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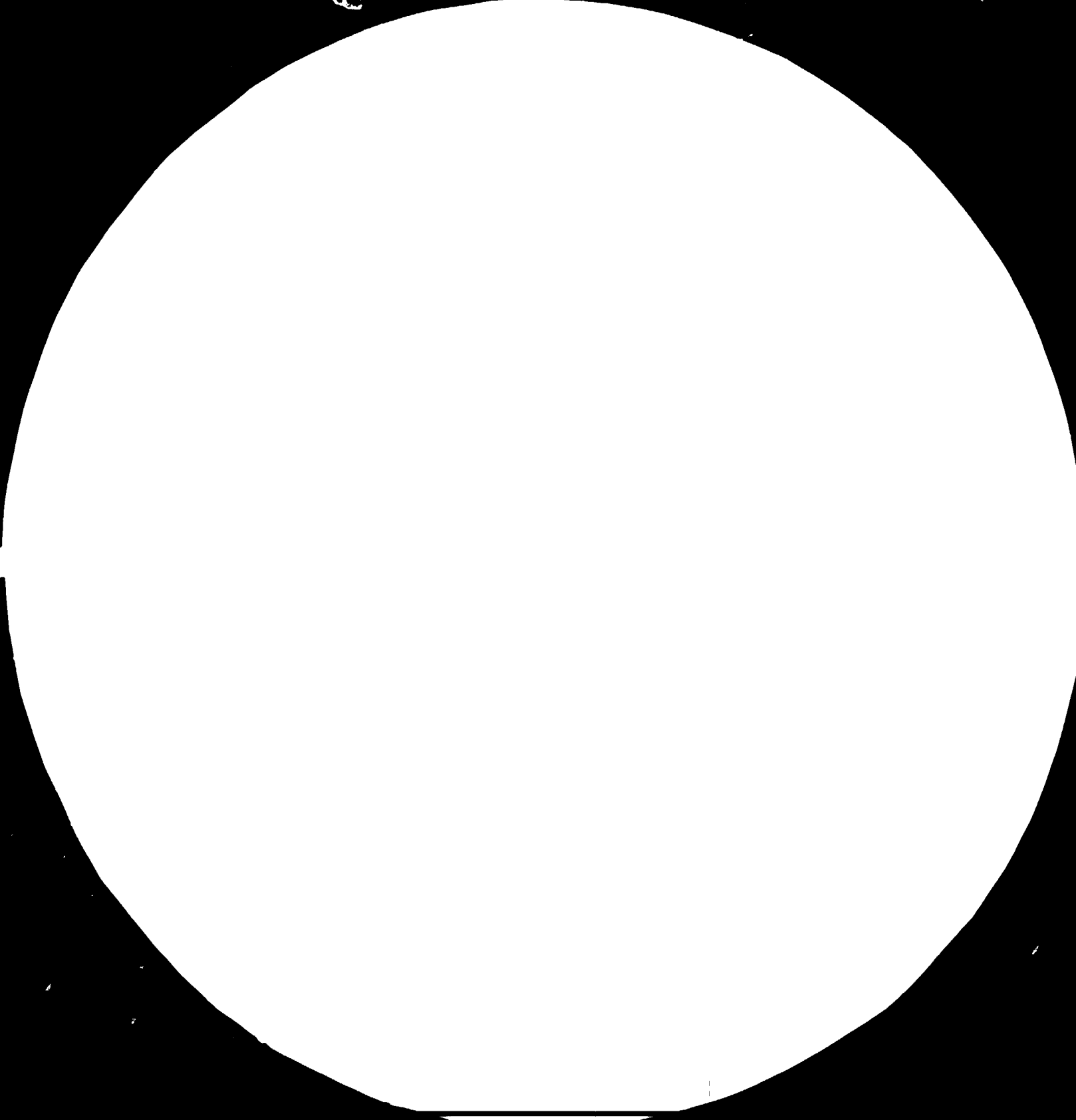
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January 1984
ENGLISH

Syria

ASSISTANCE TO THE MUNICIPALITY OF DAMASCUS
IN THE CONSTRUCTION OF A COMPOST PLANT

SI/SYR/79/802

SYRIA

Technical Report*

Return Mission October 1983

Prepared for the Government of Syria
by the United Nations Industrial Development Organization,
acting as executing agency for United Nations Development Programme

Based on the work of David J. Miles
expert in waste management

United Nations Industrial Development Organization
Vienna

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RECOMMENDATIONS

1. Assistance should be made available to the Damascus Municipality in the preparation of the final tender document.
2. Some of the companies selected for inclusion on the final list are new to waste treatment and compost production. They state they are successfully producing matured compost. However, it seems advisable that a visit to these plants by Syrian compost authorities be made and comprehensive technical appraisals be prepared for the attention of the committee, established within the Municipality of Damascus for the selection of the successful bidder.
3. The composting project has now arrived at a crucial stage. In order to guarantee successful implementation close technical supervision and guidance is important until the compost plant will be erected and commissioning and acceptance trials will have been completed.

1. Findings

In October 1983 the UNIDO expert discussed with the Syrian authorities involved in the establishment of the compost plant in Damascus the progress of the work, especially of the preparatory work required for the final tender document. Forty six companies submitted pre-qualification documents. Out of 46 applicants 27 companies have been chosen by the GENERAL COMPANY FOR ENGINEERING AND CONSULTING to be invited for submission of tenders for the construction of the compost plant.

On the basis of his own experience the UNIDO expert feels that the number of invitees is rather high, particularly in view of the methods existing for compost production. Around eight companies should be adequate for the purpose. The Municipality, however, is of the opinion that a larger number of invitees may provide a better basis for the final selection.

The companies to be invited will be informed by mid November and should be in receipt of final tender documents by the end of December 1983.

The final tender document must contain the numerous specifications required for the garbage treatment plant. It is also imperative that the document be formulated in such a way that no deviation from the established specifications will be allowed to the contractor. These points have been discussed by the UNIDO expert with the representatives of the Municipality of Damascus and of UNDP.

After having produced a "water-tight" tender document and selected the contractor, measures must be taken to control that the contractor indeed fulfils the obligations as stipulated in his contract. For example an inspection of the mechanical and electrical plant through the GENERAL COMPANY FOR ENGINEERING AND CONSULTING may be carried out to control that the specified items and not cheaper versions have been supplied. The GENERAL COMPANY FOR ENGINEERING AND CONSULTING must also ensure that all civil works be executed in the specific manner as detailed in the tender document.

Only through close checking and visual supervision can one achieve a properly constructed unit, with mechanically sound equipment that will give the required length of service.

2. Project visit

The following is a brief account of visits and consultations held by the UNIDO expert with the Syrian authorities:

a) On his arrival in Damascus a meeting was held with Mr. Khahl Aiash. Mr. Aiash stated that he was concerned that a decision on the siting of the proposed plant had not yet been made.

As his first task, the expert was requested to supply Mr. Aiash with a report recommending the most suitable site out of the three available.

The sites available are:

- i) Sbench, south west of Damascus
- ii) Ain Termah, south east of Damascus
- iii) Jahroneah, present land filling area.

A report was given to Mr. Aiash containing observations on the three sites and subsequent recommendations. A copy of the report is given in Appendix 1 of mission report May 1983.

b) Mr. Nada-Haj Oghli informed the UNIDO expert that electrical services can be provided at the Jahroneah site. This means, if the Municipality accepts the expert's recommendations the composting plant will be sited at Jahroneah.

Advantages of Jahroneah are:

- i) Land availability
- ii) Less expense in acquiring the land
- iii) No nuisance to neighbours
- iv) Adjacent land available for dumping unacceptable materials for compost process
- v) Collection vehicles will not need re-routing.

If the Jahroneah site is used the expert would strongly recommend that a transfer station be built just outside of Damascus. This will allow the collection vehicles to increase their productivity by around 200%. The large vehicles used for transporting from the transfer point to the treatment plant could be used to bring treated compost back into Damascus.

c) On Wednesday 19 October the expert arranged a meeting with Mr. Ali Sabbage, the Deputy Minister of Agriculture for Syria. The meeting was also attended by Dr. R. Shayeb and K. Elhas from the Department of Soils.

As the Ministry of Agriculture had little information about the compost project, the project was described and it was explained that the compost could be produced in various qualities. The object of the meeting was to identify the main type of conditioner for soils around Damascus.

Mr. Sabbage explained that the farmers buy chemical fertilizers (mainly phosphates) and that any form of compost would be welcome. The farmers at present are paying around 700 Syrian pounds per ton of fertilizer.

Dr. Shayeb stated that the most important factor was to avoid plastics and glass in the compost as this will bring difficulties for the promotion of compost utilization among farmers.

Dr. Shayeb suggested a visit to the Ministry's Agricultural Laboratories at Douma to discuss the more technical details of soil requirements. This was arranged for the following day.

d) Mr. Talel-Al-Khadra heads the Department of Soils at Douma. It was explained that compost provided the following advantages:

- 1) It contributes towards replacing the organic substances that have been absorbed by the previous crop, and also stabilizes the humus husbandry;
- 1i) It stimulates and multiplies the soils organisms;

- iii) It contributes towards supplying the soil and plants with main trace elements;
- iv) It increases the pore volume and improvement of air and water husbandry of heavy soils;
- v) It increases the nutrient and water holding capacity of light soils;
- vi) It raises the ph value of acid soils.

During the discussions with Mr. Talel-Al-Khadra and his chemists it was jointly recognized that samples of compost at different stages of maturity be sent to the agricultural laboratory in Douma for analysis.

e) On Saturday 22 October a meeting was held in Damascus Municipality with Mr. Khalil Aiash (Head of Technical Services), Mr. Hader-Haj Oghli (Assistant to Mr. Aiash) and Dr. Saalem (UNDP).

The compost project was discussed in length. The next visit by the UNIDO expert is envisaged around mid November to assist in the finalization of the tender document.

