

MANAGEMENT SKILLS DEVELOPMENT PROGRAMME

MODULE 2: PLANNING

هيئة القومية للمياه - الخرطوم
ابحاث المياه الجوفية - هولندا

WADS

NATIONAL WATER CORPORATION SUDAN
TNO-DGV THE NETHERLANDS
IN COOPERATION WITH IWACO B.V.

Nyala, February 1988

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Management Skills Development Programme Module 2: PLANNING	Code: WADS
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Management Skills Development Programme

Module 2: Planning

WADS - Nyala-operations

Management Skills Development Programme
Module 2: PLANNING

Code: WADS

Edition: April 1988

Page:2.

HAND OUT

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Report nr.	Title	Date
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70.128/3	Training Plan WADS	Khartoum, Dec.'87
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70.128/5	Management Skills Development Programme: Module 2: Planning	Nyala, Febr. '88

PLANNING COURSE-WADS NYALA

FEBRUARY 27 AND 28, 1988.

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Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page:4.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

CONTENTS

Preface

PART I: BASICS

- I.1 INTRODUCTION
- I.2 DEFINITIONS
- I.3 ANALYSIS OF ORGANIZATIONAL TASK
- I.4 COORDINATION STRUCTURE
- I.5 DECISION MECHANISMS
- I.6 INFORMATION

PART II: PLANNING SYSTEM

- II.1 PLANNING STRUCTURE
- II.2 MASTER SCHEDULE
- II.3 RESOURCES PLANNING
- II.4 SECTIONS PLANNING
- II.5 ACTIVITIES PLANNING
- II.6 CASE STUDY

PART III: DISCUSSION

- III.1 DISCUSSION ON BARCHART OF ACTIVITIES
- III.2 DISCUSSION ON PLANNING STRATEGY

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 5.
HAND OUT	Prep. by: SN TNO-DGV/IWACO
<p>PREFACE.</p> <p>This planning course is the second module of the Management skills development programme for the WADS Nyala-operations. It comprises three parts, viz.: 1. Basics, 2. Planning system and 3. Discussion. A case study and practical exercises are included.</p> <p>The hand outs given in this report are summaries of the subjects discussed during the course.</p> <p>The Management skills development programme is based on the Training plan, which has been developed within the framework of the Water Resources Assessment and Development project in the Sudan (WADS). This project started in January 1986 as a follow-up to the cooperation programme between the Sudanese National Corporation for Rural Water Development (NCRWD) and the Netherlands Institute of Applied Geoscience TNO-DGV.</p> <p>The executing authorities of the project are the Sudanese Ministry of Energy and Mines and the Directorate General for International Cooperation of the Netherlands Ministry of Foreign Affairs.</p> <p>IWACO B.V. Rotterdam is involved in the Training component of the WADS project and the management of the Nyala-operations.</p>	

Management Skills Development Programme
Module 2: PLANNING

Code: WADS

Edition: April 1988

Page: 6.

HAND OUT

Prep. by: SN
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Management Skills Development Programme

Module 2: Planning

WADS - Nyaia-operations

PART I: BASICS

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 7.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

I.1 INTRODUCTION

Planning and control

In recent years it has become more and more apparent that planning and control are one of the basic managerial activities that determines the effectiveness of an organization.

It is an essential tool that assist the management to achieve the targets efficiently, economically and in the time allotted.

Planning and control comprises the coordination of all operational activities and the utilization of manpower, materials and equipment. It starts with the decision making, based on information.

In its capacity as the brain and the central nervous system of the operations, it is responsible for the preparation, start-up, progress and completion of the operational task.

The aspects of planning and control are:

1. Deciding on the targets to be met by the project organization as a function of time.
2. Deciding on the resources which are needed for the realization of the targets defined.

Resources are:

- manpower;
- materials;
- information, including methods;
- equipment and tools;
- time;
- finance.

3. Analysis (specification) of the defined task.

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page:8.
HAND OUT	Prep. by: SN TNO-DGV/IWACO
<p>4. Selection of the appropriate resources in the required quantities, qualities and on the right times.</p> <p>5. Preparation of the resources required and consideration of organizational and environmental constraints:</p> <ul style="list-style-type: none"> - manpower availability and training; - materials procurement, stock control, issue; - information on design, processes/activities, sequence, methods, procedures, standards; - equipment and tools required, allocation and utilization; - time; - finance. <p>6. Loading and scheduling, communication and coordination:</p> <ul style="list-style-type: none"> - loading of manpower and equipment; - scheduling of operations; - communication between involved parties; - coordination of involved parties. <p>7. Dispatching:</p> <ul style="list-style-type: none"> - setting activities/operations in motion according to schedules; - discussion of the work to be carried out; - instruction and motivation of personnel; - guidelines and standards to meet. <p>8. Control of work-in-progress:</p> <ul style="list-style-type: none"> - supervision; - inspection; - control. <p>9. Problem solving:</p> <ul style="list-style-type: none"> - problem analysis; - problem solution. 	

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page:9.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

10. Completion of the work:

- reporting;
- documentation and filing;
- analysis of results;
- evaluation and feedback;
- replanning;
- communication and coordination.

Elements of control procedure

The efficiency of a process or operation is measured by the ratio of output to input. Ideally, this is the criterion that ought to be used in defining the efficiency of an organization. The **input** includes all the resources and potential capabilities of the organization in manpower, materials and equipment as well as in organizational abilities. The **output** is simply the result realized within a certain period of time. But it is obvious that "input" and "output" are rather difficult to define in accurate terms. Hence the only way in which we can assess the efficiency of the organization is by comparing actual performance with targets specified in the operational programme, provided that this programme is **realistic**: planned in good faith, provided that the plant is capable of coping with it and taking into account external and internal constraints.

Operations control must be an active function, ideally it must operate like an automatic self-regulating mechanism that registers events and react to them by adjusting relevant parameters in the operational centers. In addition to that, it must be self-learning, so that it can gain from its experience and learn from past mistakes.

Control comprises the following stages and activities:

1. Observation

Observing progress of the operations and recording the relevant information, e.g.:

- output of processes vs. time;
- idle processes, breakdowns;
- inspection of quality by control charts;
- collection of cost data.

2. Analysis

Analyzing the data collected, by comparing progress with the plans e.g.:

- compare progress as a function of time;
- process capabilities;
- compute costs and compare with estimates.

3. Corrective actions:

Taking immediate action to redirect activities, to solve problems and to modify plans in order to attain the targets.

4. Post-operation evaluation:

Feeding back information and conclusions to those who need it in order to improve future planning e.g.:

- time scheduling;
- capacity planning;
- specifications;
- process improvements;
- inspection procedures;
- economic evaluation;
- preparing better data for future estimates.

Effective communication is a prerequisite to efficient control. Control initiates and supervises operations with the aid of a control mechanism that feeds back information regarding implementation. This mechanism is also responsible for subsequently adjusting, modifying and redefining plans and targets in order to achieve the primary goals.

Management Skills Development Programme
Module 2: PLANNING

Code: WADS

Edition: April 1988

Page: 11.

HAND OUT

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Example: Inventory control.

The importance of materials availability at the various stages of production necessitates a mechanism of inventory and stores organization. Inventories are a financial burden and management of stores may be very costly. Inventory control is sometimes a very complex function, as its policies are not dictated by internal needs and considerations alone, but by external factors governing the purchasing of materials, such as vendors' offers and terms, market availability, transportation problems. These external factors may influence quantities and delivery dates of materials and have to be taken into account by any inventory control mechanism.

Functions and activities of management.

A general breakdown of the management functions and activities is given below:

FUNCTION	ACTIVITY
Planning	<ul style="list-style-type: none"> — Forecasting — Developing Objectives — Programming — Scheduling — Budgeting — Developing Procedures — Developing Policies
Organizing	<ul style="list-style-type: none"> — Developing Organization Structure — Delegating — Developing Relationships
Leading	<ul style="list-style-type: none"> — Decision Making — Communicating — Motivating — Selecting People — Developing People
Controlling	<ul style="list-style-type: none"> — Developing Performance Standards — Measuring Performance — Evaluating Performance — Correcting Performance

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 13.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

I.2 DEFINITIONS

1. Lead time.

Lead time is the time interval from the date an activity starts until the date it is completed. In case of a job it is the total of the activity times including delays. The lead time can vary because of several practical reasons, therefore it is necessary to work with the average lead time.

Average lead time or expected lead time is:

Set-up time(s) + activity time(s) + delays
--

Delays are mainly influenced by the organization and by the environment.

2. Average.

The representative value of a group of values, such as the arithmetic mean:

Arithmetic mean of a series of values (X_1, \dots, X_n) is obtained by dividing their sum by the total number of values (n). A generalized formula is:

$$\frac{X_1 + X_2 + X_3 + X_4 + X_5 + \dots + X_n}{n}$$

3. Backlog.

The sum of all unfilled work waiting to be executed or processed.

4. Cycle.

The interval of time during which a system or process periodically returns to similar initial conditions.

5. Dispatching.

The function of releasing work (orders) to the appropriate work center. Setting the operations in motion.

6. Extrapolation.

Estimation of the value of a function for a value of the argument (= independent value) which is outside the range of tabulated values which are being used.

7. Interpolation.

The contrast of extrapolation: estimation of a value of a function which lies inside rather than outside the range of tabulated values or given values of the argument.

8. Range.

The algebraic difference between the largest and the smallest numbers in a set of numbers.

9. Sample.

A set of objects or things from a larger set called a population. Unless otherwise specified, all samples are assumed to be random samples, i.e. each item in the population has an equal chance of being drawn.

10. Sequencing.

Determining the order in which activities should be carried out to achieve a certain objective.

11. Slack.

The time allowance for contingencies in excess of the time usually required to carry out an activity or task.

12. Statistic.

A quantity obtained from sample observations, such as the mean value, which may be used to estimate a population parameter.

13. System.

A group of objects or procedures purposefully organized and interconnected to perform a desired function in a desired way.

14. Trend.

A linear function of time.

15. Accountability

The obligation to carry out the duties or responsibilities and to exercise the authority of a position in conformance with understood and accepted standards.

16. Responsibility

The work assigned to a position, i.e.:
a responsibility of a manager is planning and control.

17. Authority

The sum of the powers and rights assigned to a position. If you have responsibility, you are assigned the work. If you have authority, you have both the right and the ability to make the decisions, spend the money and do anything the work requires.

18. Performance standards

The criteria by which the work and results are measured. A standard might be to complete a job in 3 weeks.

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 17.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

I.3 ANALYSIS OF ORGANIZATIONAL TASK

The organizational task of the WADS Nyala-operations comprises different products:

- A. Village water supply.
- B. Water resources studies.
- C. Products for UNHCR (United Nations High Commission for Refugees).
- D. Products for third parties.
- E. Training (knowledge and skills development activities).

To complete a product at adequate level of performance, different activities should take place in a certain sequence, according to defined methods and procedures and directed to predetermined performance standards.

Each of these products comprises a sequence of events that can be established from the beginning of the cycle to the end.

Village water supply is the main product of the Nyala operations. The end product (wells, super structures) is standardized. The implementation process follows a cycled pattern and is repetitive. Planning, scheduling and control factors can be developed and programmed, based on predictable repetitive activities. Characteristic for repetitive processes is, that planning and control becomes relatively simpler and a master schedule can be constructed, in which the production plan is balanced against production capacity. Skills levels should be high (to be developed by training). Emphasis is on functional performance of the work force.

The product directed activities are executed by specialized sections, managed by section heads. The following sections are present at the Nyala-operations:

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 18.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

1. Village project section (VPS).
2. Groundwater exploration section (GES).
3. Well construction section-prefabricating unit (WCS-pre-fab).
4. Well construction section- field unit (WCS-field).
5. Metal workshop.
6. Car workshop.
7. Electronic workshop.
8. Drawing section.
9. Drilling section.
10. Logistics.
11. Administration and finance.
12. Contracting out.

Figure 1 gives a breakdown of products and specialized sections of the Nyala-operations and their interrelationships.

The analysis shows that the Village water supply product is related to almost all sections of the Operations. Communication and coordinations are very important in this case (coordination of the interdependent sub-tasks of the different sections).

Figure 1: Analysis of the organizational task of WADS Nyala-Operations.

Specialized sections		Products				
		A Village water supply	B Water resources studies	C Products for UNHCR	D Products for third parties	E Training
1	Village project section	+	+	(+)		+
2	Groundwater exploration section	+	+	(+)	+	+
3	Well construction section-prefab	+				+
4	Well construction section-field	+				+
5	Metal workshop	+		(+)		+
6	Car workshop	+	+	+	+	+
7	Electronics workshop	+	+	+	+	+
8	Drawing section	+	+	(+)	+	+
9	Drilling section	(+)	+	+	+	+
10	Logistics	+	+	+		+
11	Administration & Finance	+	+	+	(+)	+
12	Contracting out		+			+
	+ = fully involved (+) = little involved					

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 20.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

I.4 COORDINATION STRUCTURE

The need for coordination follows on the analysis of the organizational task.

In principle three types of coordination are relevant to the Nyala situation, namely:

1. Horizontal coordination:

Coordination of products; integration between products within a section (functional manager).

2. Vertical coordination:

Coordination of sections per product; integration between sections (linking manager or product coordinator).

3. Overall coordination:

Coordination of the total project (project manager).

The structure of coordination and the persons responsible for coordination should be defined explicitly with regard to the effectiveness of the organization.

The horizontal coordination in the WADS Nyala-Operations is structured as follows:

Specialized sections

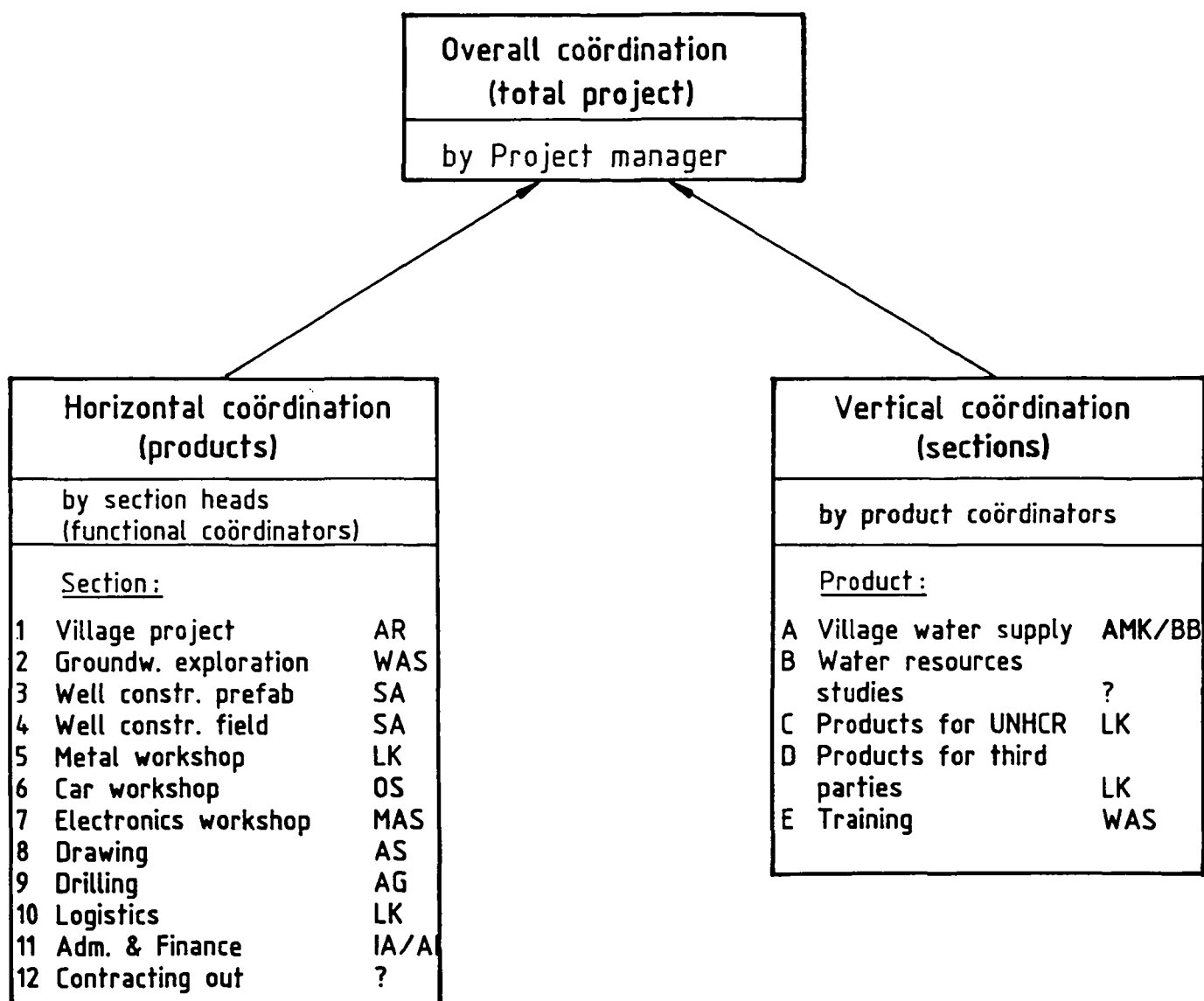
Coordinator (initials)

Section heads:

1. Village project section	AR
2. Groundwater exploration section	WAS
3. Well construction section-prefab.	SA
4. Well construction section-field	SA
5. Metal workshop	LK (expatriate)
6. Car workshop	OS

Management Skills Development Programme Module 2: PLANNING	Code: WADS																				
	Edition: April 1988																				
	Page: 21.																				
HAND OUT	Prep. by: SN TNO-DGV/IWACO																				
7. Electronic workshop	MAS																				
8. Drawing section	AS																				
9. Drilling section	AG																				
10. Logistics	LK (expatriate)																				
11. Administration and finance	IA/AF																				
12. Contracting out	?																				
<p>Note: Section heads are functional coordinators.</p> <p>The vertical coordination in the WADS Nyala-Operations is structured as follows:</p> <table border="0"> <thead> <tr> <th><u>Products</u></th> <th><u>Coordinator (initials)</u></th> </tr> </thead> <tbody> <tr> <td></td> <td>Product coordinators:</td> </tr> <tr> <td>A. Village water supply</td> <td>AMK/BB (expatriate)</td> </tr> <tr> <td>B. Water resources studies</td> <td>?</td> </tr> <tr> <td>C. Products for UNHCR</td> <td>LK (expatriate)</td> </tr> <tr> <td>D. Products for Third parties</td> <td>LK (expatriate)</td> </tr> <tr> <td>E. Training</td> <td>WAS</td> </tr> </tbody> </table> <p>The overall coordination in the WADS Nyala-Operations is as follows:</p> <table border="0"> <thead> <tr> <th><u>Total project</u></th> <th><u>Coordinator (initials)</u></th> </tr> </thead> <tbody> <tr> <td></td> <td>Project management:</td> </tr> <tr> <td>Products and sections</td> <td>AMK/BB (expatriate)</td> </tr> </tbody> </table> <p>Figure 2 gives a diagram of the total coordination structure of the WADS Nyala-operations.</p> <p>This analysis shows that not all coordination functions are covered by the organization and some are not yet defined explicitly. It is important to have Sudanese experts responsible for coordination.</p> <p>Note: Job descriptions should include the coordination task of the job holder.</p>		<u>Products</u>	<u>Coordinator (initials)</u>		Product coordinators:	A. Village water supply	AMK/BB (expatriate)	B. Water resources studies	?	C. Products for UNHCR	LK (expatriate)	D. Products for Third parties	LK (expatriate)	E. Training	WAS	<u>Total project</u>	<u>Coordinator (initials)</u>		Project management:	Products and sections	AMK/BB (expatriate)
<u>Products</u>	<u>Coordinator (initials)</u>																				
	Product coordinators:																				
A. Village water supply	AMK/BB (expatriate)																				
B. Water resources studies	?																				
C. Products for UNHCR	LK (expatriate)																				
D. Products for Third parties	LK (expatriate)																				
E. Training	WAS																				
<u>Total project</u>	<u>Coordinator (initials)</u>																				
	Project management:																				
Products and sections	AMK/BB (expatriate)																				

Figure 2: Analysis of coordination structure of WADS Nyala-Operations.



Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 23.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

I.5 DECISION MECHANISMS

Planning and control include decision making which should be based on information and decision rules.

The following aspects of decision making can be distinguished:

1. Type of decision making:
 - individual decision making;
 - joint/group decision making.
2. Routine or non routine decisions.
3. Degree of complexity of the decision.

The application of group decision making (by a group decision mechanism) affects not only the quality of the decision, but also the motivation of the involved parties to implement the decision adequately.

Group decision making is not always necessary. It depends on the type of decision (complex decisions, non routine decisions).

A decision mechanism processes the information relevant to the decision and selects the appropriate alternative course of action.

At the WADS Nyala-operations there are three relevant decision levels, which are related to the coordination structure:

1. Horizontal: at section level
2. Vertical: at product level
3. Overall: at project level

Persons responsible for the decision making at each level are the same as mentioned in chapter I.4. Information and decision rules should be defined for each decision within the framework of planning and control.

The decision mechanisms are not yet organized completely and systematically.

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 24.
HAND OUT	Prep. by: SN TNO-DGV/IWACO
<p>I.6 <u>INFORMATION</u></p> <p>Timing and scope</p> <p>Information is the basis of the decision making process. Relevant aspects are: flow, scope, timing, reliability/actuality, and presentation of information.</p> <p>The following aspects will be considered next:</p> <p>Timing of the information flow, e.g.:</p> <ul style="list-style-type: none"> - Periodic flow of information: Each section head schedules activities periodically and communicates to those who must effect them. - Continuous flow of information: Each section head reports to the project manager regarding major problems during implementation of the programme on a continuous basis. <p>Scope of the data base available to produce the required information for decision making, e.g.:</p> <ul style="list-style-type: none"> - Local scope of data base: The decision mechanism on section level has access to information regarding the performance of the work-in-progress by the concerned section. - Global scope of data base: The decision mechanism on project level has access to information regarding the implementation of the village water supply programme by all involved sections. 	

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 25.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

Relation between scope and timing:

The right scope of the data base available and the proper timing of the information flow are important for the functioning of the decision mechanisms.

+ scope	periodical-local P	continuous-local Q
	periodical-global X	continuous-global Y
	→ timing	

P: limited decision making, only periodical;

Q: continuous decision making is possible;

X: batch processing of information at fixed intervals;

Y: only perfect in theory.

An adequate information system is the foundation for planning and control.

Development of the information system

The development process of the information system for planning and control is visualized in Figure 3.

Steps

1. Define the input of the planning and control system:
specify and classify the organizational products to be produced as a function of time.
2. Determine the main activities of the planning and control system and their interrelationships.
Represent it by a flow chart:
 - main activities are represented by blocks (black boxes);
 - interrelationships are represented by arrows.

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 26.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

3. Detail each main activity:

Specify the operations and the decisions in the right sequence.

4. Analyze the information flow of each main activity:

a. What information inputs are needed and where does it come from;

b. What information outputs are to be furnished and to whom.

The analysis done in steps 3 and 4 can be documented in a systematical way by using the format in **Figure 4**.

5. Complete the flow chart of the main activities by including the information flow as analyzed in step 4.

6. Determine the standards for planning and control. Standards are related to e.g. capacity requirements of manpower and equipment, materials requirements, financial requirements, product lead times, activity lead times, inventory, priorities.

7. Determine and document therelevant procedures of the planning and control system.

8. Implementation, training and monitoring:

- implementation of the information system;

- training of the involved persons;

- monitoring of the implementation process. If you monitor something you regularly check and/or record how it is changing or progressing over a period of time.

Figure 3: Development process of the information system for planning and control.

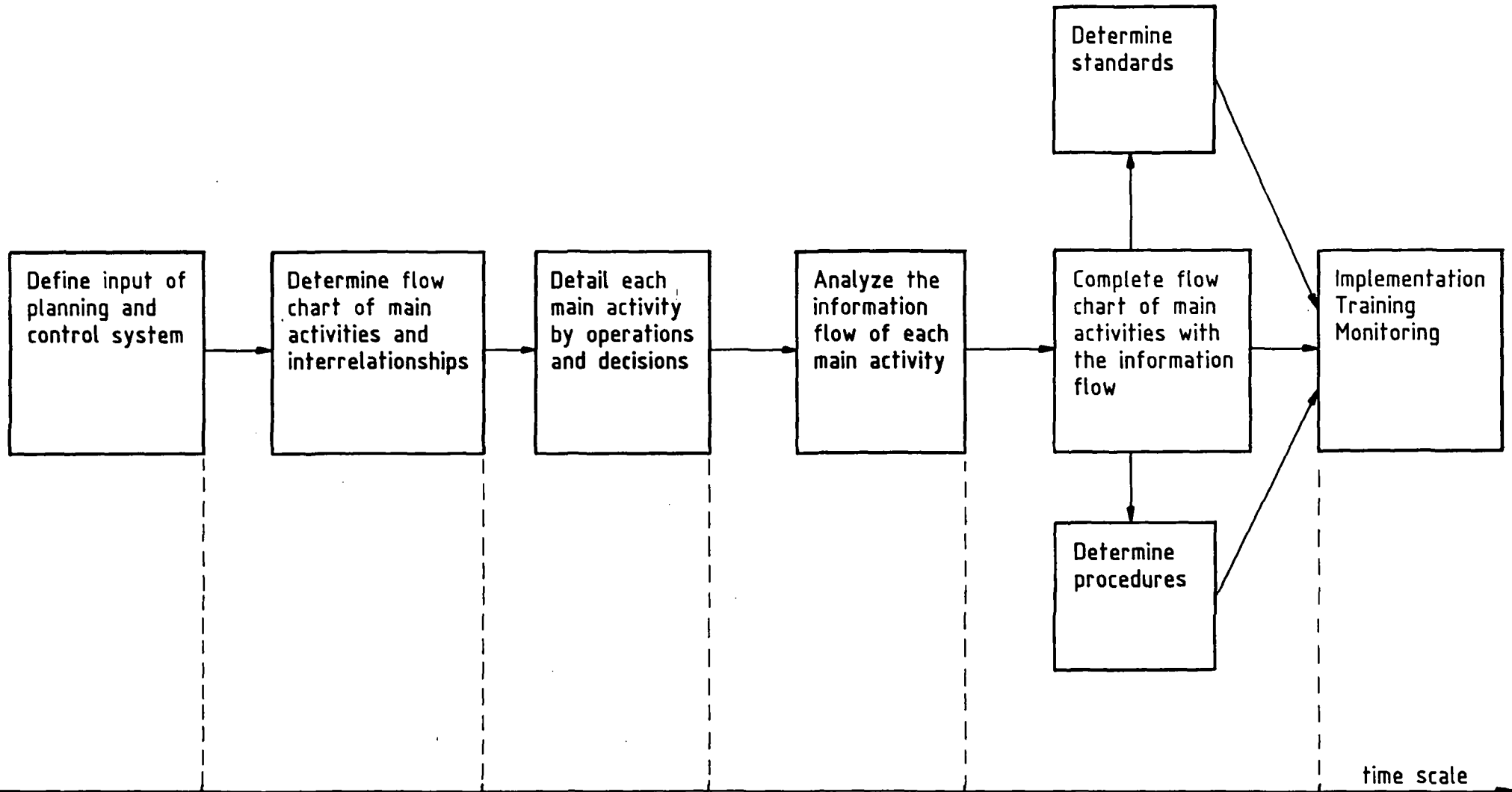


Figure 4: Information flow analysis of main activity

Main activity :

Operations and Decisions	input information			output information		
	from	document	information	to	document	information

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 29.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

DRAFT

Management Skills Development Programme

Module 2: Planning

WADS - Nyaia-operations

PART II: PLANNING SYSTEM

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 30.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

II.1 PLANNING STRUCTURE

Planning is concerned with the future, the defined targets, the structure and capabilities of operations and the constraints within and outside the organization.

The proposed planning structure for the WADS Nyala-operations consists of the following planning elements:

1. Master schedule;
2. Resources planning;
3. Sections planning;
4. Activities planning.

Master schedule: defining the targets to be met on project level during a certain planning horizon.

Resources planning: the process of deciding on the resources the organization will require for its future operation, based on the defined targets and as a function of time.

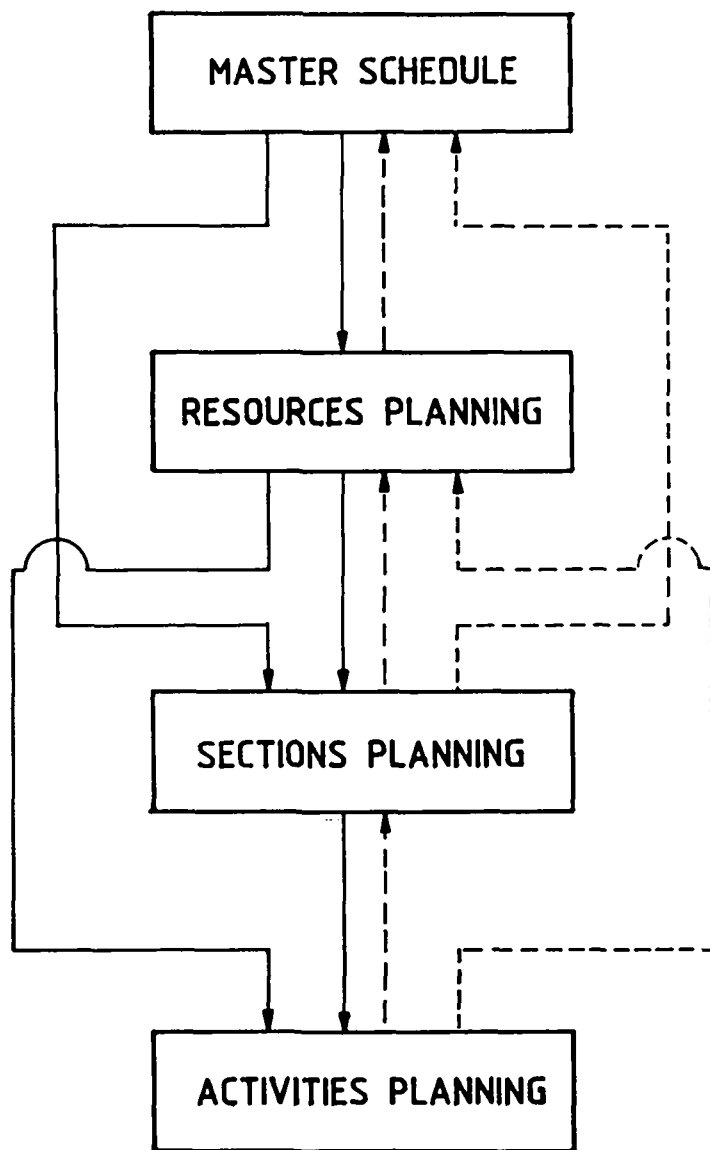
Sections planning: the process of defining the subtasks per section based on the defined targets, as a function of time and the coordination of these subtasks.

Activities planning: the process of defining the activities within a section, derived from the subtask of each section, as a function of time and the coordination of these activities.

The interrelationships between these planning elements are of prime importance and must be considered in detail.

Figure 5 gives a breakdown of these planning elements and their interrelationships.

Figure 5: Proposed planning structure WADS Nyala.



In the following paragraphs each of these planning elements will be explained briefly.

II.2 MASTER SCHEDULE

The master schedule defines on project level:

- What to produce (the products);
- How much to produce (quantities);
- When to produce (time of completion).

It is the result of group decision making at top level of the organization and it is the basis for the operations. An important feature of the master schedule is that it should be a realistic plan. It is not the Plan of Operations, but it is derived from the Plan of Operations. The Plan of Operations has been prepared a long time before the actual start of the project organization, before actual and concrete information are available concerning resources, capabilities, bottlenecks, constraints etc. In most cases a Plan of Operation is an objective, measurable, but not based on actual circumstances and information.

The master schedule is a realistic document based on the knowledge of actual circumstances. All prevailing conditions and constraints should be taken into account when defining the master schedule. It covers a certain period of time (the planning horizon), e.g. 6 months.

Because of the realistic prerequisite, a Master schedule must be reviewed periodically e.g. monthly.

An example of a master schedule for village water supply (product A) and water resources studies (product B) is as follows:

Products	Months					
	Jan.	Febr.	March	April	May	June
A : Wells Wells and super- structures	2		2		2	
		2		2		2
B : Maps - phase 1	1					
Maps - phase 2			1			
Maps - phase 3					1	
Maps - phase 4						1

The master schedule should be checked roughly on the availability of relevant resources e.g. manpower, material, equipment, finance, information and lead times. This is called a "rough cut" check. Corrective measures should be taken if necessary.

The decision mechanism for the master schedule includes the project management and the section heads.

II.3 RESOURCES PLANNING

The resources planning comprises a breakdown of the required resources for the execution of the defined master schedule: what means do we need, how much and when available.

Type of resources, relevant to the master schedule are:

- human;
- financial;
- technical;
- information.

The measures to be taken for the availability of the required resources are also part of the resources planning, e.g.:

- ordering of materials: purchased materials, fabricated components, subcontracted items;
- ordering of tools: handtools for well construction;
- ordering of equipment: generators, pumps, hydrological equipment;
- hiring of laborers: crafts, fieldworkers, experts;
- organizing financial means;
- stock control and proper storing;
- inspection of goods.

Especially those items which can be critical or bottleneck should have special attention.

The logistic system, which is the system for organizing and managing the flow of materials, components, supplies and other items from suppliers, is closely related to the resources planning.

The decision mechanism for the resources planning includes the project management and the section heads.

The resources planner (coordinator) should submit the necessary information to the decision mechanism.

A simplification of a resources planning schedule is given below:

item	weeks											
	10	11	12	13	14	15	16	17	18			40
<u>pumps</u>												
requirements				4				4				
available				4				1				
ordering				-				3				
<u>components</u>												
<u>of well</u>												
requirements			2				2					
available			2				-					
ordering			-				2					

The lead time for ordering must be taken into consideration.

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 36.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

II.4 SECTIONS PLANNING

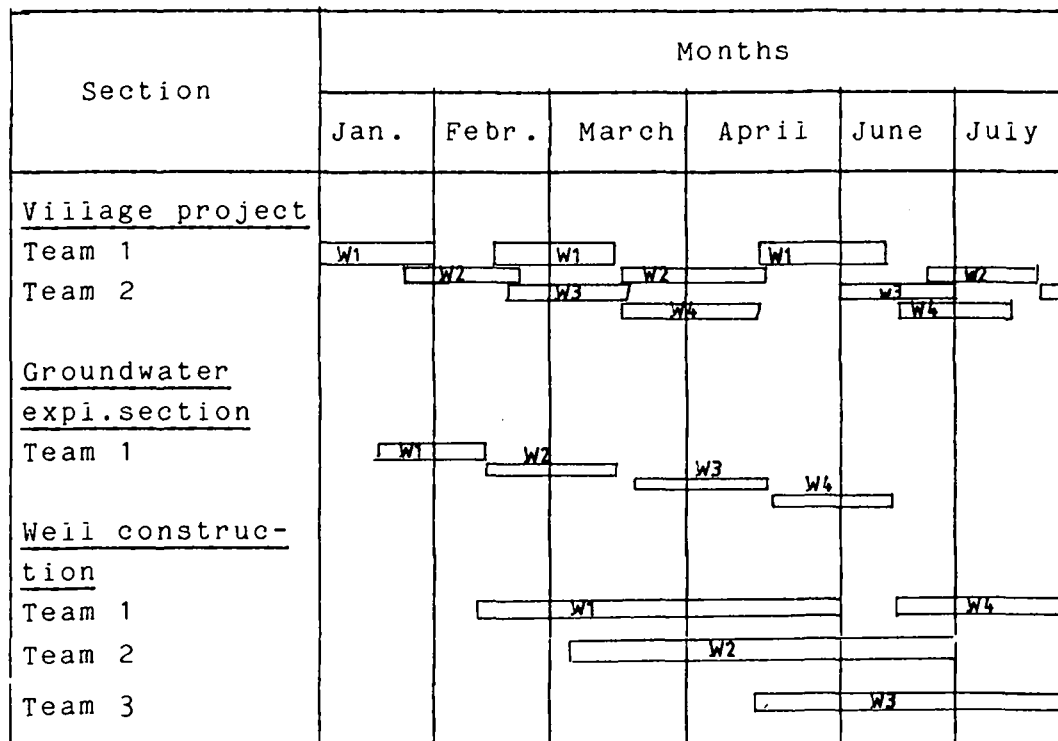
The definition of the sub-task per section based on the master schedule as a function of time and the coordination of these subtasks which are interconnected, is the aim of the sections planning (who will play what role).

The planning horizon of the sections planning is equal to the master schedule. Review period is also monthly.

The decision mechanism for the sections planning includes the project management and the section heads. The product coordinators should submit the necessary information to the decision mechanism.

Sections planning can be visualized by a barchart planning method. It gives the distribution of the subtasks of each section as a function of time and the workload.

A simplification of a sections planning schedule for village water supply (product A) is given below.



The barchart represent the activity lead times. W=Well

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 37.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

II.5 ACTIVITIES PLANNING

The definition of the activities within a section, based on the subtask of the section as a function of time and the coordination of these activities which are interconnected, is the aim of the activities planning. This is the base line of the operations.

The planning horizon of the activities planning is shorter than the sections planning, e.g. 1 or 2 months, with a one or two weekly review period.

The effective and efficient utilization of manpower, materials and equipment is the primary aim of the planning.

The decision mechanism for the activity planning includes the section head and his key staff, who should submit the necessary information.

The activity planning can be visualized also by a bar chart planning method. It gives the distribution of activities within the section as a function of time and the workload.

A simplification of an activity planning schedule for the Village project section is given below.

Village project section activities	weeks									
	10	11	12	13	14	15	16	17	18	19
1	XZ									
2	PQ									
3		UV								
4	NO									
5	FL									
6			XZ							
7			PQ							
8				UV						
9			NO							
10		FL								
11			FL							
12				FL						
13					NO					
14						XZ				

XZ, PQ, UV, etc. = Initials.

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 39.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

Hints for activities planning

Some hints for the preparation of the activities planning are:

1. Rank the jobs of a section in order of priority according to their work content and target date or managerial priority order.
2. Phase the jobs correctly.
3. Load a section as far as possible up to full capacity.
4. Schedule the jobs in such a way as to reduce section idle time and job idle time to a minimum.
5. Control the workload per section.
6. Assign jobs to the section staff forward in time.
7. Show the starting and finishing times for each job.

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 40.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

II.6 CASE STUDY

Introduction

The case study concerns the planning approach of the building of the training centre of WADS Nyala.

The following pages give a summary of the approach, presented by the Chief technical advisor of WADS Nyala-operations and the trainer.

CASE: PLANNING

BUILDING TRAINING CENTRE

what, when

Master
schedule

1

2

3



Resources

By wich means

who + when

Who will play
what role



Activities
planning

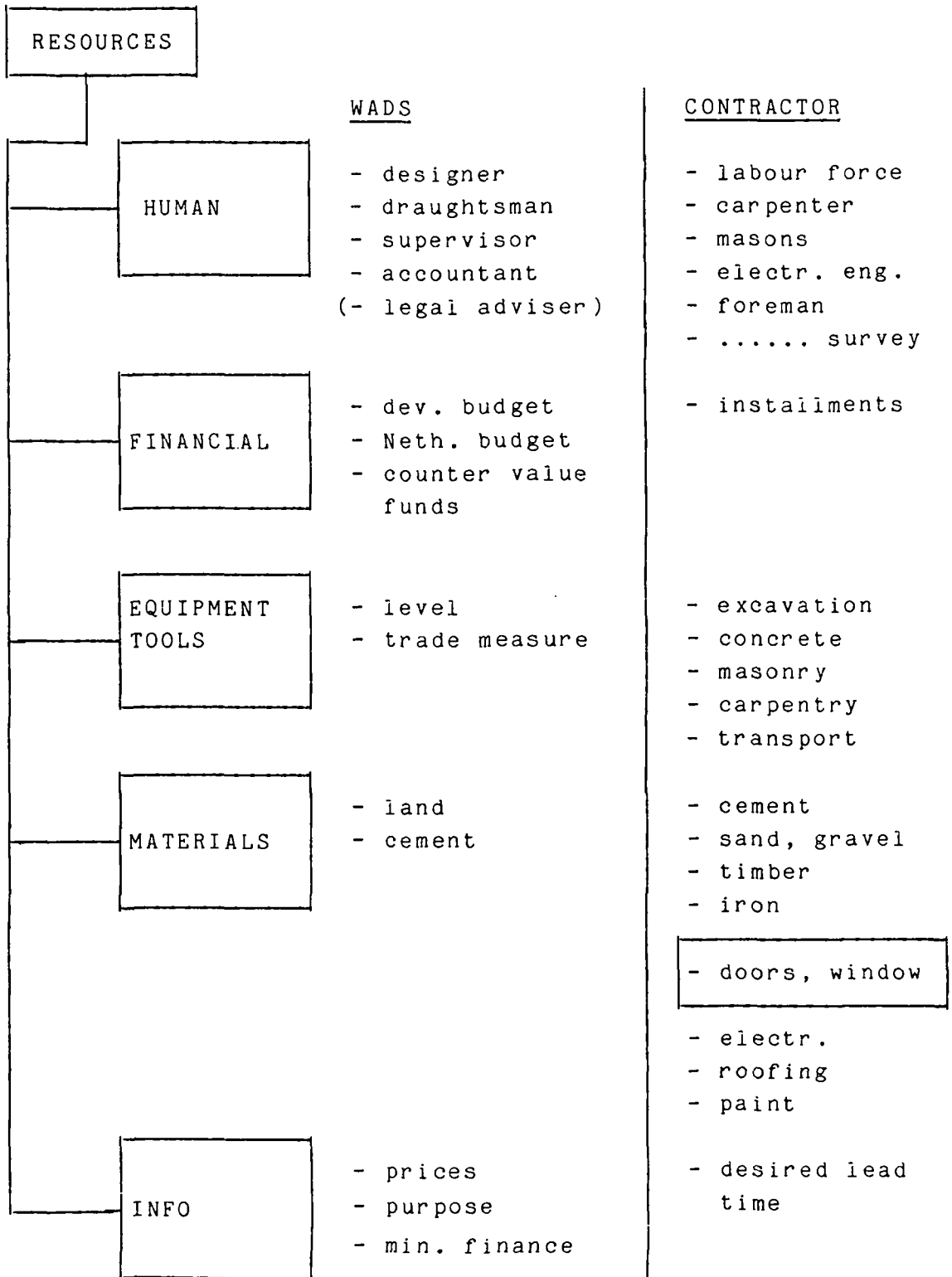
- purpose
- target, lead time
- design, cost estimate

1 = rough check
2 = return info
3 = check for execution

- human
- financial
- technical
- information

- by own force
- contracting out

- wads input
- contractor



Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 43.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

MEANS OF CONTROL

- design, specifications;
- contract;
- site supervision;
- site meetings.

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 44.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

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Management Skills Development Programme

Module 2: Planning

WADS - Nyala operations

PART III: DISCUSSION

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 45.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

III.1 DISCUSSION ON BARCHART OF ACTIVITIES OF PRESENT SITUATION

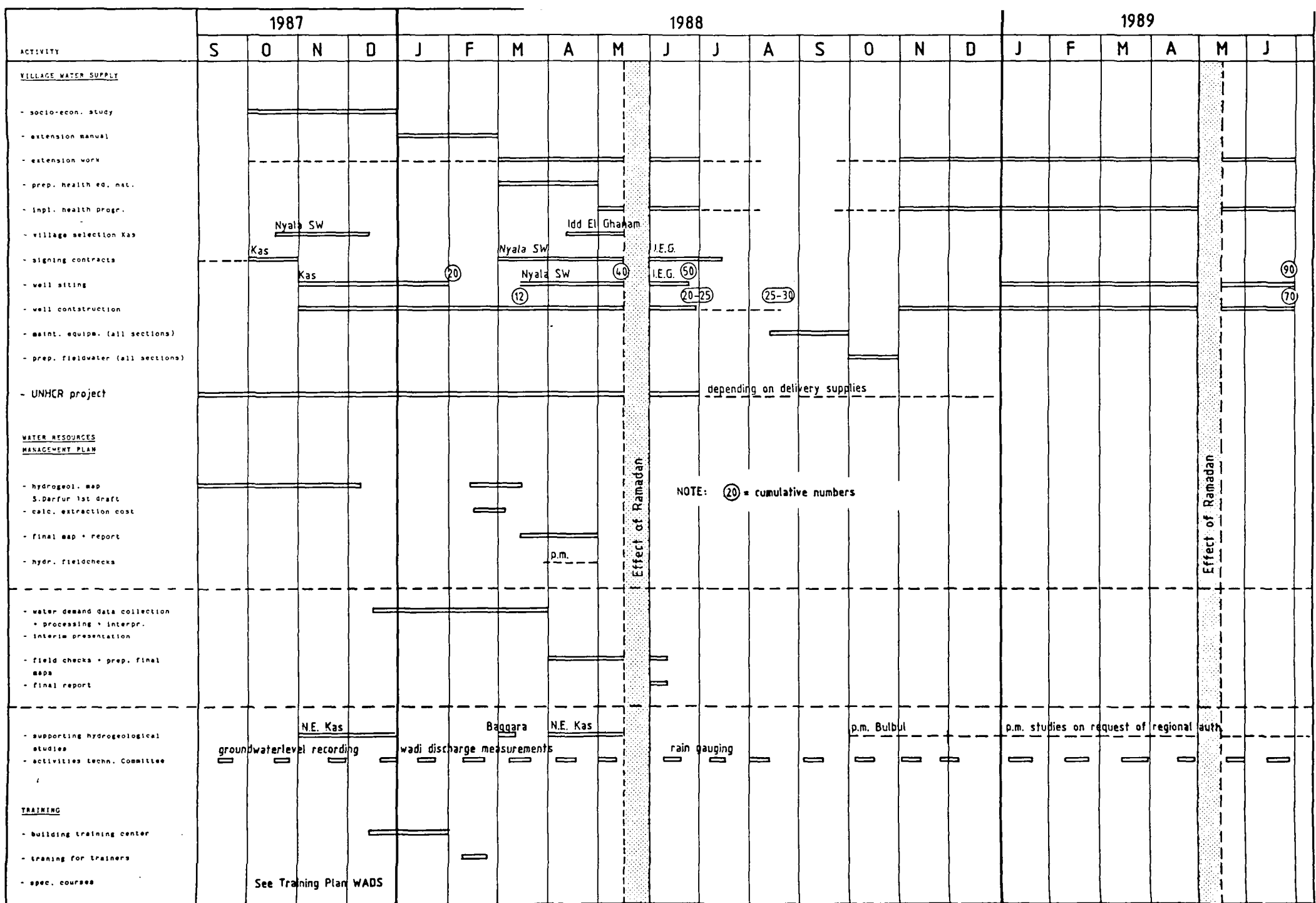
The barchart of activities of the present situation is given on the following pages and comprises:

- a breakdown of activities per product;
- a planning horizon of more than two years;
- the scheduled period of time of each activity.

The barchart is explained by the Chief technical advisor of the WADS Nyala-operations.

The approach is different with the forementioned planning system. It includes the information regarding the master schedule and the sections planning in a more general way.

The weak and strong points of this approach were discussed by the participants of the session.



Effect of Ramadan

Effect of Ramadan

NOTE: (20) = cumulative numbers

Nyala SW

Idd El Ghaman

Kas

Nyala SW

I.E.G.

Kas

(20)

Nyala SW

(40)

I.E.G. (50)

(90)

(12)

(20-25)

(25-30)

(70)

depending on delivery supplies

NE. Kas

Baggara

NE. Kas

p.m. Bulbul

p.m. studies on request of regional auth

groundwater level recording

wadi discharge measurements

rain gauging

See Training Plan WADS

III.2 DISCUSSION ON PLANNING STRATEGY

Topic 1

Do we need a systematical planning approach?

Conclusion of discussion:

Yes, we do; but the approach should be practical and adapted to our specific situation, viz.:

- the Sudanese situation;
- the Nyala situation;
- mentality of the people;
- type and size of the organization;
- constraints (predictable and non-predictable);
- other limitations.

Topic 2

What should be the strategy?

Conclusions of discussion:

The strategy should be:

1. Improvement of the organizational aspects with regard to planning:
 - coordination;
 - decision-making;
 - information system.
2. Improvement of planning:
 - resources planning;
 - sections planning;
 - activities planning.

Decisions on the implementation will be discussed in the staff meeting.

Management Skills Development Programme Module 2: PLANNING	Code: WADS
	Edition: April 1988
	Page: 48.
HAND OUT	Prep. by: SN TNO-DGV/IWACO

Summary of remarks made by the participants of the course during the discussion session:

1. We need a more expressed planning system to have more grip on coordination.
2. We must have an estimate of the workload which is coming and a good activities planning on operational level.
3. Feedback is missing in the present situation.
4. We must have a clear picture of the responsibilities.
5. Coordination between sections should be improved and more systematical.
6. Systematic planning approach is necessary.
7. WADS Nyala is not a big organization. Does the proposed planning approach fit the organization?
8. In Sudan you need improvisation.
9. Logistics and resources are the weak points.
10. In Sudan we are dealing with many constraints, e.g.:
 - a rainy season of 3 months;
 - the Ramadan of 1 month;
 - shortage on fuel and materials;
 - irregular and limited transportation;
 - limited communication facilities.
11. We are always facing problems in Sudan and we are always trying to find a solution.
12. This part of the training is fantastic, but we cannot decide on the planning approach in this discussion session. Therefore we should hold a staff meeting.