

protein quality. Ox-drawn equipment must replace hand labour in small-scale agriculture.

- Irrigation is a powerful long-term development tool in semi-arid regions depending on soil and adequate reserves of water.

- Few countries have surplus land suitable for agriculture. Those that do can pursue settlement policies and agrarian reform to increase food production.

- Countries without surplus land must concentrate on higher yields *per acre* with irrigation, conserving moisture, using fertilizer, multiple cropping and high-yielding seeds.

- Canada should continue its strong support of international research centres which produced the high-yielding varieties of wheat and rice, the basis of the "green revolution". In 1972-73 the new varieties increased world food production dramatically — 15 extra million tons of wheat and 29 million of rice in the Middle East and Asia alone.

- CIDA is supporting national research and development to adapt the high-yielding varieties to soil and climate conditions in Peru, Ghana, Zambia, Bangladesh, the Andean zone, East Africa and India. This support should increase.

- CIDA must seek closer co-ordination with other donors so that agricultural projects can be integrated with all aspects of the rural poverty problem. CIDA must also be committed to continuing projects of five years and longer until they can be turned over to native management. It should continue support of programs launched by private organizations.

- Federal Government departments and agencies and provincial governments and consulting firms have a wide variety of expertise in rural-water development that may be mobilized to assist developing countries. More research in tropical hydrology should be encouraged by CIDA.

- Aid to rural water development should be comprehensive and must take into account local cultural, institutional and social patterns.

#### Food production major priority of assistance program

Canada will invest more than \$1 billion over the next five years to assist developing countries increase food production.

Projects involving agriculture, fishing, forestry and closely-related rural development will make up about 30 per cent of CIDA's bilateral spending, from now to 1982. More than 800 individual projects under way in 70 countries will cost \$86.5 million.

This does not include Canadian food products provided to developing countries and development institutions under the Canadian food-aid program, which seeks to relieve immediate food shortages.

In addition to these expenditures, many of the multilateral development institutions supported by Canada are focusing their work on agricultural and rural-development programs.

Bilateral projects which have components related to food production range from irrigation in Togo to growing rape seed in Bangladesh.

#### Research supported

Canada also supports international agricultural research through a global network of agricultural research stations as well as the Ottawa-based International Development Research Centre (IDRC).

In 1976-77, \$3,670,000 was allocated to seven research stations while the IDRC, which was established in 1970, invested \$29.7 million in research programs.

Most of IDRC funds go towards agriculture, food and nutrition sciences.

The Centre has supported research in such tropical crops as sorghum, millet, cassava and other legumes. The IDRC is also concerned with improving post-harvest technology to reduce wastage of crops, in animal sciences, and in development of foodstuffs from the by-products of crops such as coffee and sugar.

Canada also finances agricultural projects through Canadian and international non-governmental organizations. In the past six years, CIDA has provided these private institutions with more than \$80 million, of which one third was invested in the agricultural and rural development sector.

The motorization of the fishing pirogues in Senegal and the construction of the Warsak Dam in Pakistan are just two examples of rural development that helped boost food production and increase employment.

In Senegal, 75 per cent of the fishermen used dug-out canoes. The activity is a vital source of food as well as employment. Canada provided outboard motors, helped build and equip workshops for their maintenance and established a marketing system. From 1970 to 1975, the number of motorized boats rose from 2,000 to 4,800, which nearly doubled the catch. Revenues increased from \$20 million to \$75 million.

In Pakistan, as a result of the construction of the Warsak Dam, more than 120,000 acres of arid land was transformed into profitable farm holdings by the Warsak Power and Irrigation Development on the Kabul River.

#### Fisheries development

- The estimated 70-million annual fish catch could supply about 70 per cent of the animal-protein requirement of the world's population. In fact, about half is consumed by livestock in feed supplements. The United Nations Food and Agriculture Organization estimates that an annual catch of 100 million tons can be reached in 15 to 25 years, with most of the increase in tropical waters near developing countries.

- To help countries expand their fisheries, CIDA should concentrate efforts on quantity and quality of fish stocks; research into environmental factors including yearly catches, and vessels and equipment used; training of fishermen, plant workers, managers, scientists; and better use of incidental catches now thrown away.

- Aquaculture could produce 15 to 20 million tons, three times the current production, by 1985. Employment potential is high. Although Canadian expertise is scarce, the field is worth consideration.

- CIDA should encourage small-scale inland fisheries as part of a comprehensive, rural-development scheme.
- Canada should encourage production of fish-cakes, sausages and spreads, from fish which are usually thrown away.

#### Forestry

- Tree-planting programs in semi-arid regions of the world would have tre-