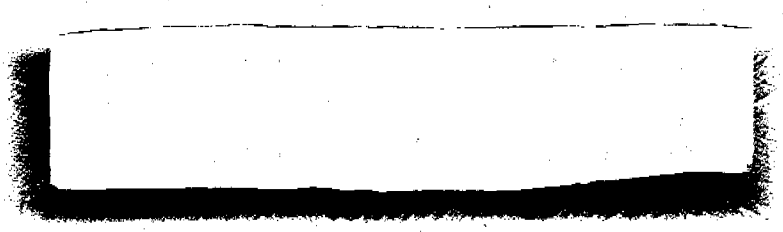
KENYA FINLAND WESTERN WATER SUPPLY PROGRAMME

DRAFT SYLLABUS AND REGULATIONS FOR PUMP ATTENDANTS COURSE

MINISTRY OF WATER DEVELOPMENT, KENYA
MINISTRY FOR FOREIGN AFFAIRS, FINLAND

KENYA – FINLAND
RURAL WATER SUPPLY DEVELOPMENT PROJECT IN WESTERN PROVINCE OF KENYA



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HELSINKI, FINLAND
KAKAMEGA, KENYA

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I. SYLLABUS FOR PUMP ATTENDANTS COURSE

1. INTRODUCTION. This course is designed for women, (chosen by well committees) since they bear the burden of carrying water. Two women will be trained from each well and will perform duties of repairmen for their pump. These women will also serve as advicers to the well committees and the consumers on matters related to self-reliance in construction of wells. They will also serve as reporters to the project, on the condition of the pump and water. They will also advise the community on personal hygeine and water hygeine. The training may last ten days or more and will be conducted in their environment, commencing and ending at a time convenient and agreeable to them.

2. AIMS AND OBJECTIVES OF THE COURSE

The pump attendants course is designed to meet the community manpower needs of safe and clean water. The course aims at providing specific individuals in the community with practical skills, knowledge and attitudes so that they are able to:

(i) Operate the pumps effectively.
(ii) Maintain the pumps in good working condition.
(iii) Carry out duties of pump repairing in cases of breakages.
(iv) Maintain hygeinic conditions on and around the well.
(v) Cultivate a sense of rural development in various fields such as food, livestock, textile, masonry, forestry etc.
(vi) Develop a sense of ownership for wells.
(vii) Educate the rest of the community on the importance of clean safe water and on the benefits to be

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derived from water as a whole.

(viii) Contribute positively towards self-emplyment hence eradication of unemployment problems.

(ix) Promote the government's policy on eradication of common ailments caused by unclean water, and other forms of unhygeinic conditions.

3. COURSE OF STUDY

The scheme has been designed to cater for community groups and specific individuals chosen by the group who will attend seminars at intervals with full provision fro practical work.

4. DURATION OF COURSE

The course is designed to have a duration of fourteen days. The ratios for the course are as follows:

Core Subjects - 4 days

Main subjects - 5 days

Practical work - 5 days

The pattern of attendance is left to the discrection of the seminar organizers.

5. ENTRY REQUIREMENTS

Trainees for this course are required to have an acceptable level of education. The decision on the acceptance of trainees for the course rests with the trainers and the community concerned.

6. EXAMINATION

The examination will consist of two parts.

6.1 Core and main subjects will be examined at the end of the seminar through oral questions and answer method. The trainer must ensure full participation by all trainees. This examination will be PART I.

6.2 The practical work will be examined through practical exercises done as group work and by follow-up practical demonstrations at well sites. + In addition credit will be given for development projects at well sites. This examination will be PART II.

6.3. Certificates of completion will be issued after the trainee has successfully completed the PART I and II of this examination.

6.4 PART I examination will entail the following subjects:

(i) Water sources
(ii) Water hygeine
(iii) Protection
(iv) Uses of water
(v) Water Bone diseases
(vi) Pump parts
(vii) Pump maintainance system
(viii) Pump faults
(ix) Fault correction
(x) Cleanliness at well site
(xi) Development at well site
(xii) General well committee activities
(xiii) Report writing

PART II examination will entail the following practical - work:

(i) Pump removal
(ii) Pump reinstallation
(iii) Design of a simple project (income generating at well site)
(iv) Design of Drainage system.

6.5 Candidates who fail the practical course assessment must repeat the course.

6.6 Certificates of completion must show the subjects and practicals undertaken by the candidates.

7. ELIGIBILITY FOR ENTRY TO EXAMINATION

7.1 Candidates for the examination, must at the time of entry to the examination, have completed the course and attended all the sessions for the given period.

7.2 The candidate must have actively participated in all the sessions during the course period.

8. ATTENDANCE AND COURSE WORK REQUIREMENTS

8.1 The candidates are expected to attend the seminars organized by KFWWP - Community Development section or any other as this course or any other additional training in theoritical and practical studies. Each trainee will be required to make at-least 75% of thepossible attendance in each subject and complete satisfactorily the course-work thus, class work, homework, and practical work.

8.2 Records of marks awarded for the course work must be kept by the trainer and in respect of each candidate and forwarded to the office atleast two weeks before the certificates of completion are prepared.

8.3 Class-work participation assessment will be given a weighting of 30% and the examination (PART I & II) will be given a weighting of 70% in the determination of the final mark awarded to the candidate in each subject.

9. ISSUE OF EXAMINATION RESULTS

9.1 Results of the examination as a whole will be issued in five classes and for the individual papers will be in eight grades. Each candidate will receive record of performance giving the result in terms of class and grade.

The relationship between classes and grades is:

PASS with distinction	Grades 1 and 2 or A
PASS with credit	Grades 3 and 4 or B
PASS	Grades 5 and 6 or C
FAIL	Grades 7 and 8 or D

9.2 Candidates will be required to take, at the same sitting, all the relevant papers and to pass in all of them. When a candidate fails by one mark in one subject, the Trainer may award his a pass in the whole examination provided he has fulfilled certain requirements.

9.3 A candidate who repeats the practical work course will only get an overall pass gradeå irrespective of the grade he achieves in the various subjects.

TIME ALLOCATION OF COURSES

A. CORE SUBJECTS

SUBJECT	NO. OF MODULES	ALLOCATED TIME (HRS (HOURS)
Water Circulation of water in nature Water Sources/Laws/Pollution Protection	1	2
Uses of Water Water bone diseases Primary Health Care Environmental Health and Sanination Rural Health services	1 1	3 3

B. MAIN SUBJECTS

Pump types	1	1
Pump maintainance system	1	1
Pump parts		
Pump mode of working	1	1
Hand pump tool kit		
Pump faults	1	1
Pump fepair	1	1
Cleanliness at the well site		
General well committee activites	1	2
Development at well site		
Report-writing	1	1

C. PRACTICAL WORK

Pump removal	1	2
Pump installation	1	2
Home demonstration Project on water use and hygeine	1	2

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COURSE CONTENT

A. CORE SUBJECTS

1.0 Water, Water Cycle, Sources and Laws Objectives

At the end of this unit, the trainee should be able to:

(a) Identify different types of water and water sources.

(b) Understand the importance of using clean safe water.

(c) Understand the formation of water, pollution of water and protection of water.

(d) Treat water at home and understand its various uses.

(e) Advise the community on personal hygeine, environmental sanitation and rural development for self relliance.

1.1 Water

(a) Definition (descriptive)

(b) Formation

(c) Hygeine

(d) Transportation

(e) Storage

(f) Types of water

(g) Hard water

(h) Soft water

(i) Drinking water

(j) Rain water

(k) Sea water

(l) Fresh river water

((m) Fresh lake water

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1.2 Water Cycle

(i) Earth surface - land and oceans
(ii) Sun as a source of energy
(iii) Evaporation of water vapour
(iv) Winds
(v) Highlands - low temperature
(vi) Condensation - rain drops, hail-storms
(vii) Rainfall
(viii) Rivers
(ix) Soil - (porous and no-porous rocks)

1.3 Water Sources and the Law

(i) Surface water - springs, ponds, lakes, rivers rain water.
(ii) Ground water - boreholes, wells
(iii) Cleanliness/ pollution - Laws, governing these
(iv) Protection of ground/surface water - Laws governing

2. Pollution and Protection

(i) Meaning of pollution, causes of pollution problems of pollution
(ii) Protection - procedure - during collection, transportation and storage
- siting ground water
(iii) Hygeine - siting factories and other dumping pits and pit latrines.

3. Uses of Water

(i) Domestic
(ii) Plant life
(iii) Animal life
(iv) Bulding
(v) Industrial
(vi) Power production

4. Water Treatment

(i) Eradication of contamination causers, storage, filtration, sedimentation, coagulation, sterilization, and removal of colour, odour and taste

(ii) Prevention of corrosive action on metals for example plumbo-solvency.

(iii) Iron and manganese removal

(iv) Destruction of algae and fungal growth for example by dissolving some chlorine gas.

5. Water Bone Diseases

(i) Water bone for example cholera

(ii) Water washed for example scabies, eye diseases such as trachoma

(iii) Water based for example Bilharzia

(iv) Water-related for example malaria

(v) Sanitary related for example Hookworm

6. Primary Health Care

(i) Defination

(ii) Health Education

(iii) Nutrition and Food Supply

(iv) Water and Sanitation

(v) Immunization - maternal and child Health and Family Planning.

(vi) Control of Endemic Disease

(vii) Treatment of common conditions

(viii) Supply of Essential Drugs

(ix) Mental Health

(x) Dental Health

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8. Rural Health Services

(i) Definition
(ii) Types of Rural Health Services
(iii) Community Health workers
(iv) Traditional Birth Attendants
(v) Rural Health Centres
(vi) Functions of the above

B. MAIN SUBJECTS - OBJECTIVES

2.0 At the end of this unit, the trainee should be able to:
(a) Operate the type of pump effectively.
(b) Repair and maintain the pump.
(c) Understand the different parts of the pump and their functions.
(d) Instil a sense of ownership for the well in the community and encourage the start of income generating projects at the well.
(e) Instil an overall sense of unity in the community.

2.1 Pump Types

(i) Gray Nira AF 85 - for shallow wells
(ii) Direct action - India MK II and Malatting pump for deep wells

2.2 Pump Parts

(i) Handle
(ii) Shock-absorber
(iii) Sleeve bearing
(iv) Handle Nipple
(v) Pump stand
(vi) Socket - Head Hex screw
(vii) Base plate
(viii) Gasket
(ix) Rod Plug
(x) Pump Rod

(xi) Plunger Nipple
(xii) Plunger valve Botton valve
(xiii) Plunger Body
(xiv) Plunger Ring
(xv) Cylinder pipe
(xvi) Bottom Valve Limiter
(xvii) Bottom valve Body

2.2.1 (i) Well-cover-functions
(ii) Well-apron functions
(iii) Concrete rings
(iv) Drainage Channel
(v) Fence
(vi) Maintainance

2.3 **Pump Maintainance System**

(i) Mobile maintainance teams
(ii) The Locational repairmen
(iii) The pump attendant
(iv) Spare part distribution
(v) Merits and demerits of the above maintainance systems
(vi) Appropriate maintainance system

2.4 **Pump mode of working**

2.5 **Hand Pump tool kit** - Handling of tools

2.6 **Pump faults**
(i) Identification of -
(ii) Correction of -

2.7. **Pump Installation**

(i) Procedure in pump removal
(ii) Sanitary re-installation procedure
(iii) Organization of helpers
(iv) Removal and re-installation

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2.8 Cleanliness at the well site

(i) Cleaning well site

- around the pump, around the well, drainage cleanliness, washing clothes and bathing, cow troughs etc.

2.9 General Well Committee activities

(i) appointment of effective office berarers
(ii) appointment of mama safi (pump attendant)
(iii) management of well funds
(iv) Organization of well projects

3.0 Development at well-site

(i) Developing kitchen garden
(ii) Making bricks, block-making
(iii) Establishment of tree-nurseries
(iv) Building cattle troughs and developing dairy farming, piggery, poultry fish-farming etc.
(v) Bee-keeping
(vi) Retail trade - shop, Kiosk
(vii) Flour - mill construction
(viii) Textile trade - for example making chair clothes, tie & dye
(ix) Co-ordination with the respective government ministries for advice on the above.

3.1 Report-writing

(i) Procedure
(ii) Contents/parts
(iii) Length of -
(iv) Filling in report forms

3.2 Language and Communication

(i) meaning of communication

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(ii) forms of communication (spoken, written, by signs)
(iii) speech making for - seminars, public address, debates, lectures.
(iv) choice of topics and the level of audience, effectove speaking.
(v) prepared and unprepared speech.

COURSE CONTENT

C. PRACTICAL WORK

OBJECTIVES

At the end of this units the trainee will be able to:

(a) Assemble a pump and carry out repair work

(b) Design a simple income generating project

(c) Design an efficient system of well protection and drainage

1.0 (i) Steps in pump removal
(ii) Steps in pump installation
(iii) Practical removal and re-installation of the pump.

1.1 INCOME GENERATION

(a) Design of - small project at well site bearing in mind the weather conditions, soil, marketability of the product and other factors that would influence the product's benefits and choice of project.

(b) Case study of water use and hygeine in three homes.

1.2 HEALTH EDUCATION

The trainees will be expected to work in groups, to produce one of the following:

(i) Song
(ii) short play
(iii) Two poems

(iv) Diagrams
(v) Story

1.3 PROTECTION OF WELL

The trainees will design by use of manillar papers an image of a well, well-drained, fenced and free from contamination.

1.4 Practical exercise on report form filling
(on designed forms (report)

B.C. Namajanja