solution. When you are seeking solutions to performance problems, IT IS JUST AS IMPORTANT THAT YOU DEFINE THE CAUSE OF (i.e. diagnose) THE PERFORMANCE DEFICIENCY AS IT IS TO PINPOINT THE TASK(S) THAT ARE DEFICIENT.
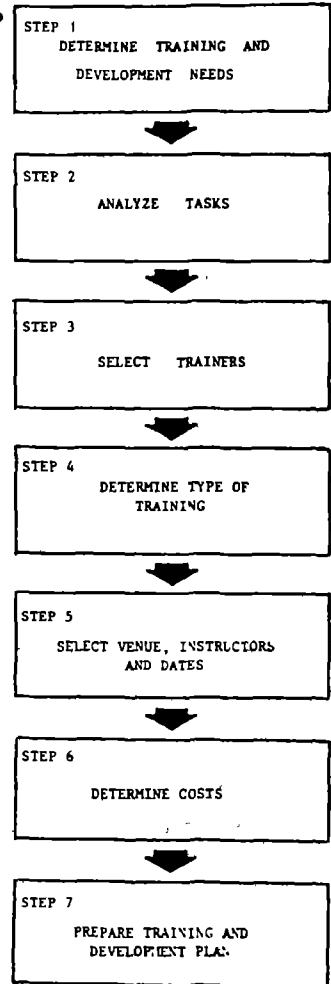
STEP ONE: DETERMINE TRAINING NEEDS (cont'd)

   Robert F. Mager refers to this need for diagnosis in his book, Goal Analysis.

   "Like medication, instruction can be given when none is needed. It is also possible, as in prescribing medication, to instruct when some other remedy would be more to the point. Therefore, it is as appropriate for those who would solve problems of human performance to carry out an analysis before selecting a remedy, as it is for a physician to make a diagnosis before prescribing a cure*."

A performance deficiency exists when there is a difference between the desired result and the actual result. You may, for example, expect that 100 metres of 150mm diameter new distribution pipe be laid each week by a 5 man crew. If the actual amount laid is only 65 metres, a performance deficiency exists. Similarly, if you have set a goal that customer complaints will be dealt with within three working days and you find that some complaints are never going beyond the receptionist, there is a performance deficiency.

   The solution selected to correct the deficiency depends on its cause.
Causes may be divided into three major categories.**

   Lack of skill or knowledge -- The worker does not know how, when or how well to perform.

   Environmental and/or management causes -- The work environment, the management procedures, the supplies, the tools, the work procedure, the lack of available transportation, etc., prevent or hinder the worker from performing adequately.

   Motivational, incentive or attitude -- The worker's motivation or attitude interferes with his/her performance; or the incentives provided are inadequate.

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* MAGER, R.F. Goal analysis: Belmont, California: Fearon Publishers Inc., 1972 p. 5

** AUSTIN, J. A. How will developing nations train their manpower for water quality management?, Tel Aviv, December 1979. p.3

STEP ONE: DETERMINE TRAINING NEEDS (cont'd)

USEFUL AIDS TO STEP ONE

In order to do the Performance Deficiency Analysis, you will want to examine a problem -- a performance deficiency. Think of an area in which you are not satisfied with the quality of work being done. To help decide what is the probable cause of that performance deficiency, analyze it by asking the following questions.

Lack of Skill or Knowledge

(a) Has the worker* been trained to carry out mastery performance?
(b) If the training has been conducted, was it adequate?
(c) Is there evidence that the worker does not know what, when, how, or how well to do the task?
(d) Is there evidence that the worker can perform, but has difficulty transferring the knowledge or skill to the job?

Environmental and/or Management Causes

(a) Are there poor working conditions where the task must be performed?
(b) Are tools and equipment adequate?
(c) Is there sufficient time to perform this task?
(d) Is there sufficient manpower assigned to perform this task?
(e) Is there disagreement over the method used to perform this task?
(f) Is there a lack of access to data or resources?
(g) Are the criteria for job performance too demanding?
(h) Is there interference from another task (i.e. scheduling)?
(i) Is there adequate supervision?

Motivational, Incentive or Attitudinal

(a) Can the worker perform some of the time, but not always?
(b) Is good timely feedback provided on performance?
(c) Are there adequate incentives to the worker?
(d) Is the task unpleasant in the mind of the worker?
(e) Are poor supervision techniques used?
(f) Does the worker lack perception of the values of the task?
(g) Are there appropriate consequences for adequate and inadequate performance?
(h) Is the task repetitive or boring?
(i) Is the task of low priority or competing priority?

IF YOU DISCOVER THAT A LACK OF SKILLS OR KNOWLEDGE IS THE PRIMARY CAUSE OF THE PERFORMANCE PROBLEM TRAINING IS THE LIKELY SOLUTION. BEWARE, HOWEVER, THAT PERFORMANCE PROBLEMS THAT STEM FROM ENVIRONMENTAL AND/OR MANAGEMENT CAUSES, OR FROM MOTIVATIONAL CAUSES WILL PROBABLY NOT BE SOLVED IF YOU USE TRAINING AS THE SOLUTION. SUCH PROBLEMS REQUIRE APPROPRIATE SOLUTIONS.

* Worker is used here and subsequently to cover all employees of an agency, plus part timers and unpaid helpers.

STEP TWO: SELECT AND ANALYZE TASKS

WHAT IS IT?

When you have found performance deficiencies that will respond to a training solution, you must determine which specific tasks in the overall job are causing the performance problem. These are the tasks that a training course should deal with. Selection of specific tasks is one aspect of Step Two.

Analysis is another. Analysis means breaking down into simpler elements. A Task Analysis, therefore, means breaking down a task in order to identify the skills, the knowledge and the abilities required of a worker for mastery job performance.

WHY IS IT NEEDED?

Task Analysis is essential because TRAINING SHOULD BE BASED UPON THE JOB TASKS THAT THE TRAINEE IS EXPECTED TO PERFORM. The skills, facts and attitudes that he needs are identified through a Task Analysis. A training course is then designed to teach all the skills, knowledge and attitudes that are required of the worker if he is to perform his appointed task(s) effectively.

A Task Analysis is crucial to the formulation of performance-based Job Descriptions. Each worker ideally should have a well written job description so that he knows what is expected. Similarly, Task Analysis can also be used as a basis for objective supervision. When the supervisor has clear and specific knowledge about the worker's task, he is able to spot problems and help the worker.

| STEP 1 |
| DETERMINE TRAINING AND DEVELOPMENT NEEDS |

| STEP 2 |
| ANALYZE TASKS |

| STEP 3 |
| SELECT TRAINERS |

| STEP 4 |
| DETERMINE TYPE OF TRAINING |

| STEP 5 |
| SELECT VENUE, INSTRUCTORS AND DATES |

| STEP 6 |
| DETERMINE COSTS |

| STEP 7 |
| PREPARE TRAINING AND DEVELOPMENT PLAN |

HOW IS IT DONE?

In order to carry out a Task Analysis you should observe a worker who is a master performer. Note down all the steps of the task as he performs them. You might also want to ask him to write or tell the steps because he may be aware of steps that your observation has missed. Then carefully think through the steps of the task. Ask yourself such questions as:

- What must a worker be able to do to accomplish
  this task? What type of skills are involved.
- What prior skills must he have?
- What prior knowledge must he have?
- What concepts or meanings must he understand
  before he can perform?
- Can the steps in the task be broken down into sub-steps?
- Do the sub-steps require different prior skills,
  knowledge, understandings?
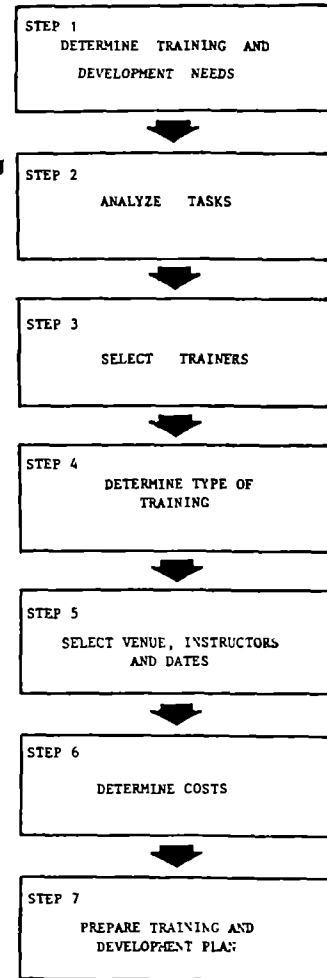
STEP TWO: SELECT AND ANALYZE TASKS (cont'd)

Study the detailed example (IS-01) on Page 102 of a task analysis on the following pages. It graphically illustrates how one person analyzed the task of installing new services. With such a complete analysis as a guide, it is easy to see how a supervisor could use this knowledge to a) train a new employee to do the task, and b) closely supervise the work, in this case, of the plumber charged with the installation.

Prior to planning any training event you will want to analyze each task that is to be taught. Only when you have broken the task into its component steps can you begin to plan a training session.

USEFUL AIDS TO STEP TWO

IS-02 is a sample Task Analysis form. You will want to use similar forms in order to formalize an analysis for each task that will be the subject or segment of a training course.

Full details of Task Analysis are presented in the following two documents:

Instructor's Manual and Planning Guide for Training of Trainers; and

A Guide for Training Manual Developers,

prepared by the Caribbean Basin Water Management Project. They are available upon request from the Environmental Health Division of Regional WHO offices. (For addresses see Bibliography in Reference Notes section).

POSITION: _Utility Plumber_   TASK: _Installs New Services_

WHAT THE WORKER DOES (Operation)	HOW HE DOES IT (Step)	WHY HE DOES IT	WHAT HE NEEDS TO KNOW
Cuts and threads pipe	_Measures length, cuts pipe with hand hacksaw and threads with hard die._	_To connect pipe and fittings for service supply._	1. _Skill in taking and reading measurements._ 2. _Skill in manipulating hacksaw and hard die._ 3. _Knowledge of thread types, quality and defects._
Makes soldered joints	_Cleans ends, assembles ends, applies solder using butane torch._	_To secure joints and ensure leak-free connections._	1. _Knowledge of solder and soldering process._ 2. _Process on applying solder._ 3. _Skill in identifying defects in soldered joints._
List concisely and accurately each operation performed to complete the job task.	Describe simply but completely how each of the operations are performed.	Explain very concisely the reasons for performing each operation.	List all that is required in order that each operation is performed efficiently - reading, calculation, colour, smell or taste, recognition, etc

POSITION: _Utility Plumber_   TASK: _Installs New Services (Cont'd)_

WHAT THE WORKER DOES (Operation)	HOW HE DOES IT (Step)	WHY HE DOES IT	WHAT HE NEEDS TO KNOW
Installs meter	Prepares ends, positions and aligns meter, couples up meter and pipe and tightens with hard wrench.	To provide measurement of water consumed.	1. Knowledge of the several types of meters. 2. Knowledge of the installation procedure of each type. 3. Skill in using the tools required. 4. Ability to make leak-free threaded joints.
Installs valves	Determine position, prepares end then positions and couples valve ends and tightens with pipe wrench.	To provide a control point in the service main.	1. Knowledge of the types and working principles of valves. 2. Knowledge of the installation procedure of each type. 3. Skill in manipulating the installation tools.
List concisely and accurately each operation performed to complete the job task.	Describe simply but completely how each of the operations are performed.	Explain very concisely the reasons for performing each operation.	List all that is required in order that each operation is performed efficiently - reading, calculation, colour, smell or taste, recognition,et

TASK ANALYSIS WORKSHEET

POSITION: _Utility Plumber_   TASK: _Installs New Services (Cont'd)_

WHAT THE WORKER DOES (Operation)	HOW HE DOES IT (Step)	WHY HE DOES IT	WHAT HE NEEDS TO KNOW
Installs valves (Cont'd)			4. Skill in making leak-free threaded joint.
Taps main and installs ferrule	Identifies point to tap, sets up tapping machine and attaches to main: operates machine until main is tapped then removes machine with ferrule in position.	To facilitate the connection of service line to main.	1. Knowledge of the tapping maching including how it is operated. 2. Knowledge of the size of taps and their code classification. 3. Skill in setting up tapping machine and operating the machine.
Lays distribution pipe	Positions and connects pipe, seals and tightens joints using the pipe wrench.	To provide a continuous flow of water from the main to consumer.	1. Knowledge of the several types of pipes in use. 2. Knowledge of the several pipe sizes and grades.
List concisely and accurately each operation performed to complete the job task.	Describe simply but completely how each of the operations are performed.	Explain very concisely the reasons for performing each operation.	List all that is required in order that each operation is performed efficiently - reading, calculation, colour, smell or taste, recognition,etc

TASK ANALYSIS WORKSHEET

PUSITION: _Utility Plumber_   TASK. _Installs New Services (Cont'd)_

WHAT THE WORKER DOES (Operation)	HOW HE DOES IT (Step)	WHY HE DOES IT	WHAT HE NEEDS TO KNOW
Lays distribution pipe (Cont'd)			3. *Knowledge of gradient and flow of water.* 4. *Ability to make leak-free joints.*
List concisely and accurately each operation performed to complete the job task.	Describe simply but completely how each of the operations are performed.	Explain very concisely the reasons for performing each operation.	List all that is required in order that each operation is performed efficiently - reading, calculation, colour, smell or taste, recognition, etc.

TASK ANALYSIS WORKSHEET

POSITION:_____ TASK:_____

WHAT THE WORKER DOES (Operation)	HOW HE DOES IT (Step)	WHY HE DOES IT	WHAT HE NEEDS TO KNOW
List concisely and accurately each operation performed to complete the job task.	Describe simply but completely how each of the operations are performed.	Explain very concisely the reasons for performing each operation.	List all that is required in order that each operation is performed efficiently - reading, calculation, colour, smell or taste, recognition, etc.

STEP THREE: SELECT TRAINEES

WHAT IS IT?

It is a crucial step for ensuring a successful training outcome. It is the point at which you determine which workers need and can most benefit from the proposed training.

Names of trainees will be listed on an attachment to the Annual Training Plan.

WHY IS IT NEEDED?

A careful trainee selection is needed in order to ensure that:

1. The trainees are actually lacking in the skills or knowledge which will be taught, in the proposed training course.

2. The trainees have the necessary background and pre-requisites to benefit from the proposed training.

3. The trainees will be or are presently assigned to work in an area where the skills/knowledge can be used.

| STEP 1 |
| DETERMINE TRAINING AND DEVELOPMENT NEEDS |

| STEP 2 |
| ANALYZE TASKS |

| STEP 3 |
| SELECT TRAINERS |

| STEP 4 |
| DETERMINE TYPE OF TRAINING |

| STEP 5 |
| SELECT VENUE, INSTRUCTORS AND DATES |

| STEP 6 |
| DETERMINE COSTS |

| STEP 7 |
| PREPARE TRAINING AND DEVELOP TEXT PLAN |

HOW IS IT DONE?

A simple diagnostic test can help in establishing the knowledge, skill and attitude levels of trainees. The test, based on the Task Analysis done in Step Two can be performed as:

1. Discussion with the employee's supervisor, and on the basis of it, possibly also,
2. Observation of the employee as he currently performs the task.
3. Oral or written questioning of the prospective trainee.

Although the actual testing situation need not be formal, the preparation for the testing should be a thorough study of the Task Analysis. If, for example, it is intended to present a training course to improve the performance of the plumbers laying distribution mains, you will need to be very familiar with the skills, knowledge and attitudes necessary to perform that task to the standard required. Looking at the task analysis you will see that the successful plumber will need, for example, an ability to read plans, some physical skills and a positive attitude about working outdoors. The diagnostic test will therefore include an inquiry into the prospective trainees' prior knowledge, physical skill and attitudes.
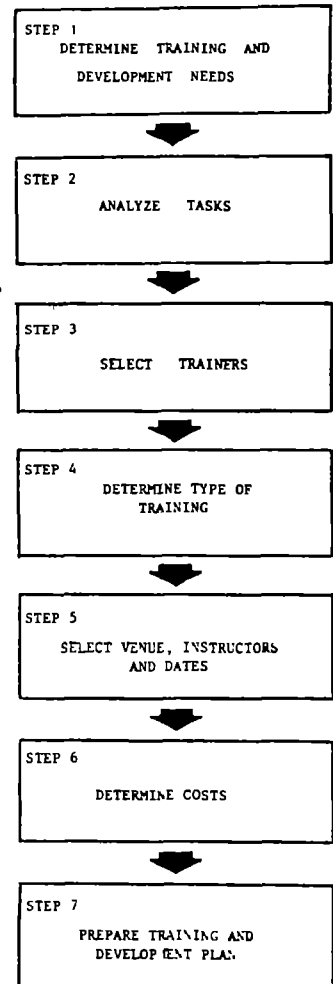
STEP THREE: SELECT TRAINEES (cont'd)

Please note that you are NOT looking for trainees who can already perform the required skills but rather for people who have the potential to benefit from the proposed training. If diagnostic testing shows a significant number of trainees lacking in a knowledge or skill area, this material should be included in the training course. If only a few prospective trainees are deficient, individual remedial programmes could be devised.

It may sometimes happen that thorough diagnostic testing can not be performed prior to the start of the training programmes. In that case, trainees should be selected on the basis of their supervisor's opinions of their abilities and their own reported interest and evaluation of their abilities.

When selecting trainees for a proposed training course you should look at the employees present standard of performance; his pre-requisite knowledge, skills and attitudes; and HIS WORK ASSIGNMENT AFTER THE COMPLETION OF THE COURSE. Needless to say, only trainees who will actually have some use for the proposed training should be selected for the training programme.

It is during Step Three that you will also want to consider the geographical regions and/or work divisions of the potential trainees. If the skills to be taught are needed throughout the WS&S sector, you will want to have a representative geographical distribution of trainees.

At this stage you should also note whether some or all of the trainees will need transportation and/or accommodations for attendance at the course. Such information may very well affect the cost, duration and location of the training.

USEFUL AIDS TO STEP THREE

1. The Task Analysis previously prepared is an invaluable tool for determining the skills, knowledge and attitudes that are necessary for the performance of the task. You will be able to determine the pre-requisites for entry into the course from a study of the Task Analysis. When examining the Task Analysis ask yourself such questions as:

A.   What mental abilities are required here? e.g. reading?
       writing? discriminating? analyzing? recognizing?
       evaluating? appraising? making mathematical calculations?
       reporting?.

B.   What physical abilities are required here? e.g. lifting?
       withstanding temperature extremes? driving? using tools?

C.   What social abilities are required here? e.g. communica-
       ting? cooperating? supervising? criticizing? organizing?

Consider selecting only those employees who have the pre-requisite skills and knowledge.

STEP THREE: SELECT TRAINEES (cont'd)

2. To prepare the diagnostic test itself, use the information gathered through the Task Analysis to develop testing criteria. Observe or ask about the current skills and knowledge of the prospective trainees. If they cannot presently perform the task to the standard required, they are likely candidates for inclusion in the training course.

3. You will also want to inquire into the personnel policies pertaining to the future work assignments of prospective trainees. It is important that the newly trained individual will be assigned to work where he is both able and motivated to perform. If it is unlikely that the trainee will be given such an assignment, his place in the training course should be allotted to another candidate.

STEP FOUR: DETERMINE TYPE OF TRAINING THAT IS APPROPRIATE

WHAT IS IT?

In this step, decisions are made as to the type of training that is appropriate and feasible for the proposed training course. Selections will be made from the following categories:

- On-the-job
- Training within a sector agency (in-house)
- Training outside a sector agency (local)
- Training outside a sector agency (regional)
- Training outside a sector agency (external/overseas)
- Self-paced Training (self-instructional programmmed texts and correspondence courses).

WHY IS IT NEEDED?

Different methods of training are appropriate for different types of learning. Learning to drive a vehicle requires different methods than, for example, learning to do mental arithmetic calculations. When you performed a Task Analysis (Step Two) you became aware of the specific skills that must be mastered by the successful trainee. In this Step, you again use that knowledge, plus a knowledge of basic learning psychology in order to determine what type of training is best suited for the specific learning objectives of the proposed training course.

| STEP 1 |
| DETERMINE TRAINING AND DEVELOPMENT NEEDS |
| STEP 2 |
| ANALYZE TASKS |
| STEP 3 |
| SELECT TRAINERS |
| STEP 4 |
| DETERMINE TYPE OF TRAINING |
| STEP 5 |
| SELECT VENUE, INSTRUCTORS AND DATES |
| STEP 6 |
| DETERMINE COSTS |
| STEP 7 |
| PREPARE TRAINING AND DEVELOPMENT PLAN |

HOW IS IT DONE?

You will base your decision regarding the type of training that will best suit your objectives on several factors:

1.   The type of learning involved
2.   The number of trainees needing the training
3.   The extent of learning necessary (in terms of time)
4.   Suitability of available courses
5.   The availability of instructors and materials.

Educational psychologists have discovered that different methods of training are suitable for different types of learning. Most of the training you will be concerned with will have as its objectives the learning of skills (i.e. performance). It is appropriate, therefore, to briefly discuss the way in which skills are best learned.
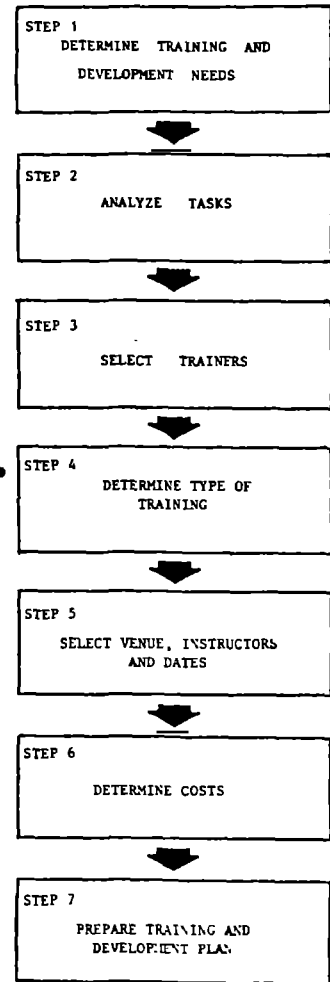
STEP FOUR: DETERMINE TYPE OF TRAINING THAT IS APPROPRIATE (cont'd)

There are three important steps to mastery of a skill:

1.   Mentally understanding what is required in the performance of the skill (e.g. one must understand how to shift gears in a car before one can practice and perfect the shifting).

2.   Physically practicing the sub-skills or steps (e.g. one needs to practice putting in the clutch and shifting to each gear separately).

3.   Physically practicing the total skill (e.g. one needs to practice actually driving a car and shifting at the appropriate times in order to completely learn how to shift gears).

When you are aware of the steps that are a necessary part of skill learning, you will ensure that the type of training you select will provide ample opportunity for the trainees to practice both the sub-skills and the total skill to be mastered. You should not, for example, subject trainees to long lecture-type courses if their goal is to learn a skill. You may often choose on-the-job training rather than off-the-job training because the former provides an ideal opportunity to practice and apply the skills that are being taught. You will seriously question any course that aims at merely teaching its trainees about a skill rather than teaching how to perform the skill. A course on the theory of water quality is less likely to improve water quality than is a course teaching how to take water samples, perform tests and make suitable adjustments.

The guiding principal in selecting the type of training is to keep the training as job-related as possible. Systematic on-the-job training is appropriate for the development of most skills, particularly manual and supervisory skills. It may, however, be complemented by off-the-job training within, or without, the sector agency. The Water Industry Training Association, in London, have compiled a set of tables, one for each major job description, indicating suggested training both off-the-job and on-the-job. For example, they have produced job training recommendations for Resident Engineers (see Reference Notes, section 5), for Water Quality Officers, and for Distribution Foreman/Supervisor. It is particularly interesting to note the detailed job description without which the training requirements could not be effectively compiled.

Other factors on which to base your decision about the type of training concern the availabilty and suitability of instructors, materials and training space. The cost of each option will also undoubtedly be a factor.

USEFUL AIDS TO STEP FOUR

When looking at ready-made external courses, you should examine how closely the objectives of the course match the needs of your organization. Consider the following points:

a) Do the course objectives match the needs of the sector agency and the trainee? Are the course objectives set out clearly enough to judge this?

STEP FOUR: DETERMINE TYPE OF TRAINING THAT IS APPROPRIATE (cont'd)

b) Is the course length realistic? Does the course appear to be well prepared and planned?

c) What training methods will be used? Will they offer adequate opportunity for trainee participation and practice? (See next page, IS-03 for a table illustrating some learning principles as they are applied in various training methodologies).

d) Does the training staff have appropriate experience and skill to teach?.

e) What do previous trainees/trainers have to say about the course?

f) If the current courses offered from outside institutions do not seem suitable, are the institutions willing to design a special course for the WS&S sector? (The information gathered in Step Two, Analyze Tasks, can provide the necessary guide for a new course outline.)

If your study of available options leads you to believe that a local, in-sector or in-house training programme would be most suitable, you will want to consider the following questions:

a) Are there sector employees who are master performers at the task for which training is needed?

b) Are written training materials necessary? If so, can they be locally developed? (See Guide for Training Manual Developers* for Instructions for developing training manuals).

c) Are manpower, money and time available for developing training materials?

d) Have guidelines been set describing the course content? (Task Analysis).

e) Will or do supervisors readily and effectively take on the responsibility of training their subordinates?

f) Have any sector employees participated in a Training of Trainers Course?

g) Could the employee who writes the materials also teach the course?

h) Is there a sector training centre? Are basic training aids available (e.g. chalk boards, laboratory equipment, demonstration materials)?

NOTE: Section 2 of this chapter, following Step 7, provides a brief guide to the preparation of an in-house training course.

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*Available from the Environmental Health Division of WHO Regional Offices. See addresses in Bibliography, Reference Notes section.

INFORMATION SHEET: IS-03

TRAINING METHODOLOGIES

When selecting a training methodology, we must be very clear about what we hope to achieve through training. The training objective will influence the choice of methodology. The main factors affecting the choice are shown below.

Human factors
- Teacher (trainer)
- Participants
- Environment

Objectives
- Knowledge
- Skills
- Attitudes

Subject Area
- Specific subject
- Inter-disciplinary problems

Time and Material Factors
- Time
- Finance
- Teaching facilities

Principles of Learning
- Motivation
- Active involvement
- Individual approach
- Sequencing and structuring
- Feedback
- Transfer
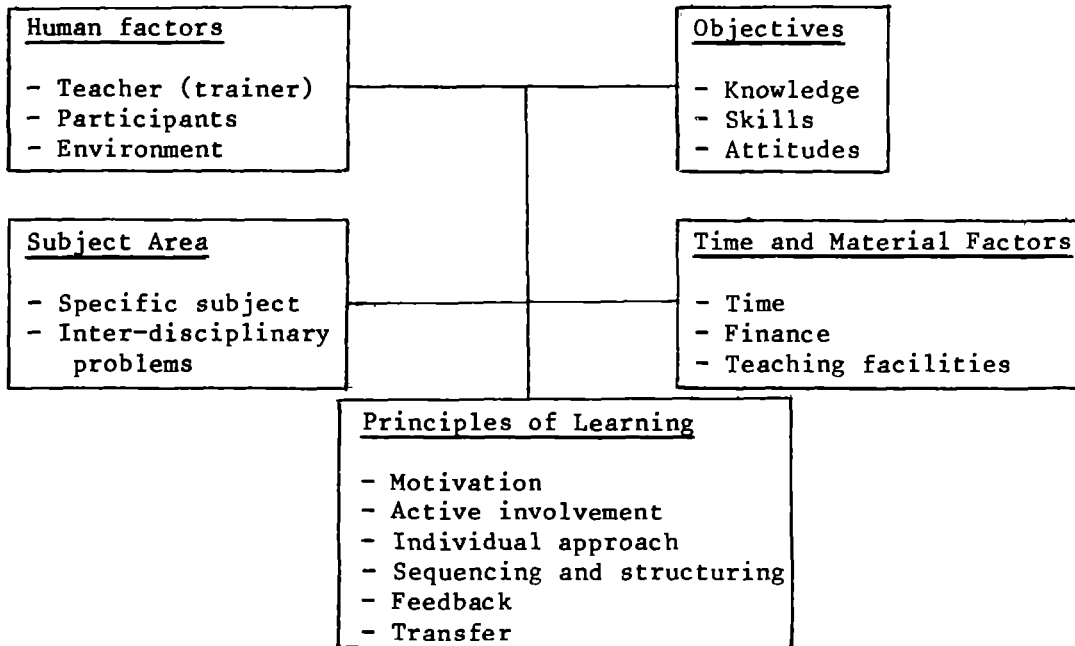
The application of some principles of learning in training/teaching methods is illustrated in the diagram below.*

Method / Principle	Training on the job	Lecture	Group Discussion	Case Study	Business Game	Role Playing	Application Project	Reading Assignment
Motivation	Good	Average	Average	Average	Good	Average	Good	Weak
Active involvement	Good	Weak	Average	Good	Good	Good	Good	Average
Individual approach	Good	Weak	Average	Average	Average	Average	Good	Average
Sequencing and structuring	Average	Good	Weak	Average	Average	Weak	Average	Good
Feedback	Good	Weak	Average	Average	Good	Good	Good	Weak
Transfer	Good	Weak	Weak	Average	Average	Average	Good	Weak

Rating: ■ Good   ■ Average   □ Weak

*An introductory course in teaching and training methods for management development, International Labour Organization, 1977, Geneva.

STEP FIVE: SELECT VENUE, INSTRUCTORS AND DATES

WHAT IS IT?

At this step, formal and definite decisions are made regarding the place, the dates and the instructor(s) for the proposed training.

WHY IS IT NEEDED?

In order that the Training Plan becomes a guide for ACTION, the above factors must be included.

HOW IS IT DONE?

Having already examined the type of training that is most suitable (Step Four) and having examined the available options, this step only requires the finalizing of the decision.

An estimate of the time needed for the training must be made in conjunction with the instructor. You should remember, however, that although knowledge is relatively quick and easy to impart, the practical application of the related skill will take longer to develop. Judgements about the length of a course should be based on estimates of average ability.

It may be necessary to select dates for the course prior to arranging for the venue and instructor; or you may find that the availability of the venue and instructor will determine the timing of the course. Either way, when selecting dates for the course, be sure that the prospective trainees will be available at that time. Important holidays and work loads should both be considered.

The venue for the training course will be determined by the nature of the course and the number of trainees involved. On-the-job training may require no extra room at all. Courses with a classroom component can often be taught in an available room within the agency. Courses requiring some laboratory work will obviously need a facility that allows for that.

Some of the characteristics of a good presentation site are:

(a)   It has adequate space for working, laying out tools, equipment and aids. It is large enough so that all course participants will have an unobstructed view when demonstrations are being given.

STEP 1
DETERMINE TRAINING AND
DEVELOPMENT NEEDS

STEP 2
ANALYZE TASKS

STEP 3
SELECT TRAINERS

STEP 4
DETERMINE TYPE OF
TRAINING

STEP 5
SELECT VENUE, INSTRUCTORS
AND DATES

STEP 6
DETERMINE COSTS

STEP 7
PREPARE TRAINING AND
DEVELOPMENT PLAN
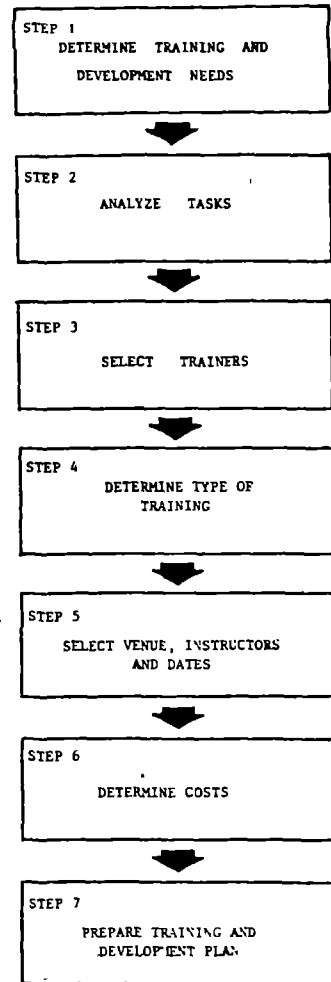
STEP FIVE: SELECT VENUE, INSTRUCTORS AND DATES (cont'd)

(b)   It is away from distractions such as noisy crowds, machines and traffic.

(c)   Lighting and ventilation are adequate.

Using vocational and technical schools within the area often proves to be a good solution when sector facilities are not available.

Choice of venue should also consider travel and accommodation possibilities for participants; skilled workers in developing countries normally do not have the same allowances, etc. as professional personnel. You should therefore consider the feasibility of arranging mobile programmes that can visit regional centres or individual municipalities.

When selecting an instructor keep in mind that the ideal trainer is a supervisor or manager within your organization who has had some training in the techniques of instruction. No matter who is selected for the training assignment, however, you should satisfy yourself that the answers to the following questions are positive.

1.   Does he know the subject? Can he practice the skills involved?

2.   Has he the personality to understand and sympathize with his trainees' difficulties?

3.   Can he organize and present his material in a logical manner?

4.   Is he effective in meeting training objectives?

In most WS&S sector agencies, it will probably be necessary to train more trainers. These instructors should, if possible, come directly from the sector. This follows the philosophy that "TRAINING is an INTEGRAL COMPONENT OF MANAGEMENT RESPONSIBILITY". It should also be noted that this is in keeping with recommendation 78m from the UN Water Conference (1977) which states the following:

"take steps to encourage operational managers and supervisors
to play their part, both individually and collectively, as
non-professional and part-time trainers/instructors of their own
staff".

All too frequently supervisory staff back away from any training duties because they believe it is the job of the Training Officer. To ensure that training does truly become an integral component of management action, it is proposed that many of the trainers be drawn from the ranks of the sector agencies -- not necessarily to become full-time instructors in any sense of the word, but simply to make a contribution, based on their expertise, to the total training programme.* Supervisors and training staff can thus complement each other and gain from each other and so enrich the programme.

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* CAREFOOT, N.F. Suggested Steps in Development of a National Training
    Delivery System, prepared for the International Reference Centre for
    Community Water Supply, The Hague, March 1978.

STEP FIVE: SELECT VENUE, INSTRUCTORS AND DATES (cont'd)

Although training is a component part of all supervisory functions, it is recognized that not all supervisory personnel have the potential to be effective trainers/instructors. In one experience where a pool of instructors was developed from the ranks of water and sanitation agencies, selection criteria for entering the training of trainers workshops were as follows:

The participant should:

(a)   As a minimum educational requirement have attained a School
       Leaving Certificate.

(b)   Be a key person who will make a substantial contribution to
       training activities.

(c)   Be someone with enough remaining service time that a "return" can
       be realized from the training investment.

(d)   Be a person who has demonstrated an ability to improve employee
       performance on-the-job.

(e)   Occupy a position that has authority over other people (or will do
       in the near future).

Further, it is important that:

(f)   At least 20% of the participants be available for occasional short
       periods in the future to develop instructional materials;

(g)   The local training coordinator (person in the utility assigned to
       organize and implement training activities) be a participant;

(h)   A reasonable balance be struck between senior office staff and
       senior field staff;

(i)   That the manager of the utility participate in the training
       sessions to the maximum extent possible.

In addition:

(j)   It may be found desirable to include some employees who are
       exceptions to the above suggestions;

(k)   Utilities are encouraged to arrange for the participation of
       potential trainers from outside their ranks, e.g. existing
       technical or trade school and other departments of Government.

STEP FIVE: SELECT VENUE, INSTRUCTORS AND DATES (cont'd)

USEFUL AIDS FOR STEP FIVE

It is suggested that decisions regarding venue, instructors and dates be formalized and put in writing. The following people should be formally notified:

1.   The manager of the sector agency involved
2.   The trainees
3.   Supervisors of the trainees
4.   The Instructor(s)
5.   Person charged with supplying training materials and supplies
6.   Person in charge of the training facility, laboratory etc.
7.   Person in charge of making transportation and/or accommodation arrangements.
8.   Secretarial help that may be required.

STEP SIX: DETERMINE COST

WHAT IS IT?

This is the step in which the cost of the proposed training is estimated. All costs -- direct (e.g. trainer's wages) or indirect (e.g. wastage of materials) are added in. This step is an element within the Manpower Development Plan, Step 10 Financial Viability (see Planning chapter) and as such it should be compatible with it and within the budget agreed at that stage.

WHY IS IT NEEDED?

It is obviously important to know the cost of a training programme in order to decide if it is affordable. Another reason is that it enables management to compare the cost of the proposed training with the need and the likely benefits. It also enables proposals to be put forward to ensure adequate budget allocations.

HOW IS IT DONE?

An estimate of the cost of training is given in the Manpower Development Plan. You will want to verify or refine that figure. To do so, the following items should be considered:

- Trainees' wages or salaries during period of training
- Cost of transportation and accommodation
- Trainers' wages during training
- Loss of output owing to trainees being away from the job
- Materials development
- Wastage, spoilage or provision of special materials
- Special training facilities, equipment etc.
- Other training costs (e.g. record keeping, secretarial assistance, etc.).

It is often useful to divide the total cost among the number of people to be trained in order to determine the cost of training per trainee.

Having established an estimated cost, you will want to examine it in view of these questions:

- Does this training make economic sense?
- Even if the training is effective, will the cost compare favourably with the benefits?
- Could the same result be obtained with less expenditure?

Depending on the answers to the above questions, you will want to do one of three things:

1. Go to Step Seven, Prepare the Annual Training Plan;
2. Re-examine the proposed training course and the training needs with a view to revision;
3. Reject the planned training and investigate other training priorities.

STEP 1
DETERMINE TRAINING AND DEVELOPMENT NEEDS

STEP 2
ANALYZE TASKS

STEP 3
SELECT TRAINERS

STEP 4
DETERMINE TYPE OF TRAINING

STEP 5
SELECT VENUE, INSTRUCTORS AND DATES

STEP 6
DETERMINE COSTS

STEP 7
PREPARE TRAINING AND DEVELOPMENT PLAN
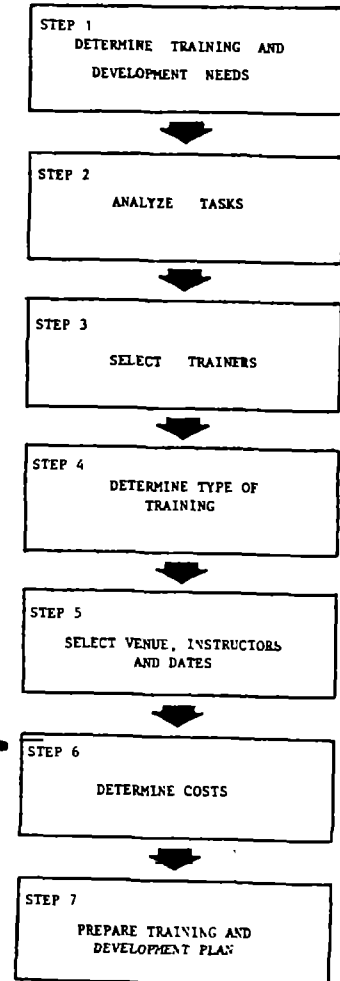
STEP SEVEN: PREPARE ANNUAL TRAINING PLAN

WHAT IS IT?

The Annual Training Plan is the result of decisions about the training that will be offered throughout the year. It should provide enough information to make the organized and efficient development of human resources an on-going part of the WS&S function.

WHY IS IT DONE?

The plan is prepared in order that both the human resources and the training resources of the sector can be utilized in the most efficient manner throughout the year. The plan is also a source of information to employees. It should be publicly displayed, if possible, so that the entire work force is made aware of the organization's training intentions.

HOW IS IT DONE?

The preceding six steps are the guidelines on which to base the Annual Training Plan. Each step should be taken for each training need. Each column must be filled in for each training course. Remember to attach a list of trainee names to the plan.

USEFUL AIDS TO STEP SEVEN

On the following page you will find a sample Training Plan Form, (IS-04). You may want to use one similar to this; or you may choose to develop a form that is adapted to your specific situation. An example of its use appears as IS-05.

STEP 1
DETERMINE TRAINING AND DEVELOPMENT NEEDS

STEP 2
ANALYZE TASKS

STEP 3
SELECT TRAINERS

STEP 4
DETERMINE TYPE OF TRAINING

STEP 5
SELECT VENUE, INSTRUCTORS AND DATES

STEP 6
DETERMINE COSTS

STEP 7
PREPARE TRAINING AND DEVELOPMENT PLAN

TRAINING PLAN

WATER SUPPLY - SANITATION

Training Need (Course Title)	Trainees			Cost per Trainee	Total Cost	Venue	Instructor	Type of Training and Duration											
	No.	Region or Division	Job Classi-fication					J	F	M	A	M	J	J	A	S	O	N	D
					SAMPLE														

Note: Type of Training
(a) On-the-Job
(b) Training within sector agency (in-service)
(c) Training outside sector agency (local)
(d) Training outside sector agency (regional)
(e) Training outside sector agency (external/overseas)
(f) Self-paced Training (self-instructional and correspondence courses)

TRAINING PLAN

WATER SUPPLY - SANITATION

Training Need (Course Title)	Trainees			Cost per Trainee	Total Cost	Venue	Instructor	Type of Training and Duration											
	No.	Region or Division	Job Classi-fication					J	F	M	A	M	J	J	A	S	O	N	D
Preventive Maintenance	20	HQ	Pump Attendant	80	1600	Job site	Sn. Mechanic			a	a	a						-	
Transport Management	6	HQ	Super-visors	100	600	Office	-	b	b										
Hand Pump Installation	30	District Office	Jr. Tech-nicians	50	1500	Job site	Sn. Technician				a	a	a						
Supplies Management	6	HQ	Supplies Officers	30	180	Classroom	Manager							b					

Note: **Type of Training**
(a) On-the-Job
(b) Training within sector agency (in-service)
(c) Training outside sector agency (local)
(d) Training outside sector agency (regional)
(e) Training outside sector agency (external/overseas)
(f) Self-paced Training (self-instructional and correspondence courses)

SECTION TWO: DEVELOPING AND IMPLEMENTING A TRAINING PROGRAMME

It is quite likely that after all the thought and analysis that went into developing the training plan, you concluded that in-house training was the most appropriate. It may also be likely that your agency does not at this time have Human Resources Development staff who are experienced in putting together in-house training programmes. What follows, therefore, are some HELPFUL TIPS that will GUIDE you through the phases of developing a training course.

It is not our intent to document and explain all the steps necessary for the production of a training course. For a detailed examination of the process please see: Instructor's Manual and Planning Guide for Training of Trainers and A Guide for Training Manual Developers (see Bibliography).

This section can, however, help you ask and answer the questions that will lead you through the training development process. The approach is illustrated by the flow-chart on the next page. As we mentioned in the Overview Chapter illustrative diagrams of this sort may give a static impression or, alternatively, suggest that all that is required to be successful at the end of the process is to proceed systematically from Step 1 to Step 7. Those of us who have been involved in real life situations, know it can be plagued with constraints which make the path less smooth. This further emphasizes the need to proceed systematically even though compromises may have to be made. Outline information is also provided on subsequent pages.

THE SYSTEMATIC APPROACH

STEP 1

DETERMINE TRAINING NEEDS

Study performance deficiencies within the organization. Determine which are due to a lack of skills and/or knowledge and will respond to a training solution

STEP 2

ANALYZE TASKS

Study the task. Determine precisely what skills are necessary for its accomplishment

STEP 3

DEVELOP CURRICULUM

Determine precisely what the successful trainee must be able to do at the end of the proposed training in order to accomplish the task. Write objectives in terms of observable behaviour. Determine the necessary pre-requisites, the proper sequences of instruction and the instructional system components

STEP 4

PREPARE ENVIRON-MENTAL SUPPORT

Ensure that adequate facilities and training aids will be available. Support staff (e.g., secretarial help) should also be considered

STEP 5

CONDUCT TRAINING

Conduct training using activities that will enable the trainees to do the task described in the performance objectives

STEP 6

FOLLOW-UP TRAINING

Observe trainees to determine if they have achieved the course objectives and are applying the new skills back on the job. Give reinforcement and feedback

STEP 7

EVALUATE AND ADJUST TRAINING

Assess the training course to determine if it is adequately designed to eliminate the intended performance problem

SECTION TWO: DEVELOPING AND IMPLEMENTING A TRAINING PROGRAMME (cont'd)

STEP ONE:
DETERMINE TRAINING   The systematic approach begins with a Needs Analysis.
NEEDS   It lists the needs of the organization. Since we are
                       concerned here with manpower, the Needs Analysis will
                       concentrate on the manpower required to do the work
                       of the organization.

                       If a Manpower Development Plan (Chapter 2) and an
                       Annual Training and Development Plan (Section 1 of
                       Chapter 3) have been completed, you have already
                       determined the Training Needs for your organization.

STEP TWO:
ANALYZE TASKS   A Task Analysis was done as Step Two in the
                       development of the Annual Training and Development
                       Plan. Please refer to Chapter 3, Step 2, for further
                       information.

SECTION TWO: DEVELOPING AND IMPLEMENTING A TRAINING PROGRAMME (cont'd)

STEP THREE: Ideally, a professional trainer or specialist in
DEVELOP CURRICULUM   curriculum development will do this step for your
                     organization. Realistically, however, that will not
                     always be possible. If you follow the simple steps
                     outlined below you will be able to design a simple
                     and effective training course. Just as you must take
                     a systematic approach to planning and training, so
                     must you take a systematic approach to developing the
                     training curriculum. What follows is a brief
                     description of the steps to be taken. Following
                     these steps will give you a simple training
                     curriculum. If your needs are for a more complex
                     training programme, or if you desire more detailed
                     information, you are referred to:

                     Instructor's Manual and Planning Guide for
                     Training of Trainers, 1978; and

                     A Guide for Training Manual Developers, 1980,

                     prepared by the Caribbean Basin Water Management
                     Project. Copies are available through Regional WHO
                     Offices. (For addresses see Bibliography in Reference
                     Notes section).

                     Once again, the emphasis in this step, i.e.
                     Curriculum Development, is on analysis. We analyze
                     in order to prevent the common mistakes of many
                     novice trainers. Have you ever been involved in a
                     training course in which the instructor, who although
                     an expert at the task being taught, simply didn't
                     know how to teach?

                     Perhaps he went too fast. Perhaps he spent too much
                     time on the simple things and skimmed quickly over
                     the parts of the skill that were confusing or
                     difficult for you. Perhaps he did all the talking
                     and didn't give you a chance to try out the skill.
                     Perhaps you learned a great deal of theory but at the
                     end of the course really didn't know how or what you
                     were supposed to do with that theory. Perhaps it was
                     never clear to you just exactly what you were
                     expected to learn or to be able to do when you
                     finished the course.

                     If you have experienced such frustrations, you will
                     understand why we do not want to continue training in
                     such a haphazard and ineffective manner. It is not
                     difficult to do better.

SECTION TWO: DEVELOPING AND IMPLEMENTING A TRAINING PROGRAMME (cont'd)

STEP THREE:
DEVELOP CURRICULUM

Part 1: Statement of
        Performance
        Objectives

First, write Performance Objectives.
Performance Objectives are a very precise statement of exactly what the trainees are expected to BE ABLE TO DO as a result of the training course. Of course, in order to write sensible performance objectives, you will have to look at the Task Analysis.

Why?

Because, the Task Analysis tells you everything that is involved in the performance of the skill you intend to teach. If there are many skills in the task(s) that will be taught in the training programme, you will have many Performance Objectives. Be sure that you write the Performance Objectives carefully. You will use them not only as a guide to tell you what to teach in the training programme, but you will also use them as a guide to evaluation: Did the trainees actually learn to do what we wanted them to do? Was the training programme successful?

Here is an easy way to organize and write Performance Objectives. Answer the questions.

(**)   1. What observable behaviour do you require of the trainee in order to prove that he has learned the task (or sub-task?). Here is an example:

THE TRAINEE WILL BE ABLE TO:
Install by-pass connections on main for leak detection meter.

(**)   2. Under what conditions will the trainee show this observable behaviour? Will you provide him with anything? Here is an example:

UNDER THE FOLLOWING CONDITION:
given correct tools and size of pipe, three (3) valves, flange sockets and spigots, two (2) tees, two (2) bends and meter.

(**)   This symbol is used throughout SECTION TWO to denote those questions which are, in effect, keys to help you follow the step.

SECTION TWO: DEVELOPING AND IMPLEMENTING A TRAINING PROGRAMME (cont'd)

STEP THREE:
DEVELOP CURRICULUM

(**)   3. What will you consider success? How well must he
                    perform? Here is an example.

                    TO THIS STANDARD:
                    Must be in keeping with standard procedures
                    outlined. No leaks should occur at connections.
                    Flanges should be correct distance apart to allow
                    installation of meter between them, and allow
                    bolting of meter flanges to pipe flanges. Meter
                    chamber should be correct size to allow workmen
                    enough room to make necessary adjustments for leak
                    detection meter.

                    Use the above three questions as guidelines to write
                    all the Performance Objectives that are necessary to
                    cover all the tasks you want taught in the training
                    programme.

SECTION TWO: DEVELOPING AND IMPLEMENTING A TRAINING PROGRAMME (cont'd)

STEP THREE:
DEVELOP CURRICULUM

Part 2: Determination
         of Pre-
         requisite
         Knowledge

The next step in Curriculum Development is to decide exactly what you want potential trainees to know BEFORE they enter the training programme. For example, it is foolish to invite trainees to a course in the performance of water quality tests requiring some involved mathematics if those trainees cannot perform simple arithmetic. This step, which is called Determination of Pre-requisite Knowledge, ensures that the right workers are invited to the right training course.

To do this step, you will again look at the Task Analysis. Analyze what capabilities, skills and knowledge a worker must have in order to successfully learn the new task. Must he, for example:

(**)

- be able to differentiate colours?
- be able to deal tactfully with the public?
- be able to lift and move heavy equipment?
- be able to read and write?
- be able to drive a vehicle?
  etc.

STEP THREE:
DEVELOP CURRICULUM

Part 3: Determination
        of Sequences
        of Instruction

This step of Curriculum Development can help avoid a great deal of confusion. Have you ever attended a training course in which you were confused for the first few sessions? Did the instructor jump right in to difficult material on the first day, and then go backwards and explain those concepts on day three?

If your purpose is really to make learning as easy as possible for your trainees, you will avoid such confusion by carefully determining in advance what items should be taught first, which build on those first items, which build on the first two items and so on until the entire skill is logically introduced.

STEP THREE:
DEVELOP CURRICULUM

Part 4: Design of
        Instructional
        System
        Components

        (**)

The next step in curriculum development is the Design of Instructional System Components. When you have completed the earlier steps you will be ready to make decisions regarding:

TIME FRAMES

- How much time should we allow for the teaching, discussion and practice of each element of the skill?
- How many sessions?
- How many days altogether?

TEACHING METHODOLOGIES

        (**)

NOTE: A brief guide to Training Methods appears as (IS-06 p. 130). (See also IS-03, p. 113 for further information regarding Training Methodologies).

- What method of teaching can be used to make learning as easy as possible for the trainees?
- How can we make it possible for the trainees to actually practice the skills we want them to master?
- Will they need to discuss concepts?
- Will they need to physically practice new skills?

TEXT MATERIALS AND MEDIA

        (**)

- What teaching materials shall we use?
- Are there manufacturer's manuals that are appropriate for this level of trainee?
- Can we find or make illustrated job-aids that will show the steps pictorially?
- Are films or slides or posters available or desirable?
- Can we prepare our own simple task guidelines to be used as handouts?
- What materials will be absolutely necessary?

INFORMATION SHEET: IS-06   A BRIEF GUIDE TO TRAINING METHODS

Method	What it is	What it does	Points to watch
Programmed learning	Text which progressively feeds information to the trainee. After each piece of information questions are posed which the trainee should answer correctly before moving on.	Effective knowledge transfer and high knowledge retention rate can be used for self-study and mixed ability classes, each trainee proceeding at his own pace.	Some degree of self-motivation needed. A tutor is needed to answer less obvious problems and provide comment. Programmes can be designed where advanced trainees can move rapidly through certain sections.
Guided reading	Trainee is given standard literature to read and comment upon in a structured situation.	For management level and self-motivated trainees. An effective means of knowledge transfer.	Danger of self-deception. Requires strong motivation.
Lecture	Talk with little or no participation	Information transfer to large audience with controlled content and timing.	Lack of participation likely to prevent some people understanding or assimilating. Avoid giving too much information.
Talk	Talk with participation - questions and discussions encouraged.	Information transfer to not more than twenty people.	Participation encourages learning and interest. However, all may not join in.
Discussion	Knowledge, ideas and opinions freely exchanged.	Useful when application of information is flexible or attitude require changing.	Session may be blurred or incoherent. Attitudes may be entrenched. Skilled leader required.
Demonstration	Trainee is told, shown and then does job, with correction and supervision.	Skills may be manual, clerical or social Confidence helped.	Avoid excessive delay of practice. The whole may be important as well as parts. The breakdown of skills can be a refined programme.

../

Role playing	Trainees enact the roles they will play in work e.g. 'In tray' exercises whereby trainees receive letters, files, etc. to action.	Practice of face-to-face skills, with feedback. Realistic pressure possible Good for decision-making skills. Opportunity to learn things not directly related to exercise.	Embarrassment and tendency to joke must be avoided. Skilled leader required. Items must be realistic.
Question and Answer	An exchange between trainer and trainees to test learning progress, stimulate participation or seek information.	Strengthens such techniques as demonstration, talk, and discussion, by stimulating trainee involvement, clear thinking and the development of understanding. Skillfully-worded questions can identify individual or group progress and indicate attitudes.	Considerable trainer skill is required to use the technique effectively. Questions leading to 'Yes' answers should be avoided. Use imperative questions whenever possible (What?How? Where?When?Who?). Questions should always be framed in an encouraging and supportive manner. They should never menace. Questions should be concise and simply worded.
Coaching	An essentially personal on-the-job management training technique designed to inspire and develop individual	Imparts kowledge, develops skills and forms attitudes during informal but planned encounters between managers and subordinates. This technique increasingly offers sound learning situations within a management development programme.	Successful coaching depends on a clear definition work and training objectives Mutual confidence must be developed. Coaching can be a long process and be well planned to make time available for question checking assimilation, giving feedback, rewarding reinforcing progress.
Case Study	Real event with support facts presented to trainees for analysis.	Possible exchange of ideas and different solutions without penalty.	Unreal atmosphere and lack of background may encourage impractical decisions.
Project	Objective set for trainee to complete - wide guidelines necessary to encourage initiative.	Stimulate creativity, interest, and decision-making. Feeds to trainer information on trainee's knowledge and personality.	Full cooperation needed with trainee. Apparent pressure or criticism can cause loss of confidence.
Assignment	Task or investigation undertaken to close guidelines after a session of information absorption.	Practice encourages learning transfer to job situation. Useful as a test for the trainee.	Realistic exercises should be chosen to avoid frustration. Loss of confidence must be avoided.
Group exercise	Trainees examine problems and propose solutions as a group.	More effective group working and insight into the way groups think and arrive at decisions.	A trainee's personal performance in the group can be analyzed and fed back to him. Such actions require skilled handling and should be treated with care. Group of four and fewer ensure full commitment.

SECTION TWO: DEVELOPING AND IMPLEMENTING A TRAINING PROGRAMME (cont'd)

STEP THREE: STUDENTS ASSESSMENT TOOLS
DEVELOP CURRICULUM
            (**)   - How will we evaluate the trainee's progress?
                                (NOTE: If the Performance Objectives have
                                been written carefully, those objectives will
                                tell exactly how to judge success. Useful
                                evaluation techniques are explained on the
                                following page IS-07).

                              EVALUATION SCHEME FOR TRAINING DESIGN

            (**)   - How will we judge -- not the trainees -- but
                                the training programme itself?
                              - What will be our criteria for success?
                              - Do we expect a certain level of improvement
                                in the quality of the service to the public?
                              - Do we expect fewer clerical errors?
                              - Do we expect fewer complaints in a particular
                                area?
                              - Do we expect fewer breakdowns with
                                organization vehicles?
                              - Do we expect fewer leaks in new distribution
                                lines?
                                etc.

STEP FOUR:
PREPARATION OF   As discussed earlier, one of the key elements
ENVIRONMENTAL SUPPORT   for training is adequate support and facilities.
                              Even the best training programme will fail if there
                              is inadequate support from the organization. At
                              this step, questions such as the following must be
                              answered:

            (**)   Have suitable trainees been identified and will they
                              be available for the period of the training
                              programme?

                              Is suitable classroom, laboratory, or on-the-job
                              working space available?

                              Have the necessary training aids (e.g. blackboard,
                              chalk, papers, books, overhead projectors etc.) been
                              procured?

                              Are we sure that these trainees will be assigned to
                              jobs where they will use the skill that they are
                              being trained for?

INFORMATION SHEET: IS-07

AID FOR TRAINING EVALUATION[*]

Procedure	Evaluation Categories				Definition	Advantages	Limitations
	Reactions	Learnings	Behaviour	Results			
Interview	X		X	X	Structured questions for information, impressions	Flexible can clarify	Cost biases
Observe	X	X	X		Watching, appraising performance	Little threat no added cost	Disruptive unreliable biases
Group Interview	X				Group discusses training	Immediate direct	Leader influence variable honesty
Organizational Documents			X	X	Written records, memos., budgets, production schdules, data	Reliable objective job related minimal bias ease of review	Possible subjective Conversions needed?
Participate Contract			X		Agreement on skills, knowledge use	Motivational job related	Resentment at follow-up organizing constraints
Performance Test		X	X		Test of performance: operate a machine, etc.	Reliable simulate possible	Time consuming simulation may be costly
Questionnaire	X	X	X	X	Written questions on specifics of training, or the job	Low cost honesty anonymity?	Little follow-up return rate uncontrollable
Self Assessment		X	X		Self-judgement of gains after a period	No threat useful to trainees	Indifferences self insureness
Written Test		X			Measurement of specific learnings against standards, norms.	Low purchase cost easy scoring wide sampling	Development cost job related? culture bias?

[*]Adapted from "An Aid for the Training Evaluator", US Civil Service Commission Bureau of Training; Training Leadership Division, Washington D.C. 20415.

SECTION TWO: DEVELOPING AND DEVELOPING A TRAINING PROGRAMME (cont'd)

STEP FIVE:
CONDUCT TRAINING

Having followed the preceding steps, you are now ready to actually do the training. It may be on-the-job; it may be in a classroom. There may be many group discussions; there may be a great deal of role playing; there may be hours devoted to demonstrations and practice of skills. All such decisions will have been made prior to the training session on the basis of the earlier steps. (REMINDER: Evaluation should be made at each step along the way to ensure that the trainee has mastered one concept or skill before proceeding to the next).

Ideally, the person or persons who act as instructors will have had some training to prepare them for the role of trainer. If not, or if they would like to refresh their memories about the techniques of effective teaching, they are again referred to the texts mentioned on page 101 prepared by the Caribbean Basin Water Management Project.

STEP SIX:
FOLLOW-UP TRAINING

Follow-up involves several important parts. One that will be obvious to you by now is, of course, evaluation of on-the-job performance as a result of the training just given. Follow-up on the job is just as important for the employee returning from an overseas course as it is for the employee completing an internal workshop.

(**)

WARNING: Training is not complete when the trainees walk out of the classroom door. Training is only completed when you have observed those trainees using the new skill at their work places. This observation relates to a second important element of Follow-Up. REINFORCEMENT and FEEDBACK.

SECTION TWO: DEVELOPING AND IMPLEMENTING A TRAINING PROGRAMME (cont'd)

STEP SIX:
FOLLOW-UP TRAINING

A trainee who has learned a skill, but is then not encouraged to use it (reinforcement) is likely to forget it and go back to the older and perhaps mo.. comfortable way of operation. When you make your frequent observations of trainees back at the job site, you must also encourage them and encourage their supervisors to support the new behaviour. If, as may be the case, the trainee is no longer performing as well as he did at the final session of the course, this is your opportunity to provide feedback.

Feedback is simply informing the learner how he is doing. No one can improve if he doesn't know that he is not doing well in the first place. Feedback lets the trainee know how well he is doing.

> IT IS AN ON-GOING DUTY FOR INSTRUCTORS, SUPERVISORS AND MANAGERS TO GIVE REINFORCEMENT AND FEEDBACK.

STEP SEVEN:
EVALUATE AND
ADJUST TRAINING

Having given a training course once, the chances are that you will also want to give it again sometime in the future. You will, of course, organize all the analyses done in preparation of the course and store them in an accessible place for future courses. Before all this information is put away however, do a final analysis. Be ruthless. Ask questions such as:

(**)

CAN THE TRAINEE PERFORM SATISFACTORILY?
- Were some activities too long?
- Were some activities not necessary?
- Did the trainees find some of the work too easy?
- Too boring?
- Too complicated?
- Not relevant?
- Was the course too long?

SECTION TWO: DEVELOPING AND IMPLEMENTING A TRAINING PROGRAMME (cont'd)

STEP SEVEN:
EVALUATE AND
ADJUST TRAINING

- Too short?
- Were the materials suitable?
- Can they be improved?
- How can training activities be changed to make the course more effective next time it is presented?
- What different methods could the instructor use in order to make the learning easier for the trainees?
- Could or should the venue be changed?
- Did the students have the proper pre-requisites?
- Should the pre-requisites be reconsidered?
- What should be added to the course to make it more responsive to the needs of the organization?
- What should be deleted from the course to make it more compact and meaningful?

Answer these questions. Make the necessary changes. File the new improved version away for the next time similar training is required.

Now look around. Analyze. Decide which of the other identified training needs will be the target for the next training programme. Training is likely to be an on-going process in your organization, so

1) examine your training plan and once again
2) prepare for the next training event.

SECTION 3:   GUIDELINES FOR FORMULATING TRAINING PROGRAMMES FOR COMMUNITY-BASED
WORKERS TO PROMOTE WATER SUPPLY AND SANITATION*

INTRODUCTION

The following guidelines provide one approach to helping to integrate the variety of workers, teachers, volunteers, and communicators with water supply and sanitation programmes, in a Primary Health Care context, in rural communities.

It is suggested that readers adapt this approach to meet their own community circumstances. It would also be helpful to refer to WHO's "Guidelines for Planning Community Participation in Water Supply and Sanitation Projects". (A. Whyte - ETS/83.8).

The sector agencies which have the primary responsibility for the implementation of rural water supply and sanitation programmes, generally do not have much dialogue with the village communities nor have the type of personnel who can prepare, educate and motivate a community's interests and involvement. Failure of simple systems and the inability to achieve health benefits of these systems can often be attributed to lack of simple knowledge, motivation, community involvement, acceptance of ownership and other such causes.

Under the Primary Health Care programmes, however, there are several categories of "community-based workers" who can be gainfully used to fill the gap by supplementing the efforts of implementing sector agencies in promoting, educating and motivating the people in the planning, implementation, operation and maintenance of their water and sanitation systems. There is a growing fear that the social and health benefit that should accrue from the Decade programme may not be achieved if these aspects of the programme are not given adequate attention.

If is felt that community-based workers can be prepared to carry out this function at the community level if some hygienic and technical aspects of water and sanitation are also included in their training programme. The guidelines that follow have been drafted to assist in the formulation and implementation of their training programmes.

SCOPE OF REQUIRED TRAINING PROGRAMMES

The scope of education and training required at the community level for promoting water supply and sanitation is quite wide, indeed, as shown in Fig. 1. Among the various inputs required are education of the general public in order to ensure their participation in the project and continued involvement in its operation and maintenance. Besides general education, specific training is needed for two target groups: the community based workers and the technicians from various agencies such as health, water sector, etc. When properly delivered, the above inputs should lead to the desired outputs as shown in the Figure, namely, proper decisions by the community on its preferences for its water sources, the technology to be used in providing the water and sanitation facilities and the methods of financing. Community action is then necessary to ensure the construction of the project, the continued protection of the water source and supply system, and proper operation and maintenance of all the facilities. Gradual behavioural changes in personal and community hygiene practices could also be expected to occur.

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*Prepared by WHO, South-East Asia Regional Office, New Delhi.

FIGURE 1
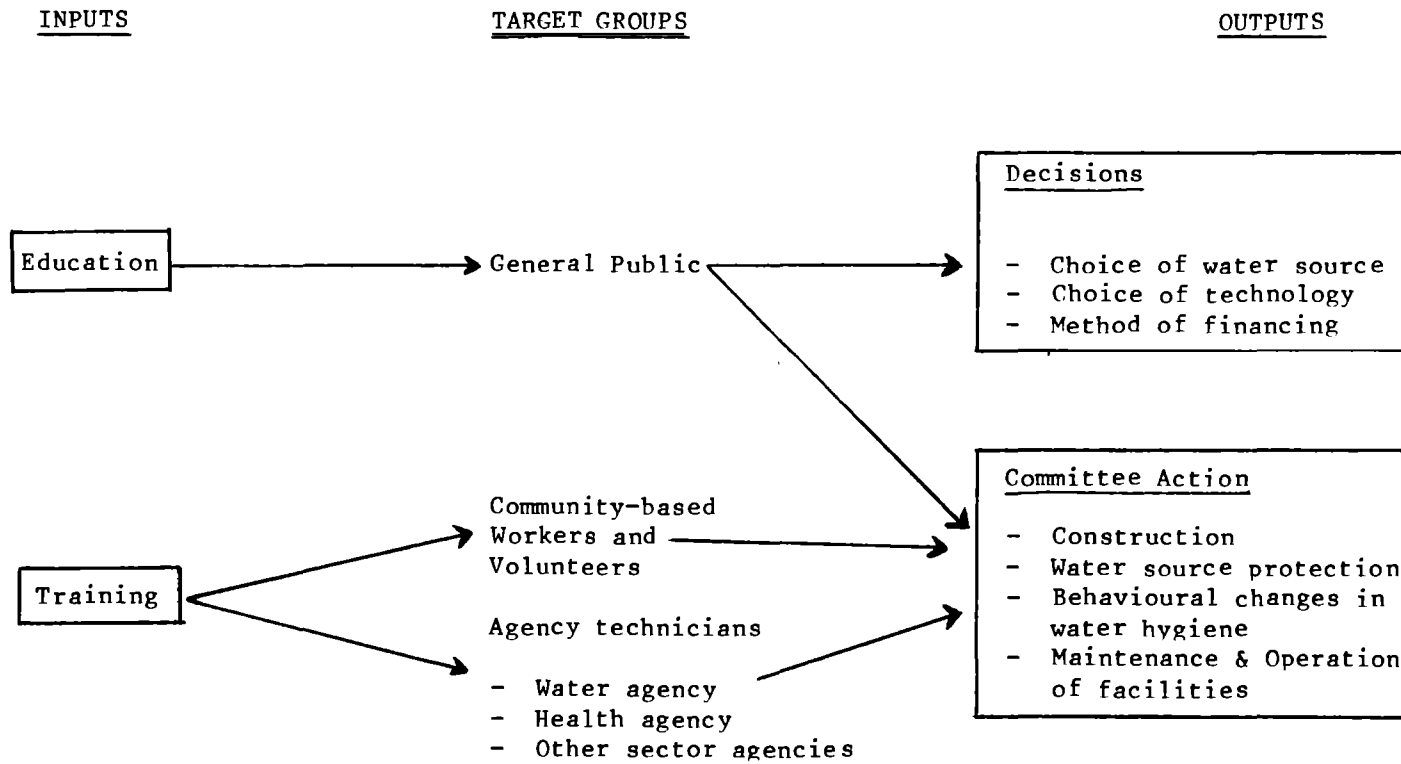
| INPUTS | TARGET GROUPS | OUTPUTS |

Decisions

- Choice of water source
- Choice of technology
- Method of financing

Education ─────────→ General Public

Committee Action

- Construction
- Water source protection
- Behavioural changes in water hygiene
- Maintenance & Operation of facilities

Training ─────→ Community-based Workers and Volunteers

Agency technicians

- Water agency
- Health agency
- Other sector agencies

SECTION 3:   GUIDELINES FOR FORMULATING TRAINING PROGRAMMES FOR COMMUNITY-BASED WORKERS (cont'd)

COMMUNITY-BASED WORKERS

The types of health workers at the community level differ in different countries according to needs and resources available in the country and local employment patterns.   To take primary health care to the people through the promotion and provision if its water and sanitation component, it is very important that the community-based workers should be carefully and properly trained since they constitute the first level of contact between individuals, families and communities.   In most countries they include people with limited education and at best elementary training in health care.   In many developing countries, community based workers also include traditional healers, traditional birth attendants, village volunteers and such other categoreis. They often form part of the local community, get love and respect from them and have great influence on the health practices of the community.   Hence depending upon the availability in the community, the following categories[*] of community-based workers should be included for training in the promotion and utilization of safe drinking water and sanitation programmes:

1.   Village health workers/volunteers/guides

2.   Community health workers/volunteers

3.   Community health communicators

4.   Family health workers

5.   School teachers

6.   Traditional healers

7.   Traditional birth attendants

8.   Village social volunteers

9.   Workers from other sector (Water technicians and
      local skilled persons)

---

[*]It is realised that in some countries the titles and job categories differ though most of the titles commonly used in the SE Asia Region are included in the list.

SECTION 3:   GUIDELINES FOR FORMULATING TRAINING PROGRAMMES FOR COMMUNITY-BASED
WORKERS (cont'd)

TASKS TO BE PERFORMED BY COMMUNITY-BASED WORKERS

     Before attempting to formulate a training programme it is very important
first to understand the different types of tasks (as is explained in Step 2,
page 100) which a community-based worker is responsible for carrying out.
This, in turn, helps to understand the scope of training required for him. It
should also be borne in mind that the trained community-based workers have to
deal at two different levels namely at the individual (and house) level and at
the community level.

     In practice, the community-based workers are mostly busy in the following
kinds of tasks:

   1.   Making home visits on request when somebody is sick in the
        family.

   2.   Dealing with curative aspects of treatment for the diseased
        and care of the patients.

   3.   Carrying out immunization programmes during empidemics.

   4.   Providing first aid to the victims.

   5.   Providing some information on the need of personal and
        community hygiene.

     In the training programmes of community based workers in some developing
countries, they are provided with some preliminary knowledge and training on
safe drinking water and environmental sanitation. But only a few of them
promote this aspect of health education with the individuals and communities
as a part of their day to day activities. Multipurpose workers are sometimes
expected to perform many different tasks but are unable or unwilling to do so
for a variety of reasons, not the least of which is their daily workload.
These, and other factors affecting performance cannot be neglected in a wider
review of the programmes.

     If communities are well served by trained workers and, if due attention
has been paid to the basic needs of communities some "indicators" should
reflect progress in the water and sanitation situation of those communities.

     A few typical indicators are given below.
     1. Was the community consulted prior to provision of Water Supply and
         Sanitation facilities?

     2. Is the Community involved in maintaining its Water Supply and
         Sanitation facilities?

     3. After provision of safe water, are unauthorized water sources closed
         or still used by the people?

---

4. Are Water Supply and Sanitation facilities <u>functioning</u>? (e.g. are
   handpumps in working order? Are latrine water seals broken, etc.?)

5. Is any technical guidance and/or spare part available when wanted?

6. Do health workers know whom to approach depending upon nature of
   problem?

7. Is <u>use</u> actually made of Water Supply and Sanitation facililties?

8. How is water transported from the source and stored in the home from
   the point of view of likelihood of contamination?

9. What is the disinfection mode, if any, and its frequency?

10. Is any special precaution taken in the home for water served to
    children upto age 5?

11. Is the community (with or without help of health workers) capable of
    undertaking a sanitary survey of its water sources to determine
    contamination likelihook (distance from pollution sources, changes in
    land use, and such other features)?

12. Are water accumulations in channels, roadside puddles, etc. observed
    in small numbers or are they widespread?

This list is not complete but only indicative of the type of indicators
one could take into account in judging progress in the field. Knowing the
indicators one could determine whether the syllabus included under each module
is adequate for the purpose. After all, in the final analysis, progress at
the community level is the true measure of an effective programme for water
and sanitation as a component of primary health care, and must provide the
necessary feedback for reviewing the programme including its training aspects.

Ideally, the community-based workers have to be trained for carrying out
the necessary tasks related to the following objectives:

I.   <u>Health and hygiene promotion</u>

          (i)   To promote behavioural change by awakening the communities to
                the importance and need of hygienic practices for health care.

          (ii) To improve capability of communication between the community
                health workers and the communities.

          (iii) To improve knowledge of ways and means of ensuring safe water
                supply and proper sanitation.

          (iv) To promote community participation in planning, constructing
                and operating WSS facilities.

SECTION 3: GUIDELINES FOR FORMULATING TRAINING PROGRAMMES FOR COMMUNITY-BASED WORKERS (cont'd)

II.   Construction of facilities

           (i)   To provide knowledge on basic and appropriate construction techniques to the community workers and skilled workers to enable them assist the communities in constructing the facilities.

           (ii) To demonstrate ways and means of mobilizing community participation in construction.

III.   Operation and maintenance facilities

           (i)   To impart basic skills in operation and maintenance of WSS facilities at the community level.

           (ii) To demonstrate ways and means of mobilizing community participation in operation and maintenance.

     It is evident that all community-based workers do not have to be trained in all the three areas just described. Some could be trained for only one area (e.g. Health hygiene promotion) while others may be trained for two areas if desired. Thus, a modular arrangement would be useful to have, with each module covering one of the above areas.

A TYPICAL TRAINING PROGRAMME

     Based on the objectives enumerated above, a typical training programme can be developed for community based workers to promote water supply and sanitation. Figure 2 lists three "modules" together with the type of persons suitable to be trained in each case, the categories of technicians, etc. from amongst whom the "trainers" can be mobilized, and the recommended duration of each course.

     Figure 2 constitutes a summary of the training programme suggested for community-based workers. Further details of topics that could be included under each module are listed from page 145.

Logistic support

     Adequate logistic support needed to organize and conduct such a training programme must be given due consideration as it can greatly affect the outcome. Such support is needed at least in the following aspects:

     1. Transport facilities.

SECTION 3:   GUIDELINES FOR FORMULATING TRAINING PROGRAMMES FOR COMMUNITY-BASED WORKERS (cont'd)

2. Teaching aids (charts, drawings, manuals, etc.) and related equipment.

3. Demonstration units for typical construction methods and repairs/ maintenance jobs.

4. Materials and facilities for construction of typical units.

5. Storage space.

Follow-up and evaluation

Follow-up activities necessary to ensure successful training and the criteria on which training can be evaluated in due course, have also been listed under each module in Figure 2.

The availability of experienced resource persons cannot be over-emphasized. Both course content and style of presentation can be reviewed from time to time and often improved at little or no extra cost.

FIGURE 2

FIGURE 2

Item	Module I	Module II	Module III
A. Title of Module	Health & Hygiene Promotion	Construction of WSS facilities	Operation & Maintenance of WSS facilities
B. Objectives	(i) To promote behavioural change by awakening the communities to the importance and need of hygienic practices for health care. (ii) To improve capability of communication between the C.H. workers and the communities. (iii) To improve knowledge of ways and means of ensuring safe water supply and proper sanitation. (iv) To promote community participation in planning, constructing & operating WSS facilities	(i) To provide knowledge on basic and appropriate construction techniques to the community workers and skilled workers to enable them assist the communities in constructing the facilities. (ii) To demonstrate ways and means of mobilizing community participation in construction.	(i) To impart basic skills in operation & maintenance of WSS facilities at the community level. (ii) To demonstrate ways and means of mobilizing community participation in operation & maintenance.
C. Persons to be trained Community-based volunteers/ workers	Health leaders or guides Community health volunteers/workers Community health communicators Family health workers; School teachers Traditional healers & birth attendants	Community volunteers/workers Community skilled workers (masons, smiths, etc.)	Community volunteers/workers Community skilled workers (masons, smiths, etc.) Community Development Committee members School teachers Health leaders/guides
D. Trainers	Sanitarians; Water technicians; Auxiliary health workers; Health assistants; Midwives/ nurses; Experienced C.H. workers/volunteers Note Module I will first be offered to above category to prepare them (after field experience) as "trainers" for community-based volunteers/workers.	Sanitarians; Water technicians; Experienced skilled workers/volunteers Note Module II will first be offered to above category to prepare them (after field experience) as "trainers" for the community-based volunteers/workers.	Sanitarians; Water technicians, Experienced skilled workers/volunteers Note Module III will first be offered to above category to prepare them (after field experience) as "trainers" for the community based volunteers/workers.
E. Duration	1-2 weeks	3-4 weeks Note Prior to exposure to Module I is not essential.	1-2 weeks Note Prior exposure to Module II is not essential but recommended wherever possible.
F. Follow-up Activities i) Supervised field work. ii) Refresher Courses (with some advanced topics).	Recommended for 6-8 months after completion of Module I. 1-week refresher course recommended every 2-3 years after completion of first exposure course.	Recommended for 6-8 months after completion of Module II. 1-week refresher course recommended every 2-3 years after completion of first exposure course.	Recommended for 6-8 months after completion of Module III. 1-week refresher course recommended every 2-3 years after completion of first exposure course.
G. Evaluation	(i) Observation of Response from individuals & community in actually practising personal hygiene themselves. (ii) Decrease in insanitary surroundings. (iii) Actual participation of the community in planning, construction & operating WSS facilities. (iv) Modes of transportation of drinking water from source and possibility of contamination. (v) Impact on the community health standard through improved clean environment and reduction in infection rate especially among children.	(i) Efficiency of utilization of knowledge in the proper construction of WSS facilities. (ii) Extent of community participation secured in the provision of facilities (iii) Satisfactory consultation with individuals & community prior to provision of facilities.	(i) Extent of community involvement in operation & maintenance of its water and sanitation facilities. (ii) The existing condition of community water supply and sanitation facilities (its operability & state of maintenance. (iii) Ability to give technical guidance to community whenever required. (iv) Efforts to keep adequate stock of spare parts in stock. (v) Extent of usage made of unauthorized sources of unsafe water. (vi) Capability of the community to undertake sanitary surveillance for protection of the drinking water source.

MODULE 1

Health and Hygiene Promotion (Duration: 1-2 weeks)

1. **Personal Hygiene**

   (a) Locally endemic diseases and value of personal hygiene in preventing them.

   (b) Need for washing hands clean with soap and water always after work and before meals and after use of toilets.

   (c) Need of cleansing plates, glasses, utensils, spoons, etc., for water- and food-handling.

   (d) Use of clean and washed personal clothes.

   (e) Need for taking regular baths or other methods of cleaning the body at regular intervals.

   (f) Need for eating well cooked and heated food and need of preventing flies from coming into contact with food.

   (g) Need for taking safe drinking water (safe means not contaminated from pollution from human and animal excreta and waste disposal).

2. **Community Hygiene**

   (a) Locally endemic diseases and their causes through poor hygienic community practices.

   (b) Need for getting the food-handlers in such public eating places to wash their hands clean after the use of toilets for serving food and to use clean spoons, plates, glasses for handling food.

   (c) Need of using clean and safe drinking water in clean glasses for consumers and to avoid touching (contaminating) the inside of the clean glasses with hands before serving.

   (d) Need of preventing flies, worms, insects, rats, etc., and animals eating the food or touching the food before and while eating.

   (e) Need of protection of food from the sun, wind and rain.

   (f) Need to prevent spread of diseases from food handlers in the public eating places through physical health examination of food handlers to see they are not carriers of diseases.

   (g) Need to use clean hands and clean storage spaces by traders handling public food for sale in community markets and to protect it from flies and other insects with proper covers.

MODULE I (cont'd)

2. Community Hygiene (cont'd)

(h) Need of taking boiled or cooked foods, especially where sewage is used as fertilizer.

(i) Need of keeping the premises and drains clean of garbage and rubbish waste, dirty water etc., to prevent breeding and harbourage of flies, mosquitoes, insects and rodents and need to dump such waste in common and protected pits away from wells, springs, etc.

3. Drinking Water and Excreta Disposal

(a) Different types of sources of water normally used by the people like spring, river, wells (tubewells), ponds, lakes, rain water and snow, and their different qualities.

(b) Modes of contamination of drinking water, from dirty roofs and storage tanks for rain water, in transportation, storing, in use of contaminated pots, ropes, buckets (in wells) and simple methods of disinfection of drinking water such as boiling.

(c) Modes of transmission of diseases like diarrhoea, dysentary, cholera, worm infestation, etc., and methods of prevention.

(d) Modes of pollution of drinking water sources and its prevention from waste disposal, excreta disposal, surface water run-off, from human and animal contacts by fencing or other; need of sanitary surveillance of drinking water sources.

(e) Modes of transmission of communicable diseases by indiscriminate defecation in the open area through flies, through pollution of drinking water sources and ground around by surface run-off, by the children playing around in the polluted ground through hands and feet.

(f) Methods of proper disposal of human excreta through sanitary latrines and simple low-cost sanitation facilities properly constructed and maintained clean.

(g) Use of wastewater draining from wells, and family water system to irrigate family gardens planted with vegetables, and recovery of resources from waste disposal wherever applicable.

4. Community Capability

(a) Use of simple charts and available audio-visual aids and local materials to facilitate understanding of above aspects and communicating them to others.

(b) Need for organizing meetings, talks, demonstrations, etc. using specific approaches to facilitate communication to various community groups (e.g. women, elders, children, etc.).

(c) Demonstration of ways and means of mobilizing community involvement. Listening to their concerns; shaping their message to build upon those concerns.

MODULE II

Construction of WSS Facilities (Duration: 3-4 weeks)

1. Construction

    (a) Typical types of simple (appropriate technology) structures needed to
        be constructed in local area for (i) water supplies from springs,
        wells, ponds, rain water systems, etc. (including fixing of
        handpumps); (ii) excreta disposal on site; (iii) wastewater drains;
        (iv) soakage pits.

    (b) Construction techniques related to (a) above, pointing out health
        hazards resulting from poor construction.

    (c) Health hazards of wrong location of structures (e.g. location of
        latrines very near and upstream of wells).

    (d) Construction consideration in choice of location (e.g. type of soil
        and depth of ground water affecting foundations and excavations.

    (e) Available local sources of construction materials and their
        suitability. Estimation of quantity of materials required for
        different types of structures.

    (f) Ability to secure advice, assistance, clarification on construction
        aspects from referral centres.

2. Community Involvement

    (a) Use of simple charts and devices to facilitate understanding of
        above aspects and communicating them to others.

    (b) Demonstration of ways and means of mobilizing community involvement
        for labour and for transporting essential construction materials not
        locally available.

MODULE III

Operation & Maintenance (Duration: 1-2 weeks)

1. Operation & Maintenance

    (a) Periodic Inspection requirements for sanitary survey of water sources
        and typical, locally used water supply facilities such as:

            (i) Dug and tube-wells with handpumps
           (ii) Spring sources; protected ponds
          (iii) Gravity piped supplies with standposts
           (iv) Disinfection systems
            (v) Rain water systems.

MODULE III (cont'd)

(b) Periodic inspection requirements of typical, locally used sanitation facilities such as:

(i) On-site excreta disposal units
(ii) Open drains
(iii) Soakpits

(c) Undertaking simple repair and maintenance tasks for locally used equipment and facilities from among (a) and (b) above.

(d) Ability to draw water samples in sterile fashion and transport to testing laboratories. Ability to follow-up on adverse reports of water quality by undertaking specific sanitary surveys, inspecting disinfection and other equipment/arrangements and adjusting disinfection dose.

(e) Requirements of spare parts and tools to be stocked at site.

(f) Ability to secure advice, assistance, clarification on operation and maintenance difficulties from referral centres, and provide feedback to the centres for improving technology, etc.

2. Community Involvement

(a) Role of community members in operation and maintenance.

(b) Use of charts and simple devices to help communicate operation and maintentance requirements to the community-based workers and volunteers.

(c) Demonstration of ways and means of mobilizing community participation in operation and maintenance activities, transporting and storing spare parts, disinfectants, etc.

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4. <u>EVALUATING PROGRAMME EFFECTIVENESS -- BOTTOM LINE RESULTS</u>

INTRODUCTION:

Many managers simply make an assumption that all training is good training and that all good training will naturally benefit the organization. NO SUCH ASSUMPTIONS SHOULD REMAIN UNTESTED. Managers are encouraged to evaluate programmes and ask some hard questions.

<u>Is the water supply safer as the RESULT of training?</u>

<u>Has leakage been reduced as the RESULT of training?</u>

<u>Have the number of call-backs on repair work been reduced as the RESULT of training?</u>

<u>Has a greater footage of water main been installed as a RESULT of training?</u>

Only when the manager has facts and figures to supply answers to the questions like those above can he truly know whether or not training has been beneficial. In order to get those answers, he needs to make an evaluation.

Here, it is necessary to measure such things as the quantity and quality of work and determine if that work is actually contributing to the accomplishment of goals. Two broad questions need to be asked:

Are the results those that were intended?

Do the results add to the accomplishment of goals?

To evaluate a project, one must know what the goals of that project are. For example, a training course to teach plumbers how to conduct a leak detection survey has that as a goal. But there is also a broader goal or objective to improve water distribution by eliminating as much leakage as possible.

Understanding that objective, ensures that evaluation will not only include whether or not the plumbers successfully learned how to perform the steps of a leak survey, but whether that knowledge and those skills actually affected the larger objective. For example, has there been less water wastage as a result of the training course? Has money been saved?

4. EVALUATING PROGRAMME EFFECTIVENESS -- BOTTOM LINE RESULTS (cont'd)

THE STEPS OF EVALUATION

The general approach to evaluation consists of three steps:

STEP ONE: Decide what is to be evaluated and what data will
                         be necessary to make the evaluation.

STEP TWO: Collect the information needed to provide evidence
                         for the evaluation.

STEP THREE: Analyze the information.

STEP ONE: Decide what is to be evaluated and what data will be necessary to
make the evaluation.

When doing an evaluation, one looks at the objectives, goals and targets
of a programme or project in order to know what is to be evaluated. As in the
earlier example of the training course given for leak detection, there will be
both general objectives and intermediate goals. Planning what data will be
required in order to determine if the goals and objectives have been met might
look like this*.

TO EVALUATE THE ACHIEVEMENT OF:	THE FOLLOWING DATA IS NECESSARY:
Plumbers' ability to perform a leak detection survey.	Performance appraisal at completion of training for all plumbers who participated in the course.
	Reports from supervisors who have observed performance of plumbers as they do leakage surveys on-the-job.
Reduction of water wastage in the distribution system.	Statistics showing estimated number of gallons of wastage in a specific district before training of plumbers.
	Statistics showing estimated number of gallons of wastage in the same specific district after training of plumbers.
	Percent reduction in water losses in the district.

* The following format as well as other segments in this evaluation
discussion have been adapted from EVALUATION, A Training Course for National
CDD Programme Managers, WHO, 1981.

4. EVALUATING PROGRAMME EFFECTIVENESS -- BOTTOM LINE RESULTS (cont'd)

The preceding table illustrates the type of data that might be useful in evaluation of a training course for leak detection. In this case, data must be collected to give information about (1) the intermediate goal of teaching plumbers the skills of leak detection and (2) the broader goal of reducing water wastage in the distribution system.

In addition to evaluating the achievement of large goals and objectives, evaluation is also important when measuring performance of an individual and of an entire system. Performance measurement is the essence of evaluation. Such a measurement is called a Performance Indicator. The following table gives some typical performance indicators which could be used to measure the performance of an individual (in this example, a water laboratory technician) and other indicators used to measure the performance of a system (in this case, the water quality surveillance system).

Water Lab Technician		Water Quality Surveillance System	
Tasks	Performance Indicators	Tasks	Performance Indicators
Take samples from 40 points each week	Sampling recorded observations	Enforcement	Records of action
Test water quality	Test results recorded	Develop policies and regulations	Evidence of application of regulations
Double check on positive samples	Positive test results by two test reports	Prepare drinking water standards	Adopted standards and the facilities to monitor and control them
Compile reports	Reports available	Staff training	Trained operators
Maintain stock of supplies	Regular expected requisitions	Sanitary surveys	Records of regular inspections
		Sampling and monitoring	Reports and activity
		Reporting requirements	Properly formulated and organized report system
		Control quality of water supply	Health of population

4. EVALUATING PROGRAMME EFFECTIVENESS -- BOTTOM LINE RESULTS (cont'd)

STEP TWO: Collect the information needed to provide evidence for the evaluation.

        In Step One, the performance indicators that illustrate whether the tasks of an individual or of a system have been performed are listed. If you are evaluating the achievement of broader goals and objectives, the necessary data to determine their achievement is also listed. In Step Two, you collect that data. There are several means of gathering information.

1. Routine Information Systems -- A routine information system is one that is used to collect data on a regular basis. Such a system for a leak control programme would probably involve regular reporting by managers in charge of the distribution system regarding the number of gallons of water used each day. A routine information system for a training programme would probably involve the instructor's standard end of course report on the ability of each trainee. Supervisors of the newly trained employees may also be required to submit routine reports on the on-the-job performance of all workers who have had special training.

2. Random Information Systems -- Sometimes it is difficult to collect data from all sites or districts. A random information system is a system used to collect data from reporting sites selected for their representativeness. If information is wanted on water usage in villages with populations of less than 2,000, not all villages need be investigated. A sample of representative villages will usually provide an adequate data base.

3. Special Studies -- Special Studies are useful for collecting data which is not collected on a routine basis. A programme review of the entire HRD process might be a special study. Another study might allow for a comparison of the performance of newly trained workers with un-trained workers.

STEP THREE: Analyze the information.

        The first action in information analysis is compiling and organizing the data. To compile data, transfer it from individual reports to summary reports and graphs.

        Data analysis is perhaps most important when used to evaluate the achievement of the objectives and goals. If, for example, ones research shows that the plumber trainee successfully completed the course in leak detection, but there is no resulting drop in the amount of unaccounted water, ones analysis probably points to a problem somewhere in the organizational system.

4. <u>EVALUATING PROGRAMME EFFECTIVENESS -- BOTTOM LINE RESULTS</u> (cont'd)

A more desired scenario would be when ones analysis clearly shows that not only have the plumbers mastered the skills needed to perform a leak survey but that there is a corresponding percentage drop in unaccounted water loss. In this situation, further analysis can provide one with actual monetary data showing how much money has been <u>saved</u> by the training course. Managers often think of training in terms of how much it costs rather than the resulting financial benefits.

During this analysis step one may also be looking for trends. One may find clues that will help identify the causes of the trends. For example, one might discover that trainees with a particular educational background consistently do better in a treatment plant operators' course. What does this indicate? Similarly, one may find that courses taught by one instructor have a lower success rate than courses taught by another instructor. What use can one make of this information?

<u>SUMMARY</u>

Section 1 of this chapter has discussed the seven steps in the production of an Annual Training Plan. The Training Plan makes it possible to perceive Human Resources Development as an organized and on-going method of meeting the real manpower needs of the water supply and sanitation sector.

Section 2 provided guidance for the development of in-house training programmes.

Section 3 provided guidelines for formulating training programmes for community-based workers to promote water supply and sanitation.

Section 4 provided a three-step approach to the evaluation of programme effectiveness.

Chapter 4

Management

WORLD HEALTH ORGANIZATION

HUMAN RESOURCES DEVELOPMENT

HANDBOOK

GUIDELINES FOR MINISTRIES & AGENCIES
RESPONSIBLE FOR WATER SUPPLY & SANITATION

TRAINING

PLANNING   MANAGEMENT

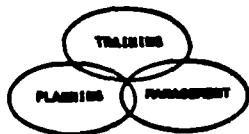INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE

highly
recommended

TABLE OF CONTENTS

IS = INFORMATION SHEET

TABLE OF CONTENTS (cont'd)

1. INTRODUCTION

The Decade's biggest resource is people. But do we make the best use of them? The number of broken down or badly functioning water supply and sanitation systems suggests not.

Shortage of skilled manpower tops the list of constraints identified by developing countries as hampering more rapid sector progress. Yet, there is also ample evidence of overstaffing in many undertakings.

The diagnosis of the HRD Task Force is that a much more integrated approach is needed in human resources development, linking training with organizational changes, career development, and planning and management systems. It is on this critical component of management that we now need to concentrate.

In the overview chapter, the interdependence of Planning, Training and Management was highlighted. Then, in the chapters on Planning and Training it was stressed that HRD planning, to be effective, had to be integrated with the organization's business and operating planning and preferably also within a strategic context. It was seen that planning and the training programmes that resulted could not occur in a vacuum and needed to be managed in a systematic way.

The efficiency with which any organization can be operated will depend to a very considerable extent upon how effectively its personnel are managed. Since all organizations, regardless of their size, must operate with and through people, the management of such organizations is basically a process of managing people.

The following quotation on human resources management is taken from the Basic Strategy Document[+]:

"Reorientation of human resources development, in water and sanitation, to achieve the decade goal, requires radical changes in the attitudes and skills of managers. Motivating employees and enhancing their job satisfaction are essential elements of good management. The concern of those who manage human resources should include: the formulation of policies with respect to the recruitment, employment, and retention of human resources; the monitoring of requirements for various skills; the appropriate distribution of the workforce, bearing in mind the needs of underserved populations and the skills required to serve these needs; the supervision of employees and the provision of continuing education and training to help improve their performance; the provision of material incentives; the provision of career-development opportunities; the evaluation of the performance of employees; and the provision of the necessary logistical support."

[+] Basic Strategy Document on Human Resources Development, Recommendations of the Task Force of the IDWSSD Steering Committee for Cooperative Action, (EHE/82.35), WHO, 1982.

1. __INTRODUCTION__ (cont'd)

There are some who may see in the above statement the seeds of controversy. Yet it has got to be faced in the light of the prevailing situation. The Pan American Health Organization/WHO described the prevailing situation starkly in their publication, __Drinking Water Supply and Sanitation: The International Decade in the Americas,__* as follows:

"In the history of many countries, the water systems of important cities represent significant achievements, a source of national pride, and the symbol of a high degree of development.

Today that situation has changed dramatically. Few countries would currently consider their water and sanitation sector among the most developed and satisfactory. Indeed, most indicators of institutional performance demonstrate that few water agencies could be considered successful in achieving their goals....

Lack of money and skilled human resources are generally singled out as the main obstacles to achieving better performance. Although no one could doubt the importance of these two factors, they do trigger a number of questions. Are the human resources presently available being used to capacity? Would more money and people solve existing problems, or simply create new ones? Are technically biased managers equipped with the necessary managerial skills to adequately cope with the complexities of shrinking budgets, public relations and motivating staff? Are institutions prepared to provide their people with the conditions and tools necessary to perform adequately? In many cases the answer to these questions would have to be an unqualified "No".

These words from PAHO/WHO could just as easily have been used to describe the situation in other regions of the world. It calls for a new and radical look at how best to deploy human resources, at how best to plan for, train and manage people. It could well mean a major overhaul within the often out-dated civil service system that permeates many water supply and sanitation agencies. This may be too huge an undertaking to contemplate for some. But a start needs to be made and there is no reason why water supply and sanitation should not become the model for change. It needs leadership at the political level and certainly at the top level of management. At the political level, of the type of leadership shown in adopting the World Health Assembly water supply and sanitation resolution WHA 34.25 in May 1981. Governments accepted the need to change from sophisticated to appropriate technology; from a concentration on urban construction to programmes for the underserved peri-urban and rural population; from technician training to training Primary Health Care oriented workers; and by associating communities in all stages of projects. Implementation of the water and sanitation resolutions adopted by the World Health Assembly will be directed by sector managers. The re-orientation called for in the resolutions will be carried out by the same managers. __Thus, it is self evident that top-level managers in water and sanitation programmes have a "MAKE" or "BREAK" influence on achieving sector objectives.__

All this can be done if the will is there, and above all if a reorientation of management style and practices takes place. But it will take time and it needs to be planned. The chapter lists many tools and approaches that need to be considered, much like a menu, choosing what is most appropriate. They are best introduced in incremental stages.

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* Environmental Series No. 3, PAHO/WHO, Washington, 1983.

1. INTRODUCTION (cont'd)

Before developing further each aspect of the personnel policies mentioned it may be helpful to make five essential points to put the introduction into context.

Successful organizations have found that:

1. Human Resource Management embraces all who manage people.

2. All managers have a two-fold responsibility; for task management and for people management.

3. It is necessary to balance the needs of the organization with the needs of the employees, to obtain their commitment.

4. Balance, and the culture that goes with it, is an overall guiding principle which includes style of management and shared values.

5. Personnel policies need to be designed to attract, retain and motivate good people and be consistent with each other.

Now, to expand on the five essential points:

First, human resources management embraces all managers who manage people whether they are designated as training, personnel, staff, operational or general managers. It also embraces those who, whilst not given the title of manager, nevertheless manage people, e.g. supervisor, foreman.

Secondly, all of these managers have a two-fold responsibility, for task management, on the one hand, and for people management, on the other. Successful organizations have learned that it is essential to help their managers to strike a balance between these two responsibilities.

PEOPLE
MANAGEMENT

TASK
MANAGEMENT

It is a common experience in the water and sanitation field to find too much emphasis on the task side and not enough on the people management side i.e. the people who perform the task. There are notable exceptions but in general a better balance seems to be required.

Thirdly, putting it in another way, it means balancing the needs of the organization with the needs of the employees that make up the organization. To do this well requires that individual managers need to understand not only the needs of the organization in a technical and operational sense but also the needs of the employees. Primarily, such managers have discovered that this is the way to obtain the involvement, commitment - the motivation - of their employees to their work and to their organization. This motivation being the prerequisite for enhanced

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1. INTRODUCTION (cont'd)

performance. It could be said that it has been seen to pay an organization to
be fair, consistent and balanced. It is also clear from the experience of
less successful organizations that if management does not achieve a balance
between the needs of the organization and the needs of the employees others,
such as trade unions and staff associations, will attempt to do so.

Fourthly, this is not to suggest that balance is possible in every action
of every individual manager. It seems, that successful organizations use this
need for balance as one of a number of major objectives to be achieved and
they apply it as an overall guiding principle against which almost everything
they do can be judged. Some organizations think of this as a management
philosophy, others as a pervading culture[+] or ethos but whatever it is
called, it is known to include tone and style of management and the
development of shared values. Time taken by the Board of an organization to
think through what each of the major objectives should be has been found to be
time well spent. They then need to ensure that all managers and employees
understand these objectives. This means that open and clear lines of
communication, together with regular opportunities for dialogue and
consultation are essential.

Fifthly, it is in the Personnel Policies[*] of an organization and
management's ability of putting them into everyday operation that this culture
and this balance shows itself. Successful organizations have found that
personnel policies need to be written and practiced in such a way that good
people are attracted to the organization, wish to be retained by it and are
motivated to help it achieve its goals. Policies, flowing from the major
objectives, therefore need to be carefully thought through before they are
written to ensure that all employees and management can easily understand what
is intended. Then they need to be practiced by all members of management, not
just personnel managers, in a fair and consistent way with the minimum gap
between policy and practice, between intention and actuality. Unfortunately
there always seems to be a gap, the trick is to keep it to an absolute minimum.

Each element of the Personnel Policy must be consistent with each of the
others. They should make sense, to management and employees alike and be part
of a coherent and integrated approach. In short, they should fit into the
organization's own particular culture. It is this culture, the guiding
principles driving management thinking, which is the base against which new
policies and practices can be tested before they are introduced.

[+] Peters, Thomas J. and Waterman, Robert H., In Search of Excellence, 1983.

[*] Personnel Policies are alternatively described as Human Resources Policies
by some. For the sake of simplicity and consistency we will use, e.g. the
description Personnel Policy. However, we do see the Personnel Function as
being synonymous with Human Resources Function, as a broad based, major
function of an organization, reporting in to the Chief Executive.

1. INTRODUCTION (cont'd)

In conclusion, readers are asked to bear in mind the above five essential points when thinking about ones own organization and in reading the rest of the chapter which is devoted to the major ingredients of Personnel Policies. It should be obvious from the foregoing introduction that these policies must be viewed in the widest possible sense as they are applicable to everyone in the organization. They are not the sole responsibility of any one function although, clearly, they should be the major responsibility of the Personnel Function. What follows is not intended to be a comprehensive treatise on every aspect of Personnel work. There are numerous books on that subject. Rather, it is a reminder of the subject areas that should be considered and their importance in the whole field of managing human resources.

2. ORGANIZATION OF PERSONNEL FUNCTIONS

All managers and supervisors, as we have emphasized, have the responsibility for human resources management. Many modern organizations also have a personnel staff whose job it is to provide their managerial and supervisory colleagues with professional assistance in each of the human resources fields of activity. Many of the duties which have been traditionally identified with personnel management are "operational", e.g. record keeping, accepting manpower requisitions, coordinating recreational activities, producing staff rosters, perhaps even job classification and personnel selection. Today however, many of the activities of personnel management require consultation with and cooperation of other top management, e.g. analyzing staffing needs and developing plans; developing policies, procedures; approving job and salary plans.

In many organizations, it has been found useful and necessary to help set up and then work with committees representing different groups of employees, who meet regularly to discuss problems or suggest new areas for action. Examples include those developed for broad reviews of personnel policies, job classification, performance evaluation etc. They might be described as, e.g. Joint Advisory Councils, or Joint Shop Stewards Committees depending on a number of factors one of which is whether the agency is unionised. These committees are generally situated at the level of top management or their closest advisors.

To carry out the personnel activities described above, smaller agencies may want to create a position in personnel management for the first time. Other may wish to consider upgrading the function from the "operational" type of work indicated above to include policy and planning work too. It has been found that the personnel function should report directly to the General Manager if the necessary "balancing" emphasis is to be achieved.

An organization chart from one of the Thailand agencies appears on the next page (IS-01). It provides an example of the organizational arrangements for administering the personnel function. Observe that the Training function reports directly to the Chief Executive whilst Personnel comprises a separate function. In other agencies, and particularly other industrial fields in developed countries, these personnel services have combined with training and other personnel areas to form a broader based Personnel Function, reporting to the Chief Executive - such as is described in section 3, Personnel - Major Areas of Activity on page 163.

INFORMATION SHEET: IS-01

ORGANIZATION STRUCTURE PROVINCIAL WATER AUTHORITY

THAILAND
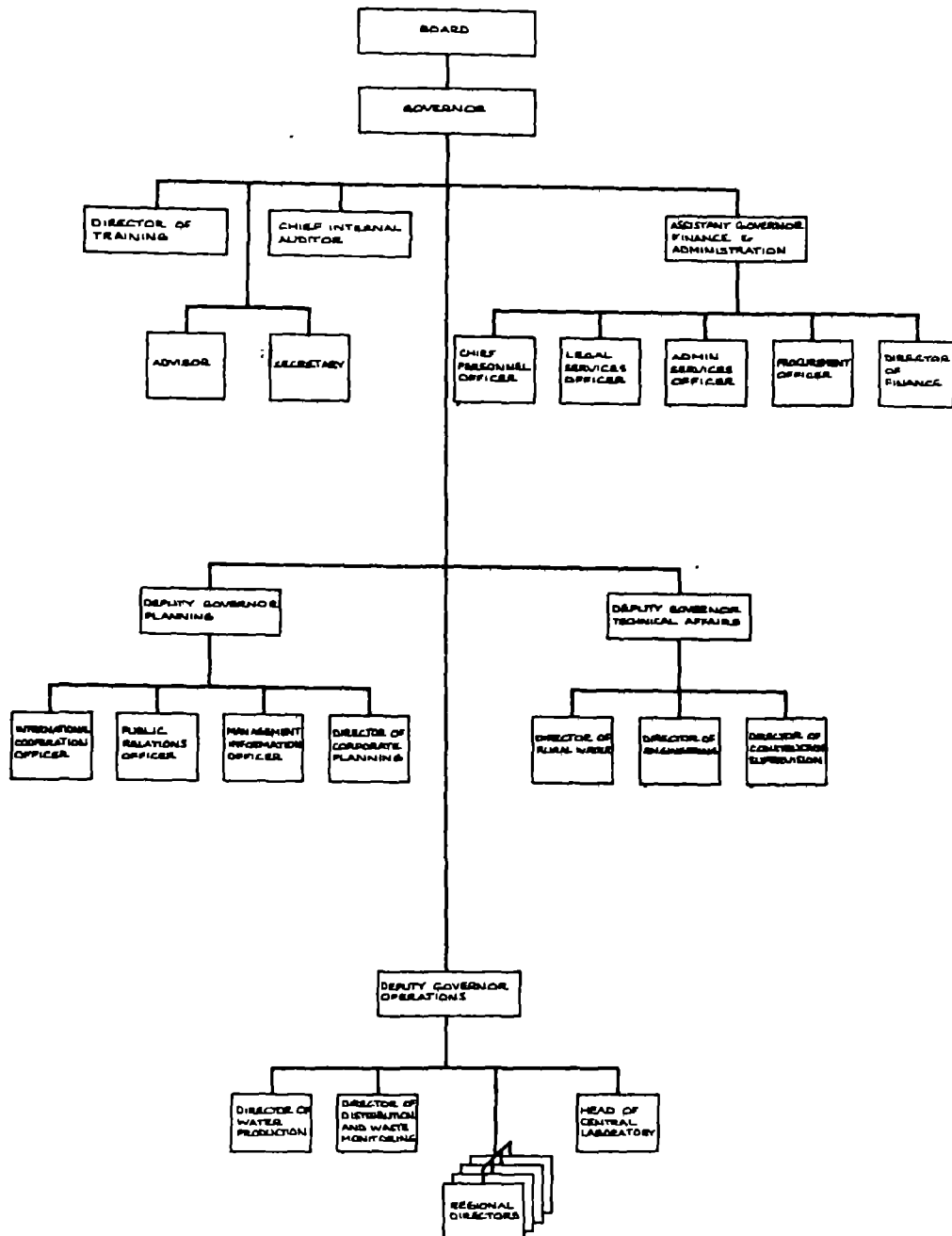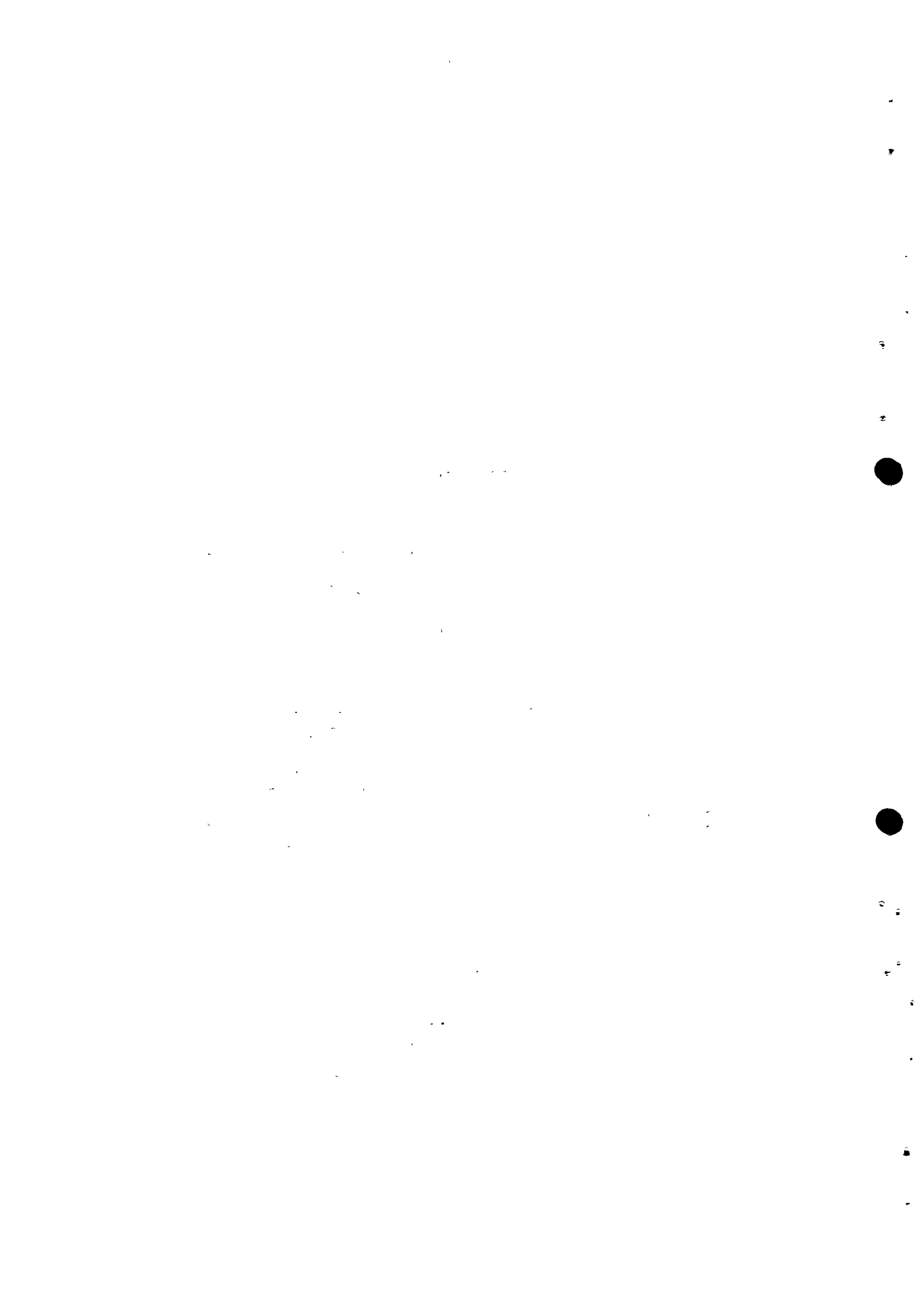
2. ORGANIZATION OF PERSONNEL FUNCTIONS (cont'd)

A small to medium sized organization may organize the personnel function as follows: with as little as one person per area of activity and sometimes even one person being responsible for more than one area of activity, according to size and need.

```
┌─────────────────────┐
│ Personnel           │
│ Function            │
└──┬──────────────────┘
   │
   │          ┌────────────────────┐
   ├──────────│ Job                │
   │          │ Evaluation         │
   │          └────────────────────┘
   │
   │          ┌────────────────────┐
   ├──────────│ Recruitment and    │
   │          │ selection          │
   │          └────────────────────┘
   │
   │          ┌────────────────────┐
   ├──────────│ Training           │
   │          │                    │
   │          └────────────────────┘
   │
   │          ┌────────────────────┐
   ├──────────│ Records            │
   │          │                    │
   │          └────────────────────┘
   │
   │          ┌────────────────────┐
   ├──────────│ Employee/Labour    │
   │          │ relations          │
   │          └────────────────────┘
   │
   │          ┌────────────────────┐
   └──────────│ Advisory           │
              │ services           │
              └────────────────────┘
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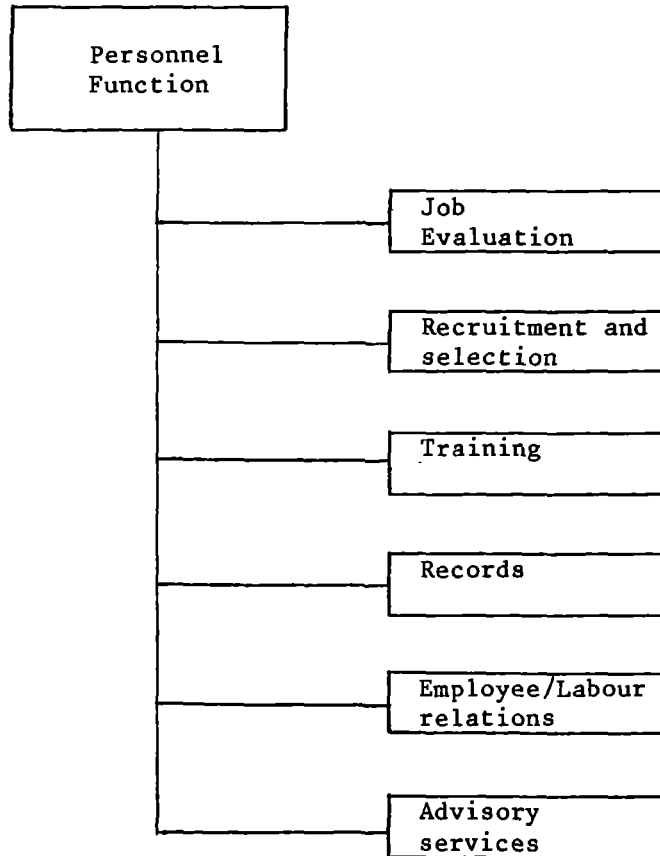
An even fuller statement of activities of a Personnel Function is presented on the next page. That figure may be helpful in reviewing the current services and capabilities of ones own Personnel Function. It may, of course, be much broader than one needs at present, but its organization will suggest future activities.

Regardless of the organization structure, the Personnel Function must work closely with line managers and supervisors and the other departments in the agency if the organization is to be effective.

3. PERSONNEL - MAJOR AREAS OF ACTIVITY

The size and structure of an organization, together with the nature of the personnel programme that it is to administer are important factors in determining the structure of the Personnel Function. The following figure illustrates some of the divisions into which human resources may be organized and the activities that each division may well perform. Some of the activities shown here are sometimes included in other of the divisions listed depending on the emphasis required.

```
                    ┌─────────────────────────────┐
                    │     PERSONNEL DIRECTOR       │
                    └─────────────────────────────┘
```

Policies
Manpower Development Plan
Records & Reports
Statistical Analysis   PERSONNEL
Morale Surveys   PLANNING
  & Personnel Research
 	
1
	Policies
	Communication &
	  Consultation
	EMPLOYEE Collective
	RELATIONS Bargaining
	Legislation
	Grievances/Appeals
	Discipline
	Suggestion Schemes
	
	2

Interviewing Testing Recruitment Placement - Selection EMPLOYMENT Orientation - Induction Transfers Terminations Records **3**	Benefits/ Pensions Insurance EMPLOYEE Publications SERVICES Counselling Recreation Parking Miscellaneous **4**
Job Evaluation Job Description Job Specification WAGES & Job Classification SALARIES Salary Surveys Work Standards Job Design **5**	Performance Appraisal APPRAISAL Career & CAREERS Development Structures Promotion Lateral moves **6**

Training Policys
Programmes   TRAINING
  Management   &
  Supervisors   DEVELOP-
  Operators, etc.   MENT
Performance Evaluation
Facilities/materials
 	
7
	Examinations
	HEALTH First Aid
	& Health Programme
	SAFETY Referral
	Campaigns/Education
	Inspections
	Awards/Records
	Accident
	  Investigation
	
	8

Personnel Policies are the binding material that turn these boxes from separate entities as shown into a coherent whole. So before describing each of the activities in more detail it is necessary to consider Personnel Policies.

3. PERSONNEL - MAJOR AREAS OF ACTIVITY (cont'd)

Personnel Policies

Whatever the structure that is decided upon as most appropriate in the circumstances it is Personnel Policies that will guide this work.

According to the Basic Strategy Document, "The concern of those who manage human resources should include: the formulation of policies with respect to the recruitment, employment, and use of human resources....." Others have suggested that water and sanitation agencies would be well advised to consider developing and publishing, or reviewing and enhancing their policies and regulations for managing human resources where they have not already done so.

Personnel policies outline guiding principles for the management of employees. They may be general or specific, broad or narrow in scope. Policies serve as a guide to action and decisions. They spell out the goals and procedures for many of the aspects of human resources management. They provide guidance for many decisions by supervisors and managers who can thus act with a greater degree of confidence in resolving problems because they have a more objective basis on which to make and to defend their decisions.

Policies also serve as an aid in: orienting and training new personnel, administering disciplinary action and resolving grievances. They provide answers to many questions that are referred to supervisors and managers.

Procedures explain how general policies will be carried out systematically. Regulations set out rules which govern the rights and duties of the employees in their work relations.

Where policy statements are very general, they may need to be supported with additional components. SATECIA*, for instance, suggests some of the following kinds of additional documents to spell out company policy:

- Employee Handbook
- Handbook of Organization
- Manual describing positions, classifications, careers
- Job Classification and Evaluation Procedures Manual
- Personnel Recruitment and Selection Manual
- Training Manual
- Performance Evaluation Manual

A policy which is very general yet successfully communicates important values of the organization is given as an example on the following page (IS-02). Although this personnel policy is taken from the international banking industry, many of the items are also applicable to the water industry. It provides us with an opportunity to learn from another occupational field.

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* SATECIA, "System for Administration and Development of Human Resources" SYMPOSIUM ON DEVELOPMENT OF ENVIRONMENTAL MANPOWER WITH PARTICULAR REFERENCE TO BASIC SANITARY CONDITIONS, Rio de Janeiro, November, 1979.

INFORMATION SHEET: IS-02

PERSONNEL POLICY STATEMENT OF A MAJOR INTERNATIONAL BANK

The personnel policies of the bank are based upon the belief that the success of the bank and its usefulness to the countries it does business in are primarily dependent on its personnel, and that the development of the greatest potential for each employee is not only good for the employee, but of maximum advantage to the bank.

It is the policy of the bank, therefore, to give its employees training and opportunity so that they can have the satisfaction and happiness that come from good surroundings, good rewards and the consciousness of work well done.

TO ACHIEVE THESE ENDS IT IS THE POLICY OF THE BANK:

To employ individuals solely on the basis of qualification.

To recognize each person as an individual throughout his or her entire period of association with the bank.

To implement continually positive affirmative actions that will ensure that equal opportunity is afforded to all qualified staff members and to applicants for employment regardless of race, creed, colour, national origin, sex, age, or physical handicap.

To review periodically the performance of all members of the staff and to keep them informed concerning their status; to provide continuous guidance to help staff members to progress.

To promote from within on a bank-wide basis individuals qualified to fill vacancies in more advanced positions.

To maintain salary scales which compare favourably with those paid for similar work by the better paying companies in our employment markets; to administer individual salaries in a manner which recognizes the relative importance of each position and rewards meritorious performance.

To maintain a generous and comprehensive benefits programme having in mind that financial security and personal welfare are of great value to members of the staff, their dependents, and to the bank.

To provide an attractive and efficient environment by maintaining good physical working conditions and by fostering harmonious relations among staff members.

To regard planned training, education, and staff development activities as an investment for the mutual benefit of individuals and the bank.

To communicate freely to all members of the staff and to encourage communciation from them and among them.

To encourage members of the staff to participate in activities related to civic affairs, and community welfare projects.
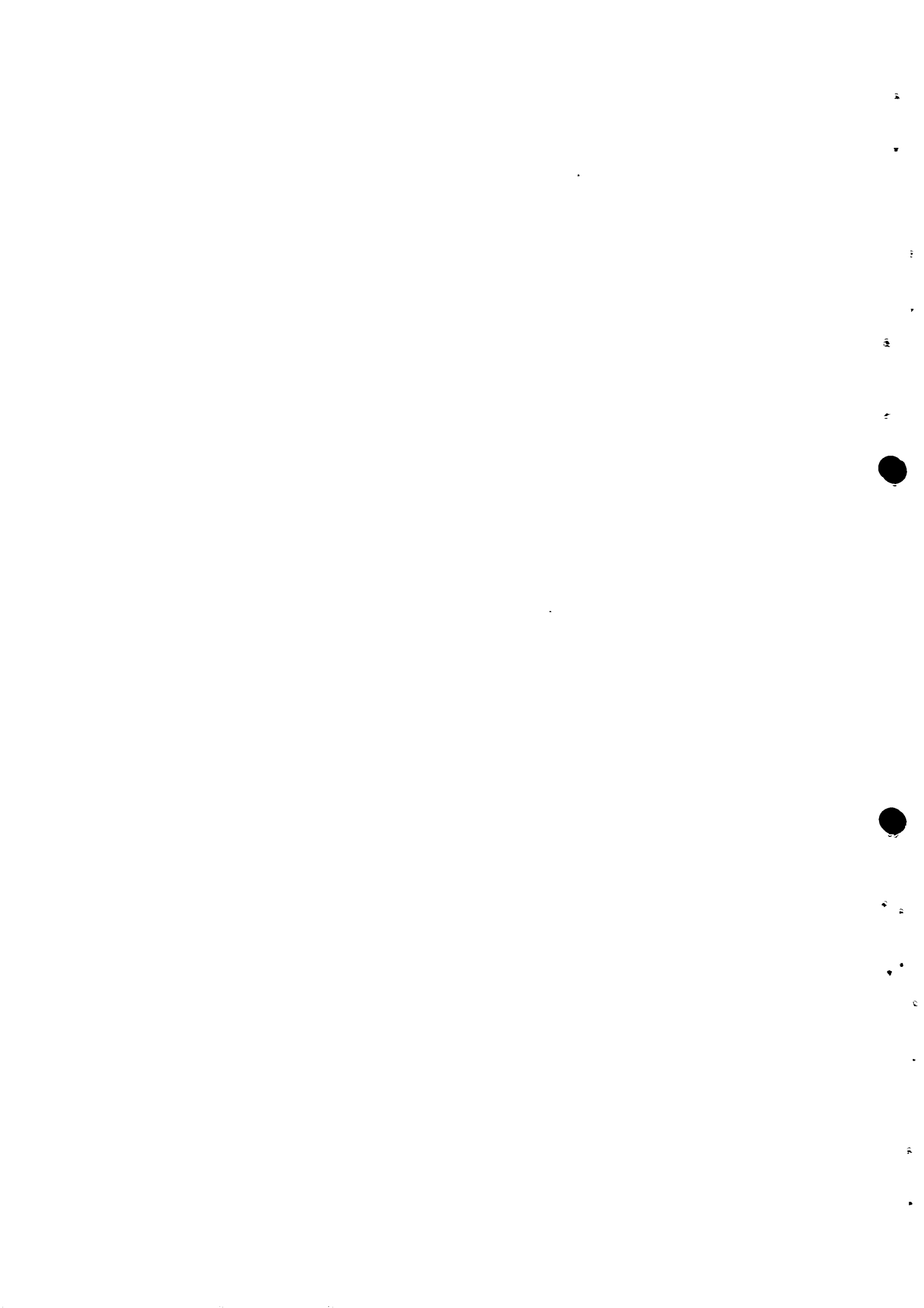
3.   PERSONNEL - MAJOR AREAS OF ACTIVITY (cont'd)

    Obviously, the elaborateness of a written policy statement will depend in part upon the size of the organization. A more complete listing of personnel policies might include references to the following areas:

- Organization	- Remuneration and Allowances
- Manpower Planning	- Working Schedule and Hours
- Job Evaluation & Classification	- Fringe Benefits
- Training and Development[+]	- Social and Welfare Benefits
- Career Planning	- Sick Leave and Maternity
- Hiring	- Old Age, Death, Disability
- Recruitment	- Safety, Housekeeping, Health
- Selection	- Industrial Relations
- Probation	- Discipline, Standards of Conduct
- Transfers	- Terminations and Penalties
- Leaves and Excused Absences	- Complaints and Grievences
- Holidays and Days off	- Suggestion Systems
- Promotions, Merit & Increases	- Political Involvement and Nepotism
- Performance Evaluation	- Communication, and Participation
- Salary Administration	Mechanisms

A personnel policy should fulfill several criteria:*

(1) Policy should be written, understandable, and present a comprehensive coverage of the personnel functions.

(2) Provision should be made for communicating and ensuring understanding of stated policies throughout the organization.**

(3) Policy should be established as a result of discussions and consultations throughout the organization, including consultations with employees' representatives as appropriate.

    To ensure that this comprehensive coverage is achieved a method of regularly reviewing and updating, where necessary, is required. Some organizations have their regional/divisional/operational personnel managers (representing their operational management colleagues and contemporary personnel experience in the division) meet regularly with their central staff colleagues at Personnel Strategy meetings, to do just this. Any suggested changes are then first tested on their operational management colleagues before going to the board for approval.

[+] Training and Development Policies are described in Section 7.1 pages 199 to 204.

*   SATECIA, "System for Administration and Development of Human Resources" SYMPOSIUM ON DEVELOPMENT OF ENVIRONMENTAL MANPOWER WITH PARTICULAR REFERENCE TO BASIC SANITARY CONDITIONS, November, 1979.

** This is described in Section 3.2 Orientation - Induction page 178.

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3.   PERSONNEL - MAJOR AREAS OF ACTIVITY (cont'd)

1 PERSONNEL PLANNING

       1.1   POLICIES
       1.2   MANPOWER DEVELOPMENT
             RECORDS AND REPORTS
             STATISTICAL ANALYSIS
       1.3   MORALE SURVEYS AND PERSONNEL RESEARCH

     This subject is very fully covered in the Planning Chapter, pages 24-91 inclusive. However, there are a number of additional factors which affect and involve management which require emphasis and consideration.

     1.1 Policies

     The Personnel Policies we described from page 164 onwards are not self contained but rather strongly influence each major area of personnel activity including this planning activity.

     For example, where the government of a member state is party to the World Health Assembly water supply and sanitation decade resolution* and asks/recommends the ministry/agency responsible for water supply and sanitation to accept the personnel policy implications of them. In this case the government is asking the agency to accept the reorientation necessary and to apply changes:

     -   from sophisticated to appropriate technology;
     -   from a concentration on urban construction to programmes for the
         underserved peri-urban and rural populations;
     -   from technician training to training Primary Health Care oriented
         workers (from other sectors); and
     -   by associating communities in all stages of projects.

     There are profound implications for agencies in these areas of major changes of emphasis. For example, the Primary Health Care emphasis and the use of local health workers who can assist agencies whose labour forces are overly stretched and too thinly spread and can at the same time facilitate positive community involvement and helpful voluntary effort. This is one important way of augmenting an agency's labour force and ensuring represen- tation in rural communities that would not otherwie have any contact with the agency. Moreover, the harnessing of local communities, particularly women and voluntary effort in, e.g. the operation and maintenance of existing or new water supply and sanitation programmes would ensure that fewer of them failed through lack of the required attention.

     However to ensure that such initiatives succeeded an agency would have to have a number of staff devoted partially, if not wholly, to facilitating positive community involvement.

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* WHA Resolution 34-25 - 22 May 1981.

PERSONNEL PLANNING (cont'd)

1.2 Manpower Development Plan

The main reason for compiling manpower supply and demand information in the eleven step sequence, we described in the Planning Chapter, is to enable management decisions to be made, based on reliable information and a rational approach. We showed at what stages management interventions could be made when trade-offs might have to be considered, and when decisions about choices may need to be made.

On the basis of the agreed annual manpower requirements, per occupational group, records and reports can be compiled to enable management to monitor progress, e.g. of recruitment and/or training programmes, and where necessary take corrective action.

How best to do such recording and reporting is for each organization to decide on the basis of need. One large organization with a number of divisions geographically spread across the country finds it useful to arrange monthly meetings of the manpower planners and the personnel recruiters/ placement officers one of each for each division. This is particularly helpful for, besides replacing labour turnover (even a low one of 5%, of 15,000 employees requires 750 replacements just for attrition) and adding any growth that is planned, they need to transfer employees across divisions to meet changing needs and their full employment/no redundancy policy. So they keep themselves and their management very much up-to-date.

Today, computers can make recording much easier than in the past, especially when because they are used for payroll runs the information must be up-to-date. When comprehensive personnel information is added, like age, length of service, skills, experience and education, planners can easily extract, e.g. age profiles, length of service profiles per department and function. It is on the basis of such information that further management decisions can be made. For example, the organization mentioned above having noted that 30% of its employees were in a six year bracket (34-40 years old) decided that most recruitment in the future would be in the 16-24 age range.

1.3 Morale Surveys and Personnel Research

Morale surveys of employees can be a very useful management tool. A number of organizations regularly use them to quantify attitudes, (so helping to dispel any inaccurate assumptions and beliefs held by managers) and provide information for action and motivation programmes*. Others use them occasion- ally. They can be simple and include only a few, but rather fundamental, questions or they can be as sophisticated as the organization can deal with. They are greatly appreciated by employees but they do raise employee expectation and so should only be embarked upon if there is a genuine intention on management's part to right anything they find wrong. The responses can be broken down by department, age, sex, or skill and can be used for trend measurement and problem identification.

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* GIBSON Howard, Common Staff Status in IBM, article in Industrial Partici- pation, London, Winter issue, 1979/1980.

1. PERSONNEL PLANNING (cont'd)

1.3 Morale Surveys and Personnel Research (cont'd)

The following recent survey example designed by the U.S. Labour Relations Institute indicates how supervisors can hold inaccurate assumptions and beliefs.

WHAT DO EMPLOYEES REALLY NEED?

JOB FACTORS	EMPLOYEES' RANKING	SUPERVISORS' RANKING
Feeling of being in on things	2	10
Job security	4	2
Interesting work	6	5
Personal loyalty to employees	8	6
Tactful disciplining	10	7
Good working conditions	9	4
Promotions and growth in the company	7	3
Good wages	5	1
Sympathetic help on personal problems	3	9
Full appreciation of work done	1	8

There is a wealth of rating information in this table, resulting from a survey of 10,000 workers, e.g., employees were first of all looking for "full appreciation of work done", secondly for a "feeling of being in on things" and so on, with "good wages" coming fifth. Whilst supervisors ranked these first two needs as eighth and tenth respectively putting "good wages", the fifth need, as number one.

Before readers rush to the conclusion that such disparities could not occur in their agencies it should be said that this type of result is very typical of many organizations and has been found to be so right across the world. Recent survey data in the developing countries ofLatin America and the Caribbean indicates that "appreciation of work done" is also the no. 1 factor there too. One of the important implications of this survey is that costly solutions are not required to meet employee needs. For example, to meet employee need No. 1, a simple thank you is often (not always) all that is required. To meet employee need No. 2, good communication and consultation is what is required - (this is developed further in Section 2 Employee Relations, page 174) - and this does not have to be costly. It can be as costly as the organization can afford to make it. The reader may care to continue the study of the table and to draw further conclusions from it.

PERSONNEL PLANNING (cont'd)

1.3 Morale Surveys and Personnel Research (cont'd)

Clearly, there will be some variations from agency to agency should these questions be asked and it depends where one is now on any one of these job factors as to where one puts it relative to the others. For example, if one is already receiving good wages it is less important than other factors whilst if one is not getting good wages it becomes more important. Experience, however, shows that it still would not come first for employees despite supervisors thinking to the contrary.

The balance that managers are required to achieve between the organization's needs and employee needs, referred to earlier, is unlikely whilst their thinking is so different from that of their employees. Organizations who have come to pay more attention (and it does not have to be undue) to employee needs have experienced greater motivation, greater commitment and improved performance from their employees. Whilst surveys are a useful tool in determining whather balance has been achieved - and in at least one organization such a survey actually resulted in a training programme entitled "balanced management" - it is not every organization that will be able to use them. In such cases managers and supervisors must be trained to understand employee needs and to respond positively. Managers and supervisors sometimes need to be reminded that they are also employees and the difference between how they think and how their employees think is no where near as great as is frequently believed. Many organizations have found that this gap in thinking can be narrowed by their own efforts. Sometimes, however, when relationships between management and employees are poor the gap is wide and it needs major efforts to narrow it. Much more commonly, it does not require such effort.

These paragraphs on Morale Surveys apply as much to the following section on Employee Relations as they do to this planning section. One of the disadvantages - among many advantages - of breaking down the personnel area in this way is that it suggests the sections are separate and distinct when in fact they overlap considerably and are clearly interrelated.

3. PERSONNEL - MAJOR AREAS OF ACTIVITY (cont'd)

2 EMPLOYEE RELATIONS

     2.1 POLICIES
     2.2 COMMUNICATION AND CONSULTATION
     2.3 COLLECTIVE BARGAINING
     2.4 LEGISLATION
     2.5 GRIEVANCES AND APPEALS
          DISCIPLINE
     2.6 SUGGESTION SCHEMES

2.1 Policies

Personnel Policies guide the work across each of the areas of activity as has already been said. This is no less true of this area of Employee Relations. In fact, some organizations put the main thrust here. For example, a senior personnel manager of a large electronics organization recently described employee relations in his own company in the following terms:

"The approach to employee relations which has evolved over the years and continues to evolve, is based on respect for each employee as an individual. This is achieved in practice by developing a close working relationship between each employee and his manager, by keeping manager to non-manager ratios low, and by carefully selecting and training managers.

Expanding this further, the title manager is given to all employees who have supervisory responsibilities for other employees. Thus there are no foremen, supervisors, charge-hands or others having ambiguous titles or roles. For each of our 1,600 managers, being a manager in fact means having the responsibility to hire employees, to pay salary increases, to promote, and should it be necessary, to recommend for dismissal, albeit within the organization's guidelines.

Managers are selected from within the organization on the basis of a number of factors, which besides performance, include the ability to motivate employees as well as adopt a consultative style of management. Management training courses and management coaching further develop these features and emphasize team building which is so necessary, given the articulate and questioning employees we attract.

The ratios of managers to employees obviously vary according to the nature of the work as well as the level of management. They range from approximately 1:4 to 1:18 with an average of 1:9, so ensuring that managers can get to know their employees well and are never remote. In these ways, together with some of the other practices listed later, we develop a close working relationship between employee and manager which is

EMPLOYEE RELATIONS (cont'd)

2.1 Policies (cont'd)

aimed at achieving willing co-operation. The result of this sort of management approach is that a real enthusiasm is engendered together with a positive identification with the needs of the organization.

This spirit generally pervades the organization but it requires constant vigilance and management willingness to listen to employee needs and aspirations and to adjust its practices accordingly. The aim is to have each manager as his own personnel manager, balancing task needs against employee needs. However, managers do not always achieve the ideal balance, and in order to support them we have developed over the years strong, experienced and professional personnel departments.

So while it is the manager who is responsible for looking after the interests of individual employees, overall consistency and fairness are achieved by clear and established personnel policies and practices. These policies and practices are seen as an integrated whole rather than a collection of isolated policies, even though they were built up over a number of years.

This policy framework is based on seven business principles, unwritten at first, but always basic in the thinking that built the company.

The first two, which are relevant to employee relations, are:

1.   To provide intelligent, dynamic capable management.

2.   To provide a maximum degree of satisfaction on the part of our employees in their assigned tasks."

Successful organizations, like the one quoted above, take the management approach just described for two interconnected reasons. The first is the set of beliefs that drive them, that is the culture that has already been mentioned. The second is that the organization clearly benefits as motivated and committed employees, who understand their organization's needs and have shared values, can be seen to perform well.

Obtaining improved performance is one of the main thrusts of this chapter as is the interrelated nature of each of the sections and the need for balance across them.

EMPLOYEE RELATIONS (cont'd)

2.1 Policies (cont'd)

If one was to ask employees, in successful organizations as well as unsuccessful ones, the world over, what factors affect their performance they would come up with answers something like those depicted in the following diagram:

FACTORS AFFECTING PERFORMANCE
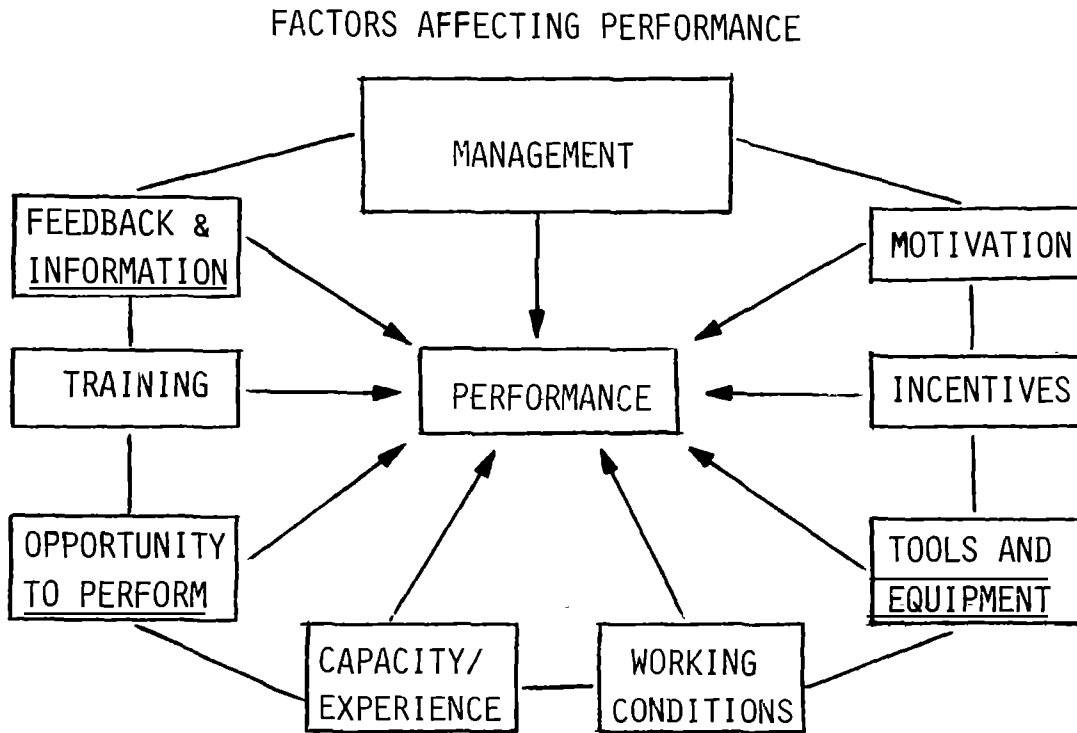
All these factors are the responsibility of the individual manager to some extent. Some may be inclined to say that not all of the factors listed are within the individual manager's responsibility. It is true that some are more directly a responsibility like management of the performance, and like motivation of the individual performer. Whilst others are less directly an individual responsibility and more an organizational responsibility, like availability of incentives and tools and equipment. But even here the manager is the agent or representative of the organization and has a clear responsibility to bring to the attention of those more directly involved if a factor is having a negative affect.

The diagram also reminds one that organizations, who in an attempt to improve poor performance by sending employees on a technical training course, should not be surprised if improvement does not take place if they ignore the other factors. Such training by itself is not enough.

EMPLOYEE RELATIONS (cont'd)

2.1 Policies (cont'd)

In addition, the diagram indicates the link between each of the major areas of activity listed in this chapter.

The theme of improved performance is further developed in Section 6, Appraisal, from the setting of goals or objectives, (whether they be organizational, divisional, functional, departmental or individual), through to performance appraisal. Performance in turn is linked with pay (Section 5), especially if an organization has a pay for performance or merit principle approach. Even if it has not got this, performance is also linked with promotion in that it is in an organization's interest to promote and be seen to promote the best performers, everything else being equal.

2.2 Communication and Consultation

> "Managers and supervisors must be held accountable for communicating with their own teams, with active board level commitment to providing information on a regular basis. This commitment must be permanent and seen to be so.*

In these two sentences, the CBI* has encapsulated three of the most important principles which must underlie any organization's communication policy:

1.   The lead must come from top management who must be clearly committed.

2.   The primary communication responsibility must be held by management.

3.   Information must be provided on a regular and systematic basis.

The Industrial Society's 1980 pamphlet, Understanding the Economic Facts, adds to these fundamental requirements as follows:

> ...our experience shows that if facts are to be believed and if those who give them are to be trusted, the information must be: REGULAR, not just at a time of crisis or in the context of annual negotiations. HONEST, the facts, both good and bad. OPEN to all employees, not just to management and representatives and with a chance to ask questions. RELEVANT, primarily about the local unit for which employees work and whose performance they can directly affect.

And the basic reason why five company Chairmen and five General Secretaries of major trade unions are urging companies to provide regular, honest, open and relevant information to their employees:

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* Guidelines for Action on Employee Involvement, Confederation of British Industry, London, 1979.

EMPLOYEE RELATIONS (cont'd)

2.2 Communication and Consultation (cont'd)

We believe people will only be committed to their work... if they understand the purpose of their work... if they understand the purpose of what they are doing, what their efforts achieve and where the money goes and comes from...

Without such commitment the success of the enterprise is unlikely.

The message is clear. It should prompt a management team to ask two basic questions. Are we interested in securing the commitment of our employees to our organization? If so, have we made a start by implementing a communication policy based on the requirements set out above?"*

How each organization achieves this is for its management to decide given its own individual circumstances.

The executive boards of some organizations meet monthly, others meet as often as weekly to decide on general direction and to resolve interregional or interdivisional issues. Many then ask each of the regional/divisional directors to immediately thereafter brief their reporting managers who then ensure that the information is passed down to all levels of employees. If this communication link is then enhanced by monthly departmental meetings with all employees given the opportunity to ask questions and be involved in a two- way dialogue, back to top management where necessary, there will be much less chance of uncertainty and misunderstanding at the very least. At best, there will be employee involvement and thus commitment to the organization. This will be especially so if the manager encourages employees to see themselves as a team and involves them in departmental problems and issues.

2.3 Collective Bargaining

Collective bargaining refers to the bargaining, or negotiation, that results from the collective agreements that an organization's management makes with trades unions, or staff associations representing the employees. Where these operate - because not all organizations are unionized - they apply to pay and conditions on the one hand and issue and grievance handling and resolution on the other.

How best to phase in Communication and Consultation with Collective Bargaining and precisely what areas should be covered by collective bargaining has exercised many minds over the years and a number of books have been written on the subject. In any case experience varies considerably from country to country and can indeed also involve legislation such that the subject cannot be fruitfully developed further here. Suffice it to say that the subject is an important one and needs to be handled by experts to get the best results.

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*   Gibson H, Buckingham G, Andrews-Jones D, Mitchell B, Roots P, Communication in Practice, Institute of Personnel Management, London, 1981.

EMPLOYEE RELATIONS (cont'd)

2.4 Legislation

Much the same can be said for legislation as has just been said for collective bargaining. It is listed here as a subject that cannot be ignored and again needs to be professionally handled. The more an organization and its managers understand how it is affected by legislation - whether the legislation applies to trades unions, employee rights, employee safety, social security, or any other area - the better it is likely to operate.

2.5 Grievances and Appeals

In this area, and indeed most of the others too, employees and managers clearly need to know what rights they have and what responsibilities they have as a result. This means that management - and where appropriate trade unions -- needs to think through not only what is right and proper at law but what is fair and just in any given set of disciplinary circumstances. It then needs to clearly communicate these organizational rules to employees and then apply them consistently when the need arises.

Procedures for satisfactorily handling grievances and appeals, without hint of victimization, and providing impartial advice and assistance to employees is yet another area requiring specialist handling within an organization. Again the most appropriate approach depends on culture, custom and practice, legislation and similar factors which cannot profitably be covered here. Fairness and consistency is essential here too.

There are numerous books on each of the three subject areas mentioned here for those who are interested.

2.6 Suggestion Schemes

Many organizations have found it useful to initiate suggestion schemes which reward employees for making suggestions as to how the organization might improve, e.g., its productivity, its procedures, its safety or any other area of activity. A well run scheme can not only bring forth excellent suggestions from those nearest to the scene but it can also incease employee involvement in the organization generally.

Like all the other activities described here, suggestion schemes, once introduced, can not profitably be left to continue indefinitely without review. The best schemes keep thorough records, regularly carry out review on the basis of these and inject minor incentives or major overhauls as necessary. Specialist books are available which describe the many types of scheme which exist.

3. PERSONNEL - MAJOR AREAS OF ACTIVITY (cont'd)

3 EMPLOYMENT

>   3.1   INTERVIEWING, TESTING, RECRUITMENT,
>   PLACEMENT, SELECTION
>   3.2   ORIENTATION, INDUCTION
>   3.3   TRANSFERS
>   3.4   TERMINATIONS
>   3.5   RECORDS

Personnel Policies here, in the area of employment practices, as in each of the other areas of activity guide day-to-day practices.

For example, many organizations thinking of their own needs (drawing on experience) as well as employee needs (i.e. meeting the needs of those who aspire to be promoted and at least wish to have the opportunity to be considered) have found that it is good practice to have a policy of promotion from within. This means that provided they have suitable candidates available, and the recruitment practice should be organized to ensure that this happens, they will fill vacancies and new posts from within the organization and will use external candidates to fill start of career posts and any where internal candidates are not available. With or without a promotion from within statement, organizations may state that all vacancies will be advertised. Yet another approach (which again can or need not go with the others above) is to determine to go for say 16-24 year olds, as was the case in the example quoted in Section 1.2, when the statistical analysis of ages revealed that age imbalance would result unless the organization concentrated (not excessively) on the recruitment of 16-24 year olds.

Whatever policy is decided upon it is good practice to let ones employees know it, together with the rationale for it. This is especially so if more than one policy/practice is embarked upon as has just been implied.

3.1 Interviewing, testing, recruitment, placement, selection

Each of the items above are aspects of recruitment and selection. The objective is to plan and carry out the activities involved in obtaining the necessary human resources for staffing the organization in a fair and consistent way.

Once the policy, or policies cum practices, are decided upon the process involves:

(a)   line managers submitting personnel requisitions to the specialist personnel recruiters/selection staff indicating the job description and the skills, qualifications, and experience necessary to meet the vacancy or new post.

EMPLOYMENT (cont'd)

3.1 Interviewing, testing, recruitment, placement, selection (cont'd)

(b)   the specialists making the vacancy known, in an attractive way, to
      the appropriate labour market, whether internal or external, through
      advertisements, letters to previously short-listed candidates held on
      waiting lists, and similar methods.

(c)   specialists and line managers together deciding on and bringing in
      for interview, and possibly testing, if appropriate, those who seem
      most suitable. This is done on the basis of the applicants letter
      and curriculum vitae or better still his completed Application Form.
      The more carefully thought out the Application Form the easier it is
      to make meaningful decisions. Similarly the easier it will be to
      later compile personal records and employee profiles on the basis of
      which the necessary statistical information can be compiled.

(d)   making an offer (together with an explanation and literature on the
      organization and its policies) and hopefully having it accepted by
      the one that best matches the requirement (subject, of course, to
      satisfactory references and medical examination).

It is costly to delay in filling vacancies, e.g. there are overtime costs,
the frustration and extra work for existing staff and it is also costly to
make mistakes. In short, it is very much worthwhile to have this service to
line managers, like all the others, well managed.

3.2 Orientation - Induction

     The process of attracting good people to the organization appears to start
with advertising for staff as has just been indicated. In reality it starts
with the impression that employees from the organization take back to their
friends in the community based on their experience within.

     This impression is further developed at the orientation/induction
programme that organizations have found it useful to arrange for new
employees. Impressions of organizations come not only from existing employees
but are also based on the reputation the organization has built up for the
quality of its services. Just as an organization's image to the outside can
be developed over time so can culture, ethos and pervading atmosphere within
the organization.

EMPLOYMENT (cont'd)

3.3 Transfers

Clearly a policy of promotion from within implies a large number of transfers particularly if the organization encourages its satisfactory employees to think in terms of long-term employment (so meeting employees' job security needs) and thus, to move across function. (This last point meets the organization's needs if, e.g. it requires to close down functions and reorganize).

This in turn implies that an organization must be prepared to re-train its employees and have acceptable interim transit conditions.

3.4 Terminations

This area has been partially covered already in the Grievances, Appeals and Discipline Section 2.5. Employees should understand from the day of their first interview, and particularly from the induction programme and the accompanying employee handbook that is given to them as part of the contract, that continued unsatisfactory performance can result in dismissal. In such cases employees should have been properly warned and given a fair chance to get themselves right, and have not responded. Again fairness and consistency of treatment across the organization is essential. With personnel staff helping line managers ensure that this happens.

There are clearly other forms of termination, like those initiated by employees themselves, e.g. retirement, better prospects elsewhere, moving with one's spouse or leaving in disgust. Whatever the reasons, it should be known and understood by personnel and line managers not only for statistical purposes but as an important morale indicator. Some organizations ensure that all leavers partake in exit interviews.

3.5 Records

Organizations have many reasons for having up-to-date and effective records for each of their staff, e.g., for payroll reasons, tax and social security reasons, skills/age/length of service profiles, vacancy filling, pensions, life assurance, etc. Computers, whether large, medium or small are management aids to this end for those organizations able to afford them. Records too must be correct, true and reliable not only to meet the organizations needs but to be fair to the employee who thus must have the right to check their accuracy. Legislation also requires this in a number of countries.

There are numerous books on each of the fields of activity described here for those who wish to take the subject further.

3. PERSONNEL - MAJOR AREAS OF ACTIVITY (cont'd)

4 EMPLOYEE SERVICES

>   4.1 BENEFITS, PENSIONS, INSURANCE
>   4.2 PUBLICATIONS
>   4.3 COUNSELLING
>   4.4 RECREATION
>   4.5 MISCELLANEOUS: PARKING, CAFETERIA

Personnel Policies guide and determine the extent of this area of activity as they do all the other areas.

4.1 Benefits, Pensions, Insurance

This area is generally known as employee benefits and can include a whole range of benefits beside the pensions and life assurance that are mentioned here. For example, they can include medical insurance for the employee and sometimes the spouse and children, holidays, sickness benefit, study grants/tuition refund for employee and sometimes the children too, housing programmes or preferential credit, free or subsidized transport facilities, cafeteria, discounts on purchases at certain local shops, etc.

Some of these so-called benefits are a legal requirement in certain countries when the legal minimum is sometimes augmented by the organization.

Often the benefits are included in the basic contract which individual employees accept on joining the organization.

Because benefits are costly and can form up to 30% and more on top of the salary, a number of organizations choose to give certain benefit improvements only on the basis of length of service. For example, holidays may be, say, 3 weeks for those with less than 5 years service and 4 weeks for those with more.

Another reason for doing this sort of thing is to reward them for service, for actually staying, especially if after a period there is no other way of rewarding it.

The whole area of benefits can be a very complicated mix and is very much open to judgement. Clearly, to give benefits that are less than what is normal in the area in which employees live is demotivating. Similarly, to give benefits that are above the norm tends to be motivating.

It is up to the employer to judge what is needed but employees also make judgements on benefits and so the right balance to strike is difficult. For example, young employees often would prefer to have the money rather than contribute to pension funds and may prefer to have assistance with housing whereas the reverse is true for older employees. The trick is to find benefits that are attractive but are low cost.

EMPLOYEE SERVICES (cont'd)

4.2 Publications

There are a variety of publications which employers often make available to their employees. They meet the needs of the organization, or employees or both.

For example, employee handbooks indicating benefits, history and services of the organization as well as its rules meet both needs. Similarly the annual accounts and/or a simplified annual employee report which is a variation on the same theme meet both needs. Organization newspapers or newsheets, notice board announcements and video tapes of many types, e.g. with a message of thanks for the years achievements from the chief executive, or announcing new projects, etc. all similarly meet both needs.

All of these in their differing ways not only provide employees with necessary information but help them feel part of the organization, give them something to share with their families and indeed sometimes help them feel good.

4.3 Counselling

Some organizations find it useful to provide a counselling service to employees having problems outside of work. At the very least this offers a shoulder to cry on which is sometimes all that is necessary. At best it can be very helpful to individual employees who get so preoccupied with, e.g. their domestic or financial problems that they cannot work properly.

4.4 Recreation

Some organizations have elaborate sports, recreational and social clubs for their employees. Others have nothing of this sort. It is very much for the employer to decide what seems to be appropriate, given the other outside facilities in the locality and custom and practice. Such facilities do offer advantages but they can be very costly and often are used only by a small minority of employees.

4.5 Miscellaneous, Parking, Cafeteria

There are a number of administrative chores that are sometimes the responsibility of the Personnel Function like organizing parking, arranging employee transport facilities, running the cafeteria, etc. Organizational restaurants and cafeterias have long been areas where status differentials were practiced. For example, with a dining room for directors, a restaurant or two for senior and junior managers and a cafeteria for others. Many successful organizations, in an effort to reduce costs as well as seeing the need to draw their managerial and non-managerial employees together as a team, have only one cafeteria. To be charitable we will say that the Personnel Function is given chores such as those mentioned above and others like them, as they are responsible for meeting employee needs.

3. PERSONNEL - MAJOR AREAS OF ACTIVITY (cont'd)

5 WAGES AND SALARIES

> 5.1 JOB ANALYSIS - DESCRIPTION, CLASSIFICATION, EVALUATION
>   IS-03 JOB DESCRIPTION EXAMPLE
> 5.2 SALARY SURVEYS
> 5.3 WORK STANDARDS, JOB DESIGN

5.1 Job Analysis, job description, job classification, job evaluation

Organizations using titles such as these tend to have a Job Evaluation Department that provides a specialist service to line managers on a day-to-day basis.

The department, initially and periodically thereafter, will work closely with those responsible for organization structuring in determining how the groups of skills will be departmentally organized.

Once this has been determined they will work closely with the departmental managers to fully understand, by job analysis, what is required of each job.

One the basis of this detailed job analysis, Job Descriptions will be prepared for each job. (These are described further on page 183). This information is then used as a basis of the Job Evaluation system, which usually operates on the basis of points being allotted for each of the factors of the job, as follows:

Factors of the job, to which the evaluator will allot points in discussion with the line manager.

- abilities required to do the job (education, experience, etc.);

- effort involved (mental, physical, etc.);

- responsibility involved (for errors, for the safety of others, etc.);

- amount of supervision undertaken or received;

- working environment conditions.

The system usually includes weighting and graduation of the factors giving significance to their importance. Then on the basis of the total number of points allotted for the job it is given a job grade. Each group of jobs is thus placed relative to one another in an internal hierarchy described as the Job Classification system. This job classification could simply be Grade 1, 2, 3, 4 and 5, with all jobs fitted into this hierarchy or it could be bigger with say Grades 1-25, or much more complicated when broken down on a occupational skill category basis.

WAGES AND SALARIES (cont'd)

5.1 Job analysis, job description, job classification, job evaluation
(cont'd)

Only after this structuring has taken place is it possible to correctly allot money values to each of the grades, in the form of a wage and salary structure. This wage and salary structure can be determined in a number of ways, e.g. by collective bargaining, or by salary surveys with other like organizations or by a degree of both. Whatever the method chosen it is bound to have some relativity to the labour market. A management policy decision is required to determine precisely where the wage and salary structure will stand relative to the outside. This depends on how much can be afforded and what the likely costs will be.

The foregoing is a very much simplified version of what actually takes place in this highly specialized area of activity. Fairness and consistency within the system and in application of the system is absolutely essential. Grading, hierarchies and salaries too indicate relative status and thus together form one of the most potentially explosive areas. Organizations dealing with trades unions find this to be one of the most busy areas of their joint endeavour.

JOB DESCRIPTIONS are the heart of the matter and it may be helpful to explain them in more detail.

WHAT ARE THEY?

A job description is a written statement describing the duties and responsibilities of a job. The purpose of a job description is to provide data which are useful in defining the performance required of an employee.

A job description explains to the employee:

. his authority, i.e. his right to make decisions.

. his responsibility, i.e. the duties and objectives he is expected
   to accomplish.

WHY DO WE NEED THEM?

The purpose of a job description is to define exactly for an employee, for fellow employees, and for supervision:

. what the employee is expected to do,

. what standard is expected,

. to whom the employee is responsible, and where appropriate,

. whose work the employee supervises.

WAGES AND SALARIES (cont'd)

5.1 Job analysis, job description, job classification, job evaluation (cont'd)

Job descriptions have other important uses as well.

Work should be arranged so that each individual uses his/her special skills and talents. There should be no overwork or underwork. Job descriptions are one way to help distribute tasks among a group.

The distribution of work among the members of an organization is one of the most important functions of a manager. When work is distributed unfairly it causes dissatisfaction; when distributed unclearly, people lack information about who to go to in solving problems, and are unclear about their own areas of freedom and responsibility.

Writing job descriptions can also give a manager a basis for pinpointing and defining training needs. By specifying exactly what an employee's duties are, a manager can also determine what the employee needs to be able to do to fulfill those duties. If the employee is unable to perform adequately, then the manager or supervisor may diagnose a training need.

HOW DO WE DEVELOP A JOB DESCRIPTION?

Job descriptions vary from one organization to another. There is no standard form for their development. However, job descriptions should ALWAYS STATE PERFORMANCE STANDARDS OF THE SPECIFIC TASKS OF THE JOB. In general, a job description should be written under specific headings to make sure that all the necessary information is easily available. A sample job description (IS-03) is on page 185. A break down and description of the major headings follow it.

JOB DESCRIPTION EXAMPLE*

	DEPARTMENT/SECTION	Accounts Department
(A)	JOB TITLE:	Cashier Wages Clerk
(B)	DATE:	22 March 1983
(C)	RELATIONSHIPS:	Responsible to: Office Manager Responsible for: Accounts Clerks/Typists 1 Machine Operator
	HOURS OF WORK:	8.30 a.m. to 5.00 p.m.
(D)	PURPOSE OF JOB:	To perform, supervise and admininster the handling/recording of sales and miscellaneous transactions, also of wages and salaries.

	DUTIES/RESPONSIBILITIES	PERFORMANCE STANDARDS
(E)	1. Carry out duties as follows: (a) Handle and record petty cash transactions. (b) Handle cash sales, receipts and records. (c) Work out wages and salaries/ including tax, insurances, pensions, overtime, bonuses, commissions etc. and put up payments. (d) Bank (e) Check bought and sales invoices. (f) Analyze and report as necessary on debits/credits. (g) Handle credit control (h) Compile business letters, simple reports etc. (i) Check ledger work. (j) Trial balances. (k) Compile charges book and charges file.	Correct cash balance Cash balance; control ledger correct payments; weekly/ annual tax balance; wages ledger etc Bank reconciliations etc. Debit/Credit ratio; payment times; Average never to exceed four weeks. Company standard. Staff errors eliminated.
(E)	2. Supervise work of Accounts Clerks/Typists and Accounting Machine Operator.	Satisfactory performance of their duties.

NOTE: It is obvious that the duties listed are only simple headings, and that some contain many detailed tasks and procedures. To have listed each separate task would have made the job description far too unwieldy.

* Adapted from "How to Use Job Analysis for Profitable Training", Food Drink and Tobacco Industry Training Board, Leon House, High Street, Croydon.

INFORMATION SHEET: IS-03 (cont'd)

JOB DESCRIPTION (cont'd)

EXPLANATORY NOTES FOR SAMPLE JOB DESCRIPTIONS

(A) JOB TITLE: Cashier Wages Clerk

JOB TITLE: This is the standard title for the person doing the work of job, e.g. Nurse/Midwife, or Plumbing Inspector. The inclusion within the job title of such words as "senior", "junior", "supervisor", "operator" or "clerk" can serve to indicate the duties and the skill level of the job. Specifying the grade of the job achieves the same purpose.

(B) DATE: 22 March 1983

DATE: The date is included because a job description is not final. People and roles change, and job descriptions should be reviewed and, if necessary, revised - preferably annually.

(C) RELATIONSHIP: Responsible to: Office Manager
                           Responsible for: Accounts clerks/typists
                           1 Machine Operator

RELATIONSHIPS: These are simple statements concerning (1) the title of the person to whom the worker is accountable for his work. (2) the title(s) of person(s) whose work is supervised by the job holder.

(D) PURPOSE OF JOB: To perform, supervise and administer the
                           handling/recording of sales and miscellaneous
                           transactions, also of wages and salaries.

JOB SUMMARY: (Purpose of Job) This is a brief summary of the main responsibilities of the job. This section provides a summary that should be sufficient to identify and differentiate the duties that are performed from those of other jobs. It often states the general criteria for judging employee performance and sets objectives toward which tasks of the job should be aimed.

JOB DESCRIPTION (cont'd)

EXPLANATORY NOTES FOR SAMPLE JOB DESCRIPTION (cont'd)

DUTIES/RESPONSIBILITIES	PERFORMANCE STANDARDS
(E) 1. Carry out duties as follows:	As detailed on page 185.
(E) 2. Supervise work of Accounts Clerks/ Typists and Accounting Machine Operator.	Satisfactory performance of their duties.

DUTIES (E): The major duties of the job are covered by brief statements (a to k in the example) to indicate what the worker should do and to what standard of performance. Duties are the major steps in the regular sequence of job performance. The description of duties may also indicate the tools and equipment used, the materials, the procedures followed and the degree of supervision received.


The brief statements (a to k) are important for developing meaningful training programmes. The listing of the basic tasks is critical to the process of identifying the essential skills and knowledge which will be the focus of a relevant training programme.

The following three points do not appear on the sample job description, but are also useful areas often covered in job descriptions from other organizations.

CAREER PATH: Career Path is sometimes included in a job description to indicate such things as the relationship of the job to other jobs with respect to transfer and promotion possibilities. Where necessary the required training programmes are also mentioned.

TRAINING AND DEVELOPMENT: Job descriptions are often accompanied by a programme for the further training and development of the person holding the job.

REVIEW AND APPRAISAL: This could be in the form of a statement describing the process for review and appraisal of the employee's performance. Normally the supervisor is expected to carry out a periodic review of performance. The review and appraisal statement would state clearly who has this responsibility.
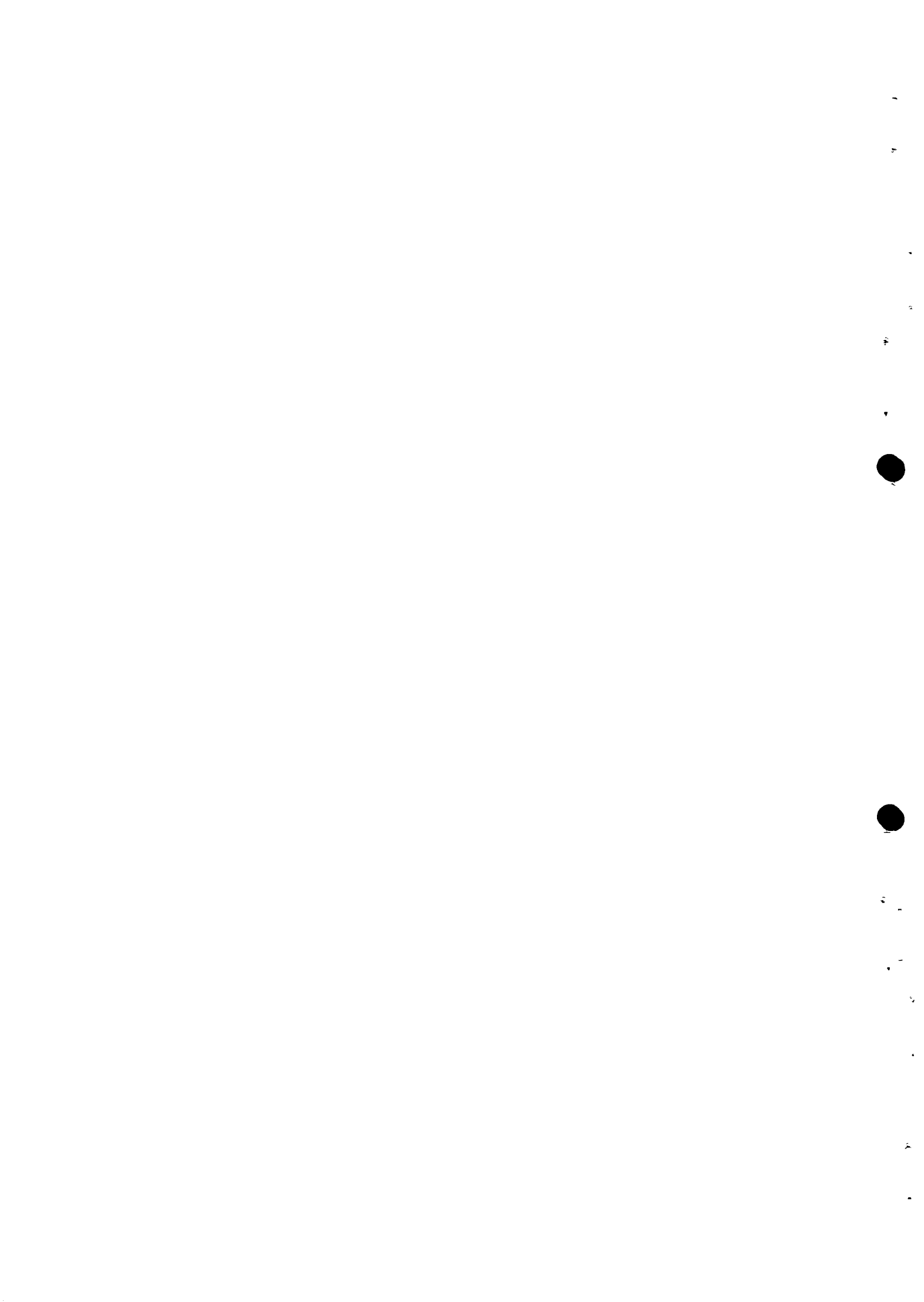
WAGES AND SALARIES (cont'd)

5.2 Salary Surveys

Salary Surveys have already been referred to on page 183, when their relativity to salary structure and structure to job classification/grading systems was described. Since, as was mentioned there, grading, hierarchies and wages and salaries indicate relative status and thus together form one of the most potentially explosive areas, it all requires great care and attention. Fairness and consistency within the whole job classification and salary structure system on the one hand, and in management's application of it for any one employee on the other, is essential.

It was explained that only after the job classification structuring has taken place is it possible to correctly allot money values to each of the grades. This would be in the form of a wage and salary structure which can be determined in a number of ways. For example, by collective bargaining, or by salary surveys with other like organizations or by a degree of both. In fact managements are unlikely to be able to negotiate with trades unions a current set of wage and salary scales without seeking comparative salary survey data. Much of the debate will focus on whose data is most comparable.

The wider the range of skills present in an organization the broader the required salary survey. Indeed the survey may need to take into account a wide variety of industries in order to be sure that all occupational grades are covered. This to some extent can be avoided by equating certain skills with other similar skills that are easier to get information on. Employees certainly have very clear cut ideas as to who they think it fair to be compared with and would like to be compared with. It is clear that an employee will not be satisfied if he/she knows that other firms pay higher wages for equal or similar work to his/her own. The situation becomes worse when these differences appear not only outside the firm but also within it.

The employee will accept and consider it fair that tasks demanding a higher level of knowledge or involving greater responsibility are better paid. However, if the employee sees that a colleague is receiving a higher salary for work equal or similar to his own, and without the justification of higher performance or seniority (depending on which is the known deciding factor) he will certainly feel wronged. A general situation resembling that described above will naturally engender discontent, and even if this is not reflected in direct complaints, it will inevitably affect the output and productivity of the organization.

In short, there are two fundamental principles which serve to shape the definition of salary policies, i.e.:

- the structure must be adequate and competitive

- the structure must be fair.

5.2 Salary Surveys (cont'd)

Adequate, as regards the minimum salary level, below which the employees' basic needs would not be met. Competitive, so as to stay in harmony with the labour market, failing which the organization will begin to lose its good employees to other organizations. Fair, as regards the balance which should exist between the relative values of the different posts.

Often the timing of salary increases, relative to other organizations is as important as is the amount given. Organizations find that it is not difficult to get others to provide them with their salary data for the simple reason that others wish to have salary data on a reciprocal basis.

5.3 Work Standards, job design

Little will be said on this subject largely because it is not normally within the responsibility of the Personnel Function. Performance standards have already been described but work standards, as stemming from work study departments have not. Fairness and consistency is important here too. Job design is an area that often is also included in work study departments.

Performance standards contain all information necessary to translate a work programme into resource requirements by indicating the kinds and amounts of resources required, procedures to be followed, and results to be expected. The expected production is one of the most important pieces of information the performance standard provides, indicating the results which can be expected when specified resources are used* e.g.:

PERFORMANCE STANDARD - DISTRIBUTION DIVISION

PERFORMANCE CRITERIA
Schedule installation of new service within one week after customer request

CREW SIZE		WORK METHOD
Working foreman	1	1 Verify that office has been notified
Helpers	2	2 Set up signs and warning devices
Total	3	3 Locate water main and customer service connection
		4 Excavate to main
		5 Make service tap: open corporation to verify tap on water main
EQUIPMENT		6 Install service, if long-side, blow under pavement to other side of street
Pickup with utility body		7 Install curb stop and meter
Backhoe-trencher		8 Flush line thoroughly
Tapping machine		9 Backfill at main and compact every 6 in to original grade
Small drilling machine		10 Install meter box and backfill to original grade and condition
Air compressor		
Hand tools		11 Sketch "as-built" for engineering and utility accounting
Signs and warning devices		divisions

MATERIAL	AVERAGE DAILY PRODUCTION
Corporation stop	5 taps
Curb stop	
Meter	7 taps (10-hour day)
Meter box	
Poly B pipe	
Service saddle	

NOTES. Call office 48 hours before digging

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* From article entitled Work Management Standards, AWWA Journal, June 1982.

3.   PERSONNEL - MAJOR AREAS OF ACTIVITY (cont'd)

6   APPRAISAL AND CAREERS

    6.1   PERFORMANCE APPRAISAL
          IS-04   WORK PERFORMANCE ASSESSMENT CHECKLIST
          IS-05   EMPLOYEE SELF-APPRAISAL PLANNING FORM
    6.2   CAREER DEVELOPMENT
          IS-06   CAREER DEVELOPMENT GUIDE - WASTEWATER PERSONNEL

     This area of activity is very much linked with wages and salaries in that
Performance Standards which were described as part of Job Descriptions (see
page 185) are the standards against which performance is appraised and often,
increases awarded. This area of Appraisal and Careers is nevertheless given a
section of its own because it is very much the responsibility of line or
operational managers dealing with individual employees, whilst wages and
salaries policies and structure are the responsibility of Personnel Function.
This is not to say that Personnel Function do not have any responsibility in
the Appraisal and Career area. They do in fact have an overall monitoring
responsibility to ensure that the practice is operated and according to policy
guidelines.

6.1   Performance Appraisal

WHAT IS IT?

     Effective supervision involves periodic evaluation or appraisal of the
work performance of employees. It is in this way that a supervisor determines
how closely his employees come to achieving their work targets. It can be the
basis for selecting areas for training and staff development. The good
supervisor will talk regularly with employees about targets and achievements,
successes and failures, strengths and weaknesses.

     The supervisor appraises staff performance in order that the employees
may learn from experience and therefore perform more effectively. The basic
questions are:

          Are work results as good as they could be?

          If not, why not, and what can be done about it?

WHY IS IT NEEDED?

     Appraising performance it NOT done to find fault with staff. It is done
in order to help each staff member perform as efficiently as possible; to
thank them when they achieve results to encourage them to improved effort when
they fall short, and to warn them if they consistently fall short.

APPRAISAL AND CAREERS (cont'd)

6.1 Performance and Appraisal (cont'd)

A large organization in its recently revised employee booklet on its Appraisal and Counselling Programme says that its purpose is four fold:

- Appraisals let you know what you have achieved against previously agreed objectives.

- Performance Plans ensure that you understand what is expected of you in your job.

  Counselling enables you to identify areas of your job performance where improvements may be needed.

  Employee Development Planning helps you set realistic plans for your further development in the Company.

It is interesting to note that this organization was a trend-setter in effectively applying its Appraisal and Counselling programme to all of its employees, non-professional as well as professional. This is another example of the longer-term movement towards staff status for all or, simple status as it is alternatively called. We have already mentioned the move towards a common cafeteria.

HOW IS IT DONE?

Assessment should be continous. It is bad practice to make no performance assessment until the time comes for something as formal as an annual review. Assessment is an on-going process and good supervisors talk with employees regularly about achievements, progress and areas for improvement.

Managers/supervisors constantly observe the manner in which employees are carrying out their job assignments, but some do not share these reactions with employees. In almost all organizations, however, employees want to know how they are doing. Most larger, and many smaller organizations have developed formal programmes designed to encourage performance evaluation and discussion on it by managers and individual employees.

The success or failure of programmes of performance evaluation depends on the attitude of management and supervisory employees. Although there are different methods for gathering data to be used in performance discussions, the key to success is in remembering that the purpose is to help employees improve their own job performance. The following diagram is a helpful reminder to managers and supervisors of the major factors effecting performance. It will help them keep the discussion as objective as possible.

APPRAISAL AND CAREERS (cont'd)

6.1 Performance and Appraisal (cont'd)

FACTORS AFFECTING HUMAN PERFORMANCE
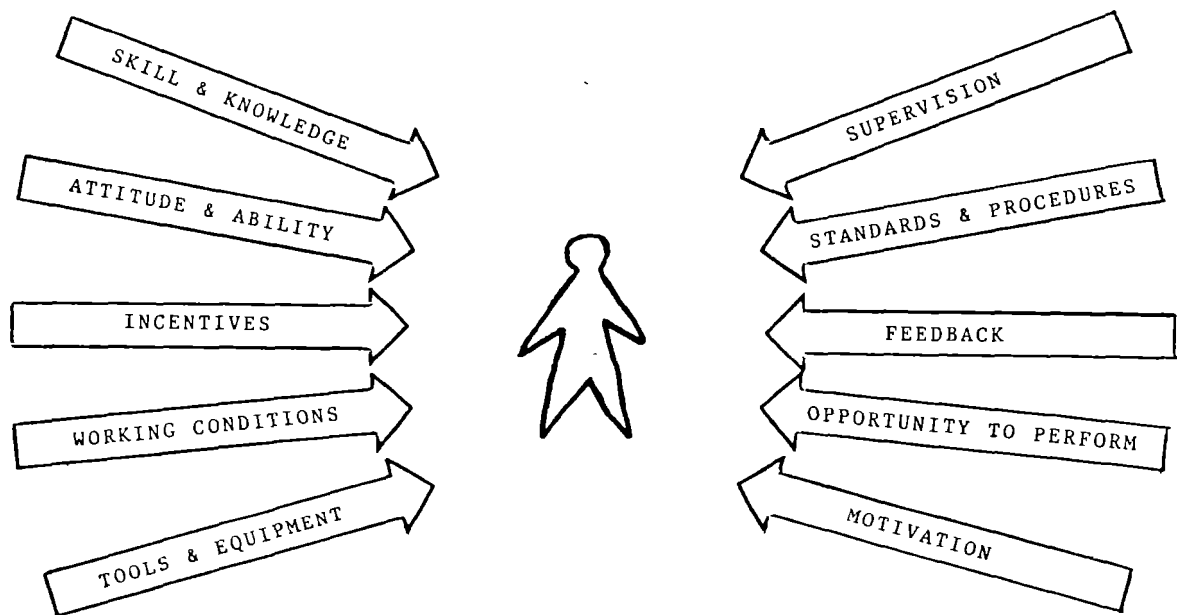
Discerning readers will recognize this diagram as a variation on the one in the Employee Relations section, page 173. It is presented in this different way here because it indicates the factors that are at work on the individual employee. The emphasis in the previous diagram was on the factors that were available for the manager to manage and in a positive way. This is the same thing but viewed from a different perspective which in microcosm is what management is all about. That is, trying to think through how employees will react and how to get the most productive reaction from them.

PERFORMANCE APPRAISAL METHODS

1. Rating Scales

The most often used approach to performance appraisal involves rating scales. This approach creates general categories for rating, such as "quantity of work", "quality of work", "job knowledge", "cooperation/ dependability", "adaptability/attendance", etc. The individual is rated on a 1-5 scale, usually, for each category. Rating scales are particularly useful when performance comparisons are to be made between people

PERFORMANCE APPRAISAL METHODS (cont'd)

1. Rating Scales (cont'd)

who have different jobs. Although it is a common approach, it is not the best. Because a rating scale is general rather than specific to the tasks of the employee, it can often create defensiveness. It also places the supervisor in a 'god' like judgement role.

2. Check Lists

An alternative to the Rating Scale is a Check List which is closely related to the job description of the employee being assessed. In a well organized management setting, the manager has many aids for developing such check lists:

- Job descriptions list functions which employees are expected to perform.

- Well-developed work plans assign specific activities to staff members.

- Technical procedure manuals may describe in detail how to perform specific tasks.

All of these are tools with which to develop simple and relevant performance indicators for performance appraisal. A sample of a simplified assessment check list using this approach is found on page 194 (IS-04).

3. Job Description Review

Problems in performance appraisal discussions usually result when supervisors and employees have different understandings about the job and performance standards. Such a lack of agreement makes performance appraisal difficult. Therefore, some managers use the interview to review job descriptions. This focuses the discussion on clarifying the job itself.

4. Self-Appraisal

Some managers have decided that their real goal for performance appraisal is to encourage future planning and effective communications between supervisors and subordinates. Often in traditional approaches to appraisal, the boss does most of the talking. The solution which some have adopted reverses the process and asks subordinates to prepare for assessments by coming to the supervisor with improvement plans. The supervisors in these circumstances are put more in the role of coach. A sample self-appraisal rating form is provided on page 195 (IS-05).

The most important point to be made is that if performance appraisal is to be useful to both supervisor and subordinate, the targets and standards for assessment need to be accepted ahead of the actual assessment.

INFORMATION SHEET: IS-04

WORK PERFORMANCE ASSESSMENT CHECK LIST

Name of Water Treatment Plant
Operator: ....

	satisfactory	unsatisfactory	comments
WORK RELATIONS			
Relations with colleagues	☐	☐	_____
Observance of regulations	☐	☐	_____
DUTIES			
Makes Water Tests	☐	☐	_____
Chlorine Tests	☐	☐	_____
Alkalinity Tests	☐	☐	_____
Jar Tests	☐	☐	_____
Bacterialogical Test	☐	☐	_____
Monitors Water storage	☐	☐	_____
Maintains Plant	☐	☐	_____
Backwashes filter	☐	☐	_____
Services Equipment	☐	☐	_____
Makes minor repairs	☐	☐	_____
Maintains records	☐	☐	_____

NOTE: When a supervisor has noted an unsatisfactory behaviour he should then make a more detailed investigation to determine exactly which step(s) in the task needs improvement.

INFORMATION SHEET: IS-05

EMPLOYEE SELF-APPRAISAL PLANNING FORM

1.   Reviewing your work, what seems to be:

    Significant contributions to goals: _____

    Unusually difficult problems solved: _____

    Major work areas for change or improvements: _____

    Major knowledge, skill or experience strengths: _____

    Major knowledge, skill or experience gaps: _____

    Training needs: _____

2.   Reviewing your total position responsibilities, what are:

    Significant responsibilities not yet undertaken: _____

    Working relationships you are pleased about: _____

    Working relationships which need strengthening: _____

3.   Did you carry out any specific assignments skillfully or
    badly: _____

Handle emergencies skillfully: _____

Badly?   _____

4.   How much help from your manager is needed or received?

    _____

5.   Future planning. What action do you feel you should take to:

    Make better use of talents: _____

    Improve specific performance areas: _____

    Add to knowledge, skill, experience: _____

    Improve relationships with manager, peers, employees: _____

    Change working methods of approach to people: _____

    Thinking to the next year -- what would be the best use of your skills and
    talents:

    _____

    In the future, what other positions might you like in the organization?:

    _____

6.   What help would you like from the supervisor in carrying out your
    plans?:   _____

APPRAISAL AND CAREERS (cont'd)

6.2 Career development

In the Performance Appraisal section (6.1) career development was described as one of the four fold purposes of an Appraisal and Couselling Programme. The precise quote was "Employee Development Planning helps you (meaning the employee) set realistic plans for your further development in the Company."

It is important that managers put career development firmly into the context of performance appraisal so that employees do form realistic plans. For example, employees should clearly understand that promotion cannot be expected unless performance at the existing level is above average. Promoting on the basis of seniority is unlikely to achieve any performance orientation; that is, unless it is merely used as a secondary factor to determine which of two above average candidates should be promoted.

A policy regarding promotions and associated training and which explains how an employee's career might develop is a particularly useful policy. We have already referred to the worth of a policy of promotion-from-within. A brief explanation of a career ladder policy - as they are often described - follows. Without such a policy and when nominated for training, a logical question for any employee to ask is, "What's in it for me?". Thus, from the standpoint of motivation it is important that the employee recognizes the proposed training not only as a potential benefit to his employer, but also as a personal opportunity. In this regard, the career ladder or career development guide provides an illustration for employer and employee alike of possible advancement opportunities to other positions within an organization.

This approach appears to be especially applicable in the case of developing countries where the improvement of existing water and waste water systems and the addition of more sophisticated equipment, etc., place heavy demands on sector personnel charged with the operation of these systems.

Well-defined career ladders for each position can prove advantageous to both employer and employee, e.g.:

(a) Such a chart provides existing staff as well as possible recruits with a perspective of their career opportunities in the utility. The career ladder provides prospective employees with an indication that the employer is interested in employee development. It can serve to attract those with ambition and those with proper qualifications.

(b) Training courses will thus be designed with a view to career development and organizational development as opposed to ad hoc, dead-end training courses.

(c) Regardless of their level of entry, employees with potential can, with the necessary training and experience, rise up the career ladder to reach their full potential and be of the most benefit to the utility.

APPRAISAL AND CAREERS (cont'd)
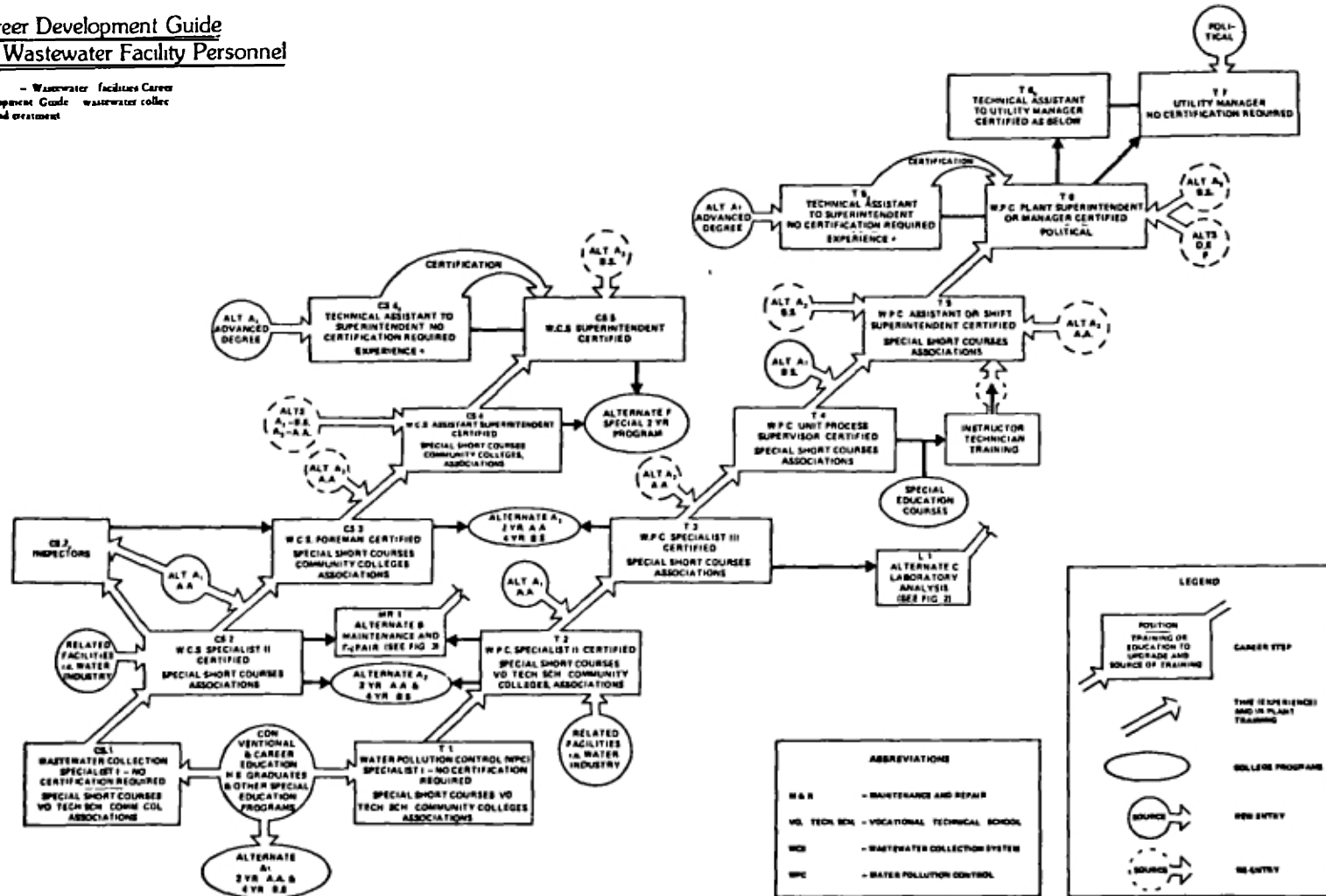
6.2 Career Development (cont'd)

(d)   By adhering to career development guides and the qualifications
       contained therein, the problem of political "appointees" may be
       minimized in a public agency.

(e)   Following the career ladder approach, a utility can be reasonably
       assured of having qualified individuals in all positions, thus
       providing the organization with valuable planning and training
       resources.

(f)   The career ladder concept and the word 'promotion' itself may
       suggest that all movement should be upward. However, organizations
       have found it useful to require employees, at certain stages in
       their careers, to take lateral moves to broaden their base of
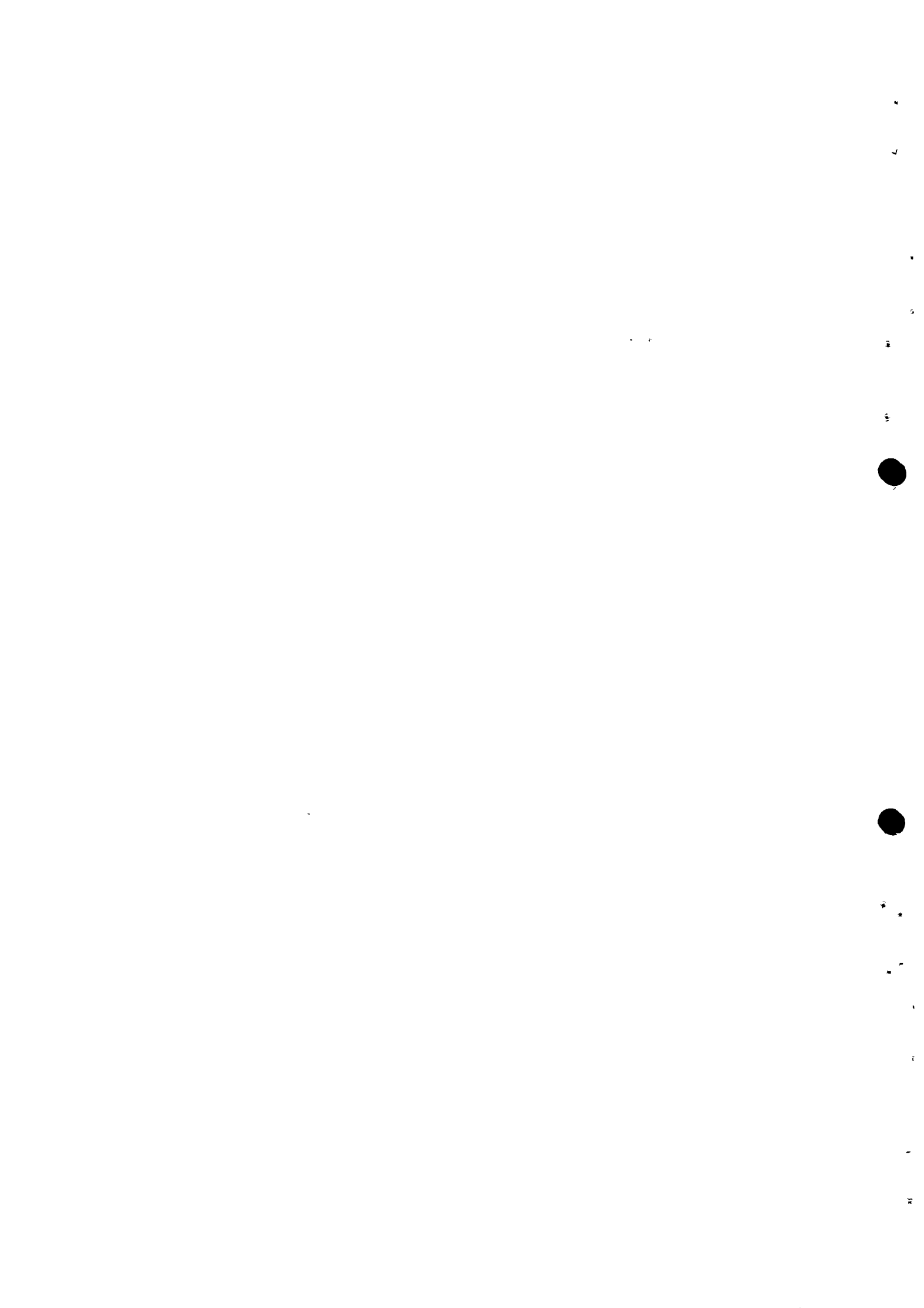   experience before moving up.

There are many examples of this type of approach, one of which, career
development guide (IS-06) is illustrated on page 198. It is taken from an
article in Deeds and Data*, a publication of the Water Pollution Control
Federation.

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*   VOEGTLE, J.A. Career development guide for wastewater facility
personnel. Deeds and data, Water Pollution Control Federation, July 1973.

Career Development Guide
for Wastewater Facility Personnel

— Wastewater facilities Career Development Guide — wastewater collection and treatment

T 6
TECHNICAL ASSISTANT
TO UTILITY MANAGER
CERTIFIED AS BELOW

T F
UTILITY MANAGER
NO CERTIFICATION REQUIRED

POLITICAL

CERTIFICATION

ALT A₁
ADVANCED
DEGREE

T 5
TECHNICAL ASSISTANT
TO SUPERINTENDENT
NO CERTIFICATION REQUIRED
EXPERIENCE +

T 6
W.P.C. PLANT SUPERINTENDENT
OR MANAGER CERTIFIED
POLITICAL

ALT A₂
B.S.

ALT A₃
D.F.

CB 4₁
TECHNICAL ASSISTANT TO
SUPERINTENDENT NO
CERTIFICATION REQUIRED
EXPERIENCE +

CERTIFICATION

ALT A₂
B.S.

CB 5
W.C.S SUPERINTENDENT
CERTIFIED

ALT A₁
ADVANCED
DEGREE

T 5
W.P.C ASSISTANT OR SHIFT
SUPERINTENDENT CERTIFIED
SPECIAL SHORT COURSES
ASSOCIATIONS

ALT A₂
B.S.

ALT A₂
A.A.

ALT A₁
B.S.

ALTS
A₁-B.S.
A₂-A.A.

CB 4
W.C.S ASSISTANT SUPERINTENDENT
CERTIFIED
SPECIAL SHORT COURSES
COMMUNITY COLLEGES,
ASSOCIATIONS

ALTERNATE F
SPECIAL 2 YR
PROGRAM

T 4
W.P.C UNIT PROCESS
SUPERVISOR CERTIFIED
SPECIAL SHORT COURSES
ASSOCIATIONS

INSTRUCTOR
TECHNICIAN
TRAINING

ALT A₁
A.A.

SPECIAL
EDUCATION
COURSES

CB 3
W.C.S. FOREMAN CERTIFIED
SPECIAL SHORT COURSES
COMMUNITY COLLEGES
ASSOCIATIONS

ALTERNATE A₁
2 YR A.A
4 YR B.S

T 3
W.P.C SPECIALIST III
CERTIFIED
SPECIAL SHORT COURSES
ASSOCIATIONS

CB 2₁
INSPECTORS

ALT A₁
A.A

ALT A₁
A.A.

L 1
ALTERNATE C
LABORATORY
ANALYSIS
(SEE FIG 2)

MR 1
ALTERNATE B
MAINTENANCE AND
REPAIR (SEE FIG 3)

RELATED
FACILITIES
i.e. WATER
INDUSTRY

CB 2
W.C.S SPECIALIST II
CERTIFIED
SPECIAL SHORT COURSES
ASSOCIATIONS

ALTERNATE A₁
2 YR A.A &
4 YR B.S

T 2
W.P.C SPECIALIST II CERTIFIED
SPECIAL SHORT COURSES
VO TECH SCH COMMUNITY
COLLEGES, ASSOCIATIONS

RELATED
FACILITIES
i.e. WATER
INDUSTRY

CB 1
WASTEWATER COLLECTION
SPECIALIST I — NO
CERTIFICATION REQUIRED
SPECIAL SHORT COURSES
VO TECH SCH COMM COL
ASSOCIATIONS

CON
VENTIONAL
& CAREER
EDUCATION
H S GRADUATES
& OTHER SPECIAL
EDUCATION
PROGRAMS

T 1
WATER POLLUTION CONTROL (WPC)
SPECIALIST I — NO CERTIFICATION
REQUIRED
SPECIAL SHORT COURSES VO
TECH SCH COMMUNITY COLLEGES
ASSOCIATIONS

ALTERNATE
A₁
2 YR A.A &
4 YR B.S

ABBREVIATIONS

M & R — MAINTENANCE AND REPAIR

VO. TECH SCH — VOCATIONAL TECHNICAL SCHOOL

WCS — WASTEWATER COLLECTION SYSTEM

WPC — WATER POLLUTION CONTROL

LEGEND

POSITION
TRAINING OR
EDUCATION TO
UPGRADE AND
SOURCE OF TRAINING — CAREER STEP

TIME (EXPERIENCE)
AND IN PLANT
TRAINING

COLLEGE PROGRAMS

SOURCE — NEW ENTRY

SOURCE — RE-ENTRY

3. PERSONNEL - MAJOR AREAS OF ACTIVITY (cont'd)

7 TRAINING AND DEVELOPMENT

> 7.1 TRAINING AND DEVELOPMENT POLICY
>   IS-07 SAMPLE TRAINING AND DEVELOPMENT POLICY
> 7.2 PROGRAMMES:
>   MANAGEMENT
>   SUPERVISORS
>   OPERATORS, ETC.
>   PERFORMANCE EVALUATION
> 7.3 FACILITIES, METHODOLOGIES AND MATERIALS

This subject is very fully covered in the Training Chapter, pages 94 to 153 inclusive. However, there are a number of additional factors which affect and involve management which require emphasis and consideration.

7.1 Training and Development Policy

WHAT IS IT?

The training and development policy is a written statement outlining commitments and plans for enhancing skills, career opportunities and organizational performance through planned training and educational activities. To become effective it requires designated people whose responsibility is to carry out the policy.

WHY IS IT NEEDED?

This policy is of fundamental importance to an agency because it enables:

- clarification of the relationship between training and other activities;

- responsibilities for training to be correctly allocated, thus minimizing inter-departmental conflicts;

- training to be carried out logically within an agreed organizational framework rather than on a unilateral personal level; and

- the effectiveness of training to be assessed in relation to the organization's objectives.

DEVELOPING THE TRAINING POLICY

Some factors to be considered in a training and development policy are listed below:

(1) Need: Procedures must be developed for defining training needs. (See chapters 2 and 3, "Planning" and "Training" for guidelines). Although supervisors and managers will have a large role in this process, an assessment of overall needs and priorities are also necessary. The Training Policy should make clear the importance of needs assessment.

TRAINING AND DEVELOPMENT (cont'd)

7.1 Training and Development Policy (cont'd)

(2) Objectives: In order to work toward the goals of the organization, trained manpower is necessary. Usually, therefore, the training and development objectives are closely related to the organizational goals. The statement in the Training and Development Policy should reflect the relationship between the two.

(3) Required Elements: The following elements are required. The Training and Development Policy should include the agency's commitment to these elements. Some of them are:

- the establishment of a Personnel Function[+];
- a Personnel Policy;
- a Personnel budget;
- a manpower inventory;
- a manpower development plan;
- performance-oriented instructional materials;
- planned evaluation of training;
- performance appraisals.

Since all of these elements are developed elsewhere in the handbook it is not necessary to repeat the detail here. However, it should be noted that an effective way of drawing all these elements together and ensuring that the ensuing Training and Development Policy is put into effect is to set up a Training and Development Committee and assign to it a regular monitoring and support role.

The following quotation is from a Personnel Policy document[*]:

"A training Committee shall be established for the administration of company training programmes. It shall consist of 5 top-level staff members necessarily including the Chief of Planning, the Chief of Human Resources, and the Director of Training. (Preferably with the Chief Executive or his deputy as chairman and another line director as the fifth member - Ed.).

The Training Committee shall meet every 3 months, or more often, if a special meeting is called by the Chief of Human Resources at the request of any other member of the committee".

The Training Committee shall have the following functions:

1) Analysis of training needs of the various company work areas.

[+] Alternatively described as a Human Resources Development Function.

[*] From a SATECIA model presented at a Symposium on Development of Environmental Manpower with Particular Reference to Basic Sanitary Conditions, PAHO/WHO, November 1979.

TRAINING AND DEVELOPMENT (cont'd)

7.1 Training and Development Policy (cont'd)

        2) Planning of all training resources for both professional and non-professional personnel and preparation of the corresponding programmes.

        3) Appraisal and upgrading of precandidates for study grants, determining the terms of leave to be granted, and recommending the utilization thereof to top management......"

(4) Staff: The responsibilities of managers and supervisors for training as well as the responsibilities of any professional training staff should be clarified in the Training and Development Policy. The personnel statement should also include reference on how the selection and training of staff concerned with HRD will be carried out.

(5) Procedures: The Training and Development Policy may state the preferred methods of training, e.g., performance-oriented training vs. theoretical learning in a classroom situation.

(6) Evaluation: The Training and Development Policy should clearly establish that review and follow-up procedures for evaluation of training and development are required as part of all programmes.

A sample training and development policy adapted from the Caribbean Basin Water Management Project is reproduced on the following pages, (IS-07). A similar policy was adopted by the majority of the ten countries participating in the project.
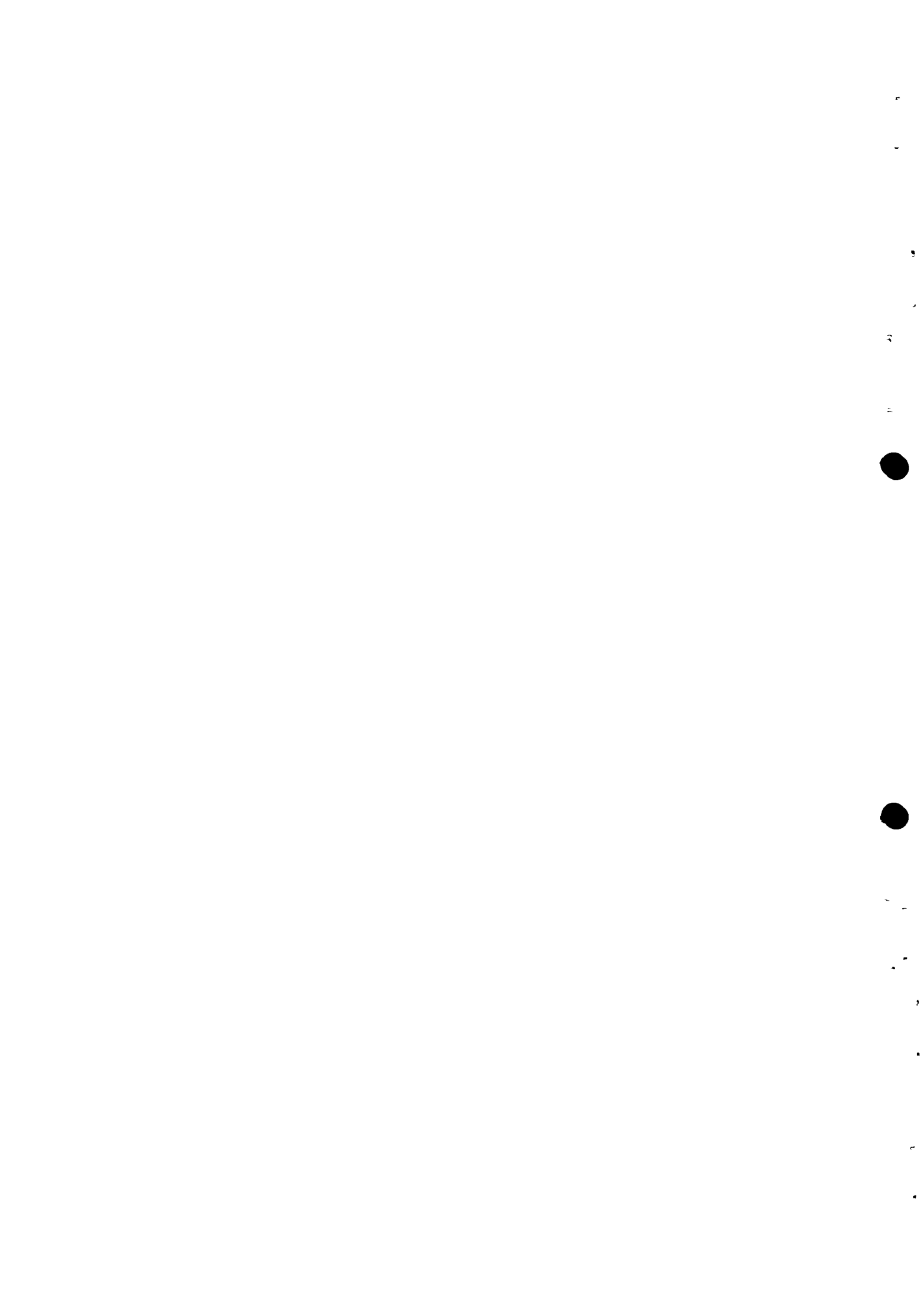
INFORMATION SHEET: IS-07

SAMPLE TRAINING AND DEVELOPMENT POLICY*

BY DEFINITION: A POLICY PRESENTS BROAD GUIDELINES ON WHICH A COURSE OF
                    ACTION IS BASED.

We wish to make known to all personnel the utility's commitment to planned, systematic training and that all Managerial/Supervisory staff have a responsibility to effect this policy. The policy outlines a deliberate departure from traditional approaches to training with a view to developing a higher degree of performance among utility personnel.

Need

The long-term effectiveness of the utility to carry out its mission hinges largely on its capacity to attract, develop, suitably assign and retain staff with the skills, knowledge and attitudes to satisfactorily perform their individual tasks. Further, it is recognized that as utility goals are achieved through employee efforts, suitable career ladders and opportunities must be provided for the individual to attain personal goals.

Objectives

The immediate objective is to implement appropriate training for waterworks employees in order to help the utility adapt to changing conditions while assisting the individual to attain his/her potential. Through such training the ultimate goal is to improve the quality of service, thereby raising the health and socio-economic conditions of the people while encouraging national and regional self-reliance.

Human Resources Development System

To assist the utility in achieving its objectives and at the same time provide the mechanism by which staff members can realize their career goals, a Human Resources Development System is required. As the HRD system is influenced by many interdependent factors related to utility as well as individual needs, its design must include all the elements to meet these needs and at the same time to institutionalize training. Some of the essential elements of the HRD system are considered to be:

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* Adapted from the "Training Coordinator's Handbook" of the Caribbean Basin Water Management project.

INFORMATION SHEET: IS-07 (cont'd)

SAMPLE TRAINING AND DEVELOPMENT POLICY (cont'd)

- Personnel Policy
- Establishment of a HRD unit
- Training policy related to Personnel Policy
- Defined organizational structure indicating functions
- Budget
- Inventory of training resources
- Manpower Inventory
- Manpower Development Plan
- Definition of the training methodology
- Multi-disciplinary "pool" of instructors
- Performance-oriented instructional materials
- Evaluation of effectiveness.

Procedures and Methodology

The choice of training procedures will be on the basis of utility and employee needs. In general terms three basic procedures will be followed:

Direct instruction of employees by their supervisors (on-the-job)

Delegated training within the utility (in-service)

Delegated training outside the utility (external)

Specific choices within the three procedures listed above will be defined by the training coordinator in consultation with management, for individual trainees as required.

To implement intelligent and creative training within each of the procedural options it is proposed to utilize the methodology illustrated below:

- THE SYSTEMATIC APPROACH -

If objectives not achieved,
review & revise as required
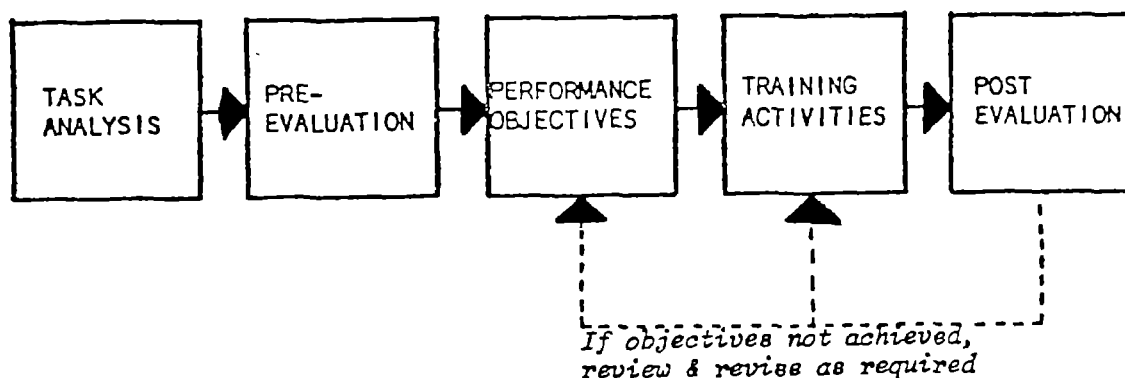
INFORMATION SHEET: IS-07 (cont'd)

Personnel

Training is not viewed as a separate specialization which is added to the utility, but rather, TRAINING IS AN INTEGRAL COMPONENT OF MANAGEMENT RESPONSIBILITY. In support of this thesis therefore, the utility adopts the following recommendation of the UN Water Conference (1977):

"78m. Take steps to encourage operational managers and supervisors to play their part, both individually and collectively, as non- professional and part-time trainers and instructors of their own subordinate staff".

Thus, it is contemplated that, wherever and whenever feasible, managers and supervisors will implement training through in-service and on-the-job training activities. All personnel selected to carry out training will have satisfactorily completed, either through individual or group study, the 3 part series of Training of Trainers workshops. External training will be coordinated by local and regional training coordinators.

Evaluation

It can generally be stated that training activities are designed to bring about desired behaviour changes in the areas of attitudes, skills, and knowledge. The purpose of training evaluation therefore should be to determine if such changes did occur as a result of the training. In a sense it should be an "accountability" system for comparing demonstrated benefits to expenditures of effort, time, and money.

Evaluation of training can provide accountability evidence, more specifically quality evidence to demonstrate training effectiveness. It is suggested that all evaluations cover the following:

Reaction: How well did the trainee like the training?

Learning: What principles, facts, and techniques were learned?

Behaviour: What changes in job performance resulted from the training?

Results: What were the tangible results of the training in terms of
            reduced cost, improved quality, improved quantity, etc.?
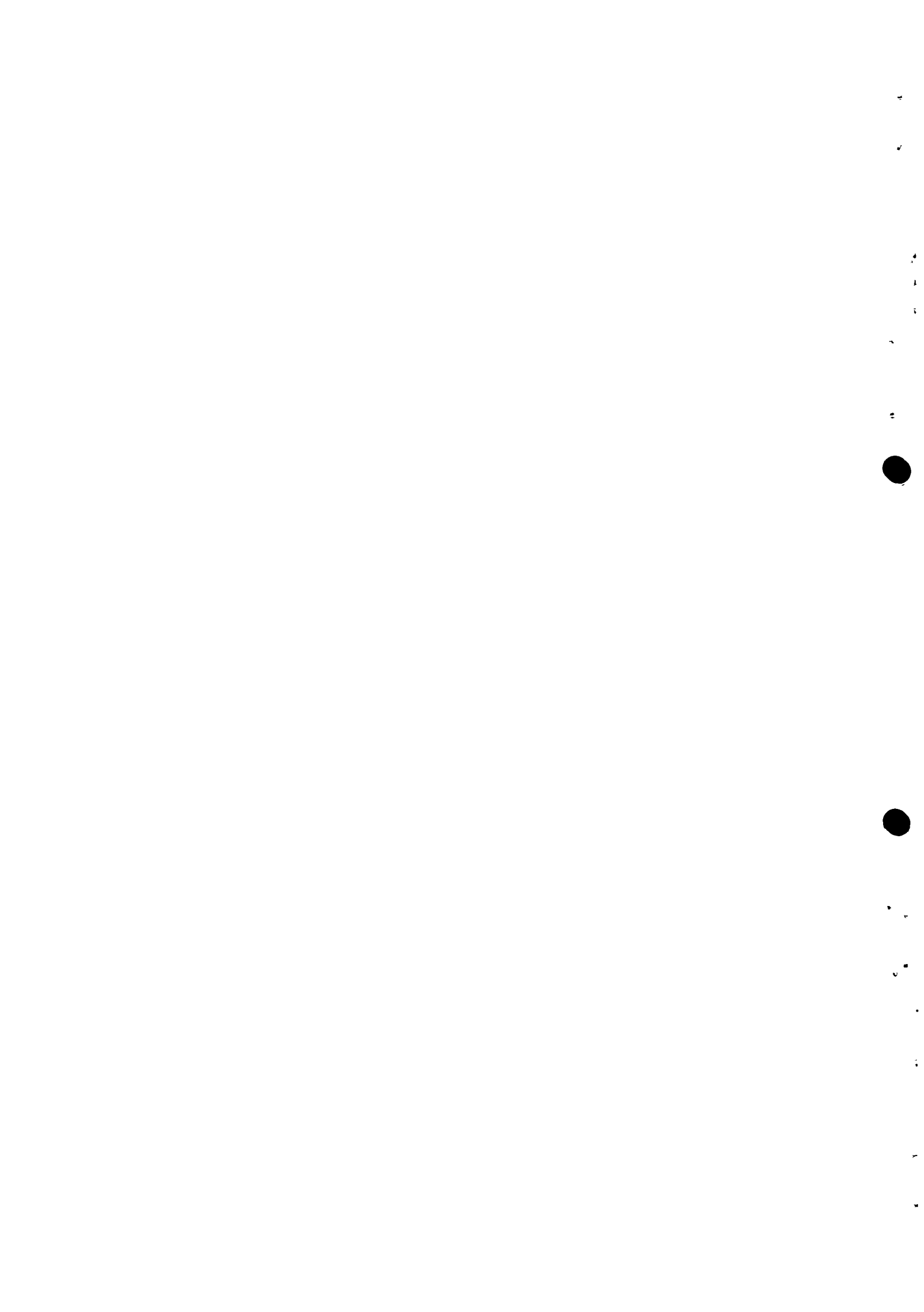
TRAINING AND DEVELOPMENT (cont'd)

7.2 Programmes

Training and Development Programmes based on the needs of each major group of employees require to be drawn up each year as part of the annual plan. Thus, an organization will have programmes for management, supervisors, operators, apprentices, technicians, technologists, administrative support staff and all the other groups making up an organization as need demands. It is important to have programmes for each of the groups mentioned above but the prime need is for management programmes for a number of reasons. Most things that happen in an organization stem from management action or indeed inaction. Management sets the tone and determines the thrusts and the emphasis. All managers need to fully understand what these are and be committed to them in order to effectively apply them. Moreover, by their participation in training and development programmes they indicate to other groups the importance of training and development. A number of successful companies have made the policy decision to require all those who have responsibility for people to spend one week per year on internal programmes devoted to people management subjects. Not only do they so become committed to the annual thrust, but it also gives them time to stop and think. It helps them recharge their internal batteries, takes them away from day-to-day pressures, lets them indulge in a little sport and eating, gives them the opportunity to mix with colleages from other functions and so work better together as a result. How to develop and implement a training and development programme for managers or any other of these occupational groups is described in the 7-Step procedure listed in Section 2 of the Training Chapter (page 122). Performance Evaluation based on performance objectives is described in Step 3 through to Step 7 (pages 126 to 136).

7.3 Facilities, Methodologies and Materials

Teaching methodologies and materials are described in Step 3 (page 129), and Training facilities in Step 4 (page 132). Additional information is provided in the Reference Notes chapter, at the end of the handbook, section 4 (page 225). There are also numerous books available on these subjects, some of which are mentioned in the bibliography, pages 214 to 217.

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3. PERSONNEL - MAJOR AREAS OF ACTIVITY (cont'd)

8 HEALTH AND SAFETY

      8.1 EXAMINATIONS
      8.2 FIRST AID, HEALTH PROGRAMME, REFERRAL
      8.3 SAFETY CAMPAIGNS, EDUCATION, INSPECTIONS
      8.4 ACCIDENT INVESTIGATION, AWARDS, RECORDS

Organizations differ as to how they arrange for this area of activity to be covered. The subject areas mentioned above give some idea of what is usually the responsibility of Health and Safety Departments. Both have been mentioned previously whilst describing the other major areas of activity. The health side can be as little as a first aid room and as much as a full time medical officer with elaborate equipment and support staff. It is most often part of the Personnel Function. The safety side, because it has much in common with the health side, e.g., accidents and first aid and safety education and health education, is often placed under the same manager who is responsible for health. Although this is not always so.

Whatever the organization structure, both areas are much concerned with getting the balance right between an organization's needs, together with its legal responsibilities on the one hand, and employee needs on the other.

The fair, just and consistent approach that we have referred to when writing about all the other areas is equally applicable here. Just as is the need for having expert specialist and professional staff. Again there is much specialist literature for those interested.

4. BUDGET FOR PERSONNEL ACTIVITIES

All of the major areas of personnel activity listed in sections 1 to 8 above require adequate funding for the staff of those activities and for the services they provide. The pace of any planned changes will often be dictated by the amount of money available. It is good personnel management practice to discuss potential changes with the executive board long before the budget cycle commences and often, in principle, before submitting detailed costings.

During the Decade of the '80's, massive commitments are being made to extend the delivery of water and sanitation services. Planning for these efforts will need to be realistic; programmes will need to be practical and supported by adequate budgetary allocations. Increasingly, national and sector efforts will demand sound approaches to financing development needs.

4. BUDGET FOR PERSONNEL ACTIVITIES (cont'd)

Throughout the international community it has been recognized that capital investment alone will not ensure good water and sanitation service. Further, it has been concluded that new and more sophisticated systems will either be misused or under-utilized unless development of human resources is undertaken as a parallel activity to physical improvements. It has been variously estimated that well over 100 000 persons per year will need training if nations are to achieve their Decade commitments. Training and Development will become an increasingly more important and prevalent activity, both in providing new forms of service and in improving the use of existing facilities. In recent years lending agencies have insisted, and recipient governments have agreed, that every improvement project must have a training and development component. Thus, most loans have a specific dollar amount allocated to training and development.

Creating organizational conditions where trained human resources are likely to remain and make a positive contribution, rather than migrate to other countries or sectors, is also important.

"If an assessment of material needs and resources for the Decade reveals that the country requires and can pay for the skills of its own expatriates, efforts should be made to locate, repatriate and employ them. In many developing countries there may already be nationals with the required skills available for appropriate jobs. This should be fully investigated before plans are made to provide additional resources for training". Basic Strategy Document on Human Resources Development, p.20.

· Recognizing and anticipating these major expenditures will require considerable inventiveness in funding formats. Countries have a variety of funding options to consider once their needs for training are identified. If these needs cannot be met entirely from existing development and recurrent budgetary resources, options anticipated by the Basic Strategy Document include:

(a) An allocation to training in the budget of water supply and sanitation agencies. A few countries are now considering the U.K. example of financing water/wastewater training through an annual levy on the payroll of each utility. (Levy for 1979-1980 was .73%.)

(b) Funds for training as a component of loans for capital investment programmes in water supply and sanitation. Lending agencies view such a component as reflecting a country's interest in improving national capacity and are generally strongly supportive of such an interest.

(c) Application for grants from donor agencies to finance training related to high priority problems. Attractive low-cost proposals concerning specific problems can, in some cases, be financed from a donor's discretionary funds at the country level.

4. BUDGET FOR PERSONNEL ACTIVITIES (cont'd)

    (d) Funds for training in connection with a research project which
         bilateral and multilateral agencies sometimes provide to governmental
         agencies.

    Some of the recurrent costs involved can be met by communities
themselves. Members of the community can sometimes make a financial
contribution to the water and sanitation schemes in their area or provide
subsidized, even partly voluntary, labour in exchange for the resulting water
and sanitation facilities.

    Plans for funding from government budgets should include provision for new
or upgraded positions in governmental agencies at all levels, and include
fixed and recurrent costs for offices, laboratories, equipment, and transport.

    Where such alternatives are not feasible, governments may need to consider
appropriate changes in their fiscal policies towards the sector.

5. EFFECTIVE MANAGEMENT OF HUMAN RESOURCES - CONCLUSIONS

    In the Management Chapter, so far, we have covered, five essential points
for gaining perspective, examples of how the personnel function can be
organized, eight major areas of personnel activity and the budgets required to
ensure their effectiveness.

    The preparation of these words has been very much coloured by the
prevailing situation in the water supply and sanitation sector throughout the
world. The Pan American Health Organization described the prevailing
situation starkly in their publication, Drinking Water Supply and Sanitation:
The International Decade in the Americas,* as follows:

        "In the history of many of the countries in the Americas, the water
    systems of important cities represent significant achievements, a source
    of national pride, and the symbol of a high degree of development. At the
    end of the last century.... water systems in the large metropolitan areas
    were generally constructed, operated, and maintained by well-organized
    companies, with good performance records....

        Today that situation has changed dramatically. Few countries would
    currently consider their water and sanitation sector among the most
    developed and satisfactory. While... other... sectors have experienced
    huge improvements, development of the water sector has been somewhat
    limited. Water agencies in many countries are being labelled bottomless
    pits for financial resources. Indeed, most indicators of institutional
    performance demonstrate that few water agencies could be considered
    successful in achieving their goals....

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* Environmental Series No. 3, PAHO/WHO, Washington, 1983.

5.   EFFECTIVE MANAGEMENT OF HUMAN RESOURCES - CONCLUSIONS (cont'd)

A lack of financial resources and the scarcity of skilled human resources are generally singled out as the main obstacles to achieving better performance. Although no one could possibly doubt the paramount importance of these two factors, they do trigger a number of questions. Are the human resources presently available being used to the utmost of their actual capacity? Would more money and more people solve existing problems, or simply create new ones? Are the concerned institutions prepared to provide their people with the conditions and tools necessary to perform adequately? In many cases the answer to these questions would have to be an unqualified "No". Yet it is generally within this scenario -- one that vacillates between the awareness of needs and the lack of commitment to meet them effectively - that managers reach the decision to carry out major training programmes. Although the lack of skilled staff is more or less evident at every level of any organization, it is doubtful that its performance could be considerably improved simply by training people."

These words from PAHO clearly summarize the prevailing situation in the Americas. They could just as easily have been used to describe the situation almost anywhere else in the world. They describe a universal situation in the water and sanitation sector today, already one third through the decade. It is a situation that calls for a new and radical look at how best to deploy human resources, at how best to plan for, train and manage people.

This new look needs to include decade aims such as changing emphasis towards appropriate technology, towards the underserved, towards primary health care and augmentation of over-stretched staff by local community-based volunteers.

Can all of this be done? Can Decade requirements be met? It certainly can be done if the will is there, and if a reorientation of management style and practices takes place. Much of what has been described here adds no extra cost. Rather it gets more for the same money. But it will take time. We must start now if we have not already done so. To illustrate this we use the example of a state run agency in Brazil that, in two and a half years, turned itself from being in deficit to being a self-sustaining operation.[+] It meant moving away from a traditional civil service culture. Measures to this end included identifiying and building leadership material, loosening management styles, changing the organizaton structure, modifying personnel practices, making systems and work processes more organic and less mechanistic, and looking at new ways of learning and communicating.

It takes time to bring about change of the sort described here and elsewhere in the Chapter.

[+]   Described in a paper presented at the Asociacion Interamericano De Ingenieria Sanitaira y Ambiente (AIDIS) Congress in July 1982.

5.   EFFECTIVE MANAGEMENT OF HUMAN RESOURCES - CONCLUSIONS (cont'd)

Time is one factor, there are others. There are four other key ingredients for revitalizing large organizations, according to David Anderson* and his former McKinsey colleague Julian Philips. They are:

1.   A felt need for change
2.   A vision of the future
3.   Revitalisation 'champions'
4.   Momentum

1. The felt need for cultural change, can come from internal change such as growth or a changing environment; it can come from vision - of the gap between what is and what might be; or it can grow out of pride - the desire to be the best.

2. Key elements in the vision of how the organization would or should be in the future include who the customers would be; what services would be offered; the core skills that would be required; a set of values' that would appeal - in other words 'what would the organization stand for?'; commitment at the top - sharing the vision among the top team and getting them committed; and a sharp focus on the first steps - without which the vision cannot be realised.

3. Champions would be individuals who would take on the change exercise as a personnel project - many would come from top management but they would be spread right through the organization.

4. The momentum for change would be built and sustained through thoughtful focused planning and replanning; group gatherings - workshops - and multiple initiatives to maximize participation - taskforces, etc; and publicizing small early gains.

But given these conditions and innovations, success comes down to understanding the basics of the business one is in and executing them well.

Recapitulating. The prevailing situation in the water and sanitation sector today calls for a new and radical look at how best to deploy human resources, at how best to plan for, train and manage people.

It will be difficult and challenging but it can be done, in time, if management ensures that the four key ingredients are ever present.

It can be done if we are prepared to learn from the successful organizations, quoted in the chapter, who have found that:

-    Human Resources Management embraces all who manage people whether they be operational, personnel or any other type of manager. They each have a role in all the major areas of personnel activity.

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* David Anderson is professor of management at the Massachusetts Institute of Technology's Sloan School.

5. EFFECTIVE MANAGEMENT OF HUMAN RESOURCES - CONCLUSIONS (cont'd)

- Together they need to integrate the Planning, Training and Management of Human Resources to help ensure that the total agency plan is achieved.

- All managers have a two-fold responsibility; for task management and for people management. It is necessary to balance these, to balance the needs of the organization with the needs of the employees, to obtain their commitment - their motivation to their work and the organization so enhancing performance. It is a common experience in the water and sanitation field to find too much emphasis on the task side and not enough on the people management side.

TASK MANAGEMENT

PEOPLE MANAGEMENT

- Time taken by the Board to think through what each of the major objectives should be is time well spent particularly if they then ensure that all managers and employees understand these objectives. This means that open and clear lines of communication, together with regular opportunities for two-way dialogue and consultation are essential. Involvement and problem solving further adds to employee motivation.

- Balance, and the culture that goes with it, is an overall guiding principle:
        - which includes tone, style of management and shared values
        - which is the base against which new policies and practices can be tested before they are introduced.

- Personnel Policies need to be designed to attract, retain and motivate good people. The policies need to be balanced and consistent with each other. This includes regularly reviewing Personnel Policies and Practices and adjusting as necessary. It means all managers being fair and consistent in the application of policies and practices.

It can be done. Let's start now.

reference *NOTES*

WORLD HEALTH ORGANIZATION

HUMAN RESOURCES DEVELOPMENT
HANDBOOK

GUIDELINES FOR MINISTRIES & AGENCIES
RESPONSIBLE FOR WATER SUPPLY & SANITATION

TRAINING

PLANNING   MANAGEMENT

INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE

TABLE   OF   CONTENTS

INTRODUCTION

This section of the Human Resources Development HANDBOOK is your section. It is intended to be your "HRD file" and it is hoped that as you discover articles, papers, handouts, exercises and other types of useful information you will put copies in this section.

If this book is to be truly useful as a handbook, you must make if your own. You must personalize it so that it contains not only notated pages of specific value to your work situation, but also a record of HRD activities you have undertaken.

We begin your reference section for you.   Included are:

1.   a Bibliography of books and articles that will be of interest to those of you who want to pursue HRD issues in greater depth; (p. 214)

2.   a glossary of terms which will be a handy reference as you read through earlier chapters of the HANDBOOK or other HRD publicatons, and; (p. 218)

3.   one example, from the British Water Industry Training Association, of their series of job training recommendations, in this case for the Resident Engineer.   Each example in their series is drawn up in the same way, with each element of the role in question, listed and alongside of it whether off-the-job or on-the-job training is appropriate and if so what form this should take. (p. 222)

4.   explanatory notes for completion of each item of the Checklist (i.e. Part 1 of the HRD Appraisal and Planning Guide on page 11). (p. 225)

BIBLIOGRAPHY

A Way to Health: Drinking Water and Sanitation 1981-1991, WHO, Geneva, 1981.

ABBATT, F.R. Teaching for Better Learning - A Guide to the Teachers of Primary Health Care Staff, WHO, Geneva, 1980.

AUSTIN, J.H. Performance Oriented Curriculum Development for Environmental Technicians, Dallas, April 1977.

An Aid for the Training Evaluator, US Civil Service Commission Bureau of Training, Training Leadership Division, Washington, D.C.

CAREFOOT, N.F. Waterworks Training - A Caribbean Perspective, World Bank Seminar on Training, Washington, D.C., March 1981.

CLARKE, L. Training Field Workers in Rural Sanitation, report on a course, UNICEF Pakistan, 1982.

COX, S.B. Developing Appropriate Human Resources for Rural Water Programs: The Agua Del Pueblo Experiment, American Water Works Association Annual Conference, paper, Florida, 1982.

Employee Training and Development in the Public Service, Public Personnel Association, Chicago, 1970.

GIBSON, H., BUCKINGHAM, G., ANDREWS-JONES, D., MITCHELL, W., ROOTS, P. Communication in Practice, Institute of Personnel Management, London, 1981.

GLENNIE, C. A Model for the Development of a Self-help Water Supply Program, Technology Advisory Group Working Paper No. 1, World Bank, Washington, 1982.

Guidelines for Human Resources Development Planning in the Water Supply and Sanitation Sector, Technical Report No. 20, WASH, Washington, 1983.

GUILBERT, J-J. The Educational Handbook for Health Personnel. Revised Edition. Offset Publication, No. 35, WHO, Geneva, 1981.

HALL, T.L., MEIJA, A. Health Manpower Planning: Principles, Methods and Issues, WHO, Geneva, (1976).

HORNBY, P. and SHIPP, P.J. Handbook for Organizing and Conducting an HMP Workshop, Educ/84.184, WHO, Geneva, 1984.

How to use Job Analysis for Profitable Training, Food, Drink and Tobacco Industry Training Board, Leon House, High Street, Croydon, UK.

Human Resources Development, A Selected and Annotated Bibliography for use in the Water Supply and Sanitation Sector, WASH/USAID, Washington, 1984.

KATZ, F.M. & SNOW, R. Assessing Health Workers' Performance: A Manual for Training and Supervision. Public Health Papers No. 72, WHO, Geneva, 1980.

KING, D. Training Within the Organization, Education Methods Inc., Chicago, 1965.

BIBLIOGRAPHY (cont'd)

LYNCH, G.   Installation of New Services - A Training/Job Manual, Caribbean
Basin Water Management Project, Barbados, June 1980.

MARGOLIS, F.H.   Training by Objectives, The Behavioural Science Centre of
Sterling Institute, Washington, D.C., (1970).

Management Consulting: A Guide to the Profession, ILO. Geneva, 1982.

McCAFFERY, J.A.   A Systematic Training Program for Potential Human Resource
Development Managers for Water and Sanitation Institutions, Working Paper
No. 24, WASH, Washington, 1983.

National Industrial Conference Board, Personnel Procedure Manual, Studies in
Personnel Policy No, 180, Bureau of National Affairs Inc., The Personnel
Department, Personnel Policies Forum Survey No 92, 1970.

PFIFFER, J and PRESTHUS, R.   Public Administration, The Ronald Press Co., New
York, 1967.

Lampang Health Development Project, Documentary Series Vol. 1 - 6 inclusive,
Ministry of Health, Thailand, 1981.

Primary Health Care Programmme 1978-1981, paper, Ministry of Health, Thailand,
1981.

Research Triangle Institute.   Guidelines for Human Resources Development
Planning in the Water Supply and Sanitation Sector, Working Draft, North
Carolina, USA., August 1982.

STERREGAARD, B., FENGER, B.H.   Guidelines on Manpower Planning in
Environmental Health, Report on a study for WHO Regional Office for Europe.
(1978).

Training Requirements for Operators of Water and Wastewater Plants, WHO/EUROPE
Report, Delft 30 March - 3 April 1981.

UNICEF - Assisted Rural Drinking Water and Sanitation Project in IMO State,
Nigeria, Policy review document, February 1984.

VALLIANT, H.M.   Management Policies: Their Development as Corporate Guides,
A.M.A. Research Study 76, New York, 1966.

VOEGTLE, J.A.   Career Development Guide for Wastewater Facility Personnel,
Deeds and Data, Water Pollution Control Federation, Washington, D.C., July
1973.

WASH GUIDELINES FOR EXTERNAL TRAINING, short ten-step guide, Washington, 1984.

WASH HRD Report Summaries, by regional and subject categories, Washingron,
1984.

WASH PROJECT - Three Year Contract Summary, WASH Progress Report No. 6,
Washington, 1983.

BIBLIOGRAPHY (cont'd)

WHYTE, A. Guidelines for Planning Community Participation in Water Supply and Sanitation Projects, ETS/83.8, WHO, Geneva, 1983.

World Health Forum Vol. 5, Articles on Primary Health Care, The importance of decentralized management, Partners for better health (Zaire), 1974.

WORLD HEALTH ORGANIZATION - Primary Health Care Films: Water for Thailand 1982 (Available from WHO, Geneva, for detail see next page) Sankofa - Ghana   1980

WORLD HEALTH ORGANIZATION: The Development of sets of Instruments to Assess the Performance of Students and Health Personnel. Document HMD 82.3, WHO, Geneva, 1982.

Instructor's Manual and Planning Guide for Training of Trainers   1978;   and

A Guide for Training Manual Developers, 1980,

Prepared by the Caribbean Basin Water Management Project. They are available upon request from the Environmental Health Division of Regional WHO Offices.

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Regional Office for Africa
P.O. Box No. 6
Brazzaville
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Philippines

PRIMARY HEALTH CARE FILMS

The following two films, both in colour, 16mm, optical sound, are available from World Health Organization, Geneva:

"WATER FOR THAILAND" - 1982   "SANKOFA - Tradition and Development"
                                            Ghana - 1980

Production: WHO   Production: Ghana Film Industry
                                                         Corporation and WHO

Length: 28 minutes   Length: 45 minutes

Languages: English   Languages: English, French

Thailand has developed an efficient primary health care programme along the lines described in the Declaration of Alma Ata. The Village Health Communicators represent the basis of the Thai system of primary health care. They are elected by the community and receive a short training in basic health education. They are supported by sub-district health centres, district health centres/ hospitals and a provincial health network. The film depicts the daily work undertaken by the Village Health Communicators but the main emphasis is on the provision of clean water, one of the most important elements of primary health care. We see how different systems of water supply are implemented, taking into account different geographical conditions, and how latrines can be effectively introduced. A clean supply of water is just one of the benefits obtained from combined efforts of the villagers who illustrate effective community involvement.

The film gives a comprehensive report on the Brong-Ahafo Rural Integrated Development Programme (BARIDEP) in central Ghana. It illustrates how people - drawing on their own resources and traditions - work together with both governmental and non-governmental organizations to develop primary health care. Elements of the programme depicted in the film include community farms, school health, community health workers, water supply, road and community facility construction, nutrition education, traditional birth attendants and other traditional practitioners. The film shows how a programme can be built on local traditions such as communal labour, traditional medicine and the social structures, and cooperative mechanisms of the villages. Through dialogue with governmental health and development workers, the population develops a strong enthusiasm to take the development of their area into their own hands. The film describes the part that governmental as well as non-governmental organizations can play in pushing forward a common venture. Numerous issues of PHC implementation are described in the film.

Standing Committee on Education and Training of Waterworks Personnel*

Glossary of Terms

1. *Management*
The whole range of people from the chief executive officer to the supervisor who direct and control the work of other employees.

2. *Managing*
Managing is an activity which is essentially concerned with setting objectives and deciding priorities, devising and implementing the means to achieve the objectives successfully, and the means to assess the results achieved

3. *Management Development*
The long term, planned development of managerial ability which will normally include planned movement within the undertaking and within the industry, promotion; progressive training and education which should extend throughout a manager's career.

4. *Professional Person*
A professional person is competent by virtue of his fundamental education and training to apply scientific method to the analysis and solution of business problems. He is able to assume personal responsibility for the development and application of science and knowledge His work is predominantly intellectual and varied, and not of a routine mental or physical character. It requires the exercise of original thought and judgement and the ability to supervise the technical and administrative work of others.

5. *Administration*
That part of managing which is concerned with the installation and operation of the procedures by which the work of an undertaking is communicated and carried out, and the progress of such activities is regulated and checked against plans.

6. *Administrative Officer*
A person who has acquired detailed knowledge and skills in one special area of administrative work, or knowledge and skill to a lesser degree in more than one area of administrative work; is able to exercise judgement in the sense of both diagnosis and appraisal of work, is required to supervise the work of others and has an appreciation of his working environment beyond the immediate limits of his duties.

7. *Supervisor*
The supervisor is at the first or second level of the total management structure and is in charge, either directly or indirectly of a particular area of operations. He is primarily concerned with planning and controlling the work of others, whether in the works, on site, or in the office.

8. *Technician*
A person who carries out functions of an intermediate grade between the technologist on the one hand and the craftsman on the other The education and specialist skills of a technician enable him to exercise technical judgement, i e an understanding, by reference to general principles, of the reasons for, and the purposes of his work, rather than reliance solely on established practices or accumulated skills

9 *Craftsman*
A skilled worker in a particular operation, trade or craft who is able to apply a wide range of skills and a high degree of knowledge to non-repetitive work with a minimum of direction or supervision.

10. *Operator*
A manual worker who possesses a degree of skill and knowledge of a narrower range than that of a craftsman, and who is capable of a lesser degree of adaptation.

11. *Education*
Activities which aim at developing the knowledge and understanding required in all walks of life rather than knowledge and skill relating to a limited field of activity or a specific job.

12 *Further Education*
Full time or part time education for persons who have left school The term, in its widest sense, includes higher education and adult education as well as non-advanced courses. It is often used in the narrower sense to denote courses leading to technical and professional qualifications.

13. *Manpower Planning*
The practice of planning to ensure that the right numbers of the right people will be available for the right jobs at the right time.

14. *Training Function*
All that has to be done in meeting the training responsibilities of an undertaking. The four main steps are:
  (a) Identification of training needs;
  (b) The formulation of training policy;
  (c) Implementing the training plan;
  (d) Assessment of training effectiveness.

15. *Training*
The systematic development of the attitudes, knowledge and skill required by an individual in order to perform adequately a given task or job.

16. *On-the-Job Training*
Training given in the normal work situation. It may constitute the whole of the training programme or be combined with off-the-job training and/or further education.

17. *Off-the-Job Training*
Training which is provided away from the work situation and production pressures. It is normally only part of the whole training programme and is usually combined with on-the-job training and/or further education.

18. *Training by "Exposure"*
The unsystematic development of the attitudes, knowledge and skill required to perform adequately a given task or job, which is acquired solely by practice and experience of doing that job.

19. *Basic Training*
The first stage of training for a given job or occupation, aimed at imparting the fundamental knowledge and skill to required standards.

20 *Induction Training*
Arrangements made by the employer to familiarise the new employee with the industry, the undertaking, welfare and safety matters, general conditions of employment and the department in which he is to be employed.

21. *Vocational Training*
Instruction and/or short periods of practice in a variety of occupations designed mainly for young persons approaching school leaving age, to give them a general understanding of employment opportunities and the conditions of employment prevailing in them Its object is to ensure a realistic approach to occupational choice.

22. *Training Policy*
A statement of the objectives of an enterprise relating to the training of persons at work and the means whereby appropriate facilities are to be provided or secured.

23. *Training Course*
A series of integrated training sessions which are linked together and which may form part of a training programme with specific aims clearly defined.

24. *Training Module*
Training based on the concept of building up skills and knowledge in units as needed by the individual Normally each module has a training element, an experience element and, where appropriate, a further education element. The duration of a module varies according to its content.

25. *Syllabus*
An abstract, or the main headings of coverage, of a training course or part of a course It may indicate the time to be devoted to each part of the training but not usually the order in which the subjects should be learnt. (The word "curriculum" is sometimes used.)

26. *Training Manual*
A guide for the use of training staff or of trainees showing in detail the subjects to be taught, the standards to be achieved, the methods of instruction to be adopted, the training equipment to be used, the form of records to be kept and the tests to be administered.

27. *Learning Programme*
A form of programmed instruction consisting of a progressive sequence of instructional steps each of which usually requires a constructed response from the student. The programme is written and tested so that each step represents a degree of difficulty within the capacity of the student for whom the programme is devised, and frames follow in the same sequence irrespective of whether the student makes a correct or an incorrect response.

28. *Film Strip*
A series of positive photographic transparencies printed on a single length of film often used in conjunction with a tape recorder as an aid to training Each frame is projected as a still picture.

29. *Training Advisory Service*
The provision of advice on any aspect of the training function at national or local level, with particular reference to identifying training needs, assisting with the formulation of training policy and the implementation of the training process Training advisory assignments do not normally extend beyond three months' duration

30. *Training Consultancy*
The provision of a training service at national or local level where the assignment will normally cover the whole of the training function from the formulation of policy to the assessment of effectiveness of a training scheme or project Training consultancy assignments are normally of extended duration.

31. *Training Organisation*
A permanent organisation or body employing established staff. which promotes or provides training services of any kind; e g. training courses, advisory services, consultancy services

32. *Educational Institution*
A permanent establishment which may be either a university or a college of technology or commerce which provides further education and/or higher education

33. *Training Validation*
A series of tests carried out on the content of the training programme designed to ascertain whether it has achieved its aim.

34. *Training Evaluation*
The measurement of the overall value of a training course or programme in social as well as financial terms.

35. *Block Release*
A system whereby employers allow their employees to attend technical colleges for short periods of full-time study, usually of several weeks' duration, normally without loss of pay.

36. *Day Release*
The system by which employers allow employees to be absent from work without loss of pay, usually for one day per week, in order to attend a course of further education.

37. *Sandwich Course*
A course consisting of alternate periods of study in a university (or an establishment of further education) and of associated industrial, professional or commercial experience at a place outside the university, so organised that about 20 weeks of each year of the course are spent in the university

38. *Correspondence Course*
Systematic instruction conducted by postal correspondence between the student and the agency running the course.

39. *Job*
All the tasks carried out by a particular person in the completion of his prescribed duties.

40. *Job Analysis*
The process of examining a job in detail in order to identify its component tasks The detail and approach may vary according to the purpose for which the job is being analysed, e g training, equipment design, work layout

41 *Job Description*
A broad statement of the purpose, scope, responsibilities and tasks which constitute a particular job

42. *Job Evaluation*
A generic term covering methods of determining the relative worth of jobs. The process enables jobs to be placed in rank order which can be used as a basis for establishing a balanced remuneration system.

43. **Performance Objective**
A statement of what a learner will be able to do as a result of a learning experience The derivation of performance objective from task and job analysis should be pre-requisite of any training activity.

44. **Instructional Plan**
A detailed chronological breakdown in terms of objectives, content and method for a given session within a training course or programme.

45. **Case Study**
A learning technique in which a real situation or a series of actual events is presented to trainees either orally or by case papers issued in advance of analysis and consideration of possible solutions to problems identified.

46 **Seminar**
A short course or conference for experienced persons making extensive use of participative methods and devoted to the exclusive study of nominated subjects with the object of furthering knowledge in those areas.

47. **Group Training Scheme**
A scheme operated on behalf of a group of employers to carry out all or some aspects of the training function and employing at least one full-time training specialist for the planning, organisation and control of training.

48. **Training Officer**
A specialist who is appointed to provide a service of advice and executive action to enable managers to carry out their training responsibilities. He may act directly as a member of the management team or may report to a training manager, and may cover a range of occupations within the organisation He seeks to describe, analyse and solve those problems the cause of which appears to be lack of skill or knowledge on the part of the individual or group

49. **Coaching**
Systematically increasing the ability and experience of the employee by giving him planned tasks, coupled with continuous appraisal and advice by the trainee's supervisor or a selected person.

50. **Tutoring**
The act of giving additional knowledge and guidance to an individual or small group in an *off-the-job* informal training situation.

51. **Retraining**
Training for the acquisition of the attitude/ knowledge/skill/performance pattern required in an occupation other than one for which the trainee was prepared originally, or in some cases for a new job or part of a job.

52. **Technologist**
A person who has studied the fundamental principles of his chosen technology and should be able to use his knowledge and experience to initiate practical developments. He is expected to accept a high degree of responsibility and, in many cases, to push forward the boundaries of knowledge in his particular field

53. **Refresher Training**
Training given to revise and up-date acquired skills and knowledge

54. **Appreciation Training**
Training designed to give a broad understanding of a subject which may be included in a syllabus or training programme It is not intended to equip the trainee or student to exercise the skills or apply the knowledge related to it

55. **Apprenticeship**
A system by which an employer undertakes by contract, written or implied, to train a person or have him trained systematically for a trade or occupation The duration of training will normally be fixed in advance.

56. **Identification of Training Needs**
An examination of an organisation's present and planned operations and the manpower necessary to carry them out, in order to identify the numbers and categories needing training or re-training It may refer also to the training needed by an individual to enable him to reach a given standard of performance.

57. **Safety Training**
An integral part of all training programmes to ensure that trainees habitually adopt safe working practices.

58. **Lecture**
A straight talk or presentation, possibly using visual or other aids, but without group participation other than through questions or discussion at the conclusion

59. **Aptitude**
The capacity of a person to acquire either general or special types of knowledge or skill

60. **Audio-visual Aids**
Aids to communication, learning and instruction which utilise both sight and hearing These include sound film and film strip projectors, broadcast television, closed circuit television and video-tape recordings

61. **Planned Experience**
Supervised practice and experience in a normal working situation, carefully planned as an integral part of the training programme to develop and consolidate the attitudes, knowledge and skill already acquired and to provide the basis for further training

JOB TRAINING RECOMMENDATION	OFF THE JOB	ON THE JOB	REMARKS
4. OPERATIONS - GENERAL			
4.1 Civil Engineering Construction methods	Appropriate professional seminars and	Discuss with project engineer Guided reading	NWC D3 will provide practical training in timbering
4.2 Excavations	CITB Engineers Appreciation OR Timbering		
4.3 Trench Timbering			
4.4 Formwork	CITB Engineers Appreciation Formwork or Cement & Concrete Association		
4.5 Sheet piling		Guided reading/discuss with project engineer	
4.6 Legal aspects of plant	CITB Plant Utilization course at Bircham Newton OR	Discuss with Plant Manager	
4.7 Operation of plant	"	"	
5. OPERATIONS - RIVERS			
5.1 River works design	Appropriate professional seminars	Discuss with project engineer	
5.2 Construction of river works	" &	"	
5.3 Dredging methods and banking profiles			
5.4 Use of measuring instruments	NWC J.203 River Flow Measurement		
6. OPERATIONS - SEWERAGE			
6.1 Sewerage treatment processes		Discuss with operations dept/ site visits	
6.2 Operations of sewerage treatment plants		"	
7. OPERATIONS - WATER			
7.1 Mainlaying		Discuss with operations dept/ site visits	
8. ENGINEERING - GENERAL			
8.1 Design - structural	Appropriate professional seminars Cement & Concrete Association		
8.2 Design - water retaining structures			
8.3 Design - mechanical aspects	Appropriate professional seminars		
8.4 Design - maintenance aspects	"		
8.5 Design - electrical aspects	"		
8.6 Concrete technology	Cement & Concrete Association		
8.7 Planning techniques	Urwick Orr & Partners		
8.8 Standard methods of measurement	NWC MSM14 CESMM or		
8.9 Conditions of contract - building	Building Advisory Service		
8.10 Conditions of contract - civil	NWC MSM 20 ICE Conditions of Contract		

JOB TRAINING RECOMMENDATION	OFF THE JOB	ON THE JOB	REMARKS
8.11 Conditions of contract - mechanical	NWC MSM.34 M & E Conditions of Contract		
8.12 Conditions of contract - electrical	"		
8.13 Contract administration and procedures	Included in appropriate contract conditions course		
8.14 Preparation of specifications	Appropriate professional seminar		
8.15 Preparation of estimates	Appropriate professional seminar or Building Advisory Service		
8.16 Tender procedure		Discuss with project engineer	
8.17 Financial aspects of design	Appropriate professional seminar		
8.18 Civil engineering construction practice		Guided reading/site visits etc. as appropriate	
8.19 Surveying practice and setting out	NWC J.36 Surveying practices or local F.E. college or Survey Centre, Worcester		
8.20 Design of temporary works	Appropriate professional seminar	OR Guided reading	
8.21 Construction of temporary works		Guided reading & site visits	
8.22 Inspection of formwork	Cement & Concrete Association		
8.23 Inspection of Reinforcement	Cement & Concrete Association		
8.24 Inspection of Concrete	Cement & Concrete Association		
8.25 Interpretation of drawings		Discuss with project engineer	
8.26 Drawing office practice		"	
8.27 Codes of practice		"	
9. ENGINEERING - SEWERAGW			
9.1 Design - sewerage works	NWC A.9 "The basis of sewerage treatment works design" or NWC A.10 "Process design of sewerage treatment systems" or NWC A.11 "Hydraulic design of sewerage treatment systems"		
9.2 Design - pumping stations	A.42 "Design of Pumping Installations		
9.3 Design - sewerage reticulation	Appropriate professional seminar		
9.4 Sewerage reticulation construction		Appropriate site visits	
10. ENGINEERING - WATER			
10.1 Design - pumping stations	A.42 "Design of Pumping Installations		
10.2 Mechanical design - water treatment plant	Appropriate manufacturers course	& Visits to Works	
10.3 Mechanical design - pumps	"	"	
11. FINANCE			
11.1 Contract Finance	Appropriate professional seminar Building Advisory Service, University of Bradford	OR Discuss with Finance Dept.	

4. EXPLANATORY NOTES ON CHECKLIST COMPLETION

These explanatory notes have been prepared to assist those who require to complete the checklist which forms part 1 of the HRD Appraisal and Planning Guide featured on page 11.

PLANNING   To what extent is HRD planning based on:

an INVENTORY of EXISTING MANPOWER?

The number of personnel employed in each occupation, e.g. civil engineers, plumbers, water laboratory technicians, etc. With a view to community participation, it is also important to take into account the potential resources in the underserved rural and urban areas.

an ESTIMATE of MANPOWER NEEDS?

The number and kinds of occupational skills required to meet sector goals.

an ASSESSMENT of MANPOWER PRIORITIES?

Prioritizing of the occupational skills required.

an EVALUATION of TRAINING REQUIREMENTS?

Training required to correct performance deficiencies and to train new inductees. Where community volunteers are involved with operation and maintenance, their training requirements should also be examined.

an INVENTORY of TRAINERS?

The number, speciality and availability of qualified instructors within and outside of the sector.

an INVENTORY of TRAINING RESOURCES?

Classrooms, laboratory facilities, workshops, courses, etc.

the PROPOSED LEVEL of SERVICE?

The extension of coverage as well as the improvement in quality over the existing service level.

an APPRAISAL of the Public Sector's ABILITY TO PAY training qualified manpower?

If promotion and pay conditions are better in the private sector it will be difficult to keep trained personnel working for the Decade. Salaries that are reasonably competitive with the private sector help to attract and retain trained staff.

N.B. If further help is required on the above questions it is available in the Planning chapter, page 24.

TRAINING   To what extent is HRD training based on:

a MANPOWER DEVELOPMENT PLAN (MDP)?

   A detailed MDP contains answers to the following questions:

   - WHO needs training and HOW MANY?
   - WHAT training do they need and to WHAT standards?
   - HOW MUCH training do they need?
   - WHAT FORM of training would be best?
   - WHERE should the training be done?
   - WHEN should the training be done?
   - WHO should do the training?
   - WHAT is the estimated cost?

a NEEDS ANALYSIS?

   Are needs systematically analyzed to ensure that training specifically
   meets them, where it is the appropriate solution. Where it is not, are
   other appropriate solutions applied?

a DEFINED TRAINING METHODOLOGY?

   A step-by-step systematic approach tailored to improve job performance,
   e.g. a sequence such as:

   1. task analysis
   2. pre-evaluation
   3. performance objectives
   4. training activities
   5. post evaluation

a MULTI-DISCIPLINARY TEAM of INSTRUCTORS?

   Teachers and trainers -- who are available -- from existing training
   institutions as well as managerial/supervisory staff trained as
   trainers.

PERFORMANCE-ORIENTED INSTRUCTIONAL MATERIALS?

   Based on the skills and knowledge required to perform a given task and
   broken-down into step-by-step performance components.

a VARIETY of DELIVERY OPTIONS?

   Short-term or long-term courses, in-service training, travelling
   seminars, day-release courses, on-the-job training, etc.

ADEQUATE FACILITIES and SUPPORT?

Accommodation should have adequate ventilation, accessories, seating, tables, sanitary facilities, storage space.

Secretarial services and office supplies of all basic necessities.

Equipment:

overhead projector	film projector (16mm)
slide projector (35mm)	screen
flip chart easel	magnetic board
flannel board	chalkboard
typewriter (manual)	typewriter (electric)
photocopying machine	file cabinet, etc.

ADEQUATE TRAINING AIDS?

text books	filmstips
supplementary books	microfilms, microcards
reference books, encyclopoedias	maps, globes
magazines, newspapers	graphs, charts, diagrams
documents, clippings	posters
duplicated materials	cartoons
programmed materials (self instructional)	puppets
motion-picture films	models, mockups
television programmes	collections, specimens
radio programmes	flannel-board materials
recordings (tape and disc)	chalkboard materials
drawing and paintings	drawing materials
slides and transparencies	display materials
construction materials	

EVALUATION of LEARNING?

Does systematic evaluation take place to ensure that trainees have learned what was required of them? A reliable way to determine the success of an instructional programme is to measure how well the trainee can perform the desired new tasks after completing the course. By expressing instructional objectives in terms of performance objectives trainee and instructor alike are provided the means for making that measurement.

N.B.   If further help is required on the above questions it is available in the Training chapter, page 92.

MANAGEMENT   To what extent has training been institutionalized, e.g. so
                  that people in charge of HRD, and management in general,
                  benefit from:

    an APPROPRIATE ORGANIZATIONAL CHART?

        Based on the thesis that TRAINING IS AN INTEGRAL COMPONENT OF
        MANAGEMENT RESPONSIBILITY it is logical that the training unit comes
        under the direction of a member of senior management. Does it do so,
        in this case?

    an INTEGRATED PERSONNEL POLICY?

        Is there a fully integrated Personnel Policy that achieves productive
        efficiency and balance across its component parts, e.g. recruitment and
        selection, pay and benefits programmes, communication and consultation,
        labour relations, motivation and career development and education and
        training?

    PERFORMANCE-BASED JOB DESCRIPTIONS?

        Are there job descriptions stemming from a task analysis of what the
        individual is expected to do in terms of measureable performance?

    a TRAINING POLICY?

        Which provides broad guidelines on which HRD is based, with statements
        covering the following: need, objectives, HRD system, procedures and
        methodology, personnel, evaluation.

    a TRAINING BUDGET?

        Has money been set aside on an annual basis to cover training needs?
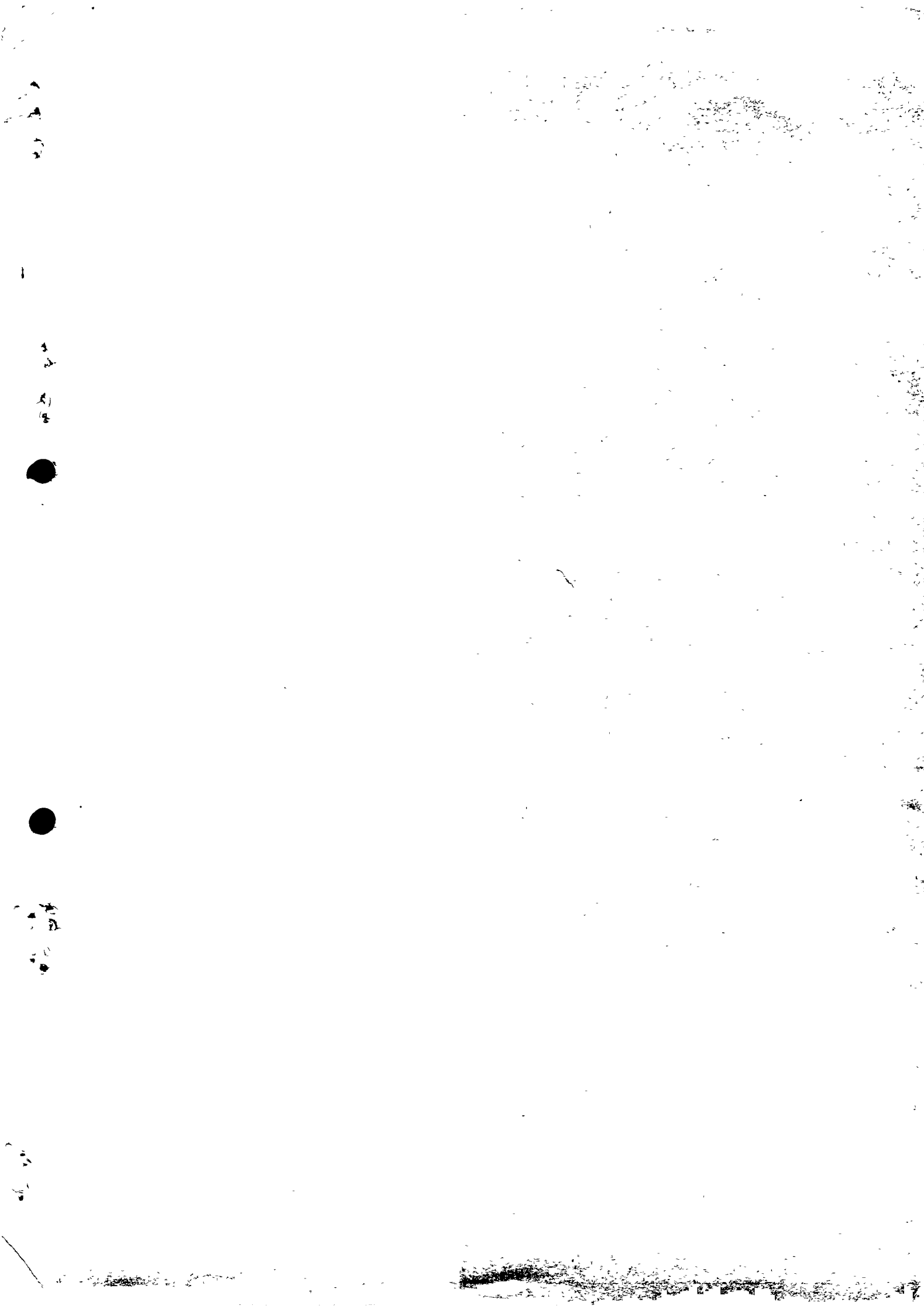   Is it adequate?

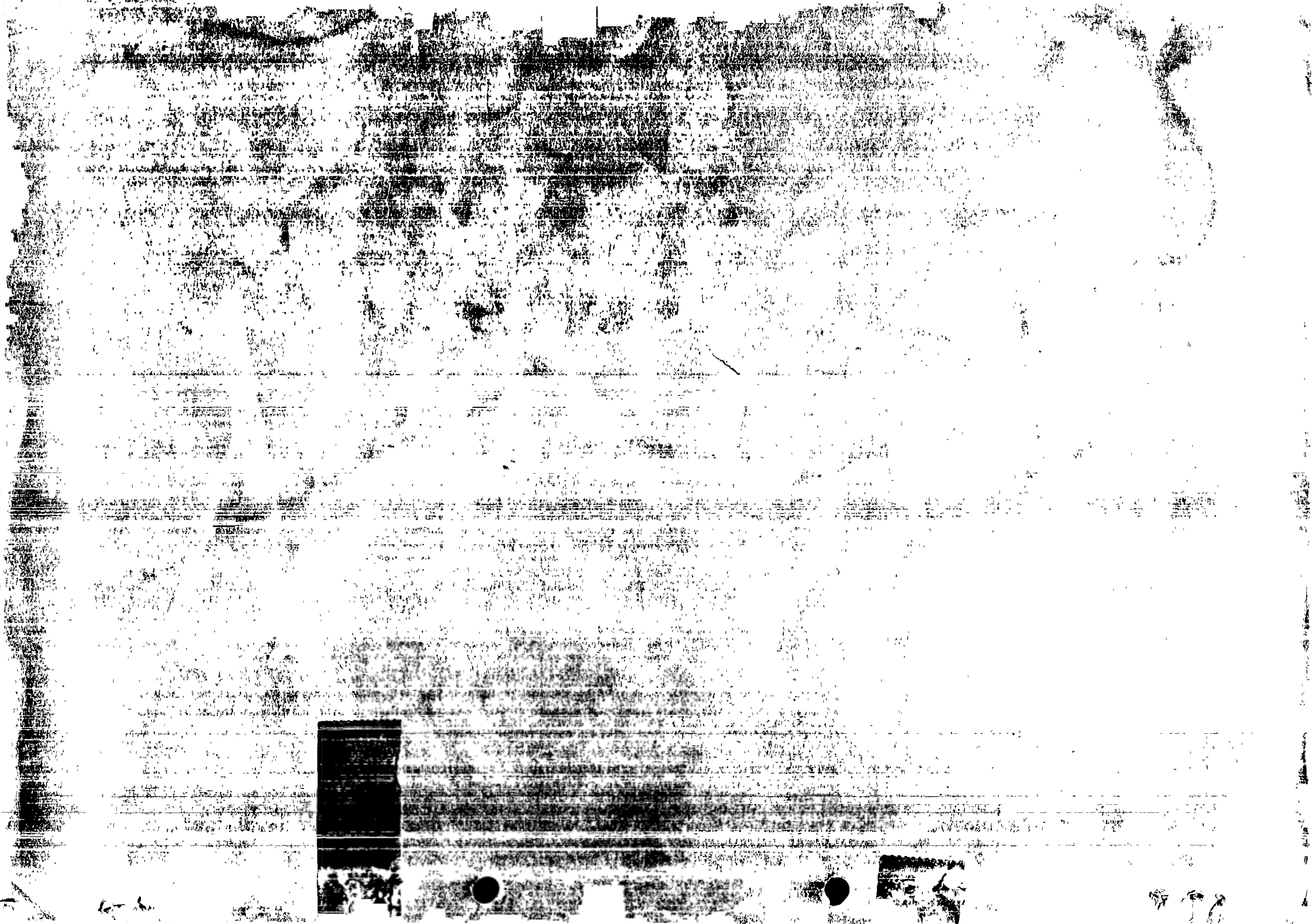   an EVALUATION of ON-THE-JOB PERFORMANCE?

        Is there a regular system of appraisal of on-the-job performance? One
        that demonstrates that good training and good work exerience leads to
        more proficient employees who know their tools/equipment and what is
        required of them in their jobs, and are self-initiating, and who relate
        well to supervision, etc?

    an EVALUATION of RESULTING LEVEL of SERVICE?

        The desired end result of all the effort and money put into human
        resource development is -- have the agreed service targets been
        achieved?

N.B.   If further help is required on the above questions it is available in the
        Management chapter, page 150.