

IDRC FEATURE

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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.)

PUTTING THE WATER HYACINTH TO WORK

(Words: 337)



The water hyacinth is often regarded in tropical countries as a noxious weed: a prolific breeder, it quickly covers hectares of water, hampering boat traffic and fishing. This aquatic plant (*Eichhornia Crassipes*) may, however, provide the raw material for many useful products.

Scientists at the National Aeronautics and Space Administration laboratories in the USA have shown that it can purify water polluted by biological wastes as well as by some chemical wastes. A third of a

hectare of water hyacinths can purify more than 2,000 tons of sewage daily, at no cost. It also has a remarkable ability to filter out heavy metals such as cadmium, mercury, lead and nickel as well as other toxic substances found in industrial waste waters.

Harvested water hyacinths can be an important source of energy. Experiments using an anaerobic (oxygenless) fermentation process demonstrate that one kilogram of plant refuse produces about a third of a cubic meter of methane gas. The residues, if they are not polluted by heavy metals, are an excellent fertilizer and soil conditioner, produced at a rate of about one ton per hectare of plants.

The plant can also be used in animal feeds. In the United States, tests have shown that dried and chopped water hyacinths, added to corn silage, produce weight gains in animals similar to a diet fortified with soybean or cotton seed meal.

A large number of projects that could exploit the full potential of this plant are being undertaken or are under consideration. In India, for instance, the water hyacinth is being tested in the manufacture of paper and paper products. Near Washington, D.C., scientists are considering planting a heavily polluted lake with water hyacinths in order to purify it and use it as a recreational site. Gold mining interests are attempting to recover tailings (refuse left over from mining) from streams. It is thought that metals present in solution in the water can be collected by the plant which would then be processed to extract the metals, in pure form.

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BANGLADESH LAUNCHES AMBITIOUS PLAN

(Words: 407)

Bangladesh, long considered by some to be a hopeless "international bread-basket case", is planning to become self-sufficient in food grains and to improve the nutrition of its people by 1985.

Ever since independence in 1971, Bangladesh has depended on food imports to feed its population of some 81 million people, expected to reach 100 million within 10 years. Despite three consecutive years of good crops since the famine of 1973-74, nearly 40 percent of its population suffer from malnutrition.

To reach its ambitious goal, Bangladesh will need to increase its cereal production by 50 percent in the next 8 years, a difficult but not unachievable task. The plan is to boost agricultural production in selected areas through the provision of easy credit facilities for small farmers to help them buy seeds, fertilizers and pesticides; land reform; expansion of rural extension services; and inland fisheries development. In addition, an intensive drive to promote backyard vegetable gardening and a crash nutrition education program will be launched. When fully operational, the plan is expected to benefit the vast majority of the rural population which makes up 90 percent of the country's people.

One of the biggest problems in implementing the plan is the lack of trained field-level rural extension workers. Bangladesh is now looking to international agencies to help them devise a training program for high school graduates, 40 percent of whom are currently unemployed. Bangladesh's task will also be facilitated if the population growth can be slowed. A massive program has been launched to reduce the growth rate from 2.8 percent to 1.8 percent between 1980 and the year 2000.

International experts who have helped the Bangladesh government devise its crash program also recommend creating an inter-agency body dealing with all food issues, exploiting fully the country's 3.6 million acres of inland waters for fish culture, and diversifying the rice-based agriculture by increasing the production of legumes, oil crops and vitamin-rich foods.

The experts further recommend an integrated rural development program and the building up of a food reserve as a hedge against crop failures. In the long run, they suggest that joint action be taken in India, Bangladesh and Nepal to harness the food and power potential of the Ganges-Brahmaputra river systems. Without such action, they say, population pressures and soil erosion in the region could have serious consequences for the three countries.

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HEALTH BEGINS IN SCHOOLS

(Words: 217)

In 1962, nurses at the Kangu hospital in the Mayombe region of Zaire were faced with a problem common to most developing countries: how, with an overloaded staff and a modest budget, could they offer health education to the community and thus reduce the incidence of preventable diseases such as intestinal parasites, malaria and nutritional problems?

Developing health education materials with the help of high school students was the answer. A first step was to improve the sanitary conditions in the schools through talks given by teachers; the construction, by the students themselves, of new toilets and wash basins; and the destruction of mosquito breeding grounds. A school workshop was also set up to produce the teaching materials for the campaign: posters, stories, and brochures.

Thus began the Center for Health Promotion which now distributes health education materials, still hand-colored by students, to 15 African countries. A training center has also been set up which offers a two year course for young people wishing to become sanitary education auxiliaries in the villages.

The Center for Health Promotion now receives assistance from the National Health Council of Zaire as well as other organizations. It has grown beyond the wildest hopes of those who some 15 years ago, saw a problem and set out to solve it.

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SHORT TAKES

- Long ago, the ladies of King Kasyapa's harem in Sri Lanka chewed the male flower of the clove tree to avoid pregnancies, says Ayurvedic physician, Mrs Seela Fernando. Mustard oil, a condiment used in the preparation of curries, was also eaten on an empty stomach and was claimed to be effective as a contraceptive.

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- Americans may soon be eating a variety of products containing cottonseed. The seeds have a protein content of 37-39 percent and the protein is highly digestible and low in calories and oils. Cottonseed is also high in potassium which helps to combat heart ailments and increases bone strength and density in children and elders. The Texas Natural Fibres and Food Commission, a state agency, says that they are almost ready to market the products which include candy, butter, salad oil, deserts and meat.

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- Gasohol, a mixture of 10 % ethanol and 90 % unleaded gasoline, is not an efficient fuel. Calculations have shown that the energy used in producing the mixture is almost double the energy it produces. To make it efficient, solar power and methane gas would need to replace the petroleum products burned to produce the ethanol...just what a Denver, Colorado, company is proposing to try this summer.

- The Director of the US Agency for International Development is revamping AID's agricultural training programs because too few of them include women who, he says, "are responsible for 40 to 80 percent of all agricultural production in the less developed countries". He also notes that about 30 percent of rural families in the Third World are headed by women.

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