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PLASTICS DEVELOPMENT CENTRE (PDC)

FOR AGRICULTURAL PURPOSES

DP/EGY/81/029

EGYPT

Final Report: Regional Symposium on Plastics in Agriculture and
PDC Future Projects

Prepared for the Government of the Arab Republic of Egypt
by the United Nations Industrial Development Organization (UNIDO),
acting as Executing Agency
for the United Nations Development Programme (UNDP)

Based on the work of Gregorio Pruzan, UNIDO Regional Symposium Co-ordinator
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United Nations Industrial Development Organization
Vienna

This report has not been cleared by the United Nations Industrial Development Organization which does not therefore necessarily share the views expressed herein.

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A. SUMMARY

- The Regional Symposium on Plastics in Agriculture for the African Decade has fully attained the objective proposed, as may be inferred from the Conclusions and Recommendations resulting from the above event. (*)

The immediate implementation of these recommendations will be of vital importance in order to obtain the expected results as soon as possible.

- The future PDC projects, discussed during the consultant's mission, are oriented to the revision and extension of the present PDC/UNIDO project (DP/EGY/81/029), the design and implementation of a new project: "Plastics for Construction Purposes" and the organization of the X International Congress on Plastics in Agriculture, to be held in Egypt towards the end of 1986.

B. OBJECTIVE OF THE MISSION

The objective of the mission originally entrusted to the consultant, included the following activities:

1. Assist in the elaboration of the Recommendations through the Recommendations Committee to help the African countries in solving their problems and impediments.
2. Evaluate and report the Symposium to both PDC and UNIDO.
3. Submit printed matter, brochures and leaflets to assist PDC in Symposium publicity.

(*) NOTE: INFORMATION REGARDING THE REGIONAL SYMPOSIUM ON PLASTICS IN AGRICULTURE FOR THE AFRICAN DECADE IS CONTAINED IN THE SYMPOSIUM REPORT. THIS DOCUMENT, TOGETHER WITH ITS PERTINENT ANNEXES, IS ATTACHED TO THIS REPORT AND HAS ALSO BEEN PREPARED BY THE CONSULTANT FOR THE ABOVE MISSION.

During the consultant's mission, UNIDO received a request from the Arab Republic of Egypt for the extension of the mission, which was to take place in Vienna and Paris, in order to carry out the following duties, related to PDC future projects, together with Mr. Osman Abouzeid, director of the above centre:

1. Advise the Director of the Plastics Development Centre (PDC) on the preparation of the guidelines for the revision and extension of project DP/EGY/81/029 "PDC for Agricultural Purposes".
2. Assist the PDC Director in order to identify the problem, justify and design the project "Plastics for Construction Purposes".
3. Co-operate with the PDC Director in the definition and implementation of the immediate activities to be carried out together with the International Committee of Plastics in Agriculture (CIPA) and UNIDO, for the organization of the X International Congress, to be held in the Arab Republic of Egypt, towards the end of 1986.

Besides the above activities, the consultant has been requested to prepare this Final Report.

C. CONSULTANT'S ACTIVITIES

Between October and November 1984 the consultant carried out the following activities in Cairo, Alexandria, Vienna and Paris:

. In Cairo and Alexandria:

Activities were related mainly to the co-ordination of the organization of the Regional Symposium on Plastics in Agriculture for the African Decade, in co-operation with the project national personnel, besides the preparation of the Symposium Report (attached to this Final Report).

- Revision and classification of the papers presented at the Symposium.
- Preparation of an Index containing number of the paper submitted, title, author and country.

- Elaboration of the programme of sessions, including the technical, opening and closing sessions, in addition to the questionnaire for the pertinent discussions.
- Preparation of a bulletin for the participants containing: Introduction, Information, Rules.
- Press releases in order to promote the Symposium at national level.
- Preparation of condensed abstracts of the papers presented for their submission in English, French and Arabic.
- Previous meetings with the PDC personnel responsible for the various activities of the Symposium, including the simultaneous interpretation team.
- Elaboration of the Symposium agenda, including the technical sessions and their authorities, visits and social activities, from 27 October through 1 November 1984.
- Meetings during the Symposium with participants from African countries, UNIDO consultants, staff members from UNDP-Cairo and UNIDO-Cairo and Vienna and with observers from Mexico, China and CIPA.
- Participation in the Drafting Committee for the Symposium Conclusions and Recommendations.
- Elaboration of draft co-operation agreements among the PDC, the Research Centre of Applied Chemistry from Mexico and the Plastics Processing and Application Centre from China.

. In Vienna:

Meetings were held with Mr. Osman Abouzeid (PDC) and Mr. Magdy Youssef (UNIDO), during which the following issues were considered and discussed, taking into account the interest expressed by the Government of Egypt:

- The revision of project "Plastics Development Centre for Agricultural Purposes" (DP/EGY/81/029), considering an increase of US\$ 200,000 in UNDP's contribution and the extension of said project until 1986.

- The guidelines for the design of the project "Plastics for Construction Purposes", to be implemented by PDC/UNIDO.
- Actions aiming at obtaining UNIDO's possible participation for the organization and convening of the X International Congress on Plastics in Agriculture, to be held in Egypt during the last quarter of 1986, at a date to be determined.

. In Paris:

Meetings were held with Mr. Osman Abouzeid (PDC), Jean Claude Garnaud (CIPA) and Francis Buclon (French Committee) during which the following subjects were discussed:

- The organization of the X International Congress on Plastics in Agriculture, to be held in Egypt during the last quarter of 1986.
- The implementation of the recommendations corresponding to the Regional Symposium on Plastics in Agriculture for the African Decade, held in Alexandria (Egypt), from 27 October to 1 November 1984.
- The creation of an African Committee of Plastics in Agriculture and its association with the International Committee of Plastics in Agriculture (CIPA).
- Possibilities for starting training courses in Plasticulture, in France, for participants from other countries.

D. RESULTS OF THE MISSION

The results obtained during the consultant's mission, in co-operation with the project national and international personnel, UNIDO staff members and CIPA Secretariat are:

- . Report on the Regional Symposium on Plastics in Agriculture, which is attached herewith, together with its corresponding annexes.

- . Documentation containing the necessary procedures for the organization and convening of the above-mentioned Symposium.
- . Conclusions and Recommendations of the Symposium.
- . Guidelines for the revision of Project DP/EGY/81/029-"Plastics Development Centre for Agricultural Purposes".
- . Guidelines with the necessary basic information and methodology for initiating actions in order to design project "Plastics for Construction Purposes", were provided to the PDC Director in Vienna.
- . Information complementary to that previously provided concerning the implementation and organization of the International Congress on Plastics in Agriculture, to be held in Egypt, during 1986, together with the necessary requisites for requesting UNIDO's co-operation in the organization of the above event, were considered with the PDC Director and the CIPA Secretary in Paris.

E. FINDINGS

- Concerning the Regional Symposium on Plastics in Agriculture for the African Decade, participating countries expressed their interest in incorporating the use of plastics in agriculture and water management.

It must be pointed out that participating countries belong to areas with different characteristics as regards climate, soil and socio-economic aspects; however, the interest expressed is shared by all the countries; many of them have not initiated activities in this area while others are just starting them.

Only some of those countries, such as Egypt, Morocco and Algeria, are more advanced concerning the technology for production and application of plastics in agriculture and water management.

Most of the representatives of the participating countries contacted the consultant in order to be informed about the procedures to be followed to request UNIDO's co-operation for the design and implementation of projects on Plastics in Agriculture.

- The Plastics Development Centre (PDC) has the necessary physical infrastructure for offering technical co-operation to other African countries. However, the team of professionals and technicians who are necessary to handle the above-mentioned infrastructure (pilot plant, laboratories, experimental station), in order to provide technical services and carry out research and development and training activities, is still insufficient as regards quality and quantity.

- The Government of Egypt is interested in revising the present project DP/EGY/81/029, extending it until 1986, increasing both UNDP and the Government's contributions.

- Regarding the X International Congress on Plastics in Agriculture, to be held in 1986, the Government of Egypt has reiterated its agreement to host the above-mentioned event.

- On the other hand, the Government of Egypt has expressed its interest in designing and implementing a project, with the PDC and UNIDO's co-operation, concerning the development of plastic materials to be used in public and private construction.

F. RECOMMENDATIONS

- As a result of the Regional Symposium on Plastics in Agriculture for the African Decade, it is recommended that the Plastics Development Centre (PDC) initiate the necessary actions concerning said Centre in order to implement the recommendations formulated by the Symposium.

- Among those actions, the strengthening of the PDC's present structure is of vital importance, specially concerning professional personnel (researchers and technicians), both as regards their number and their capacity to meet local requirements and provide technical assistance to other countries of the region. To contribute to this purpose, it is suggested to implement the recommendations contained in UNIDO Technical Report : "Training Programmes and Promotional Activities", of 31 December 1983, a copy of which is available at the PDC.

- As regards the draft co-operation agreement subscribed by the PDC with the Centres of Mexico and China, it is recommended that the PDC elaborate the details for its implementation, taking into account both the assistance that the PDC may require and the different types of collaboration that it may offer to the above-mentioned Centres.

- Concerning the creation of an African Committee of Plastics in Agriculture, it is recommended that the PDC strengthen the actions initiated during the Symposium which were later discussed in Paris with the CIPA Secretariat. The above Committee should be associated with this institution in order to benefit from its services.

- For the X International Congress on Plastics in Agriculture, which is to be held in Egypt towards the end of 1986, it is recommended that the PDC confirm, during December 1984, in consultation with the Egyptian Government, the date and place for the above event. Once this is arranged, CIPA and UNIDO should be informed in order to start all necessary actions for its organization and promotion. For this purpose, it is suggested to follow the Recommendations contained in UNIDO's report of January 1984, as well as those formulated by the CIPA Secretariat, being both of them available at the PDC.

- In addition to the above recommended actions to strengthen the PDC present structure, and having the Government of Egypt expressed its interest in revising the present project DP/EGY/81/029, extending it until December 1986 with additional resources from UNDP and the Government of Egypt, it is recommended to take into account the elements Justification, Outputs and Activities, which are mentioned later on, in order to prepare the corresponding Project Revision Document. These elements should be completed with the description of the pertinent Inputs and Budgets.

- As JUSTIFICATION to request the above revision, it is recommended to consider that:

The ongoing project shows that:

- . The application of plastics in agriculture in Egypt proved that the use of plastic installations renders satisfactory results in order to increase agricultural productivity and improve water management.

- . The Plastics Development Centre staff received training and UNIDO consultation in both plastics technology and plasticulture/ water management.
- . A well equipped testing laboratory and pilot plant at the PDC , for plastics technology, gears towards plasticulture and water management.
- . A PDC experimental station located at Genaclis is under establishment.

Some government projects in which the PDC could be involved are:

- . Upon request, newly graduated university professionals will receive from the Ministry of Agriculture a grant of 10-20 feddans (2.5 - 5.0 ha) located in the Mariut area and credit support under the condition that they will be responsible for field reclamation in due time.
- . Projects established by the F.O and the Ministry of Agriculture in Ismailia and in the eastern side of the Suez Canal in Sinai, to increase agricultural productivity.
- . The Ministry of Agriculture has developed a plan to grow vegetables under plastic greenhouses (3.000 feddans) for export purposes.
- . The Ministry of Irrigation is planning to line canals with plastics in desert areas (western and eastern side of the Nil delta) and intends to install underground drainage systems.

Plastics could be introduced to improve the development of agricultural methods.

In the polymer and plastics industry it is observed that:

- . Petrochemical industry will start the production of polyvinyl chloride in 1985 and polyethylene in 1986.
- . The plastics industries are willing to participate in the new market areas to develop the utilization of plastics in agriculture and water management.

Experiments on plastics in agriculture need at least 4 years to test the plastic materials and installations in order to evaluate technical and economic results of the plastics and installations themselves as well as the increase of agricultural productivity.

- Concerning the OUTPUTS, the following is recommended to be added to Section E-OUTPUTS (page 4) of the Project Document DP/EGY/81/029:

- . Manual containing the formulation and compounding and testing of plastic materials to produce special films for lining of canals and reservoirs, and for greenhouses, tunnels and mulching.
- . Manual for the production and testing of plastic films for lining of canals and reservoirs and for greenhouses, tunnels and mulching.
- . Manual for the application of plastic films in lining of canals and reservoirs, including specifications of materials.
- . Manual for the application of plastic films in greenhouses, tunnels and mulching, including specifications of materials.
- . Training department with capacity to undertake:
 - Four-week courses on plastics compounding and film production for 20 industry professionals and technicians per year.
 - Four-week courses on lining of canals and reservoirs with plastic films for 30 professionals and technicians per year, from public and private organizations dealing with water management and irrigation.
 - Four-week courses on greenhouses, tunnels and mulching installations using plastic films, for 30 professionals and technicians from public and private organizations dealing with the production of crops.

- Regarding the ACTIVITIES to obtain the above RESULTS, it is recommended that, in the project revision document, the following items be added to page No. 35 of Project Document DP/EGY/81/029:

- . to prepare a research and development programme for:
 - formulation and compounding of plastic raw materials
 - production of plastic films by extrusion
 - application of jojoba oil in plastics compounding
 - development of capsules for slow release of pesticides and fertilizers
 - evaluation of locally produced plasticizer (DOP)

- . to prepare a training programme for:
 - extrusion of plastic films for agriculture
 - compounding of plastic materials, etc.

- . to collect, revise, print and distribute technical information, together with practical results, arising from experience.

- . to carry out extension and promotional activities
 - in the agricultural sector
 - in plastics
 - in other related industries

- . to co-operate in the organization of the X International Congress on Plastics in Agriculture to be held in Egypt during 1986.

- According to the BUDGETS corresponding to UNDP and the Government, which were submitted as draft documents to Mr. Osman Abouzeid in Vienna, the Government and UNDP's total contributions, corresponding to Project Revision E, to be prepared, would be as follows, including the years 1985 and 1986:

The change to the project budget-Government cash contribution- is as follows:

Previous Government cash contribution:	<u>£E 150.000</u>
Revised Government cash contribution:	<u>£E 250.000</u>
Government cash contribution increase:	<u>£E 100.000</u>

The change to the project budget -UNDP inputs- is as follows:

Previous UNDP input-Project Budget Code D:	<u>US\$487.905</u>
	(line 99 total)
Revised UNDP input-Project Budget Code E:	<u>US\$687.905</u>
	(line 99 total)
UNDP input increase	<u>US\$200.000</u>