

UNEP/PAPI/FPM.1/Inf.3.

REGIONAL ACTIVITY CENTRE

PRIORITY ACTIONS PROGRAMME

UNEP - MEDITERRANEAN ACTION PLAN

First Meeting of National Focal Points
for the Priority Actions Programme

FPM.1/INF.3

Split, 6-8 December 1982

APPROPRIATE TECHNOLOGY FOR LIQUID AND SOLID
WASTES COLLECTION AND DISPOSAL
IN MEDITERRANEAN HUMAN SETTLEMENTS

May 1981

UNITED NATIONS ENVIRONMENT PROGRAMME

PROJECT DOCUMENT

SECTION 1

PROJECT IDENTIFICATION

1.1 Title of project:

APPROPRIATE TECHNOLOGY FOR LIQUID AND SOLID WASTES COLLECTION AND DISPOSAL IN MEDITERRANEAN HUMAN SETTLEMENTS.

1.2 Project Number

1.3 Priority Area

Human Settlements

1.4 Scope

Regional: Europe and the Mediterranean (all countries bordering the Mediterranean Sea)

1.5 Implementation

Co-operating Agency: World Health Organization (WHO)

1.6 Duration of project - 27 months

Commencing: July 1981

Completion: December 1983

1.7 Cost of project

Total cost : \$ 282 000

External Costs : \$ 185 000

Cost to WHO : \$ 97 000

SIGNATURES:

For the Co-operating Agency:

For the Fund of UNEP:

Name:.....

Name:.....

Title:.....

Title:.....

Date:_____

Date:_____

SECTION 2

OBJECTIVES

1. Development objectives related to environmental quality in Mediterranean human settlements:
 - 1.1 To protect coastal water and coastal land along the Mediterranean Sea against environmental damages resulting from improper liquid and solid wastes disposal in riparian communities.
 - 1.2 To protect the health of riparian Mediterranean countries against enteric and parasitic diseases resulting from improper wastes disposal.
 - 1.3 To promote efficient and economic wastes disposal technology the best fitted for Mediterranean settlements' technical capabilities for proper operation and maintenance.
2. Immediate objectives related to Mediterranean human settlements:
 - 2.1 To develop criteria for sewered versus non-sewered sanitation option.
 - 2.2 To identify appropriate technology for sewer network design, construction, operation and maintenance.
 - 2.3 To identify appropriate technologies for non-sewered sanitation devices such as septic tanks, cesspools and pit-latrines, including facilities for sludge removal.
 - 2.4 To identify appropriate technology for proper garbage collection and transportation.
 - 2.5 To identify appropriate technology for liquid wastes treatment, including lagooning, land-disposal, dune-infiltration, etc. and considering possible re-use of treated wastewater.
 - 2.6 To identify appropriate technology for sludge treatment and disposal, including agricultural use of treated sludge as fertilizer.
 - 2.7 To identify appropriate technology for garbage treatment and final disposal, including sanitary land fill and composting, with due consideration to grouping of communities for more efficient use of treatment equipment.
 - 2.8 To promote sound manpower development policies for basic sanitation operators' training, to ensure proper operation and maintenance of liquid and solid wastes collection and disposal facilities in Mediterranean settlements:
 - 2.9 To study organizational alternatives for proper management of basic sanitation facilities in Mediterranean settlements:

SECTION 3

PROJECT DESCRIPTION

3.1 Background data

Due to lack of financial and technical capabilities added to the use of inappropriate technology, most of the human settlements around the Mediterranean Sea especially those of medium and small size have not been able to cope with their liquid and solid wastes collection and disposal problems. These problems have become worse with the increasing urbanization and overpopulation of the Mediterranean coastal area combined with the impact of tourism. Poor basic sanitation conditions for the human settlements is a direct danger to health for the riparian populations as well as tourists; it is also detrimental to the environmental quality of coastal waters as well as shorelines and coastal lands. With the financial support of the central Governments, significant investments were made in the past to build basic sanitation facilities in these settlements, but very often their investments were lost because the local technicians were unable to cope with operation and maintenance difficulties resulting from the use of inappropriate technology.

Epidemiological records from all over the Mediterranean Sea show clearly the need for basic sanitation improvement in riparian settlements. It is not enough to build basic sanitation facilities, it is also needed to organize efficient operation and maintenance of these facilities. In order to do this three priority actions must take place:

- (a) To identify and promote appropriate technology for liquid and solid wastes collection and disposal in mediterranean settlements of all sizes.
- (b) To train multi-purpose operators ^{and supervisions} able to cope with these appropriate technologies.
- (c) To organize efficient basic sanitation agencies to manage these public utilities.

This project will concentrate on the first priority action but will also start looking into the following two actions.

3.2 Description of expected project results

This project will produce detailed ^{reports or} guidelines and recommendations on the following subjects related to basic sanitation in Mediterranean human settlements:

- (a) Health impact of poor basic sanitation in the Mediterranean area.
- (b) Environmental impact of poor basic sanitation along the Mediterranean coast.

- (c) Problems related to the improvement of basic sanitation conditions in Mediterranean human settlements, according to their size.
- (d) Comprehensive criteria to choose between sewerred and non-sewerred sanitation facilities.
- (e) Design criteria and appropriate technology for sewer networks, considering construction, operation and maintenance, re-use of treated wastewater and impact of storm water drainage problems.
- (f) Design criteria and appropriate technology for storm water drainage facilities, considering construction, use of local resources, maintenance and impact of liquid wastes collection problems.
- (g) Design criteria and appropriate technology for individual sanitation systems, with due consideration given to sludge removal and disposal facilities needed, as well as to unconfined aquifer pollution control.
- (h) Design criteria and appropriate technology for garbage collection and transportation to the garbage disposal facilities, the garbages being produced either in domestic homes or through municipal street cleaning activities.
- (i) Appropriate technology for liquid wastes treatment with special attention to processes such as lagooning, land application or sand dune infiltration.
- (j) Possibility of treated wastewater and/or storm water recovery and re-use. Impact on sewer network design.
- (k) Appropriate technology for garbage treatment and disposal with special attention to processes such as composting or sanitary land-filling.
- (l) Manpower development problems for basic sanitation services in the Mediterranean countries, with special consideration given to training of operators and supervisors.
- (m) Regionalization of basic sanitation services by grouping of middle-scale or small scale settlements, optimal size to justify each kind of waste disposal facilities.
- (n) Management principles of basic sanitation agencies in communities, isolated or grouped on a sound regional basis.

3.3 Workplan and timetable

3.3.1 The technical documents described in 3.2 will be prepared by three collaborating institutions selected from the Mediterranean countries. The first

document will deal with environmental health planning aspects, i.e. items (a), (b), (c), (l), (m) and (n). The second document will be about liquid wastes problems, i.e. items (e), (f), (i) and (j), and the third one will deal with solid wastes problems, i.e. items (d), (g), (h) and (k).

3.3.2 Three working groups of Mediterranean experts will review the draft technical documents prepared by each of the collaborating institutions.

3.3.3 The finalized technical documents will be translated into all the working languages of the Mediterranean programme; after reproduction they will be distributed to all collaborating countries.

3.3.4 Bar-chart

	1981	1982	1983
	J A S O N D	J F M A M J J A S O N D	J F M A M J J A
1. Preparation of technical guidelines by collaborating institutions	[Bar chart showing activity from Jan to Dec 1981]		
2. Review by working group	[Bar chart showing activity from Jan to Dec 1982]		
3. Finalization, translation and distribution of the technical recommendations	[Bar chart showing activity from Jan to Dec 1983]		

SECTION 4

FINANCING AND REPORTING

A.1. Budget

4.1.4. The financial resources to be provided from external sources are as follows:

<u>Project Component</u>	<u>Total</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
1. Agreements with three collaborating institutions to prepare guidelines	120 000	60 000	60 000	
2. Organization of three working groups to review the guidelines	60 000		40 000	20 000
3. Reproduction and distribution costs for the guidelines	15 000			5 000
TOTAL	185 000	60 000	100 000	25 000

4.1.2. The WHO Contribution to the project will be as follows:

<u>Project Component</u>	<u>Total</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
1. Professional staff salaries (10 m/m)	60 000	12 000	36 000	12 000
2. Secretarial staff salaries (10 m/m)	25 000	5 000	15 000	5 000
3. Office operating cost (14%)	12 000	2 000	7 000	3 000
TOTAL CONTRIBUTION	97 000	19 000	58 000	20 000

The overall project budget amounts to the following:

External contribution: \$ 185 000
 WHO contribution : \$ 97 000
 Total budget : \$ 282 000

4.1.3. Disbursement schedule

According to the budget.

4.2. Counterpart contributions

Counterpart contributions will be made through the provision of national expertise for collaborative activities. In addition the Government of France Spain, Malta and Egypt are expected to take care of the translation and editing cost of the technical documents produced by the project, in the french spanish english and arabic language respectively.

SECTION 4

4.3. Reports and technical documents

- (a) A final report covering all components of the workplan will be prepared by WHO for the final review
- (b) Progress reports will be prepared at the end of each six-month period of project execution.
- (c) Three technical documents, i.e. the three sets of guidelines, revised by the three working group will constitute the technical reports issued from the project.

4.4. Terms and conditions

The foreseen agreements with three collaborating institutions will be prepared in accordance with the standard rules and procedures applicable to the Mediterranean Trust Funds.

4.5. External Contribution

The expected external contribution may come from several sources but each individual activity of the project should be financed by only one financing source. The expected external contributions must be provided either in convertible currency or in the currency in which the relevant activity will see its expenses paid.

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