

# IDRC

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# FEATURE

*A monthly features service on scientific, technical, and educational subjects pertinent to development.*

## DEVELOPMENT DOSSIER

(A collection of development-oriented news that could be used whole as a column, or as separate news stories.)

### WATER FROM THE SUN

(Words: 470)

A new type of water pump that is already being used in a number of Third World countries could well solve the many problems posed by cyclical periods of drought, in the Sahel in particular, and especially the difficulties connected with the operation and maintenance of means of pumping water in the tropics.

The pump in question is a low power solar water pump which can be installed in a day or two. It starts turning shortly after the sun rises, and its delivery increases as the sun moves higher in the sky. It is thus the most regular of the intermittent sources available, and no human intervention is required to operate it. This reduces the risk of breakdowns. Since there are hardly any pins or screws to change, the cost of maintenance and operation is considerable reduced. The solar pump operates on photovoltaic cells, silicon discs which directly transform the energy they receive from the sun into a continuous electrical current. The advantage of the system is obvious: the sun does all the work, and the energy produced is transmitted to an electric motor which operates a pump.

The capacity of the pump varies from 600 to 1,300 watts. With it, between 15,000 and 120,000 litres of water can be drawn daily, depending on the depth of the well. By guaranteeing a regular supply of water, the solar pump breaks the dry season - wet season cycle. This will inevitably curb seasonal and permanent migration from the countryside and promote economic activity in rural areas in the form of farming,

livestock raising and the establishment of units of craftsmen and small agro-food industries. At the same time it will result in improved health among villagers by enabling them to plant vegetable gardens to give them the vitamin supply which they lack during the long dry season, which occupies a good part of the year.

The main obstacle to the mass utilization of this pump, which now seems to have been perfected - twenty or so such pumps have already been working for a year or two with no apparent difficulties - is financial in nature. But since the cost of photovoltaic cells, which represents seventy percent of the total investment, is decreasing by fifteen to twenty percent yearly, the total cost of a solar pump is constantly going down, and it is estimated that solar generators might be competitive in price with diesel ones by 1980. The chances for the realization of these forecasts, which some see as being utopian, are much greater in view of the fact that a new manufacturing process should soon enable photovoltaic cells to be made in a strip in a single stage, which would considerably lower the cost of producing them.

When this happens, the future should definitely belong to the solar water pump.

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#### TUNISIA BUZZES WITH ACTIVITY

(Words: 271)

There is a buzz of activity in Tunisia these days that is literal as well as figurative as the country works towards becoming an exporter of honey, beeswax and beekeeping equipment by 1981, while improving the living conditions of its small farmers.

Honey, a natural food rich in glucose and fructose sugars and containing essential minerals, protein, enzymes and acids, has been a highly prized commodity since ancient times. The bee also contributes to world food supplies by pollinating crops and beeswax is an important product, selling on the world market at prices reaching \$2.00 per lb.

Tunisia's program was launched in 1975 with help from the Food and Agriculture Organization and the United Nations Development Program because, although the country has almost ideal conditions for beekeeping, the country produced less than half its domestic requirements of honey. In less than 3 years it has increased its production by 135 percent, and no longer needs to import.

The greatest focus of the program is on bee production, research and training. Bee production centres -- 1500 of them -- distribute colonies (swarms with queen bees) to schools, agricultural centres and amateur beekeepers. Individual farmers can maintain 30 to 50 colonies, from which they can derive supplementary incomes of up to \$650 a year.

A program of apiculture training has been introduced at the elementary and secondary school levels and 300 instructors have been trained.

Other project activities include research on bee diseases and on methods of wax extraction using solar energy. Using solar techniques, Tunisia expects that in three years time it will be able to export 50 tons of pure beeswax a year.

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#### PLANTING THE SEEDS OF FAMILY PLANNING

(Words: 243)

When he began working as a village health worker, some 17 years ago, Dr Juan Flavier of the International Institute of Rural Reconstruction, Cavite, Philippines, found that he lost his audience when he tried to explain family planning. Not only were his lectures, using medical terminology, not understood, but they did not persuade or motivate the villagers to accept the new techniques.

One day, an old woman who had heard his lecture told him that when he tried to explain the uterus she thought of the earth where things grow, the sperm were seeds put into the earth and the ovaries were string beans that opened and dropped their seeds when ripe. From then on Dr Flavier's presentation changed drastically.

Working with the Philippine Rural Reconstruction Movement, he, and the villagers, have evolved hundreds of agricultural parallels: spacing children and corn; mother hens with too many chicks and mothers with too many children, stones placed on seeds and IUDs.

These analogies have now been published in flipcharts by the Communication Foundation for Asia: one side depicts the natural phenomena, the other the family planning parallel. The comparisons are grouped into categories to allow for cultural differences between communities and relate to fishing, various types of agriculture, popular beliefs and household articles. A manual, The Agricultural Approach to Family Planning, has also been published and is available, free of charge to developing country researchers, from Family Planning International Assistance, 810 Seventh Ave., New York, New York 10019, U.S.A.

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#### SHORT TAKES

- Recycling old newspapers is much in vogue throughout North America. But now Americans may unwittingly be eating them, disguised as a "taste treat" called Carroty Slim Cone. Sugar, colour, flavourings and chemicals are added to the newspapers along with vitamins A and C. Dr Michael Jacobson of the Center for Science in the Public Interest concocted the Slim Cone to point out the need for adequate labelling on "food" items. Presently such a product could be marketed in the USA without telling the consumers what it contains.

- By the year 2000, the world labour force will increase by at least 800 million people to reach 2.5 billion. If massive global unemployment is to be avoided, over a billion new jobs must be created, says Thomas T. Kane in the 1978 World Population Data Sheet issued by the Washington-based Population Reference Bureau. Some countries such as Mexico, Colombia, Syria and Algeria are expected to double their work force, although not necessarily their job opportunities.

- Success in reversing sterilization in both men and women has been reported in the USA and Canada. Using micro-surgery techniques, an American urologist reconnected the severed vas deferens in 257 men: 91 percent of those who has been sterilized for less than 10 years regained normal sperm counts within 6 months. In Vancouver, Canada, 71 percent of female patients who underwent surgery to reverse tubal ligations became pregnant.

- If the farm strike begun in December 1977 in the USA is successful, unemployment in that country could jump to 30 percent, bringing about a severe depression. Farmers are complaining that the prices for their products have remained at the 1967 level, or have dropped below them, while their costs have doubled, even tripled in the case of farm equipment. To meet the farmers' demands -- which include 100 percent parity on the creation of food reserves and food exports and a halt to the import of meat and livestock -- would cost the US government \$30 to 40 billion and cause retail food prices to jump by 25 percent.

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