

**UNITED NATIONS
DEVELOPMENT
PROGRAMME**

Distr.
RESTRICTED

DP/PROJECTS/R.13/Add.3
5 March 1980

ORIGINAL: ENGLISH

GOVERNING COUNCIL
Twenty-seventh session
June 1980
Agenda item 6 (b)

PROGRAMME PLANNING**COUNTRY AND INTERCOUNTRY PROGRAMMING AND PROJECTS****PROJECT RECOMMENDATION OF THE ADMINISTRATOR****Supplementary assistance for a global project****Testing and Demonstration of Small-Scale
Solar-Powered Pumping Systems**

(GLO/78/004)

Estimated UNDP contribution:

\$ 445 000

Duration:

12 months

Executing Agency:

International Bank for Reconstruction
and Development (World Bank)

I. Background

1. The Governing Council at its twenty-fifth session in June 1978 approved \$1,176,105 for a global project on Testing and Demonstration of Small-Scale Solar-Powered Pumping Systems. 1/ This allocation is expected to be fully expended by mid-1980. Progress in implementing the project has been very satisfactory, although somewhat slower than anticipated for reasons stemming from the technical complexity of the project as well as the lengthy bidding procedure that proved to be necessary due to the very wide interest the project evoked. It is considered highly desirable to extend the present phase of the project for an additional year to mid-1981 in order to take full advantage of the work thus far accomplished, and to lay the groundwork for an expanded second phase that will extend project activities to a much larger number of countries.

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1/ DP/PROJECTS/R.10/Add.1.

2. The basic objective of the project is to develop, drawing upon existing technologies to the maximum extent possible, small-scale pumping systems for water supply and irrigation which (a) are based on the use of solar power; (b) are decentralized; (c) have costs low enough for small farmers; (d) have minimal and simple operation and maintenance requirements; and (e) have good prospects for manufacture and/or assembly in developing countries. Four countries agreed to participate in the project on a pilot basis: India, Mali, Sudan and the Philippines. The form of India's collaboration was subsequently modified to take account of national developments in solar energy that made it unnecessary to field-test foreign units in the country. The project is being executed by the World Bank under contract to Sir William Halcrow and Partners (UK) as principal consultants in association with the Intermediate Technology Development Group, Ltd. The principal consultants were selected through an international bidding procedure which elicited a wide response from leading technical organizations around the world. A contract was concluded with the consultants in July 1979, following which technical work on the project was begun.

II. The project

3. The following work has been accomplished under the project to date. The principal consultants have completed a comprehensive State-of-Art Report on Small-Scale Solar Power Pumping Systems. The report reviews the use of such pumps for the irrigation of crops in small land-holdings (of the order of one hectare) in developing countries and provides a technical assessment and appraisal of the principal types of solar pumping systems presently available, as well as the merits and demerits of numerous sub-systems and component choices.

4. On the basis of the above investigations, 11 prototype pumping systems have been selected for manufacture and field-testing. Ten of these are photo-voltaic pumps, and one a solar-thermal system. In addition, arrangements are being discussed with the Government of India for the possible testing at the manufacturer's site in India of two promising solar-thermal models developed in that country.

5. Field-test sites have been selected jointly with participating Governments, and installation of the units is under way. The first cycle of field-tests will be initiated shortly in collaboration with the national technical organizations designated by the Governments as counterparts. They will be completed around November 1980, following which it is proposed to conduct another set of tests through a second agricultural cycle in 1981.

6. The objectives of the proposed extension of the present phase of the project by 12 months are as follows:

(a) To continue field-tests in 1981 through a second agricultural season in the countries presently participating in the project as well as several additional countries in order to obtain broader feed-back on the technical and economic suitability of the units under different conditions prevailing in developing countries;

(b) To organize, at the conclusion of the current field-test period in late 1980, an International Technical Workshop of present and prospective new participating Governments, selected Agencies, and technical organizations to review the results;

(c) To begin, during the first half of 1981, further work on design development that will build upon and extend the work accomplished up to that time; and

(d) To start procurement of improved second generation solar-electric and/or solar-thermal systems based on the results of the design development studies, for field-testing in at least 10 additional countries during a possible second phase of the project.

On the basis of this work and assuming that results warrant it, it is the intention of the Administrator to return to the Governing Council in June 1981 with a recommendation for a second phase project.

7. The expenditure components of the proposed supplementary assistance are as follows:

	<u>\$US</u>
Project personnel	55 000
International Technical Workshop	75 000
Sub-contract	300 000
Miscellaneous/Reports	<u>15 000</u>
Total	445 000

The proposed UNDP contribution will be contained within the Global IPF established by the Governing Council for the current cycle.

III. Recommendation

8. The Administrator recommends that the Governing Council:

(a) Approve the supplementary assistance; and

(b) Authorize the Administrator to make the appropriate arrangements with the World Bank for the extension of the project.
