

# IDRC ANNUAL REPORT 1983/1984



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# Annual Report 1983–1984

## International Development Research Centre

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The International Development Research Centre (IDRC) is a public corporation created by the Parliament of Canada in 1970 to stimulate and support scientific and technical research by developing countries for their own benefit.

The fields of investigation to which IDRC gives its financial and professional support include: farming; food storage, processing, and distribution; forestry; fisheries; animal sciences; energy; tropical diseases; water supplies; health services; education; population studies; economics; communications; urban policies; science and technology policy; and information systems.

Although IDRC is funded by the Canadian Parliament, its operations are guided by an international 21-member Board of Governors. Under the IDRC Act, the chairman, the vice-chairman, and nine other governors must be Canadian citizens; in practice, 6 of the remaining 10 governors are from developing countries.

The programs that the Centre supports help developing countries build the scientific competence of their institutions and their researchers so that these countries can work to solve their own problems. Research projects supported by the Centre are, therefore, identified, designed, conducted, and managed by developing-country researchers in their own countries, to meet their own priorities.

IDRC helps to create and support international research networks through which developing countries can learn from each other, share common experiences, and conduct similarly designed studies in areas of mutual concern. The Centre also promotes cooperation between developing-country researchers and their counterparts in Canada.

IDRC has its headquarters in Ottawa, with regional offices in:

- Singapore (Southeast Asia, East Asia, and the Pacific);
- New Delhi, India (South Asia);
- Nairobi, Kenya (Eastern and Southern Africa);
- Cairo, Egypt (Middle East and North Africa);
- Dakar, Sénégal (West and Central Africa); and
- Bogota, Colombia (Latin America and the Caribbean).

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INTERNATIONAL DEVELOPMENT RESEARCH CENTRE  
CENTRE DE RECHERCHES POUR LE DEVELOPPEMENT INTERNATIONAL

June 1, 1984

The Hon. A. J. MacEachen, P.C., M.P.  
Secretary of State for External Affairs  
Lester B. Pearson Building  
Ottawa, Ontario

Dear Minister:

In accordance with Section 22 of the International Development Research Centre Act, I have the honour to transmit herewith the Annual Report of the International Development Research Centre for the fiscal year ending March 31, 1984, which includes the financial statements of the Centre and the Auditor General's report thereon.

Yours sincerely,

Dr. Liliane Filion-Laporte  
Acting Chairman  
Board of Governors

## Introduction

Development specialists are often accused of taking pleasure in harping on the destruction wrought by famine and the poverty that afflicts the less favoured regions of the world. No doubt those who live in the comfort of the industrialized countries can never be over-informed of the harsh realities of daily life in the nations of the Third World. It would, however, be a serious mistake to point only to the gloomy side of things. Development has had successes that should be mentioned with pride.

One fact emerges: the billions of dollars spent and the array of technical, scientific, and human resources that have been mobilized in the last 20 years to assist developing countries have borne fruit. Certainly, there are still appalling gaps between rich and poor countries, between North and South but, thanks to development, some of the gaps are narrowing and it is possible to hope that, in the future, the painful economic inequalities of today will be less glaring.

### IDRC

Development is fundamentally a long-term undertaking; it requires not only patience, but also a great deal of honesty. Canadians are, by nature, generous when it comes to development; but, although they are aware of the needs of the Third World, they sometimes wonder if their efforts are worthwhile. This is not necessarily negative. The International Development Research Centre, which will soon have existed for 15 years, regularly evaluates the results of the research it funds. In 1983, for instance, the Office of Planning and Evaluation (OPE) and the Centre's Singapore office supported a study to identify critical development issues in Southeast Asia and the role played by external donor agencies. The study revealed the need for the Centre to be fully informed of the region's priorities and to respond with programs that are carefully defined within the context of national research and policymaking systems.

Developing countries themselves are very much aware of the need to evaluate research and the several reviews that OPE will be supporting on the role and the importance of evaluation in research systems reflect this concern. These reviews will focus on the impact of evaluation as a management tool to ensure more effective and efficient research and policy planning. At one such review in December 1983, senior managers of agricultural research institutes of countries in the Association of South East Asian Nations (ASEAN) met at an OPE-funded workshop to examine the role played by evaluation in research. The workshop generated considerable interest outside the ASEAN region, notably in Latin America.

Another important evaluation study of Centre-supported projects was carried out by the Ethiopian Science and Technology Commission at a major conference attended by more than 50 scientists and policymakers represent-

ing all Ethiopian research and policy institutions concerned. This conference was sponsored jointly by OPE and the office of the Comptroller General and Treasurer.

### **Third World's economic growth**

Several Third World countries, particularly in Southeast Asia, are experiencing a remarkable economic takeoff. The region is now an economic pole of quite exceptional vitality where millions of men and women work, produce, and trade ceaselessly. In 3 years, China has almost fulfilled its 5-year plan for 1981–1985. Until 1980, Indonesia was the world's largest rice importer but, thanks to development, particularly in irrigation and the clearing of new land for agriculture, production has increased to such an extent that Indonesia has now reached self-sufficiency in food. The 20 countries with the most rapid economic growth from 1970 to 1977 were all developing countries and most were not petroleum exporters. It is expected that, by the year 2000, the Third World will produce 30% of all goods manufactured in the world.

The slower progress of the economies of the developed countries has, of course, restricted exports from developing countries and thus limited their economic growth. Although there is room for optimism in the short term, it is more than likely that the next few years will be very trying. In spite of this, it is estimated that the share of developing countries in world trade will increase from 4.3% in the period 1980–1985 to 6.8% in the next 10 years. Unfortunately, protectionism has struck a hard blow at some of the basic exports of the developing countries, particularly in the textile sector. Some regions have been harder hit than others by the worldwide economic recession: in Latin America, for example, the recession has put an abrupt end to the progress made in the 1970s. The slowing of economic growth has caused a perceptible increase in rates of unemployment and underemployment and worsened poverty. As a whole, Third World countries can expect to share in 1984 in the economic recovery that seems to have begun in North America. The experts of the World Bank estimate that the average growth rate this year will be 3.5% as compared to 1% in 1983.

### **The indicators**

Life expectancy is certainly the most sensitive indicator of the improvement in standards of living and of the effects of development aid. In the least-favoured countries, life expectancy is now rising much faster than previously, mainly because of effective measures taken in public health and the control of epidemics. In Third World countries as a whole, life expectancy has risen from 47 years in 1950–1955 to 57.5 years in 1975–1980. In India, life expectancy in 1960 was 42, in 1975 it reached 50. Over the same period, in Indonesia, life expectancy rose from 40 to 48, in Togo from 34 to 41, and in Paraguay from 54 to 62.

In Tanzania, a country that has had the benefit of substantial aid from Canada, several indicators — such as life expectancy, the percentages of educated adults and of children in primary school, and the number of people who have access to safe drinking water — are higher than those for other African countries at the same level of personal income. On average, from 1960 to 1979, life expectancy has risen by 10 years (to 52), the percentage of educated adults has climbed from 10 to 66, and that of children in primary school from 25 to 70: these are very large advances. In Mali, from 1960 to

1974, the number of educated adults has doubled. The same has occurred in several disadvantaged countries, among them the Ivory Coast, Egypt, Haiti, Mauritania, Nepal, Rwanda, and Sénégal. Most of these countries have made notable gains in the provision of education and health-care services in rural areas.

In its most recent report on development, the Organisation for Economic Cooperation and Development (OECD) drew attention to the fact that, in the developing countries, there are now greater reserves of skill, competence, and techniques than ever before in the members of the liberal professions, as well as among agrarians, scientists, researchers, and entrepreneurs.

Sri Lanka is a striking example of a country that has made a considerable investment in the development of educational and health services. Sri Lanka rapidly achieved a high ranking among developing countries in regard to almost all the indicators of social progress.

The Centre is extremely sensitive to the need to train scientists in the Third World to create an indigenous research infrastructure. Thus training forms a component in most of the projects funded by the Centre. For example, a single project in Indonesia allowed some 20 young agricultural researchers to complete their studies or obtain their degrees.

The mechanisms of economic cooperation, particularly South–South cooperation, are also changing so as to meet the needs of the poorer countries better. According to OECD, the struggle against poverty and the shadow that it casts — hunger — depends in the long run on the peoples of the developing countries playing a larger role in economic development, particularly in the area of agriculture.

### **A difficult future**

Despite these results, which incline one to optimism, the future is uncertain, especially for the African countries. The drought in the Sahel is of catastrophic dimensions and threatens the survival of millions. The International Food Policy Research Institute (IFPRI) estimates that the shortfall in food supplies in the sub-Saharan countries of Africa may reach 35 million tonnes of basic foodstuffs by the year 2000. Food imports into Africa had already reached 24 million tonnes in 1981, at a cost of US\$8.6 billion. The region has become the chief beneficiary of world food aid: about 50% of the total compared to only 5–6% at the beginning of the 1970s.

In the countries of the Sahel, the livestock population has been restored since the drought but animal output is growing more slowly than the needs of the population, especially in urban areas. Milk imports are also increasing rapidly. Consequently, the dietary intake of protein from meat and fish continues to drop.

The state of indebtedness of the less-favoured countries is stupefying. The combined debts of the Eastern and Third World countries are now estimated at about US\$700 billion. In 1982, payment of interest alone by the developing countries represented up to 45% of their exports of goods and services.

The growth rate of population in developing countries has fallen from 2.4% annually for 1965–1970 to 2% for 1980–1985. Despite this, in the last 10 years, the population of the Third World has increased by 20% while,



concurrently, there has been an unprecedented environmental degradation due to the high rates of deforestation, soil erosion, and desertification. By the end of the century, 3 billion people will live in areas denuded of firewood.

### **Need for a new regional office**

The needs of the developing countries are becoming ever more complex. They require careful study by the donor agency and a flexible administration. To be fully attuned to the situation, it is better to be in the field.

The President of the Centre, in June 1983, announced the signing of an agreement with the Indian Government authorizing the establishment by IDRC of a Regional Office for South Asia in New Delhi. This, the sixth office, will coordinate the Centre's activities in Bangladesh, India, Nepal, Pakistan, Sri Lanka, and the Maldives Islands. The New Delhi office is already overseeing the administration of 98 projects in South Asia with a total funding of \$16 219 204.

IDRC's Regional Office in Singapore, which was formerly responsible for the coordination of activities in those countries, will now be able to concentrate its efforts in Southeast and East Asia and the Pacific. The Centre is responsible for 256 projects in these areas for a total of \$33 746 289. In Africa, the Centre operates three regional offices: the West and Central Africa office located in Dakar oversees 124 projects totaling \$16 470 515; the Eastern and Southern Africa office in Nairobi in Kenya supervises 128 projects totaling \$19 616 093; and the Middle East and North Africa office located in Cairo is responsible for 71 projects accounting for a total funding of \$11 342 588. The Regional Office for Latin America and the Caribbean in Bogota oversees 368 projects at a total of \$54 118 730.

In the 1983 – 1984 fiscal year, the Centre approved 362 new projects, 78 more than in the preceding year. A complete listing of the projects begins on page 21 but a look at the highlights of each division's program of activities is worthwhile.

## **Agriculture, Food and Nutrition Sciences**

### **86 projects, \$21.7 million**

The Agriculture, Food and Nutrition Sciences Division has undergone significant changes during the past fiscal year. Among these is the fusion of the research programs on crops and cropping systems and animal sciences. This major rearrangement, the *crops and animal production systems*, serves to underline the close relationship between these two activities in the lives of many Third World farmers. Important research efforts will be aimed at helping small farmers to maximize advantages from interdependent production systems.

The selection of food crops adapted to local climatic conditions and the perfecting of new, more productive cultivars are key elements in research projects on crops and cropping systems. The Division also pays great attention to research on local plants that can be used for human or animal nutrition. Several research projects involve bananas, plantains, legumes, and oilseed crops. The Division will also contribute, with other agencies, to set up an international research network on bananas and plantains to reinforce national research programs in Central America, the Caribbean, and West

Africa. The principal objective is to encourage small-scale farmers to become more autonomous by producing local foods.

Research on sorghums and millets is being pursued in Uganda and other East African countries. In Sudan and Upper Volta, important research is being done on striga, a parasitic plant responsible for serious crop-production losses in many developing countries.

In the context of network support, the Centre assisted the International Institute of Tropical Agriculture (IITA) to strengthen the capacity of national institutions in West Africa to carry out research on cropping systems. In Ethiopia, the Division has helped to establish an important network on oilseed crops that will help link projects supported by the Centre throughout Asia and Africa.

The Division provides funding support to regional and international agricultural research institutes when their activities are linked to national research programs. In the area of animal sciences, the Division with the Centro Internacional de Agricultura Tropical in Colombia helped to set up a projects network to improve the quality of pastures and grazing lands to increase the yield from cattle raising through national research projects.

In the Dominican Republic, the Animal Research Centre (CENIP) will receive support to develop the best system of milk cattle production. The project is part of a network of research projects in which the Centro Agronómico Tropical de Investigación y Enseñanza is a member.

The *postproduction systems program* is working to develop new implements by designing seeders for soybean and is involved in the engineering and technology of foodstuffs production. The Division is funding a feasibility study on the establishment of a fruit-juice plant in Colombia. Studies are being carried out on the transformation of foodstuffs, their handling, preservation, storage, and drying. Prototypes of solar-energy rice dryers are being tested in Sierra Leone. Several research projects aim at trying to reduce losses of foodstuffs because of poor storage. Studies have been undertaken on the rehydration of vegetables and postharvest treatment for application to legumes.

The Division's *forestry program* focuses on the social rather than the industrial uses of trees. Supplies of firewood and the increase of agricultural output are the main objectives underlying the reforestation program. This sector of activities aims at demonstrating and publicizing technologies that have been developed to suit national forestry programs. Training internships in methodology and up-dating courses for African researchers in forestry have already been initiated and will be continued.

Regional workshops on the afforestation of dry zones are also among the priorities for the program in an attempt to respond to the urgent need for such measures in semi-arid regions.

Research projects into the utilization of forest products have been carried out. In Tanzania, work is proceeding on improving the energy yield of charcoal for local consumption.

The Division is concerned with the quality of tree seedlings used in research projects and plantings. In pursuit of this goal, a regional centre for

seedlings for East Africa is expected to receive financial support from IDRC. A similar centre is being planned for North Africa.

In Asia, the Centre has been engaged for 4 years in an important research project on bamboo and rattan. A whole system of research projects has taken shape.

A number of projects in the postproduction and forestry programs are connected with energy. Research is being done on biogas, the utilization of sawdust, the conservation of fossil fuels, and solar energy.

The objective of the *fisheries program* is to increase stocks of fish for human food. Much of the funding support allocated is directed toward Asia where intensive fishing calls for many research projects. Efforts are being made to develop methods of breeding fish in captivity and to improve catches so as to obtain the greatest possible yield of food protein from this sometimes underexploited source. In China, production of fish in captivity reached more than 800 000 tonnes in 1979. A research project has been undertaken jointly between the University of Alberta and the University of Zhongzan in China for the best possible system for breeding carp in captivity. The Division is also concerned with the cultivation of bivalves and other molluscs for local populations. In Chile, for example, techniques will be developed to increase the production of mussels and oysters by cultivating spats.

## **Communications**

### **12 projects, \$0.4 million**

The Communications Division supports program activities that concentrate on helping improve and increase dissemination of the results of Third World development research, so that worthwhile results may be utilized more quickly and more effectively.

The Division's program activities are divided into two areas: *scientific communication* and *media development*. In the former, the objective is to help national and regional research institutions to develop publishing programs so that research results can be disseminated to scientists in their own and other developing countries, and also to the technologists, extension workers, teachers, and others who can apply the results of research in the development process. In addition, the dissemination of research information in the national languages of certain countries may be supported.

A major step in this direction took place in early 1984 in Nairobi, when the Division funded a conference to bring together scientific editors from developing countries and representatives of scientific editors' associations in North America and Europe. Participants explored how groups such as the International Federation of Scientific Editors' Associations (IFSEA), the Centro Regional para el Fomento del Libro en América Latina (CERLAL), and the International Council of Scientific Unions (ICSU) could contribute to the production of better journals and other scientific publications in developing countries.

In March 1984, the Centre's Board of Governors approved in principle a 3-year project that will provide training in scientific editing and publishing for editors drawn from national research institutions in the Third World.

Managed by the Communications Division, this Philippines-based project is also supported by IDRC's Cooperative Programs and Fellowships and Awards divisions, and the International Rice Research Institute (IRRI).

The efforts to disseminate information on science and technology to a wide range of nonscientific publics — policymakers, extension workers, technicians, teachers, and the general public — have identified a lack of trained science writers in the popular media in developing countries. Under its media development subprogram, the Division has funded a series of training seminars for journalists interested in acquiring expertise in science writing, including one this past year in Yaoundé, Cameroon, for writers from 11 countries in West Africa.

Support from the Division also enabled the Association internationale des journalistes scientifiques africains to meet its operating expenses and to establish a monthly feature service for the dissemination of scientific and technical information via the news media. Also in Africa, the Division provided support to the Pan African News Agency (PANA) to train writers from 37 national news agencies in science-news reporting.

The Depthnews Science Service operated by the Press Foundation of Asia (PFA) is an important reference service for the media in Asia. Support from the Division has enabled PFA to commission 52 "science and technology in development" feature articles from freelance Asian journalists, to adapt them for radio broadcast, and to disseminate some in the national languages of five Asian countries.

The within-Centre creative activities of the Division are described in detail on page 76.

## **Cooperative Programs** **12 projects, \$3.8 million<sup>1</sup>**

The Cooperative Programs Unit was established during the 1980–1981 fiscal year and became an autonomous division in 1983–1984. The principal objective of the Division is to promote collaboration between Canadian research institutions and those in developing countries for projects concerned with various development issues. With this principal objective are three others of importance. First, to develop the scientific and technological research capacity of the participating Third World institutions; second, to create channels of communication among scientists; and third, to encourage the Canadian research groups to take a tangible interest in a wider and more varied range of Third World concerns.

Budgetary allocations fall under two distinctly different headings: research activities in cooperation with the Centre's program divisions; and research activities directed by the Cooperative Programs Division itself.

The first area of specialization created by the Division was in earth sciences. Interest is concentrated mainly on geology, geophysics of superficial deposits, hydrology, hydrogeology, and geology applied to engineering. The program stresses the fields of research identified by institutions in the

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<sup>1</sup>In addition, a further 16 projects for a value of \$3.0 million funded by Cooperative Programs are administered by other program divisions.

developing countries and derived from their own evaluation of their priorities. Projects must also fall within Canadian fields of specialization. The program emphasizes the training of scientists in developing countries, particularly on-the-job training.

In Ethiopia, mineral production has never played an important part in the economy. However, the bedrock in a significant part of western Ethiopia is similar to the bedrock from which important minerals are extracted in some of the major mineral-producing countries of Africa and the rest of the world. The Ethiopian Government has given priority to a detailed geological study of those regions that possibly contain mineral deposits. Researchers from the geology departments at Carleton and Ottawa universities will work with research teams from Addis Ababa University and the Ethiopian Institute of Geological Surveys to trace the evolution of the fold from Gore to Gambela in the southwestern region of Ethiopia.

Tailings slime associated with aggregate mining poses a serious threat to health and the environment in developing countries. In Singapore, the engineering firm of McClelland has linked with McGill University's Geotechnical Research Centre to deal with the problem at the request of the Government of Singapore. The project will also involve Malaysian researchers. The results will be applicable to analogous problems in Malaysia, Thailand, and Indonesia.

The Division's range of activities continues to reflect a wide band of interests. The Division, for instance, recently undertook a study to emphasize the needs of small- and medium-sized businesses in developing countries.

Colombia has given high priority to the transformation of steel to strengthen its industrial sector. However, manufacturers have difficulty in welding Colombian manufactured steel. The Universidad del Valle in Colombia, with the University of Waterloo in Canada, has designed a research program to study welds in certain types of Colombian steel, particularly their tensile strength and durability. Significantly, the Colombian National Apprenticeship Program (SENA) will incorporate the research findings into its upgrading programs for skilled welding technicians.

The marine environment is a priority for numerous countries, among them Canada and the People's Republic of China. A joint research project has been agreed upon between the Institute of Ocean Sciences in British Columbia and the National Bureau of Oceanography in China to conduct experiments in reservoirs to understand pollution phenomena better.

India, a multilingual nation, preserves hundreds of languages of varying importance and geographical distribution. This linguistic plurality is a source of anxiety to the Government both because of the complexities resulting in educational and literacy plans and political and administrative implications. Since independence, India has gathered data on languages in its 10-year censuses. A research project, involving the Centre international de recherche sur le bilinguisme (CIRB) at Laval University in Quebec City and India's Office of the Registrar General and Census Commission, aims at gathering useful and significant basic data from the 1981 census, which is still being analyzed. The CIRB will analyze and publish the data while India will retain responsibility for the administration of the project. The findings will be

valuable in sociolinguistic studies that, in turn, will facilitate the Indian Government's task of linguistic planning.

## **Fellowships and Awards**

### **17 projects, \$1.7 million**

In July 1983, the Fellowships and Awards Program became a full division. This confirms the Centre's commitment to training Third World personnel to help maintain and develop an indigenous research capability. The Division, however, sets aside part of its funds for Canadians who wish to expand their knowledge of international development.

In the past, fellowships and awards were granted only to individuals. Recently, however, so as to maximize impact, the preference has been for grants to individuals working within research institutions; this approach benefits both the individual and the institution. The Division is attempting to identify institutions that have the capacity to train researchers as well as those that might become sources of trainees. The selection process is carried on in close collaboration with the other divisions of the Centre.

During the year just concluded, the Fellowships and Awards Division initiated group-training courses at local or regional levels. The objective is to improve technical, research, and administrative skills to increase the competence of regional institutions so that they may offer such courses in the future.

Within the framework of this activity, the Division has supported a project enabling the Regional Center for Educational Innovation and Technology (INNOTECH) in the Philippines to offer a training program for project directors and researchers in educational development from Indonesia, Malaysia, the Philippines, and Thailand. In Liberia, a workshop introduced research managers and decision-makers to the methodological principles of applied research in the area of health. The participants came from Cameroon, Gambia, Lesotho, Liberia, Malawi, Zambia, and Zimbabwe.

Recently, the Fellowships and Awards Division has funded projects jointly with other divisions. For example, Social Sciences and Fellowships pooled their efforts to send students from Africa, Asia, and the Middle East to the Demographic Centre in Cairo, one of only two such regional centres in Africa. The Fellowships and Awards Division sometimes also administers training projects or fellowships awarded by other divisions. In one instance, this has resulted in a far-reaching project of the Health Sciences Division enabling Chinese epidemiologists to receive specialized training in various Canadian universities.

Whatever the program concerned, the Division has taken up as its task aiding in the training of researchers and research personnel in developing countries. Fellowship holders are usually guided toward local or regional institutions, even if some of them attend research establishments in the industrialized countries.

Please see page 67 for a complete list of awards.



## Health Sciences

### 66 projects, \$8.7 million

During the past fiscal year, the Health Sciences Division has consolidated its reorganization and begun to design a more comprehensive approach in responding to research needs in health and health care. The Division's major program areas are now water supply and sanitation, maternal and child health, tropical and infectious diseases, and occupational and environmental health. The following highlights activities in each of these programs.

Since 1976, IDRC has actively supported research on the development of more effective pumping systems for rural *water supply*. Support from the Division in this area has intensified since the UN General Assembly launched the Drinking Water and Sanitation Decade in November 1980. Much of the Division's funding assistance has focused on the development of a handpump made of simple components of polyvinyl chloride (PVC), making it possible to manufacture, maintain, and repair the pump at the village level with local resources. In one project recently begun with support from the Division, researchers are attempting to define an effective strategy for promoting the acceptance and adoption of the PVC handpump in northeastern Thailand, the poorest and driest region of the country. The findings should be of benefit throughout Asia.

To ensure the proper use and care of the PVC pump, villagers need simple instructional materials. The Division, then, is also funding the development of a manual to be used in Asia by illiterate and semiliterate village dwellers.

In the area of *maternal and child health*, funding support has been increased substantially, and closer links are being forged with the World Health Organization (WHO). In Sudan, for example, a project will attempt to strengthen maternity care services in a rural area using a community-based approach and emphasizing in-service training. Another project in Indonesia and the Philippines will develop popular educational materials for women in lower socioeconomic groups to improve their knowledge, attitudes, and behaviour with regard to breastfeeding and related child-survival practices.

The Division has been responsive to the need for improved pre-, peri-, and postnatal health services, particularly in remote rural areas. In Egypt, a project will develop a data base on the health problems of pregnant women and make recommendations to improve health-care services. A similar project will be carried out in Costa Rica, where there has been a perplexing rise in infant mortality after several decades of remarkable improvement. Researchers there will investigate the factors determining poor pregnancy outcome and look at the influence of preterm delivery and low birth weight on infant growth and development. In the Central African Republic, where nutritional anemia is a grave problem, a project will examine the effectiveness of educational measures in improving the nutritional state of pregnant and lactating women.

Insect-borne diseases continue to threaten the lives of millions of people. Over the years, the Division has actively supported research into dengue hemorrhagic fever (DHF), an often fatal tropical illness transmitted

by the mosquito *Aedes aegypti*. Funding was provided for a workshop in Kuala Lumpur on the epidemiology of DHF and the role of vectors, vector control, and vaccines in treatment. The Division has also continued its funding support for WHO's Special Programme for Research and Training in Tropical Diseases. The Programme provides support for research into the prevention, diagnosis, and treatment of six major tropical diseases: malaria, schistosomiasis, leprosy, filariasis, trypanosomiasis, and leishmaniasis.

In Asia, notably in the southeast, some countries have industrialized rapidly in the past two decades. One result has been a concomitant increase in the number of industrial accidents and in the incidence of occupational diseases. In Korea, researchers will conduct a cost-benefit analysis of improved working conditions in 18 companies in the furniture, mining, and construction sectors. They hope to demonstrate that a safer working environment means increased labour productivity. In India, high dust levels in coal mines are causally related to the incidence of pneumoconiosis among miners. A project will study the occurrence of this occupational respiratory disease and the health status of selected miners in Bihar and West Bengal. The findings will be presented later at a national workshop on pneumoconiosis.

More and more, international attention is being directed to the marketing and quality of pharmaceutical products in developing countries. There is little doubt that the greater availability of such drugs and their aggressive promotion has resulted in considerable misuse and abuse. In Malaysia, a project will investigate this problem and collect information on the prescribing and marketing of a wide variety of therapeutic drugs, as well as on the adequacy of the drug information being made available.

## **Information Sciences**

### **34 projects, \$7.5 million**

The Division of Information Sciences has always emphasized support for projects that benefit more than one country, that is, the creation and the development of international and regional information-sharing networks. The underlying principle behind this funding approach has been to promote cooperation among countries in a given region in the collection and processing of data to avoid duplication of work and the waste of valuable resources. An outstanding example at this level has been the Division's important support of AGRIS, the global information system for the agricultural sciences and technology, operated by the Food and Agriculture Organization of the United Nations.

Although the Division has been instrumental in setting up regional resource centres, it is now emphasizing action at the national level to permit countries to exploit fully the benefits of larger systems and apply them to national information needs. For example, the Division has provided financial help to set up a documentation centre in Mauritania to collect, analyze, and disseminate information on rural and agricultural development, particularly irrigation. The centre will be linked to AGRIS as well as to regional information networks in the Sahel, such as the Sahelian Scientific and Technical Information and Documentation Network (RESADOC) of the Institut du Sahel in Mali. A similar effort has been undertaken in Sénégal



where the documentation centre of the Ministry for Rural Development has been selected as the coordinating body in West Africa for the dissemination of agricultural information through AGRIS. The project will provide for the distribution of Agrindex, a computer-produced index of current world literature related to agriculture, to Senegalese research institutes, which in turn will input to AGRIS.

In more recent years, then, the Division has shifted away from the "top-down" approach and now is paying increasing attention to national and even to subnational levels as the larger cooperative systems mature. For instance, in Botswana, where the Government has established the National Institute of Development Research and Documentation as the focal point in a national information network, support from the Division will enable the Institute to strengthen its contacts with the development-planning and research community and to identify and collect documents and unpublished literature related to the country's socioeconomic development. It will also allow Botswana to participate in the Pan-African Documentation and Information System (PADIS), the African arm of DEVSIS, a set of interacting regional systems handling the socioeconomic information needed by development planners. A similar project supported by the Division will enable Grenada to participate more fully in the Caribbean Information System for Economic and Social Planning (CARISPLAN), the Caribbean component of INFOPLAN, the Latin American arm of DEVSIS.

The Division's support extends beyond bibliographic systems, however. An interesting example of this is a grassroots, nonbibliographic project in the Caribbean. In this region, up-to-date information on the production and sale of nontraditional export crops is virtually nonexistent and has severely hampered the growth of regional trade in food products. The Division is supporting a pilot information system to provide current market information on domestic food commodities in Antigua, Dominica, and Trinidad and Tobago. Information will be disseminated through a monthly information bulletin, biannual agricultural status reports, and personalized information services.

Some of the projects supported by the Division are highly innovative. Thailand's National Research Council, for example, is using remote-sensing techniques to gather information that will help the country better manage its mangrove resources and, at the same time, safeguard the welfare of rural populations earning their living from the mangrove environment. This should be of considerable interest to other countries because, throughout the coastal regions of Southeast Asia, mangroves are being depleted at an alarming rate.

In Pune, in the southwest of India, the Division's Systems and Methods group has provided large-scale support to establish an Information Centre on Development Policy Modelling at the Systems Research Institute (SRI). The project will acquaint Asian policymakers and planners with the availability and usefulness of development-policy models and techniques. In the long run, this will enable the countries of the region to create their own development models rather than depend on models from outside.

Another innovative project is being conducted by the Museum and Reference Centre (MRC) of the Regional Project in Tropical Medicine and Public Health (TROPMED) in Bangkok, one of the rare medical museums

outside Western Europe and North America. MRC has made a modest attempt to collect material related to tropical diseases, but it urgently needs to develop its information services, human resources, and technical facilities to serve all the public health professionals in Southeast Asia. Support from the Division will enable TROPMED to strengthen research, teaching, and public education in the area of mosquito-borne diseases such as malaria, dengue hemorrhagic fever, filariasis, and Japanese B encephalitis.

In keeping with its broad mandate of promoting international cooperation in research for the benefit of developing countries, IDRC has keenly supported the establishment of the pilot phase of the Inter-agency Development Research Information System (IDRIS), a network in which project information will be disseminated among member agencies. The system's data base describes research activities located in or concerned with developing countries, funded or coordinated by agencies that are members of the cooperating group. The main objectives of the IDRIS pilot project are to test the feasibility of the idea and to supply the cooperating agencies with the information necessary to determine the long-term viability of such a system.

## **Social Sciences**

### **125 projects, \$13.2 million**

Developing countries have been particularly hard hit by the worldwide deterioration of the economy. As a result, it has been difficult for the governments and political institutions in these countries to develop policies to contain poverty and guarantee a measure of security to their populations. The Division's program for *economics and rural development* has sought to alleviate the situation of the most disadvantaged groups. In the Philippines, for example, studies are in progress in the highlands to assess how exchanges of goods and services and exploitation of natural resources influence the welfare and standard of living of the inhabitants.

Worldwide interdependence requires the undertaking of macro-economic studies. The Division is providing funding support to several countries in Eastern and Southern Africa to develop research and analytical capabilities to equip policymakers with the essential instruments for decision-making. In Latin America, a centre for economic studies, the Corporación de Investigaciones Económicas para Latinoamérica (CIEPLAN), has taken up the study of a whole range of topics such as the balance of payments, savings and investment, public expenditure, and inflation.

The program for *science and technology policy* is attempting to mitigate the effects of the shrinking of the financial, documentary, and technical resources available to researchers in developing countries. The program looks for concrete answers to the significant repercussions of the use of new technology. For instance, the perception of technological advances and socioeconomic change generated by the more widespread use of computers are making directional changes essential in both the developed and developing countries. The Division has also organized workshops on technology policy in three regions of Africa and has helped to create the East Africa Technology Policy Studies research network. These initiatives have

aroused significant enthusiasm among the researchers and decision-makers of numerous countries.

The subprogram for energy policy supports research on the evaluation of national energy resources. Great gaps still exist in the use of and requirements for energy in developing countries. The subprogram plays an important part in the allocation of the special fund for energy under the aegis of the Internal Energy Committee. It maintains close contact with the Energy Research Group (ERG) funded by the Centre and the United Nations University.

The Division continues to support international, national, and regional research networks. The conditions in which social science research in the Third World is carried on are often distressing: financial resources are scarce, the infrastructures for research are sometimes nonexistent, and exchanges between scientists are difficult or even impossible both regionally and on a world scale. It is, consequently, of the first importance to give special attention to the context of research. That is why the Division supports associations of researchers, organizes colloquia on topics of widespread significance, and collaborates with the Information Sciences Division in making worldwide documentary resources accessible.

In Latin America, the *education program* of the Division has supported in-depth research into the quality of primary education; elsewhere in the world, quantitative research has been undertaken into secondary education. The common purpose of this research has been to explore the effects of the rapid expansion of a school system on the quality of education offered. A number of other studies have dealt with the relationship between education and the main factors involved in development: sociopolitical evolution and structures, rural – urban migration, cultural revitalization, media development, the introduction of new technologies in schools and factories, and new roles for women at work and at home.

Often unable to maintain themselves at even a subsistence level on land that is too arid and harsh, people migrate massively to the cities. The result is a set of serious social problems. In South America, for example, it is estimated that two-thirds of the population is already urbanized. Without jobs, and having no work experience, these new urban migrants sustain themselves mostly by odd jobs and small trade. The *urban policy program* of the Division is conducting research into nonstructured employment in several Third World cities to assist governments in formulating policies for the development of these high employment sectors. The overpopulation of the cities is proceeding at an alarming rate and increases pressures on such urban services as sewage, aqueducts, and transportation. Various research projects deal with this range of problems and their effects upon the health of the population of African cities.

Planners and researchers in the Third World continue to be greatly interested in questions of growth and population distribution, birth and mortality rates, and migration. Such knowledge is essential to the formulation of enlightened policies on the evaluation of the progress of the major endemics or food supplies for the population.

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## Projects for which funds were approved during the fiscal year 1983–1984<sup>1</sup>

### Agriculture, Food and Nutrition Sciences

#### **80-0209 BAMBOO AND RATTAN (SRI LANKA)**

For the Ministry of Lands and Land Development, Colombo, to increase the production of bamboo and rattan to supply local industries to satisfy the demand of the population for low-cost bamboo and rattan products. \$85 000 — 36 months.

#### **82-0154 BIOLOGICAL PEST MANAGEMENT (INDIA)**

For Nagpur University, Nagpur, to establish a tissue culture technique for in vitro production of microsporidian parasites, useful in the biological control of grasshopper and locust pests, and to develop a package of practices for pest management that will be effective and acceptable, both ecologically and economically. \$128 100 — 36 months.

#### **82-0188 VEGETABLES (CHINA)**

For the Asian Vegetable Research and Development Center (AVRDC), Bangkok, Thailand, to establish cooperative programs between AVRDC and Chinese scientists to improve yields and quality of Chinese cabbage, tomato, sweet potato, soybean, and mungbean in China through plant-breeding programs and improved production methods. \$381 210 — 36 months.

#### **82-0200 AQUACULTURE (EGYPT) — PHASE II\***

For the Academy of Scientific Research and Technology, Cairo, to enable its Institute of Oceanography and Fisheries to develop and evaluate effective methods of pen and cage culture in selected fresh and brackish waters in Egypt. \$298 000 — 36 months.

#### **82-0206 CASSAVA PROCESSING (COLOMBIA)**

To enable the Centro Internacional de Agricultura Tropical, Cali, in cooperation with the Instituto de Investigaciones Tecnológicas, Bogota, and the Universidad del Valle, to determine the technical and economic conditions required for the development of a rural-based cassava-flour industry in northern Colombia and to disseminate the results to farmers,

food processors, and government agencies. \$216 600 — 24 months.

#### **82-0251 SHELTERBELTS (NIGERIA) — PHASE II**

For the Federal Ministry of Science and Technology of Nigeria, Ibadan, to enable the Forest Research Institute of Nigeria, to continue investigating tree-species performance, planting techniques, and the effects of shelterbelts on crop yields, water conservation, and the local environment. \$231 700 — 36 months.

#### **82-0256 FOOD LEGUMES (IITA) — PHASE IV**

For the International Institute of Tropical Agriculture (IITA), Ibadan, Nigeria, to develop cowpea varieties with high and stable yields that have a seed quality acceptable to farmers and consumers and are suitable for monoculture and mixed-cropping systems in the Sudan and the Sahelian areas of Upper Volta and other African countries. \$591 300 — 24 months.

#### **82-0264 DAIRY–BEEF PRODUCTION SYSTEMS (DOMINICAN REPUBLIC)**

For the Secretaría de Estado de Agricultura, Santo Domingo, to enable the Animal Research Centre to develop improved dairy–beef production systems that are based on the grazing of mixed grass–legume pastures, are appropriate for small- and medium-scale farms, and allow profitable and sustainable milk production under humid subtropical conditions. \$265 950 — 36 months.

#### **83-0002 CROPPING SYSTEMS (CHINA)**

For the Chinese Academy of Agricultural Sciences, Beijing, to develop and evaluate new cropping systems that are suited to local ecological, social, and economic conditions of various regions of China. Emphasis will be on introducing wheat, soybean, maize, oil-bearing, and other crops into rice-based cropping systems. \$414 400 — 36 months.

#### **83-0008 SORGHUM IMPROVEMENT (SOMALIA) — PHASE II**

For the Ministry of Agriculture, Mogadishu, to enable the Agricultural Research Institute to continue its efforts to improve sorghum production by developing stable, high-yielding sorghum cultivars and

<sup>1</sup> Asterisks indicate that the contract between IDRC and the recipient may not yet have been signed.

crop-management practices that are acceptable to farmers in the rainfed growing areas. \$479 500 — 36 months.

**83-0011 DEHYDRATED FRUITS AND VEGETABLES (SRI LANKA)**

To enable the Ceylon Institute of Scientific and Industrial Research, Colombo, to develop techniques for the production and marketing of dried fruits and vegetables suitable to the small-scale farmers of the dry zone. \$12 200 — 12 months.

**83-0014 CROPPING SYSTEMS (COLOMBIA)**

To enable the Universidad Nacional de Colombia, Bogota, to develop and test improved varieties and techniques for the production and marketing of potatoes, peas, and onions that are suitable for introduction into the cropping systems of small-scale farmers of the Usme District. \$167 200 — 36 months.

**83-0015 CROPPING SYSTEMS (COSTA RICA)**

To enable the Universidad de Costa Rica, San José, to examine the cultivation practices and cropping systems of small-scale farmers on the Atlantic coastal plains with a view to developing more productive cropping systems for maize, beans, cowpeas, cassava, rice, sweet potatoes, and cocoa. \$260 200 — 36 months.

**83-0018 PADDY AND RICE (MALAYSIA)**

To enable the Malaysian Agricultural Research and Development Institute, Kuala Lumpur, in collaboration with the Lembaga Padi Dan Beras Negara, to develop and test improved technologies for the handling and storage of wet paddy and milled rice. \$118 900 — 36 months.

**83-0021 PADDY GRADING (MALAYSIA)**

For the Lembaga Padi Dan Beras Negara (LPN), Kuala Lumpur, to enable LPN and the Malaysian Agricultural Research and Development Institute to develop an efficient, objective and practical paddy grading system acceptable to both farmer and buyer at the point of procurement. \$74 600 — 36 months.

**83-0022 PLANTAINS (CAMEROON) — PHASE II**

For the Délégation générale à la recherche scientifique et technique, Yaoundé, to enable l'Institut de la recherche agronomique, Njombe, to develop improved cultivars, agronomic techniques, and marketing systems for small-scale producers of plantains, bananas, and associated crops. \$174 900 — 36 months.

**83-0024 LAND-USE SURVEY (ZIMBABWE)**

For the University of Zimbabwe, Harare, to enable the Department of Land Management to develop a more detailed information base on the socioeconomic conditions and soil resources in the communal agricultural areas of the semi-arid Sebungwe region. Lands suitable for irrigation will be identified. \$144 100 — 18 months.

**83-0025 FOOD LEGUMES (MALI) — PHASE II**

For the Ministère des affaires étrangères et de la

coopération internationale, Bamako, to enable the Institut d'économie rurale to continue improving cultivars of cowpeas and bambarra groundnuts and develop various packages of agronomic practices for their production under various agroecological conditions. \$198 920 — 36 months.

**83-0035 SWEET POTATOES (PHILIPPINES) — PHASE II**

For the Visayas State College of Agriculture, Baybay, to continue developing sweet-potato varieties that possess most of the characteristics desired by farmers and consumers and to acquire, document, and maintain a sweet-potato germ-plasm collection. \$379 900 — 48 months.

**83-0036 AGROFORESTRY (KENYA)**

For the Kenya Agricultural Research Institute, Muguga, to develop agroforestry systems for the semi-arid areas of Kenya and other East African countries with a view to increasing the productivity and raising the standard of living of the rural population. \$386 300 — 48 months.

**83-0040 TRADITIONAL BREAD (EGYPT)**

For the Ministry of Agriculture and Food Security, Giza, to enable the Bread and Grain Technology Section of the Field Crops Research Institute to identify the major sources and amounts of loss in the production and marketing of balady bread in Egypt and to identify areas for further research to reduce these losses. \$44 600 — 6 months.

**83-0058 GLIRICIDIA (ILCA)**

To enable the International Livestock Centre for Africa (ILCA), Ethiopia, to collect *Gliricidia* germ plasm throughout its natural range and to identify and evaluate suitable varieties for incorporation into integrated crop-livestock alley farming systems for small farmers in the humid and sub-humid zones of West Africa. \$99 600 — 36 months.

**83-0059 NITROGEN-FIXING TREES (SIERRA LEONE)**

For the University of Sierra Leone, Freetown, to enable the Department of Agronomy of Njala University College to collect, propagate, and evaluate indigenous fast-growing nitrogen-fixing trees; to compare their performance with that of exotic species; and to identify suitable species for incorporation into agroforestry systems in Sierra Leone. \$109 200 — 36 months.

**83-0060 TANNINS (CHILE)**

To enable the Instituto Forestal, Santiago, to determine the tannin content of selected local and exotic tree species and to study methods of regenerating local tannin-producing trees in the arid zones of the country for use in the leather industry. \$115 830 — 36 months.

**83-0079 POTATOES FROM SEED (EGYPT)**

To enable the Centro Internacional de la Papa, Peru, in cooperation with the Ministry of Agriculture, Cairo, to develop and test true seed of potato varieties suitable for the cropping systems of small farmers in Egypt. \$204 400 — 36 months.

**83-0093 RURAL UNIVERSITY (COLOMBIA) — PHASE II**

To enable the Fundación para la Aplicación y la Enseñanza de las Ciencias, Cali, to continue evaluating the potential of improved annual and perennial cropping systems and to develop village-level extension programs in the Cauca region. \$380 100 — 36 months.

**83-0097 DESERT FARMING SYSTEMS (EGYPT) — PHASE II**

To enable the American University in Cairo to continue its efforts to develop farming systems suitable for desert soils typical of large areas of Egypt and for management by smallholders and cooperatives. \$370 700 — 24 months.

**83-0101 RURAL FOOD PATTERNS (ZIMBABWE)**

For Silveira House, Harare, to undertake a survey of child nutrition in the rural areas as a basis for devising future nutrition-research and rural-action programs. \$90 400 — 12 months.

**83-0105 PALM-OIL PROCESSING (SIERRA LEONE)**

For the University of Sierra Leone, Freetown, to develop and test palm oil extractors suitable for use in small farming communities and for manufacture in Sierra Leone. \$157 700 — 36 months.

**83-0106 COWPEA STORAGE (SIERRA LEONE) — PHASE II\***

For the University of Sierra Leone, Freetown, to enable the Faculty of Agriculture of Njala University College to develop effective cowpea storage systems for the country's hot, humid conditions and to evaluate the use of natural pesticides, such as cloves, within these systems. \$113 650 — 36 months.

**83-0107 SOLAR CROP DRYERS (SIERRA LEONE) — PHASE II**

For the University of Sierra Leone and the Ministry of Agriculture and Forestry, Freetown, to test and perfect the solar crop dryer developed during Phase I, assess its acceptability to farmers, and train extension workers in its construction and operation. \$174 000 — 36 months.

**83-0109 POSTPRODUCTION SYSTEMS (SADCC)**

For the Zimbabwe Ministry of Agriculture, to establish a Postproduction and Food Industry Advisory Unit to supply management and technical advisory services to countries of the Southern Africa Development Co-ordination Conference (SADCC) countries with a view to increasing food availability and security in the region. \$589 400 — 60 months.

**83-0110 BY-PRODUCTS (SUDAN) — PHASE II**

To enable the Institute of Animal Production, University of Khartoum, to develop efficient beef-cattle diets, based on high levels of low cost, agroindustrial by-products for the beef-feedlot systems of the Khartoum area. \$239 100 — 36 months.

**83-0111 DAIRY PRODUCTION SYSTEMS (SUDAN)**

For the University of Gezira, Wad Medani, to enable its Faculty of Agricultural Sciences to develop improved feeding systems and suitable husbandry practices for dairy-cattle production in the irrigated Rahad region. \$255 600 — 36 months.

**83-0119 AMAZONIAN PRODUCTION SYSTEMS (PERU) — PHASE II**

To enable the Instituto Veterinario de Investigaciones Tropicales y de Altura, Lima, to test and evaluate two models of improved dairy-beef production systems that were designed in Phase I, taking into consideration farmers' preferences and limited resources and the ecology of the Amazon Region. \$405 000 — 36 months.

**83-0120 CHAMECULTURE (ECUADOR) — PHASE II**

For the Fundación Ciencia para el Estudio del Hombre y la Naturaleza, Quito, to complete the biological and ecological studies on chame (*Dormitator latifrons*) that were begun in Phase I and to develop a technological package for cultivating the fish in rural communities. \$202 290 — 36 months.

**83-0122 FOOD LEGUME IMPROVEMENT (SUDAN) — PHASE II**

For the Agricultural Research Corporation, Wad Medani, to enable its Hudeiba Agricultural Research Station to test and improve promising cultivars of haricot beans, faba beans, chickpeas, and peas that were developed in Phase I. \$265 200 — 36 months.

**83-0125 FARMING SYSTEMS RESEARCH (IITA)**

For the International Institute of Tropical Agriculture (IITA), Nigeria, to strengthen farming-systems research capability in West African national and regional research institutions and to create effective communications among agricultural scientists, development agents, and farmers to focus research findings and technologies on the needs of rural West Africa. \$417 900 — 36 months.

**83-0126 TIMBER GRADING (MEXICO) — PHASE III**

For the Insituto Nacional de Investigaciones sobre Recursos Bióticos, Veracruz, to continue developing a suitable visual grading system for structural pine lumber to promote the more efficient and wider use of wood in building construction in Mexico and Central America. \$146 000 — 24 months.

**83-0128 PRACIPA NETWORK (CIP)**

For the Centro Internacional de la Papa, Peru, to support the efforts of the Andean Cooperative Program for Potato Research (PRACIPA) to develop improved methodologies for potato cultivation in member countries (Peru, Bolivia, Colombia, Ecuador, and Venezuela). \$504 000 — 36 months.

**83-0132 ROOT CROPS (CAMEROON—IITA) — PHASE III\***

For the Délégation générale à la recherche scientifique et technique, Yaoundé, and the International



Institute of Tropical Agriculture (IITA), Nigeria, to develop improved varieties of cassava, yam, cocoyam, and sweet potato with high nutritive quality, consumer acceptance, and adaptability to different ecological zones in Cameroon. \$455 700 — 36 months.

**83-0133 ROOT CROPS (UGANDA)\***

To enable the Ministry of Agriculture and Forestry, Entebbe, to develop improved varieties and cultivation practices that will be acceptable to both producers and consumers of cassava and sweet potatoes. \$330 400 — 36 months.

**83-0138 ECONOMICS OF SHELLFISH PROCESSING (THAILAND)**

For the International Center for Living Aquatic Resources Management, Philippines, to enable Kasetsart University, Bangkok, to ascertain and describe existing shellfish-processing techniques in Thailand and to determine ways of improving shellfish processing and marketing in that country. \$30 200 — 12 months.

**83-0143 CASSAVA MITES IN EASTERN AFRICA (CIBC) — PHASE IV**

To enable the Commonwealth Institute of Biological Control (CIBC), Trinidad, to establish throughout Eastern Africa predators that effectively contribute to the control of the cassava green mite and to assist national research programs in applying integrated control measures. \$140 100 — 24 months.

**83-0175 OILSEEDS NETWORK (ETHIOPIA) — PHASE II**

For the Institute of Agricultural Research, Addis Ababa, to continue employing a network advisor whose role is to establish effective, practical liaison between the IDRC oilseeds projects in India, Pakistan, Eastern Africa, Egypt, the Sudan, Ethiopia, and Sri Lanka. \$390 600 — 36 months.

**83-0182 STRIGA (UPPER VOLTA) III\***

For the International Crops Research Institute for the Semi-Arid Tropics, India, to continue work on breeding striga-resistant strains of sorghum and millet and to develop a set of integrated, striga-control practices for use in West Africa. \$300 000 — 36 months.

**83-0194 OIL-PALM POSTPRODUCTION AND PRICING SURVEY (THAILAND)**

To enable the Prince of Songkla University, Haad Yai, to ascertain present postproduction and pricing systems for palm oil and to identify the research needed to improve village-level oil-palm postproduction systems in southern Thailand. \$8900 — 12 months.

**83-0199 ROOT CROPS (SRI LANKA) — PHASE II\***

For the Department of Agriculture, Peradeniya, to continue developing more productive, better adapted cultivars and cultural practices for cassava, sweet potato, yam, and taro for all the principal ecological zones of Sri Lanka. \$287 400 — 60 months.

**83-0200 MARICULTURE (CHILE)**

For the Universidad Austral de Chile, Valdivia, to enable its Centro de Investigaciones Marinas to undertake research on the principal constraints to increased production of shellfish in the Chiloe region and to develop and promote improved mariculture practices. \$362 000 — 36 months.

**83-0206 FUELWOOD PLANTATIONS (MALAWI) — PHASE II\***

For the Ministry of Forestry, Lilongwe, to continue to identify suitable tree species for reforestation and small scale plantation management techniques with a view to providing the rural population with a continuous supply of wood for fuel and construction. \$377 200 — 36 months.

**83-0209 ANDEAN CROP PROCESSING (PERU)\***

For the Instituto Interamericano de Cooperación para la Agricultura, Lima, to develop improved techniques and systems for harvesting, preserving, processing, and marketing native Andean crops. \$242 800 — 36 months.

**83-0210 RURAL FRUIT PROCESSING (COLOMBIA)**

To enable the Fundación para la Aplicación y la Enseñanza de las Ciencias, Cali, to investigate the feasibility and process of establishing a community fruit-juice plant to process fruits grown on small farms in the North Cauca region of Colombia. \$72 400 — 24 months.

**83-0211 LENTIL AND CHICKPEA IMPROVEMENT AND MECHANIZATION (JORDAN) — PHASE II**

For the University of Jordan, Amman, to continue to develop improved varieties of lentil and chickpea, adapt mechanical harvesting technology to farm conditions, and develop agronomic practices suited to the new varieties and the various ecological conditions found in the country. \$308 100 — 36 months.

**83-0215 PEAS AND MAIZE IMPROVEMENT (BURUNDI) — PHASE III**

For the Ministère de l'agriculture, de l'Élevage et du Développement rural, Bujumbura, to enable the Institut des sciences agronomiques to continue research on high-yielding, disease-resistant varieties of peas and maize for maximum production under local conditions. \$519 000 — 36 months.

**83-0217 TROPICAL PASTURES NETWORK (COLOMBIA) — PHASE II**

To the Centro Internacional de Agricultura Tropical, Cali, to continue evaluating improved forage species for livestock production in Latin America by means of agronomic, grazing, and on-farm trials. Training will be provided to selected researchers from national institutions. \$637 800 — 48 months.

**83-0218 CROP-LIVESTOCK SYSTEMS (PHILIPPINES-IRRI)**

To enable the International Rice Research Institute (IRRI), Manila, in collaboration with the Institute of

Animal Science, University of the Philippines, Los Baños to incorporate a livestock component into the research process already developed for cropping systems. \$658 200 — 36 months.

**83-0219 CROP-LIVESTOCK SYSTEMS (THAILAND)**

For the Ministry of Agriculture and Cooperatives, Bangkok, to enable the Farming Systems Research Institute to develop a research methodology for integrated crop-livestock production systems, suitable for farms in northeast Thailand. \$368 500 — 36 months.

**83-0225 FRUIT AND VEGETABLE HANDLING (THAILAND)**

For the Thailand Institute of Scientific and Technological Research, Bangkok, to evaluate previously developed methods for reducing postharvest losses of major fruits and vegetables in Thailand. \$124 300 — 36 months.

**83-0226 SOYBEAN SEEDER (THAILAND) — PHASE II**

For the Asian Institute of Technology, Bangkok, to refine, test, and demonstrate the soybean seeder (suitable for other crops as well) and to encourage its local manufacture. \$200 300 — 36 months.

**83-0233 FARMING SYSTEMS RESEARCH (CAMEROON—IITA)\***

For the International Institute of Tropical Agriculture (IITA), Nigeria, and the Délégation générale à la recherche scientifique et technique, Yaoundé, to establish a team to conduct on-farm research in the center-south region of Cameroon with a view to making new technologies and methods developed at research stations available to smallholders. \$527 000 — 36 months.

**83-0234 VEGETATIVE PROPAGATION (SÉNÉGAL)\***

For the Institut sénégalais de recherches agricoles of the Ministère de la recherche scientifique et technique, Dakar, to enable the Centre national de recherches forestières to improve the productivity of important forest species and to allow for the large-scale propagation of genotypes that are well adapted to the environment. \$93 300 — 36 months.

**83-0248 CHARCOAL PRODUCTION (TANZANIA)\***

For the Ministry of Natural Resources and Tourism, Dar es Salaam, to enable the Timber Utilization Research Centre to develop a more efficient earth kiln for charcoal production and to determine its acceptability to charcoal producers. \$62 150 — 24 months.

**83-0263 POTATO PROCESSING SYSTEMS (PERU)**

To enable the Centro Internacional de la Papa, Lima, to develop, test, evaluate, and promote two simple processes for the production of nutritious, potato-based food products, one suitable for manufacture at the household or community level and the other on a factory scale. \$54 600 — 12 months.

**83-0272 MAIZE STORAGE (TOGO)**

For the Université du Bénin, Lomé, to enable the École supérieure d'agronomie to improve the traditional methods of maize storage in southern Togo. \$173 100 — 36 months.

**83-0275 TIMBER PRESERVATION (BOLIVIA)\***

For the Ministerio de Asuntos Campesinos, La Paz, to enable its Centro de Desarrollo Forestal to determine the availability and durability of native and plantation-grown Bolivian timbers and to evaluate the effect of preservatives on these species. \$235 100 — 36 months.

**83-0276 AGROFORESTRY (PERU)\***

For the Instituto Nacional de Investigación y Promoción Agropecuaria, Lima, to identify and test improved alternative agroforestry production systems and strengthen the Peruvian agroforestry research capacity. \$383 600 — 36 months.

**83-0277 FOREST REGENERATION (CHILE)\***

For the Instituto Forestal, Santiago, to develop suitable silvicultural techniques for the regeneration and management of the depleted native woodlands of the semi-arid zone of central Chile. \$321 200 — 36 months.

**83-0278 SABAH RICE LAND EVALUATION (MALAYSIA)**

For the Canadian University Service Overseas, Canada, to enable the Sabah Ministry of Agriculture to develop criteria for determining from soil surveys the rice-production potential of land in Sabah. \$14 100 — 12 months.

**83-0281 DAIRY-BEEF PRODUCTION SYSTEMS (BOTSWANA)\***

For the Ministry of Agriculture, Gaborone, to enable its Department of Agricultural Research to increase milk production among small-scale, peri-urban livestock owners and to strengthen national research capacity through training. \$445 700 — 36 months.

**83-0284 PROCESS IMPROVEMENT FOR BAKERIES (CHILE) — PHASE II**

For the Instituto de Investigaciones Tecnológicas, Santiago, to improve operations in small neighbourhood bakeries in Chile, and thereby increase their productivity, profitability, and product quality. \$166 900 — 24 months.

**83-0286 FISH-SEED RESOURCES (PHILIPPINES)**

For the Bureau of Fisheries and Aquatic Resources, Quezon City, to investigate the feasibility of utilizing the milkfish by-catch as fish-seed resources, thereby increasing income and employment opportunities in the fisheries sector. \$211 700 — 36 months.

**83-0287 FISH DISEASE (PHILIPPINES)\***

For the Bureau of Fisheries and Aquatic Resources, Quezon City, to identify the major fish diseases in the Philippines, establish a central fish-disease laboratory, and find ways of preventing the introduction of pathogens into the country. \$531 000 — 36 months.

**83-0288 RATTAN (INDONESIA)\***

For the Ministry of Forestry, Bogor, to enable the Forestry Research and Development Agency to identify improved methods for production, collection, and utilization of native rattan species and to develop techniques for the establishment of rattan plantations. \$208 970 — 36 months.

**83-0289 MINERAL NUTRITION (MALAWI)\***

For the Ministry of Finance, Lilongwe, to enable the Bunda College of Agriculture of the University of Malawi to determine the mineral requirements for Malawian cattle grazing on natural pastures that would permit higher reproduction rates and to conduct a cost-benefit analysis of mineral supplementation. \$69 400 — 36 months.

**83-0291 FISHERIES DEVELOPMENT (COLOMBIA)**

For the Fondo Colombiano de Investigaciones Científicas y Proyectos Especiales Francisco José de Caldas, Bogota, to update information on the status of fisheries resources, fishing operations, and marketing infrastructure on the northeast Caribbean coast to prepare a pilot development plan for small-scale fisheries, and to devise a practical model on fisheries development for small communities. \$176 900 — 18 months.

**83-0295 SHELTERBELT (TUNISIA) — PHASE II\***

For the Ministère de l'agriculture, Tunis, to enable the Institut national de la recherche agronomique de Tunisie, the Institut des régions arides, and the Institut national de recherches forestières to determine the physical and biological effects of three shelterbelts on agricultural crops with a view to increasing yields by achieving optimum protection from wind in all seasons. \$326 700 — 36 months.

**83-0296 BAMBOO (BANGLADESH) — PHASE II\***

For the Bangladesh Agricultural Research Council, Dhaka, to develop effective techniques for propagating high quality bamboo species that were identified during Phase I and to test and promote these species in selected villages. \$144 465 — 36 months.

**83-0319 FARMING SYSTEMS (SIERRA LEONE)\***

For the Ministry of Agriculture and Forestry, Freetown, to identify appropriate methods of crop and land management that would reduce or replace the traditional slash and burn method. \$295 600 — 36 months.

**83-0331 TILAPIA GENETICS—ECONOMICS (PHILIPPINES)**

To enable the International Center for Living Aquatic Resources Management, Manila, in collaboration with the Marine Sciences Center of the University of the Philippines, to develop an improved system for management of tilapia broodstock. \$38 400 — 12 months.

**83-1004 NATURAL PESTICIDES (UPPER VOLTA—CANADA)**

To enable Carleton University, Ottawa, to undertake research into the chemical nature and efficacy of the active compounds in two West African plant species traditionally used to protect stored cowpeas from attack by bruchid beetles in Upper Volta. \$18 900 — 6 months.

**83-1010 FISH GAMETES (CANADA) — PHASE II**

For the University of Victoria, British Columbia, and Memorial University of Newfoundland to investigate the nature and function of luteinizing hormone-releasing hormone and its analogues in milkfish and other species of importance to aquaculture in Asia and Africa and to continue research into techniques for cold-storage of gametes (spermatozoa and ova). \$385 400 — 24 months.

**83-1011 INDUCED SPAWNING (CHINA—CANADA)**

For Zhongshan University, Guangzhou, and the University of Alberta, Canada, to develop an optimal system for inducing spawning in fish species of importance to Chinese aquaculture using synthetic analogues of luteinizing hormone-releasing hormone and dopamine antagonist drugs. \$307 300 — 36 months.

**83-1012 DRY BEANS (CHILE—CANADA)**

For the Pontificia Universidad Católica de Chile, Santiago, and the University of Guelph, Ontario, to devise technologies, accessible to small producers, for inhibiting the development of "hard-to-cook" defects in stored dried *Phaseolus* beans. \$246 200 — 36 months.

**83-1022 CASAFA SECRETARIAT II**

To enable IDRC's Cooperative Programs and Agriculture, Food and Nutrition Sciences divisions to support a scientific secretariat for the Interunion Commission on the Application of Science to Agriculture, Forestry and Aquaculture (CASAFA), enabling it to promote research collaboration between Canadians and their counterparts in the Third World. \$40 000 — 12 months.

**83-1031 GENOTYPING (CIAT—CANADA)**

For the Centro Internacional de Agricultura Tropical (CIAT), Colombia, and the University of Manitoba, Winnipeg, to develop electrophoretic methodologies for the routine characterization of genotypes. This will enable CIAT to describe more accurately its existing collection of germ plasm, avoid duplication of entries, and identify objectives for future collection. \$337 500 — 36 months.

**83-1032 TISSUE CULTURE (COSTA RICA—CANADA)\***

For the Universidad de Costa Rica, San José, and the University of Calgary, Alberta, to develop practical and economical tissue culture methods for clonal multiplication of peach palm, white dasheen, and cocoyam. \$202 500 — 36 months.

## Communications

### **83-0032 SCIENTIFIC JOURNALISM TRAINING COURSE (CAMEROON)**

To enable the École supérieure des sciences et techniques de l'information (ESSTI), Université de Yaoundé, to develop training courses in scientific journalism for approximately 15 African journalists. \$34 200 — 5 months.

### **83-0038 SCIENCE WRITERS' MANUAL (PHILIPPINES)**

To enable the Press Foundation of Asia, Manila, to develop a science writers' manual that will serve as a standard text to be aimed at both the new writer and the experienced journalist. \$13 775 — 10 months.

### **83-0050 JOURNAL SUPPORT — SOCIAL SCIENCE RESEARCH (UGANDA)\***

To enable Makerere University, Kampala, to revive publication of *Mawazo*, a social science journal, and, in so doing, encourage increased social science research and discussion in the country. \$44 400 — 24 months.

### **83-0063 AIJSA — FEATURES SERVICE AND OPERATING BUDGET (SÉNÉGAL)**

To enable the Association internationale des journalistes scientifiques africains (AIJSA), Dakar, to establish itself, offer a features service, and allow the executive to meet at least twice a year. \$13 285 — 12 months.

### **83-0072 INFORMATION EXCHANGE WITH CHILDREN (KENYA)**

To enable the Mazingira Institute, Nairobi, to cover the costs involved in the preparation of two issues of *Rainbow* magazine, including staff, supplies, printing and distribution, and the final analytical report. \$35 000 — 15 months.

### **83-0088 JOURNAL SUPPORT (ZIMBABWE)\***

To enable the Journal on Social Change and Development, Harare, to continue to publish on a more regular basis and thereby secure its long-term viability as a forum for the discussion of social and economic issues. \$22 500 — 12 months.

### **83-0173 TRAINING COURSE ON TELEVISED DOCUMENTARY PRODUCTION (SÉNÉGAL)**

To enable the Association interinstitutionnelle pour la communication, Dakar, to offer a 3-week training course in the production of television documentaries as a means of popularizing scientific information. \$36 530 — 6 months.

### **83-0250 WATER AND SANITATION IMPACT VIDEO PRODUCTION (ICDDR,B)**

To enable the International Centre for Diarrhoeal Disease Research (ICDDR,B), Dhaka, Bangladesh, to produce a videotape that will demonstrate a scientific design for testing the impact of new water and sanitation technologies in rural areas of the developing world and to train staff at ICDDR,B in videotape production for extension purposes. \$13 668 — 12 months.

### **83-0293 DEPTHNEWS SCIENCE FEATURE SERVICE (PHILIPPINES)**

To enable the Press Foundation of Asia, Manila, to commission 52 feature articles on science and technology in development; to rewrite and translate 12 of the features into the five national languages; and to rewrite the 52 articles in broadcast format for transmission by the Depthnews Radio Service. \$12 943 — 12 months.

### **83-0298 PANA WORKSHOPS (SÉNÉGAL)\***

To enable the Panafrican News Agency (PANA), Dakar, to organize and conduct two training workshops on reporting science and technology, with a view to increasing the scope and quality of science writing in the mass media in anglophone and francophone Africa. \$89 533 — 10 months.

### **83-0326 PATHS TO DEVELOPMENT (CANADA)**

To enable the Alberta Educational Communications Corporation, Edmonton, to produce a one-semester learning module for senior high-school students in Canada on the subject of international development. \$50 000 — 18 months.

### **83-1023 PUBLICATIONS SUPPORT (CANADA)**

To enable the University of Toronto Press, Ontario, to publish a new series of publications with the theme "Political Economy of World Poverty" and to ensure that these are widely distributed to Third World policymakers and institutions. \$50 000 — 36 months.

## Cooperative Programs

### **83-1002 GORE – GAMBELA GEOTRAVERSE (ETHIOPIA – CANADA)**

To enable Addis Ababa University and Carleton University, Ottawa, to study a major geological cross-section in southwestern Ethiopia with the aim of identifying favourable areas for prospecting for mineral deposits; it will also help establish a research capability at Addis Ababa University and at the Ethiopian Institute of Geological Surveys in the study of highly deformed metamorphic terrains. \$483 559 — 36 months.

### **83-1003 RIVER BANK EROSION IMPACT STUDY (BANGLADESH – CANADA)\***

For Jahangirnagar University, Dhaka, and the University of Manitoba, Winnipeg, to evaluate the long-term trends of river channel migration with a view to developing forecasting techniques and models to reduce the disruptive effects of the annual floods. \$346 047 — 36 months.

### **83-1013 FACILITATING NURSERY TO GRADE ONE TRANSITION (GUYANA – CANADA)\***

To enable the Ministry of Education, Georgetown, and the University of Alberta, Edmonton, to develop, implement, and evaluate an in-service training program for Grade one teachers focusing on

teaching strategies and curriculum development to ease the transition from the preschool to the primary setting. \$26 300 — 24 months.

**83-1016 INDUSTRIAL PRODUCTIVITY (JAMAICA—CANADA)**

To enable the Scientific Research Council, Kingston, and the Research and Productivity Council, New Brunswick, to investigate factors that limit productivity in certain key areas of Jamaican industry with a view to devising a program to address these problems using industrial engineering—management techniques. \$108 500 — 24 months.

**83-1017 SEAPOL (SOUTHEAST ASIA—CANADA)**

For the Chulalongkorn University, Bangkok, Thailand, and Dalhousie University, Halifax, to analyze and evaluate the problems of implementing those parts of the UN Convention on the Law of the Sea that are of major importance to Southeast Asia. \$360 000 — 30 months.

**83-1018 AGGREGATE TAILINGS SLIME (SINGAPORE—CANADA)**

To enable McClelland Engineers, Singapore, and the Geotechnical Research Centre of McGill University, Montreal, to develop treatment procedures to settle quickly the aggregate tailings slime material and to rehabilitate the affected land for other uses. \$342 374 — 36 months.

**83-1019 METALLURGY OF ARC WELDS (COLOMBIA—CANADA)**

To enable the Universidad del Valle, Cali, and the University of Waterloo, Ontario, to carry out welding research that is relevant to the steel industry in Colombia, thereby contributing to technological progress and strengthening national research capability. \$218 590 — 36 months.

**83-1020 SNOW AND ICE IN THE UPPER INDUS BASIN (PAKISTAN—CANADA)\***

For the Water and Power Development Authority (WAPDA), Lahore, and Sir Wilfred Laurier University, Ontario, in collaboration with Environment Canada to study snow and ice hydrology in the Upper Indus Basin with a view to forecasting variations in water supply and establishing a group of trained, experienced personnel at WAPDA to do this on a permanent basis. \$411 000 — 36 months.

**83-1021 CYPRUS CRUSTAL STUDY (CYPRUS—CANADA) — PHASE II**

For Dalhousie University, Halifax, to provide state-of-the-art training for Third World geologists in marine geology, plate tectonics, and ore formation. Trainees will conduct individual on-site studies of the Troodos Ophiolite and its copper sulphite deposits. \$373 066 — 24 months.

**83-1026 MARINE ECOSYSTEM ENCLOSED EXPERIMENT (CHINA—CANADA) — PHASE II\***

For the National Bureau of Oceanography, Beijing, and the Institute of Ocean Sciences, Sidney, and the University of British Columbia, Vancouver, to

strengthen marine pollution research in China using Canadian laboratory facilities and to enhance mutual cooperation between the two countries. \$651 000 — 36 months.

**83-1027 AQUATIC POLLUTION IN CARONI RIVER (TRINIDAD—CANADA) — PHASE II\***

For the Caribbean Industrial Research Institute, St Augustine, and the University of Waterloo, Ontario, to continue and extend their analysis of pollutants in the Caroni River and their sources. \$114 300 — 24 months.

**83-1028 AGRICULTURAL MARKETING (LESOTHO—CANADA)\***

For the National University of Lesotho, Roma, and the University of Saskatchewan, Saskatoon, to undertake an economic analysis of the marketing systems for selected agricultural commodities, to assist policymakers to improve marketing policies and infrastructure and advance agricultural development. \$375 000 — 24 months.

## Fellowships and Awards

**83-0006 METHODOLOGY OF APPLIED RESEARCH IN THE HEALTH SCIENCES (LIBERIA)**

To enable the A.M. Dogliotti College of Medicine, University of Liberia, Monrovia, to hold a workshop to introduce health-care researchers, potential researchers, managers, and policymakers to the basics of applied research methodology and its role in solving major health problems. \$64 200 — 6 months.

**83-0012 MEDICAL EXCHANGE PROGRAM (CANADA)**

To enable the Canadian Society for Tropical Medicine and International Health, Ottawa, to provide a well structured educational exchange program between Canadian and developing-country institutions for medical students and postgraduate physicians. \$198 510 — 24 months.

**83-0016 GROUP TRAINING COURSE ON DEVELOPING RESEARCHERS FOR EDUCATIONAL DEVELOPMENT PROJECTS (PHILIPPINES)**

To enable the Regional Center for Educational Innovation and Technology, Philippines, to offer a training program to upgrade the research skills of project managers and researchers of specific national educational development projects. \$52 760 — 6 months.

**83-0055 SECOND FORESTRY RESEARCH COURSE (PHILIPPINES)**

To enable the University of the Philippines at Los Baños to familiarize trainees with the principles and practice of forest research methods with emphasis on wood production. \$86 200 — 5 months.

**83-0080 SCHOOL MAPPING AND MICROPLANNING IN THE CARIBBEAN REGION (JAMAICA—FRANCE)\***

To enable the Ministry of Education, Kingston, and



the Institut international de planification de l'éducation, Paris, to assist officers in the Ministry of Education in the preparation of a primary-school map and to train a team of Caribbean planners and researchers in the techniques of school mapping. \$65 490 — 1 month.

**83-0081 RESEARCH FELLOWSHIP (BUTROS)\***

To enable Dr Albert Butros, Director General of the Royal Scientific Society of Jordan, to forge closer links between IDRC and the Royal Scientific Society and between other scientific and educational institutions in the two countries. \$97 500 — 12 months.

**83-0169 RESEARCH FELLOWSHIP (JAGOTA)\***

To enable Dr S.P. Jagota to prepare the text of a book on the UN Conference on the Law of the Sea (III) and to facilitate his attendance at meetings and seminars in Canada. \$25 000 — 12 months.

**83-0171 RESEARCH FELLOWSHIP (FYFE)\***

To enable Dr W.S. Fyfe to conduct research on soil formation and degradation in Nigeria, Sri Lanka, India, and Malaysia. \$11 000 — 8 months.

**83-0191 PARTICIPATORY TRAINING APPROACH TO RURAL COMMUNITY DEVELOPMENT (BANGLADESH)**

To enable the Village Education Resource Center, Savar, to train animators from five villages in various parts of the country for community action programs using the "participatory" approach. \$58 467 — 36 months.

**83-0230 TRAINING PROGRAM ON INTEGRATED FISH FARMING (CHINA)**

For the Regional Lead Center in China, Wuxi, to develop a core of technicians for planning and implementing integrated fish—livestock—crop farming in Southeast Asia. \$115 500 — 24 months.

**83-0251 INTERNATIONAL FOUNDATION FOR SCIENCE (SWEDEN)**

To enable the International Foundation for Science, Stockholm, to support 35 young scientists involved in research work in their own countries. \$300 000 — 12 months.

**83-0321 GRADUATE FISHERIES ECONOMICS SPECIALIZATION PROGRAM (MALAYSIA)\***

For the Universiti Pertanian Malaysia, Serdang, to enable its Department of Natural Resource Economics to continue to develop and offer a quality master of science degree with specialization in fishery economics. \$265 000 — 48 months.

**83-0347 GROUP TRAINING COURSE ON URBANIZATION IN DEVELOPING COUNTRIES (MALAYSIA) — PHASE II**

To enable the Universiti Sains Malaysia, Minden, to train participants in the use of the latest techniques and methods of research and analysis, including theories and models applicable to urbanization in developing countries. \$66 000 — 1 month.

**83-0350 RESEARCH FELLOWSHIP (DOYLE)**  
To enable Dr Roger Doyle to assist regional centres and organizations in Asia to develop programs in fish genetics. \$20 570 — 12 months.

**83-0351 RESEARCH FELLOWSHIP (MILLER)\***  
To enable Dr Ralf Miller to review recent literature on educational planning, with emphasis on selected African countries. \$9188 — 12 months.

**83-0352 FELLOWSHIPS IN CURRICULUM PLANNING (UNITED KINGDOM)\***

For the University of London to enable five researchers chosen by IDRC to attend the Planning Course offered by the Institute of Education. \$48 400 — 18 months.

**83-1014 YOUNG CANADIAN RESEARCHERS AWARDS\***

For the Fellowships and Awards Division, IDRC, to encourage the involvement of young Canadian graduate students in scientific areas of concern to the Centre by offering 10 young Canadian Researcher Awards. \$250 000 — 12 months.

## Health Sciences

**83-0003 BACTERIAL GROWTH IN INFANT FORMULA (CHILE)**

To enable the Instituto de Nutrición y Tecnología de los Alimentos, Universidad de Chile, Santiago, to measure the growth of various bacterial pathogens in infant milk formula and to evaluate the effects of iron enrichment upon the proliferation of those bacteria. \$9800 — 6 months.

**83-0004 PHARMACEUTICAL DISTRIBUTION (NEPAL)**

To enable Integrated Development Systems, Kathmandu, to study the pharmaceutical distribution system in Nepal, from the central purchasing of drugs in Kathmandu, to the delivery of drug supplies to rural health centres and health posts. \$29 650 — 12 months.

**83-0005 NUTRITIONAL STATUS OF PRESCHOOL CHILDREN (KOREA)**

For the Soon Chun Hyang University, Onyang, to enable the Institute of Population and Community Medicine to define the nutritional status of young children and their mothers in an area of rural Korea and investigate the factors that determine that status. \$99 740 — 18 months.

**83-0007 RURAL WATER FLUORIDES (KENYA) — PHASE II**

To enable the University of Nairobi to add to the existing knowledge on fluoride sources, fluorosis, and defluoridation to develop an effective fluorosis-prevention program. \$65 900 — 30 months.

**83-0019 WATER SYSTEMS EVALUATION (COLOMBIA)**

For the Fundación para la Educación Superior, Cali,

to enable the Centro de Investigaciones Multidisciplinarias en Desarrollo Rural, Cali, to identify administrative and technical problems associated with the operation and maintenance of water-supply systems for Colombia's rural communities and make recommendations to the Ministry of Health for appropriate corrective action. \$105 800 — 18 months.

**83-0020 ORAL CONTRACEPTIVES—LACTATION (KOREA)**

For the Yonsei University Medical Center, Seoul, to enable its Department of Pharmacology to conduct two studies involving commonly used low-dose estrogen and progestin-only contraceptive pills and their effect on milk volume and milk composition in lactating women. \$110 820 — 24 months.

**83-0026 INTRODUCING THE PVC HANDPUMP (THAILAND)**

For the Population and Community Development Association, Bangkok, to determine an effective strategy for promoting the acceptance and adoption of the polyvinyl chloride (PVC) handpump. \$142 500 — 24 months.

**83-0029 LACTATION—AMENORRHEA (EGYPT) — PHASE II**

For the University of Alexandria, to enable the High Institute of Public Health to continue the work performed in Phase I by determining the pattern of ovulation in nursing women during and after the end of the period of postpartum amenorrhea. \$122 430 — 36 months.

**83-0030 ANTENATAL—PERINATAL CARE (SUDAN)**

To enable the Faculty of Medicine of the University of Khartoum to study the problems in the delivery of maternity-care services in rural Sudan and to test and evaluate a method of improving them. \$205 570 — 36 months.

**83-0031 HOSPITAL WASTEWATER (THAILAND)**

For the Ministry of Public Health, Bangkok, to design and construct a demonstration facility for the treatment of hospital wastewater that is appropriate to local conditions and is economical to build, operate, and maintain. \$103 700 — 36 months.

**83-0042 DEPARASITIZATION—MALNUTRITION (COLOMBIA) — PHASE II**

For the Fundación para la Educación Superior, Cali, to enable the Centro de Investigaciones Multidisciplinarias en Desarrollo Rural, Cali, to determine the impact of combined periodic deparasitization treatment on the nutritional status of preschool children and to compare the cost-effectiveness of combined treatment using mebendazole and teclozan with that of mebendazole alone. \$105 700 — 22 months.

**83-0061 DETERMINANTS OF INFANT FEEDING PRACTICES (GLOBAL)**

To enable the Population Council, New York, USA, to conduct an in-depth comparative study using data

on determinants of infant feeding practices already available from low-income urban communities in Colombia, Indonesia, Thailand, and Kenya and to prepare a book-length analysis of the data focusing on strategies to improve infant feeding. \$34 500 — 12 months.

**83-0066 HANDPUMP MANUAL (ASIA)**

To enable the Program for Appropriate Technology in Health, Seattle, USA, to develop an instruction manual for the installation, maintenance, and repair of the IDRC polyvinyl chloride handpump at the village level in developing countries in Asia. \$96 835 — 18 months.

**83-0074 HEALTH-INSURANCE DEMONSTRATION PROGRAM (KOREA)**

To enable the Institute of Population and Health Services Research, Seoul, to evaluate the impact of a health-insurance program on the population of Kangwha county after 1 year of implementation. \$68 100 — 12 months.

**83-0084 DENTAL RESEARCH (KENYA)**

To enable the Kenya Medical Research Institute, Nairobi, to attempt to establish an association between sugar consumption and the incidence of dental caries in Kenyan children. \$55 600 — 36 months.

**83-0085 NUTRITIONAL RECOVERY (ARGENTINA)\***

For the Universidad de Buenos Aires, to enable its Facultad de Farmacia y Bioquímica to determine the time necessary for nutritional recovery in mild, moderate, and severely malnourished children using two different diets and to determine and compare the cost-effectiveness of the two diets. \$40 450 — 15 months.

**83-0086 HEALTH OF WORKING MOTHERS (HONG KONG)**

For the Chinese University of Hong Kong, to enable the Department of Community Medicine to study the health problems experienced by working mothers and their children, and to make recommendations as to how health services, benefits, and legal provisions could be improved so as to ameliorate the situation. \$29 240 — 12 months.

**83-0087 CONFERENCE ON DENGUE AND DENGUE HEMORRHAGIC FEVER (SOUTHEAST ASIA)\***

To enable the Division of Health Sciences, IDRC, Singapore, to fund a workshop on dengue hemorrhagic fever to take place at the Faculty of Medicine, Universiti Malaya, Kuala Lumpur, on 1–3 September 1983. \$45 030 — 9 months.

**83-0089 PESTICIDE POISONING (SOUTHEAST ASIA)**

For the Asian Association of Occupational Health, Singapore, to assess the magnitude and severity of the problem of pesticide poisoning in agricultural regions of Thailand, Indonesia, Sri Lanka, and Malaysia. \$228 800 — 18 months.

**83-0091 COMMUNITY ORGANIZATIONS FOR PRIMARY HEALTH CARE (HONDURAS)**

To enable the Centro de Estudios y Promoción del Desarrollo, Tegucigalpa, to identify and describe community participation strategies in selected marginal urban areas in the city of Tegucigalpa as they relate to the delivery of maternal- and child-care services. \$64 950 — 12 months.

**83-0098 ANEMIA (TUNISIA)**

To enable the Institut national de santé de l'enfance, Tunis, to provide accurate data on the prevalence of anemia among high-risk populations in Tunisia and determine the factors responsible for anemia in children and pregnant women. \$84 590 — 30 months.

**83-0102 BREAST-FEEDING AND CHILD SURVIVAL (INDONESIA-PHILIPPINES)**

For the Yayasan Kusuma Buana, Jakarta, and Kabalikat ng Pamilyang Pilipino, Makati, to tap and mobilize resources within the private and commercial sectors to promote and support breastfeeding and other child-survival practices in Indonesia and the Philippines. \$184 620 — 24 months.

**83-0103 NUTRITION EDUCATION OF WEANLINGS (CFNI)**

For the Pan American Health Organization, Washington, DC, USA, to enable the Caribbean Food and Nutrition Institute (CFNI), Jamaica, to develop and evaluate teaching materials aimed at improving weaning practices. \$95 930 — 30 months.

**83-0104 HIGH-RISK PREGNANCY (EGYPT)**

For the University of Alexandria, to enable the High Institute of Public Health to develop a detailed data base on the health problems of pregnant women in an area of rural Egypt, and to study risk factors associated with pregnancy. \$140 950 — 30 months.

**83-0108 PERINATAL AND INFANT HEALTH (COSTA RICA)**

For the Universidad de Costa Rica, San José, to identify the social determinants, environmental conditions, characteristics of pregnant women, and other factors that could explain the rising rate of low birth-weight babies and neonatal mortality recently observed in Costa Rica. \$406 740 — 36 months.

**83-0112 IRON-DEFICIENCY ANEMIA (ARGENTINA)**

For the Centro de Estudios sobre Nutrición Infantil, Buenos Aires, to investigate the prevalence of anemia in children residing in both rural and urban regions, as well as to study the factors that predispose them to the development of anemia. \$108 200 — 19 months.

**83-0124 PROMOTION OF BREAST-FEEDING (DOMINICAN REPUBLIC)**

For the Secretaría de Estado de Salud Pública y Asistencia Social, Santo Domingo, to design and evaluate a program aimed at the promotion of breastfeeding among poor urban mothers. \$162 510 — 27 months.

**83-0130 NONSURGICAL STERILIZATION (SOUTHEAST ASIA)**

For the International Federation for Family Health, Indonesia, to evaluate the safety, effectiveness, and acceptability of intrauterine quinacrine pellet applications as a method of nonsurgical female sterilization. \$114 610 — 33 months.

**83-0131 PHARMACEUTICAL MARKETING PRACTICES (MALAYSIA)\***

For the Consumers' Association of Penang, to investigate the sale and promotion of pharmaceuticals in Malaysia. \$127 320 — 18 months.

**83-0136 PNEUMOCONIOSIS (KOREA)**

To enable the Catholic Industrial Medical Center, Seoul, to document the progression of pneumoconiosis of Korean coal-face workers in relation to the duration and degree of exposure and to suggest further environmental and managerial preventive measures. \$86 580 — 18 months.

**83-0140 TUBERCULOSIS (KOREA)**

For the Korean Institute of Tuberculosis, Seoul, to determine the incidence of tuberculosis, according to vaccination status, in children under 5 years of age who are contacts of new cases of smear-positive pulmonary tuberculosis; and to describe the clinical and epidemiological characteristics of tuberculosis in children. \$114 050 — 31 months.

**83-0144 GASTRIC CANCER (KOREA)**

To enable the Kyungpook National University, Taegu, to establish a correlation between dietary and other life habits and gastric cancer in two geographical areas of Korea, one with a high incidence and the other with a low incidence of gastric cancer. \$57 490 — 18 months.

**83-0146 OPHTHALMIA NEONATORUM (KENYA)**

For the University of Nairobi, to determine the incidence and etiology of ophthalmia neonatorum in a selected population and evaluate the most effective methods of therapy and prevention. \$245 300 — 30 months.

**83-0147 TROPICAL DISEASE RESEARCH (GLOBAL) — PHASE V**

For the World Health Organization, Geneva, Switzerland, to continue the Special Programme for Research and Training in Tropical Diseases. \$300 000 — 24 months.

**83-0149 TUBERCULOSIS (BRAZIL)**

For the Escola Paulista de Medicina, São Paulo, to assess the effectiveness of an intermittent regimen to treat pulmonary tuberculosis and to show that such a regimen is significantly cheaper, less toxic, and equally efficacious when compared to the standard treatment that is currently used in Brazil. \$153 450 — 24 months.

**83-0156 PIGGERY-WASTE TREATMENT (MALAYSIA)**

To enable the Department of Veterinary Services, Ministry of Agriculture, Kuala Lumpur, to develop a



centralized collection and treatment system for the control of pig-waste pollution. \$85 600 — 12 months.

**83-0170 FERTILITY RETURN AFTER IUD USE (THAILAND)\***

To enable Chulalongkorn University, Bangkok, to investigate the return of fertility among women who have been intra-uterine device (IUD) users for various periods. \$48 810 — 24 months.

**83-0177 ALCOHOLISM (CHILE)**

To enable the Universidad de Chile, Santiago, to improve the knowledge and attitudes of medical students toward alcoholism by designing an extensive training program for interns. \$80 160 — 24 months.

**83-0188 PROLACTIN RESPONSE-LATEX NIPPLE SHIELD (THAILAND)**

To enable the Chiang Mai University, Chiang Mai, to evaluate effects on milk production of the Thin Latex Nipple Shield System for sampling breast-milk quantity and quality. \$30 040 — 9 months.

**83-0193 WOMEN IN HANDPUMP TECHNOLOGY (SRI LANKA)**

To enable the Sarvodaya Shramadana Movement of Sri Lanka Inc., Moratuwa, to demonstrate the ability of village women to manufacture, assemble, monitor, and maintain a low-cost polyvinyl chloride handpump and to field test a low-cost well-drilling technique. \$75 015 — 24 months.

**83-0196 RUBELLA (MALAYSIA)\***

To enable the Universiti Sains Malaysia, Minden, to collect data on the incidence of rubella and congenital rubella syndrome in Penang state as the basis for formulating a rubella-immunization policy. \$71 590 — 15 months.

**83-0203 TOILET USAGE (PHILIPPINES)**

To enable the Mountain State Agricultural College, La Trinidad, to identify and analyze factors such as economic conditions and cultural rituals and beliefs associated with the use of latrines among the ethnic groups residing in Benguet Province. \$32 670 — 24 months.

**83-0205 VILLAGE HANDPUMPS (PHILIPPINES)**

To enable the Philippines Business for Social Progress, Manila, to mobilize communities to install, operate, and maintain locally manufactured polyvinyl chloride handpumps. \$83 840 — 24 months.

**83-0213 HEPATITIS B (MALAYSIA)\***

For the Universiti Sains Malaysia, Minden, to enable its School of Medical Sciences to collect data on the rates of Hepatitis B Virus (HBV) infection in specific groups of the Malaysian population and to identify population groups for whom HBV vaccine would be most beneficial. \$75 120 — 24 months.

**83-0214 TRADITIONAL MEDICINE (TANZANIA)**

For the Muhimbili Medical Centre, Dar es Salaam, to

enable the Traditional Medicine Research Unit to achieve a better understanding of the system of traditional medicine in rural Tanzania and its relationship with the formal health system. \$133 390 — 18 months.

**83-0244 PUMPING TECHNOLOGY RESEARCH (ETHIOPIA) — PHASE II\***

For the Ethiopian Water Works Construction Authority, Addis Ababa, to continue research on improving the technical performance and durability of locally made polyvinyl chloride handpumps. \$111 060 — 30 months.

**83-0246 ALIMENTARY ANEMIA (CENTRAL AFRICAN REPUBLIC)**

To enable the Service national de nutrition, Direction de la santé maternelle et infantile/planning familial, Bangui, to assess the degree to which nutrition education can improve the nutritional status of peasants and, particularly, reduce the incidence of anemia among pregnant and breastfeeding women. \$87 860 — 30 months.

**83-0252 COMMUNITY PARTICIPATION IN MATERNAL AND CHILD HEALTH, FAMILY PLANNING, AND PRIMARY HEALTH CARE (SRI LANKA)**

To enable the Teaching Hospital of the University of Peradeniya to enhance the efficacy of health-care services in the country using the approach of active community participation. \$74 170 — 36 months.

**83-0280 EPIDEMIOLOGY OF DIARRHEA (HONDURAS)\***

For the Universidad Nacional Autónoma de Honduras, Tegucigalpa, to enable its Department of Microbiology to investigate the epidemiology of diarrheal disease in rural Honduras. \$200 150 — 24 months.

**83-0285 PROMOTION OF BREAST-FEEDING (PHILIPPINES)**

To enable Notre Dame University, Cotabato, to develop an educational program that could be used among women in the Philippines to promote the practice of breastfeeding. \$80 720 — 24 months.

**83-0303 PNEUMOCONIOSIS (INDIA)**

For the Division of Health Sciences, IDRC, to enable the Indian Council of Medical Research, New Delhi, to assess the prevalence and severity of pneumoconiosis in coal miners in relation to the concentration and nature of airborne dust in the work place. \$214 720 — 36 months.

**83-0304 BRUGIA MALAYI (INDONESIA)\***

For the Ministry of Health, Jakarta, to enable the National Institute for Health Research and Development to elucidate details of *Brugia malayi* (filariasis) transmission and treatment patterns. \$69 090 — 24 months.

**83-0309 COST-BENEFIT ANALYSIS OF INDUSTRIAL SAFETY (KOREA)**

To enable the Korean Social Science Research Council, Seoul, to demonstrate that an improvement in industrial safety and the working environment

leads to an increase in labour productivity by reducing industrial accidents and occupational diseases. \$82 885 — 24 months.

**83-0310 WATER SUPPLY AND SANITATION (KOREA)\***

For the Seoul National University, Seoul, to enable its College of Social Sciences to determine the relationship between water supply and sanitation technologies in Korean villages and identify the major sociocultural factors and ecological elements that govern the observed relationships. \$151 000 — 24 months.

**83-0312 EVALUATION OF PRIMARY-CARE NURSE (DOMINICA)\***

For the Ministry of Health, Roseau, to identify what might be needed to improve the skills and effectiveness of the primary-care nurse. \$129 720 — 36 months.

**83-0315 PREVALENCE AND ETIOLOGY OF ENDEMIC GOITRE (LIBERIA)**

For the University of Liberia, Monrovia, to enable the A.M. Dogliotti College of Medicine to determine the prevalence of and factors contributing to goitre in an endemic area of Liberia. \$138 960 — 24 months.

**83-0317 WATER-QUALITY CONTROL (SOUTHEAST ASIA)\***

For the National University of Singapore, the Universiti Malaya, Malaysia, and Mahidol University, Thailand, to develop a rapid, inexpensive, bacteriological water-quality test and a classification scheme for categorizing drinking water sources. \$183 900 — 24 months.

**83-0324 EPIDEMIOLOGY TRAINING (CHINA) — PHASE II**

For the Division of Health Sciences, IDRC, to continue to train selected Chinese researchers in Canada on aspects of epidemiology and public health. \$304 150 — 12 months.

**83-0325 DIAGNOSIS OF BLOOD PARASITES (BOLIVIA)**

To enable the Centro Nacional de Enfermedades Tropicales, Santa Cruz, to study the microconcentration method for the diagnosis of various blood parasites and to adapt this method for use in the field. \$37 092 — 24 months.

**83-0327 STUDY OF AVAILABLE DEVELOPMENT-AID RESOURCES FOR THE HEALTH SECTOR\***

For the Division of Health Sciences, IDRC, to develop an inventory of major national and international organizations providing development assistance in the health sector. \$128 150 — 12 months.

**83-0328 REGIONAL HEALTH PROFILES (ASIA AND LATIN AMERICA)**

For the Division of Health Sciences, IDRC, to collect, collate, and analyse data and available information on health and health-related activities in the regions of Latin America and Southeast Asia. \$201 190 — 8 months.

**83-0329 SCOLIOSIS (CHINA)\***

For the Capital Hospital, Beijing, to enable its Orthopedic Department to determine the prevalence of scoliosis in the country and the degree of disability in adults and to develop appropriate school screening programs. \$212 090 — 24 months.

**83-0330 CIMDER (COLOMBIA) 1984–1989 — PHASE II\***

For the Fundación para la Educación Superior, Cali, to provide support for continued research on the Rural Health Model and to assist the organization to achieve the international credibility and visibility that will ensure multiple sources of funding for future activities. \$750 000 — 60 months.

**83-1006 SPERM INHIBITION (CHILE – CANADA) — PHASE III**

For the Pontificia Universidad Católica de Chile, Santiago, and Queen's University, Kingston, to investigate the ability of various antibodies directed at sperm antigens to interfere with the process of fertilization. \$466 420 — 36 months.

**83-1025 CYTOMEGALOVIRUS INFECTION (CHINA – CANADA)**

For the Sichuan Medical College and the Medical Centre of McMaster University, Hamilton, to jointly undertake a survey of the prevalence of cytomegalovirus infection in Chengdu City, Sichuan Province. \$103 070 — 24 months.

**83-1029 CORNEAL EYE INFECTIONS (NEPAL – CANADA)\***

For the Institute of Medicine, Tribhuvan University, Kathmandu, and the Department of Microbiology, University of Calgary, Alberta, to study the epidemiology of infected corneal ulcers in Nepal. \$124 550 — 24 months.

## Information Sciences

**81-0021 CURRENT AGRICULTURAL RESEARCH INFORMATION SYSTEM (SOUTHEAST ASIA)**

For the Southeast Asian Regional Center for Graduate Study and Research in Agriculture, Los Baños, to enable the Agricultural Information Bank for Asia to collect, record, and disseminate data in collaboration with FAO's Current Agricultural Research Information System (CARIS). \$132 000 — 36 months.

**82-0222 FAMILLE ET DÉVELOPPEMENT (SÉNÉGAL) — FINAL PHASE**

To enable the Association africaine d'éducation pour le développement, Dakar, to publish four issues of the magazine *Famille et Développement*. \$50 000 — 12 months.

**83-0034 DATE PALM INFORMATION CENTRE (NENADATES)**

For the Regional Project for Palm and Dates Research Centre in the Near East and North Africa, Baghdad, to extend its capability to collect, store, and disseminate information on date palms. \$205 700 — 24 months.

**83-0039 ATLAS OF ETHIOPIA — PHASE I**

For the Ethiopian Mapping Agency, Addis Ababa, to collect and analyze data and to complete the cartographic production of the Atlas of Ethiopia. \$167 080 — 24 months.

**83-0047 RIALIDE NETWORK STRENGTHENING (LATIN AMERICA)**

To enable the Asociación Latinoamericana de Instituciones Financieras de Desarrollo, Peru, to strengthen its information network (RIALIDE) so as to improve the flow of documents produced by and for the development banks in Latin America. \$73 985 — 24 months.

**83-0048 INDUSTRIAL EXTENSION MANUAL (ASIA)**

To enable TECHNINET Asia, Singapore, to produce a comprehensive manual covering all major aspects of industrial-extension practice appropriate to the Asian environment. \$97 760 — 18 months.

**83-0075 CURRENT AGRICULTURAL RESEARCH INFORMATION SYSTEM (EGYPT)**

For the Ministry of Agriculture, Cairo, to enable the Egyptian Documentation and Information Centre for Agriculture to collect, record, and disseminate data in collaboration with FAO's Current Agricultural Research Information System (CARIS). \$67 810 — 24 months.

**83-0078 AGRIS (SÉNÉGAL)**

For the Ministère du développement rural, Dakar, to enable its Centre de documentation to distribute Agrindex — a computer-generated index of current world literature related to agriculture — to Senegalese institutes that will, in turn, input to the International Information System for the Agricultural Sciences and Technology (AGRIS). \$21 100 — 24 months.

**83-0082 CARISPLAN (GRENADA)**

To enable the Ministry of Planning, Development and Training, St George's, to help strengthen its documentation centre and allow it to participate effectively as the national focal point for the Caribbean component of the socioeconomic information system known as INFOPLAN. \$52 900 — 24 months.

**83-0083 CARISPLAN (ST VINCENT AND THE GRENADINES)**

To enable the Ministry of Finance, Planning and Development, Kingstown, to develop a national documentation centre that can participate in regional and international information activities using advanced technologies for the storage and retrieval of information. \$59 630 — 24 months.

**83-0118 FRENCH AND SPANISH TRANSLATIONS OF APICULTURAL SOURCE MATERIALS (UNITED KINGDOM)**

To enable the International Bee Research Association, Gerrards Cross, to translate the *Apicultural Source Materials*, a series of pamphlets on bee-keeping in the Third World, into French and Spanish. \$32 600 — 12 months.

**83-0134 INFORMATION CENTRE ON DEVELOPMENT-POLICY MODELING (INDIA)**

For the Systems Research Institute, Poone, to establish an information centre to increase awareness in the Asian region of the existence, availability, and benefits of development-policy models. \$427 500 — 60 months.

**83-0148 REMOTE SENSING AND MANGROVES (THAILAND)\***

To enable the National Research Council of Thailand, Bangkok, to inventory mangrove areas using remote-sensing techniques with a view to improving management of mangrove resources. \$376 900 — 36 months.

**83-0150 DEVSIS (CAPE VERDE)**

To enable the Secrétariat d'État à la coopération et à la planification, Praia, to launch a DEVSIS-type system to ensure the collection and dissemination of socioeconomic information and to participate in the regional program of the Pan-African Documentation and Information System. \$148 500 — 24 months.

**83-0151 MARKET INFORMATION SYSTEM (CARIBBEAN) — PILOT PROJECT**

For the Association for Caribbean Transformation, Trinidad and Tobago, to develop a pilot information system to provide current market information on domestic food commodities in Antigua, Dominica, and Trinidad and Tobago with a view to expanding regional trade in nontraditional export crops. \$284 000 — 24 months.

**83-0152 REPIDISCA (LATIN AMERICA) — PHASE III, CONSOLIDATION**

For the Pan American Health Organization, Washington, DC, USA, to enable the Centro Panamericano de Ingeniería Sanitaria y Ciencias del Ambiente, Lima, to strengthen the Red Panamericana de Información y Documentación en Ingeniería Sanitaria y Ciencias Ambientales (REPIDISCA), Peru. \$538 900 — 24 months.

**83-0158 COLOMBIAN AGRICULTURAL INFORMATION SYSTEM**

For the Fundación Mariano Ospina Pérez, Bogotá, to strengthen and coordinate the acquisition of information by agricultural institutions in Colombia and to increase Colombian participation in AGRIS-AGRINTER. \$332 470 — 24 months.

**83-0165 TRAINING MATERIALS FOR PLANT-EFFICIENCY IMPROVEMENT (HONG KONG)**

To enable the Hong Kong Productivity Centre to develop and publish a set of modules to be used as teaching aids for training managers in plant-efficiency improvement, with particular reference to the metal and plastics industries. \$86 800 — 30 months.

**83-0166 CGIAR DATA-TRANSFER NETWORK — PILOT PROJECT**

For the Consultative Group on International Agricultural Research (CGIAR) Secretariat, Washington, DC, USA, to conduct a feasibility study on a

data-transfer network for the CGIAR system, and to establish, administer, monitor, and evaluate a pilot project for a small computer-based message system. \$78 000 — 10 months.

**83-0167 IDRIS PILOT PROJECT\***

To enable the Division of Information Sciences, IDRC, to test the feasibility of establishing a system — the Inter-agency Development Research Information System (IDRIS) — to collect and disseminate project information among member agencies that sponsor development research. \$58 300 — 9 months.

**83-0232 LATIN AMERICAN NETWORK OF DOCUMENTATION IN EDUCATION — REDUC (CHILE) — PHASE III**

For the Centro de Investigación y Desarrollo de la Educación (CIDE), Santiago, to develop CIDE's role as coordinating focal point of an educational information network by assisting it to implement an automated information system; to establish a mechanism for encouraging the wider use of the network products; and to produce a newsletter for the exchange of information within the network. \$401 000 — 36 months.

**83-0238 GRAIN LEGUME INFORMATION CENTRE (IITA) — PHASE III**

For the International Institute of Tropical Agriculture (IITA), Nigeria, to design and implement a Grain Legume Information Database; to collaborate with the Empresa Brasileira de Pesquisa Agropecuária, Brazil, in the collection and documentation of cowpea literature; and to set up a microfiche laboratory. \$367 520 — 36 months.

**83-0239 NATIONAL INFORMATION NETWORK AND SYSTEM (JAMAICA) — PHASE II**

For the National Council on Libraries, Archives and Documentation Services, Kingston, to ensure the continued development of the National Documentation Information and Library System for Jamaica. \$323 510 — 36 months.

**83-0240 SOUTHEAST ASIAN FISHERIES INFORMATION SYSTEM (SEAFIS)**

To enable the Southeast Asian Fisheries Development Center, Thailand, to establish bibliographic information services for fisheries in the region and at the same time, provide a mechanism for national organizations to participate in FAO's Aquatic Sciences and Fisheries Information System. \$408 210 — 36 months.

**83-0241 BRACKISH-WATER AQUACULTURE INFORMATION SYSTEM (BRAIS)**

For the Southeast Asian Fisheries Development Center, Philippines, to enable its Aquaculture Department to act as a specialized information centre for brackish-water aquaculture. \$388 000 — 36 months.

**83-0242 SELECTIVE FISHERIES INFORMATION SERVICE**

For the International Center for Living Aquatic Resources Management (ICLARM), Philippines, to

extend the capabilities of the existing ICLARM Information Service to provide selected fisheries information services to users in tropical countries. \$230 145 — 24 months.

**83-0243 TROPED MUSEUM AND REFERENCE CENTRE — MOSQUITO-BORNE DISEASES**

To enable the Southeast Asian Ministers of Education Organization, Thailand, to develop and strengthen the Museum and Reference Centre of the Tropical Medicine and Public Health Project (TROPED) National Centre of Thailand so as to enhance its regional information-exchange program on mosquito-borne diseases. \$500 000 — 36 months.

**83-0254 BIBLIOGRAPHIC SERVICE ON WHEAT AND SMALL GRAINS (CIMMYT)**

To enable the Centro Internacional de Mejoramiento de Maíz y Trigo, Mexico, to provide its user community in the developing countries with a consolidated and updated index on all references related to the improvement and production of wheat and other small grains. \$72 477 — 36 months.

**83-0258 AGRICULTURAL DOCUMENTATION IN MAURITANIA (SONADER): SUPPORT AND IMPROVEMENT**

For the National Society for Rural Development, Mauritania, to develop an AGRIS-linked documentation centre, and publish an inventory of existing agricultural information in Mauritania and a national agricultural bibliography. \$94 930 — 24 months.

**83-0297 INFORMATION FOR EXPORT PROMOTION (COSTA RICA) — PHASE II**

To enable the Centro de Telecomunicaciones para el Tercer Mundo, San José, to refine a plan for the implementation of an information system for export promotion. \$34 200 — 9 months.

**83-0299 TROPICAL VEGETABLE INFORMATION SERVICE (TVIS)**

For the Asian Vegetable Research and Development Center, Taiwan, to strengthen and expand its specialized information activities on mungbean, soybean, and Chinese cabbage. \$453 730 — 36 months.

**83-0313 DEVSIS (BOTSWANA)\***

For the University of Botswana and Swaziland, Gaborone, to enable the National Institute of Development Research and Documentation to organize national economic and social development information in support of the planning process and to participate in the related regional information programs. \$194 000 — 24 months.

**83-0314 ARCHIVE REPATRIATION (MALAWI, ZAMBIA, AND ZIMBABWE)\***

For the National Archives of Zimbabwe, Causeway, to develop a micrographics capability to give the countries involved direct access to archival materials of the former Federation of Rhodesia and Nyasaland, now Malawi, Zambia, and Zimbabwe. \$182 000 — 18 months.

**83-0316 SAHELIAN INFORMATION NETWORK (OPERATIONAL PHASE)**

For the Sahel Institute, Mali, to enable the Réseau sahélien d'information et de documentation scientifiques et techniques (RESADOC) to continue its programs, while broadening its sphere of action and participating in the regional program of the International Population Information System (POPIN—Africa). \$577 000 — 36 months.

**Office of Planning and Evaluation**

**83-0270 EVALUATION OF RESEARCH PROJECTS (THAILAND)**

To enable the Department of Technical and Economic Cooperation, Bangkok, to define a common methodology for evaluating a number of diverse research projects. \$10 614 — 4 months.

**Social Sciences**

**83-0001 ANTIPOVERTY PROGRAMS (KOREA)**

For the Ewha Woman's University, Seoul, to enable the Management Research Centre to evaluate anti-poverty programs that have been designed and implemented to improve the living conditions of the urban poor in Seoul. \$50 300 — 18 months.

**83-0009 INTERNATIONAL CONTRACT LABOUR (INDONESIA)\***

For the Atma Jaya Foundation, Jakarta, to enable the Atma Jaya Research Centre to investigate temporary labour migration from Indonesia to the Middle East, its characteristics, and its social and economic impact on the sending community. \$38 500 — 18 months.

**83-0010 TECHNOLOGY, EMPLOYMENT, AND EDUCATION (URUGUAY)**

To enable the Centro de Informaciones y Estudios del Uruguay, Montevideo, to review current information and research on technology, employment, and education in Uruguay and identify areas for further research. \$20 475 — 4 months.

**83-0013 BIRTH-INTERVAL DYNAMICS (INDIA)**

For the National Council of Applied Economic Research, New Delhi, to study the determinants of fertility change in 11 villages in the Khanna study area of Punjab State with emphasis on the variables through which socioeconomic factors influence birth intervals. \$173 500 — 30 months.

**83-0017 TECHNOLOGY AND INTERNATIONAL INVESTMENTS BY SMALL FIRMS (ARGENTINA)**

To enable the Centre on Legal and Economic International Studies, Buenos Aires, to undertake a preliminary analysis of the role and behaviour of smaller companies (nonmultinational) in host developing countries (Argentina and Brazil), with particular emphasis on the transfer of technology. \$89 000 — 14 months.

**83-0023 LOW-COST TRAVEL MODES (SOUTH ASIA)\***

To enable the Housing and Environmental Research Cell of Bangladesh, the Centre for Economic Development and Administration, Tribhuvan University, Nepal, and the National Transportation Planning and Research Centre, India, to gather information on the traditional transportation sector in Dhaka, Kathmandu, and Trivandrum; evaluate the role of mass transport in serving the urban poor; and analyze transport and modernization policies. \$154 000 — 24 months.

**83-0027 HOUSING POLICIES IN ASUNCION (PARAGUAY)**

To enable the Sociedad de Analisis, Estudios y Proyectos, Asunción, to undertake a study of housing policies in that city since the 1960s. \$48 400 — 12 months.

**83-0028 URBAN SERVICES IN MONTERIA (COLOMBIA)**

To enable the Fundación del Caribe, Monteria, to undertake an analysis of urban services in that city and a projection of future service needs in the light of an expected influx of rural migrants. \$30 500 — 12 months.

**83-0033 ECONOMIC CRISIS AND URBAN SURVIVAL STRATEGIES (CENTRAL AMERICA)**

To enable the Confederación Universitaria Centroamericana, Costa Rica, to analyze the impact of the economic crisis on survival strategies among the low-income population of San José, Costa Rica, and Tegucigalpa in Honduras. \$53 600 — 18 months.

**83-0043 EDUCATION AND SOCIAL STRUCTURE: ACTORS AND PROCESSES IN THE EDUCATION SYSTEM (CHILE) — PHASE II**

For the Programa Interdisciplinario de Investigación en Educación, Santiago, to continue research on the relationship between education and society by reviewing state education policies and their effect on access to education, studying the role of teachers in the teaching—learning process, and examining non-formal education activities. \$315 000 — 24 months.

**83-0045 FAMILY-PLANNING PERFORMANCE EVALUATION (INDONESIA)**

To enable the Central Bureau of Statistics, Jakarta, to investigate the factors influencing the success of the Indonesian family-planning program in the various districts and subdistricts of Java and Bali. \$71 000 — 24 months.

**83-0049 MARKET IMPACT ON AMAZON COMMUNITIES (PERU)**

To enable the Centro de Investigación y Promoción Amazónica, Lima, to examine the impact of the market economy on native communities in the Amazon and to suggest ways in which the expansion of market activity can be guided for the benefit of its indigenous peoples. \$54 300 — 15 months.

**83-0053 CENTRAL-CITY REVITALIZATION (ARGENTINA-URUGUAY)**

For the Consejo Latinoamericano de Ciencias Sociales, Buenos Aires, to enable the Universidad Nacional del Nordeste, Resistencia, the Universidad Nacional de Tucumán, and the Grupo de Estudios Urbanos, Montevideo, to undertake jointly a comparative study of socioeconomic and environmental problems in central city districts of Corrientes and Catamarca, Argentina, and Montevideo, Uruguay. \$97 300 — 12 months.

**83-0054 EVALUATION OF SOCIAL PROGRAMS IN RECIFE (BRAZIL)**

For the Universidade Federal de Pernambuco, Recife, to enable its Centro de Ciencias Sociais Aplicadas to undertake an evaluation of public programs aimed at improving the standard of living of the low-income population of Recife. \$71 200 — 18 months.

**83-0056 SQUATTER PRODUCE-MARKET VENDORS (EGYPT)**

To enable the American University in Cairo to describe and analyze the livelihood of urban squatter market vendors in Cairo and to understand their role in the food-distribution system. \$67 000 — 15 months.

**83-0057 HUMAN CAPITAL FORMATION (MALAYSIA)**

To enable the Institute of Advanced Studies of the Universiti Malaya, Kuala Lumpur, to assess the effectiveness of policies to encourage human capital formation and national development by measuring the costs and benefits of university education for the various income and language groups represented among the 1983 graduating class. \$57 700 — 15 months.

**83-0062 NEW FORMS OF FOREIGN DIRECT INVESTMENT: OECD DEVELOPMENT CENTRE (FRANCE)**

To enable the Organisation for Economic Cooperation and Development's (OECD) Development Centre, Paris, to study the use of new forms of foreign investment in developing countries, for example, those involving little or no equity participation by the foreign firm. \$42 000 — 24 months.

**83-0064 TEACHERS' WORKSHOPS IN RESEARCH (URUGUAY)**

To enable the Centro de Investigación y Experimentación Pedagógica, Montevideo, to study the problems of classroom teaching and to train both its own staff and a core of teachers to conduct, disseminate, and evaluate education research. \$33 500 — 12 months.

**83-0065 WOMEN'S PARTICIPATION IN THE INFORMAL SECTOR (CHILE)**

To enable the Círculo de Estudios de la Mujer, Academia de Humanismo Cristiano, Santiago, to produce a detailed description of the informal sector as it affects the women involved and their families. \$32 100 — 12 months.

**83-0067 TECHNOLOGY, EMPLOYMENT, EDUCATION, AND DEVELOPMENT (EAST AFRICA)**

To enable the Division of Social Sciences, IDRC, to support research on the relationship between the supply of technologically and scientifically trained people and the utilization of their skills in the countries of East Africa. \$96 000 — 18 months.

**83-0068 POPULARIZATION OF SCIENCE (ETHIOPIA)**

To enable the Ethiopian Science and Technology Commission, Addis Ababa, to gather preliminary data on the pattern of nonscientific beliefs among Ethiopians living within the vicinity of Addis Ababa. \$30 000 — 12 months.

**83-0069 ECONOMIC POLICY AND AGRICULTURAL STRATEGIES (ZAIRE-NIGERIA)**

For the International Food Policy Research Institute, Washington, DC, USA, to enable the Department of Economics, University of Ibadan, and the Institut facultaire des sciences agronomiques in Yangambi to explore the role of macroeconomic variables, particularly exchange-rate and external-trade policies, in the production and distribution of food. \$87 900 — 24 months.

**83-0070 SOCIAL LEARNING THROUGH PARTICIPATION IN GRASS-ROOTS GROUPS (BRAZIL)**

To enable the Rede de Apoio a Ação Feminina, São Paulo, to gain an understanding of the role that grass-roots groups play in encouraging low-income women to participate in political and social activities. \$55 400 — 18 months.

**83-0071 ASSESSMENT OF EDUCATIONAL CURRICULUM ON SEXUAL STEREOTYPES (ARGENTINA)**

To enable the Centro de Estudios de la Mujer, Buenos Aires, to identify the attitudes and values of teachers regarding sexual roles and to assess the extent to which these attitudes and values can be modified. \$49 700 — 20 months.

**83-0073 DEMOGRAPHIC ANALYSIS METHODOLOGY (CARIBBEAN)**

To enable the Institute of Social and Economic Research of the University of the West Indies, Trinidad, to organize a regional program of training and research in demographic analysis to be held in Trinidad between 1 July and 12 August 1983. \$36 420 — 2 months.

**83-0077 RENEWABLE ENERGY RESEARCH INVENTORY (TURKEY)**

To enable the Environmental Problems Foundation of Turkey, Ankara, to make an inventory of research activities and research publications on selected new and renewable sources of energy and to compile a bibliography on its findings. \$28 800 — 12 months.

**83-0090 FERTILITY AMONG THE URBAN POOR (PERU)**

To enable the Instituto Andino de Estudios en



Población y Desarrollo, Lima, to study social and economic factors that determine household composition, fertility, and family-planning practices in low-income households in Lima. \$70 400 — 16 months.

**83-0092 TEACHER WORKSHOPS: THE WORLD OF THE CHILD (ARGENTINA)**

To enable the Facultad Latinoamericana de Ciencias Sociales, Buenos Aires, to enhance, through a series of workshops, teachers' skills and awareness of their role in the classroom and in the community. \$98 000 — 24 months.

**83-0094 PROSPECTS FOR URBANIZATION (NEPAL) — PHASE I**

To enable New Era, Kathmandu, to assess the feasibility of analyzing the resource and employment characteristics of towns along the Gandaki Growth Axis and to determine the most suitable research instruments and foci for a study of this nature. \$16 300 — 6 months.

**83-0095 INTERNAL MIGRATION (BRAZIL)**

To enable the Fundação Centro de Pesquisas Econômicas e Sociais do Piauí to identify the trends and causes of migratory flows in Piauí State, evaluate the effects of a government development program on these trends and provide a basis for policy formulation aimed at diminishing or redirecting migratory flows in the state. \$87 000 — 19 months.

**83-0096 COFFEE PRODUCTION AND MARKETING (TANZANIA)**

To enable the Economic Research Bureau, Dar es Salaam, to study the production and marketing problems in the coffee industry in Tanzania and suggest prospects for future exports if domestic production can be increased. \$33 000 — 18 months.

**83-0099 MACROECONOMIC ANALYSIS PROGRAM (EASTERN AND SOUTHERN AFRICA)\***

For the Division of Social Sciences, IDRC, to support research on macroeconomic issues affecting the economic stability of countries in the region and to enhance the capacity of local scholars and institutions to conduct high level research in this field. \$302 000 — 18 months.

**83-0100 HOUSEHOLD-DEMOGRAPHIC RESEARCH: COMPARATIVE ANALYSIS (GLOBAL)\***

To enable the Social Sciences Division, IDRC, to analyze, compare, and synthesize the results of several Centre-supported projects on the topic of household demographic behaviour. \$92 500 — 24 months.

**83-0113 ASEAN AND SHIPPING CONFERENCES (SINGAPORE)**

To enable the Institute of Southeast Asian Studies, Pasir Panjang, to study the role and practices of shipping conferences operating to and from ports in

countries of the Association of South East Asian Nations (ASEAN) with a view to identifying policies and regulations that would best serve the interests of both governments and shippers. \$92 000 — 24 months.

**83-0115 PARTICIPATORY RESEARCH, EVALUATION, AND TRAINING (INDIA)**

To enable the International Council for Adult Education, Toronto, Canada, in association with the Society for Participatory Research in Asia, New Delhi, to explore in depth the theoretical and practical elements involved in what has become known as participatory research, evaluation, and training. \$59 700 — 21 months.

**83-0116 IN-DEPTH FERTILITY SURVEY (CHINA)**

For the International Statistical Institute, London, United Kingdom, to enable its Department of Population Statistics, in collaboration with the State Statistical Bureau of China, Beijing, to build up capability in China to obtain internationally comparable data on fertility and family-planning trends and their determining factors. \$200 000 — 48 months.

**83-0117 LEADING COMMUNITIES (PERU)**

To enable the Instituto de Estudios Peruanos, Lima, to discover what factors are responsible for the conspicuous success of certain rural communities and the degree to which their experience can be reproduced in other communities. \$86 500 — 24 months.

**83-0121 HOUSEHOLD ECONOMIC STRATEGIES AND FERTILITY (KOREA)**

To enable the Population Association of Korea, Seoul, to conduct an in-depth analysis of the relationships between fertility and socioeconomic factors within the context of Korea's rapidly modernizing society. \$50 000 — 24 months.

**83-0127 ECONOMICS STABILIZATION AND INCOME DISTRIBUTION (GLOBAL)**

To enable the Overseas Development Institute, London, United Kingdom, to finance research into the relationship between economic stabilization measures and changes in income distribution in Sri Lanka, India, and Zimbabwe. \$72 500 — 18 months.

**83-0129 ECONOMIC DIVERSIFICATION (PERU)**

To enable the Centro Regional de Estudios Socioeconomicos, Lima, to analyze the diversification of economic activity practiced by peasant households and communities in the Huanavelica region of Peru. \$73 100 — 12 months.

**83-0135 AGRO-EXPORTS (ECUADOR)**

To enable the Facultad Latinoamericana de Ciencias Sociales, Quito, to analyze the role of banana and cocoa production and marketing in the regional economy of southern coastal Ecuador. \$69 600 — 12 months.

**83-0137 SECONDARY EDUCATION IN ARGENTINA**

For the Facultad Latinoamericana de Ciencias Sociales, Buenos Aires, to analyze the interrelationship between the secondary education system and the economic and political processes within the larger social context. \$284 000 — 36 months.

**83-0139 IMPACT OF POPULATION AND COMMUNITY DEVELOPMENT PROGRAM (THAILAND)**

For Mahidol University, Bangkok, to enable the Institute for Population and Social Research to evaluate the Community-Based Integrated Rural Development Project, which was conducted by the Population and Community Development Association in the Nang Rong District of Buriram Province. \$243 700 — 44 months.

**83-0142 GRADUATE PROGRAM IN EDUCATIONAL RESEARCH (WEST AFRICA)**

To enable l' Association pour le développement de la formation et de la recherche en education en Afrique, Togo, to establish a training program to train up to 15 researchers per year in the skills required to study the schooling process and its results within the framework of the African social, economic, cultural, and organizational environment. \$335 000 — 34 months.

**83-0145 METHODOLOGICAL RESEARCH ON POPULATION, HEALTH, AND DEVELOPMENT (GLOBAL)**

For the Division of Social Sciences, IDRC, to support a series of activities aimed at enabling social science researchers in developing countries to develop appropriate methodologies and conceptual frameworks for ascertaining levels, trends and determinants of mortality. Emphasis will be on infant and child mortality, and mortality from select debilitating diseases. \$477 000 — 24 months.

**83-0153 POPULATION MOBILITY AND DEVELOPMENT (JAMAICA)**

For the University of the West Indies, Jamaica, to enable the Institute of Social and Economic Research to undertake a comprehensive study of the changing nature and mobility of the Jamaican labour force over the period 1973–1983 against a background of national development strategies aimed at increasing agricultural development and stimulating nonfarm employment. \$200 000 — 24 months.

**83-0154 INFANT MORTALITY AND FERTILITY (INDIA)\***

For the Family Planning Foundation, New Delhi, to initiate a number of projects in various areas of India that will increase understanding of the biological, social, economic, and environmental factors that influence infant mortality and fertility. \$272 000 — 36 months.

**83-0155 AGRICULTURAL RESETTLEMENT RESEARCH AND TRAINING PROGRAM (SUDAN)**

For the Rahad Corporation, Khartoum, to support

research and training activities relevant to the policy needs of the Rahad irrigated agriculture and resettlement scheme. \$135 000 — 36 months.

**83-0157 REGIONAL LABOR-FORCE DYNAMICS (BOLIVIA AND ECUADOR)**

For the Centro de Estudios de la Realidad Económica y Social, La Paz, in collaboration with the Centro de Investigaciones y Estudios Socio-Económicos, Quito, to study regional development processes and their effect on labour force dynamics and community development. \$231 700 — 24 months.

**83-0159 INDUSTRIAL AND REGIONAL PLANNING (EGYPT)**

To enable the Institute of National Planning, Cairo, to construct a series of industrial maps for various regions of Egypt thereby contributing to more effective industrial and regional development strategies. \$81 800 — 2 months.

**83-0160 UPLAND RESOURCE DEVELOPMENT STUDIES I (PHILIPPINES)**

To enable the University of the Philippines at Los Baños Development Foundation Inc., Laguna, to study and compare the interaction of the human population with the environment as reflected in land tenure, resource use, production strategies, and conservation technologies. \$96 200 — 18 months.

**83-0161 ORO EDUCATION STUDY (PAPUA NEW GUINEA)**

To enable the Educational Research Unit of the University of Papua New Guinea, to conduct a comparative study of high- and low-achieving rural schools in Oro Province. \$34 630 — 24 months.

**83-0162 DEVELOPMENTS IN MICROELECTRONICS AND THEIR IMPACT IN ARGENTINA**

To enable the Facultad Latinoamericana de Ciencias Sociales, Buenos Aires, in association with the Insituto Nacional de Tecnología Industrial, to undertake an investigation of the production and use of selected microelectronics-based devices in Argentina. \$96 400 — 15 months.

**83-0163 FOOD CONSUMPTION AND THE URBAN POOR (CHILE)**

For the Pontificia Universidad Católica de Chile, Santiago, to enable the Instituto de Sociología to analyze the effects of social and cultural variables on food consumption among poor households in Santiago, Chile. \$68 400 — 18 months.

**83-0164 NETWORK ON TRAINING FOR RESEARCH (LATIN AMERICA)\***

For the Division of Social Sciences, IDRC, to permit a number of independent research centres working in the Southern Cone of Latin America to strengthen their research training programs by the creation of a network for student and teacher interchanges. \$134 200 — 24 months.

**83-0168 FOOD MARKETING IN SABAH (MALAYSIA)**

To enable the Socio-Economic Research Unit, Kota Kinabalu, to describe and analyze the distribution



patterns of fruits and vegetables in the three largest towns of the State of Sabah, evaluating the role played by government agencies in the distribution network. \$88 400 — 24 months.

**83-0172 CHILD-REARING PRACTICES AND EDUCATION (LESOTHO)**

To enable the Institute for Southern African Studies of the National University of Lesotho, Maseru, to collect information on child-rearing practices among families of various economic status and degree of modernization, that will be useful in developing Lesotho's preschool education program. \$30 800 — 12 months.

**83-0174 POSTGRADUATE ENGINEERING APPRENTICESHIP SCHEMES IN KENYAN ENTERPRISES**

To enable the University of Nairobi to examine the apprenticeship training of graduate mechanical engineers within several different types of industrial enterprises in Kenya and recommend ways in which the program might be improved. \$18 800 — 12 months.

**83-0176 URBAN MANAGEMENT (KENYA)**

To enable the Mazingira Institute, Nairobi, to edit and organize the data from an earlier study of low-cost urban transport, based on the "matatu" or private taxi, within the broader context of urban management in Nairobi. \$9800 — 9 months.

**83-0179 FERTILITY AND DIFFERENTIAL MORTALITY (SÉNÉGAL)**

For the Direction de la statistique, Dakar, to enable the Bureau national du recensement to improve the knowledge of demographic trends in Sénégal by training two Senegalese demographers in multivariate analysis and other techniques of data processing and modeling. \$97 500 — 24 months.

**83-0180 DETERMINANTS OF FERTILITY (UGANDA)**

For the Makerere University, Kampala, to enable the Institute of Statistics and Applied Economics to measure the levels, trends, and determinants of fertility in Ankole — a typical rural area exhibiting particularly high fertility. \$97 000 — 30 months.

**83-0181 PARLIAMENT IN PERU: STRUCTURE AND FUNCTION (PERU)**

To enable the Universidad del Pacífico, Lima, to examine the structure and performance of the two houses of parliament to propose ways in which their effectiveness in the policymaking process could be increased. \$30 000 — 9 months.

**83-0183 URBAN-SERVICES MANAGEMENT (NIGERIA)\***

To enable the Nigerian Institute of Social and Economic Research, Ibadan, to analyze systematically the adequacy of public utilities in six Nigerian cities from a managerial perspective. \$64 500 — 18 months.

**83-0184 SOCIAL AWARENESS AND RURAL DEVELOPMENT (COLOMBIA) — PHASE II**

To enable the Fundación Punta de Lanza, Bogotá,

to complete the historical account of the San Jorge Valley with a study of an economically interrelated zone in the Sinu region. \$55 500 — 16 months.

**83-0185 ROLE OF WOMEN IN URUGUAY: RESEARCH PROGRAM SUPPORT (URUGUAY)**

For the Centro de Investigaciones y Estudios Sociales del Uruguay, Montevideo, to enable the Grupo de Estudios sobre la Condición de la Mujer en el Uruguay to raise society's awareness of the economic and social issues facing women by supporting research and meetings on the subject. \$58 200 — 24 months.

**83-0186 COMMUNITY PARTICIPATION AND COMMUNICATION TECHNOLOGIES (COLOMBIA)**

To enable the Asociación Colombiana de Investigadores de la Comunicación Social, Bogotá, to develop policy guidelines and strategies for community participation in the selection of programming and the elaboration of content of Colombian television. \$69 600 — 11 months.

**83-0187 EVALUATION OF COMPREHENSIVE RURAL EDUCATION (BRAZIL) — PHASE II**

To enable the Instituto Interamericano de Ciencias Agrícolas, Costa Rica, to develop, test, and disseminate participatory research methodologies in the evaluation of innovative rural and basic education programs in Brazil. \$81 800 — 12 months.

**83-0189 STATUS OF SCIENCE AND TECHNOLOGY IN BOTSWANA**

To enable the Botswana Technology Centre, Gaborone, to conduct a survey of science and technology resources and activities in Botswana and propose a design for a national science and technology information centre. \$21 000 — 12 months.

**83-0190 TECHNOLOGY TRANSFER CONTRACTS (GHANA)**

To enable the Ghana Investments Centre, Accra, to examine the general characteristics of the various contractual forms used to acquire technology by Ghanaian public enterprises and to assess the extent to which they provide an effective instrument for technology acquisition and for realizing national development goals. \$25 300 — 12 months.

**83-0195 UPLAND RESOURCE DEVELOPMENT STUDIES II (PHILIPPINES)**

For De la Salle University, Manila, to enable its Integrated Research Centre to study commodity and labour exchanges between Mangyan households and migrant uplanders and lowlanders to determine who benefits from the exchanges, how livelihoods are affected, and what are the implications for development in the uplands. \$42 600 — 15 months.

**83-0197 TECHNOLOGY ASSIMILATION AND ADAPTATION IN STEEL AND ALUMINUM (VENEZUELA)**

To enable the Asociación Venezolana de Tecnología, Caracas, to examine the learning processes through which technological capability is acquired in the industrial sector in developing countries. \$82 000 — 18 months.

**83-0198 IMPACT OF COMPUTER TECHNOLOGY (CHILE)**

To enable the Centro de Estudios Sociales, Santiago, to describe and analyze the impact of computers on education, employment, and professional skills in a number of service and manufacturing companies. \$96 800 — 18 months.

**83-0202 EXPORT PRICE AND TECHNOLOGY SUBSIDIES (TOGO)**

For the Université du Bénin, Lomé, to enable the École supérieure de techniques économiques et de gestion to assess two policies affecting export crop production in Togo, that is, commodity price fixing and the subsidization of farm equipment. \$36 800 — 24 months.

**83-0207 SCIENTIFIC COMMUNITIES IN CHILE: CASE STUDIES (CHILE)**

To enable the Facultad Latinoamericana de Ciencias Sociales, Santiago, to describe and analyze the structure and behaviour of the scientific communities associated with two disciplines — biology and sociology — and to propose policies by which their contribution to development might be strengthened. \$98 600 — 24 months.

**83-0208 EDUCATIONAL RESEARCH AWARDS (BOTSWANA, LESOTHO, AND SWAZILAND)**

For the National University of Lesotho, Roma, to enable its Institute of Education to enhance the educational research capacity by providing research grants, to be awarded in annual competitions, to senior researchers in independent work and junior researchers in supervised work. \$162 700 — 24 months.

**83-0216 RICE PRODUCTION AND MARKETING (TANZANIA)**

To enable the University of Dar es Salaam, Morogoro, to study agricultural development constraints and opportunities in the Ulunga district, and the effect of labour migration and remittances on agricultural productivity. \$78 000 — 18 months.

**83-0220 INCOME DISTRIBUTION AND RURAL EDUCATION (COLOMBIA)**

To enable the Fundación para la Educación Superior y el Desarrollo, Bogotá, to analyze the primary data collected through a nation-wide survey to obtain a better understanding of the relationship between the distribution of income and education in rural Colombia. \$78 500 — 12 months.

**83-0221 ARTISANAL FISHERIES (CHILE)**

To enable the Universidad de Concepción to undertake an in-depth analysis of the artisanal fishing communities of Coliumo, Tumbes, Lo Rojas, Tubul, and Isla Santa Maria to determine their potential for future development. \$66 935 — 12 months.

**83-0223 MAIZE MARKETING AND EXTENSION (SIERRA LEONE)**

To enable Njala University College, Freetown, to analyze current and future prospects for maize in Sierra Leone to assist the government in the formu-

lation of a strategy for maize production. \$60 600 — 24 months.

**83-0224 FRUIT CROPS, RIO NEGRO (ARGENTINA)\***

To enable the Universidad Nacional de Comahue, Neuquén, to study fruit production, processing, and marketing, in the Rio Negro valley with a view to identifying ways of increasing the efficiency and competitiveness of the industry. \$52 000 — 18 months.

**83-0228 CHILD LABOUR AND EDUCATION IN RURAL AREAS (COLOMBIA)**

To enable the Pontificia Universidad Javeriana, Bogotá, to examine the relationship between child labour and school performance as measured by attendance, retention, promotion, and educational attainment. \$94 400 — 14 months.

**83-0229 TEACHER WORKSHOPS: INSTRUCTIONAL STRATEGIES (ARGENTINA)**

To enable the Centro Rosario de Investigaciones en Ciencias Sociales, Rosario, to develop, through workshops, new methods for improving teaching skills and to determine whether workshop participation actually enhances teachers' effectiveness in the classroom. \$39 000 — 14 months.

**83-0231 INSTITUTIONAL SUPPORT GRANT FOR GIA (CHILE)**

For the Grupo de Investigaciones Agrarias (GIA), Academia de Humanismo Cristiano, Santiago, to strengthen its research capacity and dissemination activities at a time of growing demand for its services on the part of small-scale farmers. \$354 750 — 36 months.

**83-0235 UPLAND RESOURCE DEVELOPMENT STUDIES III (PHILIPPINES)**

To enable the Research Institute for Mindanao Culture of Xavier University, Cagayan de Oro, to study the attitudes and farming practices of small-scale upland farmers that influence soil erosion and to identify and implement a trial program of alternative practices to enhance soil conservation. \$57 600 — 24 months.

**83-0236 MANUFACTURING SECTOR STUDIES (KENYA)**

To enable the University of Nairobi to review manufacturing-sector problems and policies in Kenya. \$45 000 — 18 months.

**83-0237 DEVELOPMENTS IN MICROELECTRONICS AND THEIR IMPACT (GLOBAL)\***

For the Universidade Federal Rural do Rio de Janeiro, Brazil, the Ministry of Industry, Mexico, the Korea Advanced Institute of Science and Technology, South Korea, the Electronics Commission of the Government of India, and the Facultad Latinoamericana de Ciencias Sociales, Argentina, to enable a network of research groups to carry out an empirical investigation of the nature and impact of microelectronics-based technological changes on selected sectors; to examine the existing domestic

capacities and policies in relation to these developments; and to formulate improved policies through the national and international comparative exercise. \$570 000 — 24 months.

**83-0245 SMALL RESEARCH GRANTS (EAST AFRICA) — PHASE IV**

For the Division of Social Sciences, IDRC, to enhance research capability in the region by enabling interested and competent researchers in Eastern and Southern Africa to undertake applied studies in the social sciences. \$239 000 — 24 months.

**83-0247 OPTIONS FOR ENERGY AND TRANSPORTATION: THEIR IMPACT ON DEVELOPMENT (COSTA RICA)**

To enable the Centro de Investigaciones Sociales Ambientales y Tecnológicas, San José, to analyse the structure and in particular the energy requirements of Costa Rica's transport system and to identify energy and technology options for transport that are consistent with the rational use of available resources. \$96 800 — 24 months.

**83-0249 TECHNOLOGY POLICY (CENTRAL AMERICA) — PHASE II\***

For the Organization of American States, Washington, DC, USA, to permit the development of a diffusion and training program for technology policy in Central America based on the information and results generated in the national studies carried out during Phase I. \$452 500 — 18 months.

**83-0253 IMPACT OF LARGE ENERGY PROJECTS AND EVALUATION OF ALTERNATIVES (BRAZIL)\***

To enable the Universidade Federal Rural do Rio de Janeiro, to analyse and compare Brazil's hydroelectric and nuclear programs in terms of companies involved and impact on technological development and the environment with a view to suggesting alternative energy-supply options. \$94 000 — 24 months.

**83-0255 URBAN SERVICES MANAGEMENT (TANZANIA)\***

For the Ardhi Institute, Dar es Salaam, to enable the Centre for Housing Studies to examine the delivery of basic urban services, with emphasis on housing, in four cities and make recommendations for improving their managerial and administrative infrastructure. \$45 300 — 18 months.

**83-0257 RURAL-URBAN CHANGE IN CHIPATA (ZAMBIA)**

To enable the National Commission for Development Planning, Lusaka, to gather data on the social and economic conditions in Chipata District that will be useful for devising policies to stop the further decline of rural Chipata and to assist the urban area to accommodate the migrants. \$51 900 — 18 months.

**83-0259 RESEARCH AND TRAINING PROGRAM — CAIRO DEMOGRAPHIC CENTRE (EGYPT)**

To enable the Cairo Demographic Centre to achieve

its research and training objectives in 1984 by providing support for 10 students and an experimental research and training program. \$98 440 — 12 months.

**83-0260 HANDICRAFTS STUDIES I (SRI LANKA)**

To enable the Marga Institute, Colombo, to study the contribution of handicrafts to the national economy and to research the constraints to growth within the sector. \$59 200 — 20 months.

**83-0264 HANDICRAFTS STUDIES II (NEPAL)**

To enable Tribhuvan University, Kathmandu, to study the contribution of handicrafts to the national economy and to analyze the constraints to growth within the sector. \$47 200 — 20 months.

**83-0265 HANDICRAFTS STUDIES III (THAILAND)**

For the Thai University Research Association, Bangkok, to enable the Faculty of Social Sciences, Chiang Mai University, to study the contribution of handicrafts to the national economy and to analyze the constraints to growth within the sector. \$50 400 — 20 months.

**83-0266 HANDICRAFTS STUDIES IV (PHILIPPINES)**

To enable the Ramon Magsaysay Award Foundation, Manila, to determine the contribution of handicrafts to the national economy and to analyze the constraints to growth within the sector. \$58 500 — 20 months.

**83-0268 BALANCE-OF-PAYMENTS, SAVINGS, AND INVESTMENT (COLOMBIA)**

To enable the Fundación para la Educación Superior y el Desarrollo, Bogotá, to study the balance-of-payment adjustment process in Colombia with particular reference to the role played by changes in saving and investment activities, both in the public and the private sector. \$98 600 — 15 months.

**83-0269 QUALITY OF SECONDARY EDUCATION (KENYA)\***

To enable the Institute for Development Studies of the University of Nairobi to analyze patterns of quality and their determinants in a sample of Kenyan secondary schools. \$61 500 — 24 months.

**83-0271 MACROECONOMICS AND BALANCE-OF-PAYMENTS RESEARCH (CHILE) — PHASE III**

For the Corporación de Investigaciones Económicas para Latinoamérica, Santiago, to continue its detailed studies of macroeconomic policy in Chile, and to model the Chilean economy so as to test the impact of alternative policies in future years. \$450 000 — 18 months.

**83-0273 COSTS AND CONTRIBUTIONS OF HIGHER EDUCATION (THAILAND)**

To enable the Office of the National Education Commission, Bangkok, to assess the cost and socioeconomic contribution of higher education in Thailand, as measured by the social behaviour,

values, and attitudes of university graduates (bachelor's degree). \$94 600 — 36 months.

**83-0274 TRADE-UNION RESEARCH CAPACITY (KENYA)**

To enable the Social Sciences Division, IDRC, to help build research capacity in the trade-union movement in Kenya, and to monitor and evaluate the results of this effort. \$40 100 — 12 months.

**83-0279 INFORMATION TECHNOLOGIES AND CULTURAL POLICIES (PERU)**

To enable the Centro de Estudios sobre Cultura Transnacional, Lima, to contribute to the design and formulation of policies governing the introduction and use of new information technologies in Latin American countries. \$65 000 — 8 months.

**83-0290 LOW-COST URBAN SANITATION (MOZAMBIQUE)**

To enable the Instituto Nacional de Planeamiento Fisico, Maputo, to study building cooperatives producing latrines to plan an effective strategy for extending low-cost sanitation technology in urban Mozambique. \$62 500 — 24 months.

**83-0292 RURAL ENERGY PLANNING — CASE STUDY IN THE MICROREGION OF VALENCA, BAHIA (BRAZIL)\***

For the Fundação de Apoio a Pesquisa y Extensão, Bahia, to enable its Grupo de Planejamento Energetico to undertake a thorough energy diagnosis of the rural region of Valença, Bahia, with a view to suggesting technological and energy alternatives that optimize the use of local resources. \$96 300 — 24 months.

**83-0302 AGRICULTURAL DEVELOPMENT RESEARCH PROGRAM (NEPAL) — PHASE II\***

For the Agricultural Projects Services Centre, Kathmandu, to carry out a program of studies on critical issues in agricultural- and rural-development policy in Nepal. \$250 000 — 30 months.

**83-0306 REGIONAL AWARDS AND PROGRAM SUPPORT FOR CLACSO (LATIN AMERICA) — PHASE III**

To enable the Consejo Latinoamericano de Ciencias Sociales (CLACSO), Buenos Aires, to continue offering Junior and Special Research Awards and disseminating research findings; and to provide CLACSO with administrative support for these activities. \$448 500 — 24 months.

**83-0318 MIGRATION, REMITTANCES, AND RURAL DEVELOPMENT (KENYA) — PHASE II\***

For the University of Nairobi to enable its Population Studies and Research Institute to describe the nature and level of remittances mobilized by community welfare organizations in three districts of Kenya and to assess the impact of such organizations on rural development. \$112 600 — 24 months.

**83-0323 INCOME, EDUCATION, AND RURAL MIGRATION (COLOMBIA)\***

To enable the Instituto SER de Investigación, Bogota, in collaboration with the Centro de Estudios

sobre Desarrollo Económico to study the structure of production and labour-force participation for distinct socioeconomic groups and regions in the Colombian rural economy, and the effect of migration and education on the reproduction of the rural labour force. \$84 200 — 9 months.

**83-0332 EVALUATION OF SCIENCE AND TECHNOLOGY DECISION-MAKING (PERU)**

To enable the Grupo de Estudios para el Desarrollo, Lima, to undertake an analysis of public sector decision-making concerning science and technology to suggest ways in which it might be improved. \$75 000 — 12 months.

**83-0333 PILOT COURSE ON TELEVISION (CHILE) — PHASE II**

To enable the Centro de Indagación y Expresión Cultural y Artística, Santiago, to adapt the content, methodology and activities contained in its previously published *Manual of Education for Television* to the needs of the lower-class and marginal youth. \$17 200 — 9 months.

**83-0334 JUXTAPOSITION AND COMPARISON OF TECHNOLOGY-TRANSFER EXPERIENCES (GUYANA)\***

To enable the National Science Research Council, Georgetown, to compare technology-transfer experiences between Guyana and other developing countries to those between Guyana and developed industrialized countries, within the context of state-owned versus private-owned enterprises and socialist versus capitalist economies. \$25 000 — 9 months.

**83-0337 POPULAR CULTURE AND THE POPULAR PRESS (CHILE)**

To enable the Centro de Indagación y Expresión Cultural y Artística, Santiago, to describe the content and style of the press (bulletins, newspapers, and magazines) produced over the last 25 years by peasants, workers, and slum-dwellers in Chile and to examine its relationship to the social-political climate. \$75 700 — 18 months.

**83-0338 CULTURAL POLICY IN ARGENTINA**

To enable the Centro de Estudios de Estado y Sociedad, Buenos Aires, to examine the evolution and implementation of cultural policy, particularly as it relates to television, in the light of Argentina's return to democracy. \$84 000 — 24 months.

**83-0339 FISHERIES DEVELOPMENT (URUGUAY)**

To enable the Centro Interdisciplinario de Estudios sobre el Desarrollo Uruguayo, Montevideo, to analyze the role and interrelationships among economic policy, international demand for fish products, and fisheries development over the last 10 years. \$70 800 — 12 months.

**83-0340 EDUCATION AND WORK: ROLE OF TECHNICAL EDUCATION IN ARGENTINA**

To enable the Centro de Estudios de Población, Buenos Aires, to analyze and assess the contribution of technical-vocational education in Argentina to the

integration of technical school graduates into the workplace. \$84 500 — 24 months.

**83-0342 LABOUR MIGRATION (GAZA STRIP)**

To enable the Arab Studies Society, East Jerusalem, to study the employment patterns in the Gaza Strip, including labour migration to Israel. \$12 500 — 12 months.

**83-0343 RURAL DEVELOPMENT EXPERIENCE (INDIA)\***

To enable the Social Sciences Division, IDRC, to support participation in a seminar to evaluate rural-development experiences in India and to assess the effectiveness of various approaches, policies, and programs. \$82 000 — 10 months.

**83-0344 SMALL REGIONAL GRANTS (PERU)**

To enable the Asociación Peruana para el Fomento de las Ciencias Sociales, Lima, to administer a program of small grants designed to build the research capacity of provincial universities in Peru. \$78 700 — 16 months.

**83-0345 TECHNOLOGY POLICY WORKSHOP DISSEMINATION PHASE (GLOBAL)**

To enable the Social Sciences Division, IDRC, to allow for the consolidation and dissemination of technology-policy literature and teaching materials generated from the Technology Policy Workshop Projects. \$76 600 — 12 months.

**83-0349 ARTISANAL FISHERIES (SÉNÉGAL)\***

For the Institut sénégalais de recherches agricoles, Dakar, to enable the Centre de recherches océanographiques de Dakar-Thiaroye to carry out a diagnostic study of socioeconomic aspects of artisanal fisheries in the Casamance district. \$67 000 — 20 months.

**83-1005 HOUSEHOLD RESPONSES TO INDUSTRIAL-URBAN CHANGE (MALAYSIA—CANADA)**

For the Universiti Sains Malaysia, Minden, and the University of British Columbia, to enable the universities to carry out a study at the household level of the relationships between the processes of industrialization, urbanization, and labour force formation and their impact on the larger social and economic structures. \$95 200 — 36 months.

**83-1008 MACROECONOMIC MANAGEMENT (TANZANIA—CANADA)**

For the University of Dar es Salaam, and the University of Toronto, Ontario, to formulate an economic policy model for Tanzania that will subsequently be applied to the analysis of macroeconomic issues. \$179 000 — 24 months.

**83-1009 SCHOOLING, COGNITION, AND WORK: OUTCOMES OF PRIMARY EDUCATION (KENYA—CANADA)**

For Kenyatta University College, Nairobi, and McGill University, Quebec, to examine the relationship between the kinds of thought processes that are developed in school and those that are used in the workplace. \$170 000 — 24 months.

**83-1033 FARMERS' PARTICIPATION IN RURAL DEVELOPMENT (SIERRA LEONE—CANADA)\***

To enable Fourah Bay College of the University of Sierra Leone, Freetown, and the Canadian University Service Overseas, Freetown, to involve small farmers in the identification of rural-development problems and sources of agroecological knowledge that farmers use to address them. \$64 020 — 24 months.

## Special Governing Board Activities

**82-0254 LIBRARY ENLARGEMENT FOR AGRICULTURAL PROJECTS SERVICES CENTRE (NEPAL)**

To enable the Agricultural Projects Services Centre, Nepal, to enlarge its library premises so as to accommodate future growth. \$52 950 — 12 months.

**83-0052 CONSUMERS' LAW (MALAYSIA)**

To enable the Consumers' Association of Penang to analyze the law and propose legal reform in various areas of concern to the Malaysian consumer. \$68 726 — 12 months.

**83-0076 ENERGY AWARDS**

From the Special Governing Board Activities Energy Program, IDRC, to enable the Fellowships and Awards Division to fund training awards in energy-related fields. \$95 000 — 12 months.

**83-0114 SMALL-SCALE ENERGY SYSTEM (PHILIPPINES)**

For the Forest Products Research and Development Institute, Los Baños, to develop a small-scale energy system based on locally available renewable resources for use by rural communities. \$382 500 — 36 months.

**83-0178 DEVELOPMENT PARALLELS (CANADA—LDCs)**

For the University of Regina, Saskatchewan, to study parallels in the experience of the Third World and a developing region of a technologically advanced country, with particular reference to native communities in Canada. \$116 000 — 36 months.

**83-0212 SOLAR-ASSISTED UNDERGROUND HEAT-STORAGE AND SUPPORT SYSTEM (TURKEY—CANADA)**

To enable Doküz Eylül Üniversitesi, Izmir, and McGill University, Montreal, to examine the feasibility of heating buildings in Turkey using solar-energy systems developed by McGill's Brace Research Institute. \$93 000 — 24 months.

**83-0256 CIVIL RIGHTS (ANDEAN REGION)**

To enable the Comisión Andina de Juristas, Peru, to examine the judicial treatment of cases involving three legally recognized civil rights (association, free speech, and habeas corpus) in selected countries of the Andean region. \$92 180 — 12 months.

**83-0301 ENERGY POLICY RESEARCH  
(SEYCHELLES)**

To enable the Ministry of Planning and External Relations, Victoria, to gather and analyze data on the current and future supply and demand for energy in the Seychelles with a view to formulating an energy policy. \$97 200 — 30 months.

**83-0341 URBAN HOUSEHOLD-ENERGY  
SURVEY (CHINA)\***

To enable the Institute of Nuclear Energy Technology, Beijing, to gain a deeper understanding of energy supply and consumption in households in four cities. \$87 000 — 24 months.

## Division activity projects

In addition to the projects listed on the preceding pages, the Centre funds numerous relatively small projects that are in one way or another supportive of the ongoing activities of the program divisions. For instance, some are to support workshops or seminars to identify priority-research areas in a particular region or field of activity. Others are to enable developing-country researchers to attend international meetings of experts in other parts of the world. Still others are to provide funds for a specialist from one country to visit and assist a project team in another.

The great majority of such projects are, in fact, to cover the cost of meetings and consultancies directly or indirectly related to Centre-supported research projects in developing countries. During the past fiscal year, 613 division activity projects were approved at a total cost of \$4 380 000. Project grants ranged from a few hundred dollars to twenty thousand or more. This program funded activities such as:

- Transportation and related expenses for two Kenyan researchers to attend the 13th Conference of the International Society for Fluoride Research in New Delhi, India.
- Travel support for educators from Morocco and Togo to visit educational institutions in the Province of Quebec.
- A consultancy for a senior researcher in Argentina to review a number of studies on local technology generation in Latin American industry to establish the theoretical and research implications of these studies and identify major research issues.
- A consultancy to prepare a bibliography and a report reviewing a selected number of important papers on the technological trends in microelectronics and their impact on certain industries, directions of trade, and employment.
- A meeting in Hong Kong organized by the Asian Community Health Action Network (ACHAN) to work out the details of a possible network of projects to review select NGO primary health-care programs in ACHAN-affiliated countries.
- A seminar in Singapore organized by the International Centre for Science Communications to help identify the areas of training and research needed in science communication in the region.
- A workshop in Nairobi to identify some of the constraints to scientific publishing in developing countries.
- A study tour for four key technical persons from the Chinese Academy of Agricultural Sciences following China's agreement to participate in the International Information System for Agricultural Sciences and Technology (AGRIS).



## Financial commentary and highlights

In 1983–1984, the International Development Research Centre's financial resources from the Government of Canada continued to increase, which demonstrates the confidence bestowed on it. These resources were used to fund a greater number of new projects in the developing countries and those where commitments had been made in the past.

During the year, the Board of Governors, a significant driving force for the Centre, expressed the desire that emphasis should be placed on the growth of the Health Sciences Division and the Fellowships Program, which in October 1983 received designation as a full program division, hereafter called the Fellowships and Awards Division. The Cooperative Programs continue to grow as the portion of the grant designated for these programs continues to grow.

This year, IDRC also experienced the birth of a new management concept, the Executive Office. The President reorganized the structure of senior management with the appointments of Vice-Presidents in the areas of Research Programs, Information Programs, Collaborative Programs, and Resources. One of the terms of reference for the President's Committee is the formulation of the strategic plan for the Centre.

With the opening of a new regional office in New Delhi, India, during 1983–1984, the Centre now has six regional offices. The growth of the New Delhi office accelerated faster than expected.

The Centre has been organized in a way to meet the challenge that lies ahead. The Canadian Government remains committed to its Official Development Assistance (ODA) target of 0.5% of Gross National Product (GNP) by 1985 and 0.7% by 1990. The Government has revised upwards its forecast for the GNP, and has adjusted its forecast ODA budgets accordingly. As a result, the funding for the Centre will increase in a similar manner. IDRC continues to identify the markets in the developing countries that should have priority over these financial resources provided for them.

## Revenues

The Parliamentary grant for 1983–1984, set at \$67.4 million, including \$5.0 million for Cooperative Programs, represented an increment of 13.8% over the previous year. Total Centre revenues, excluding funds for contract research, amounted to \$70.0 million for 1983–1984, a 12.7% increase over 1982–1983 and 0.3% greater than the budgeted level.

The \$2.6 million of investment and other income during 1983–1984 surpassed the budget target of \$2.4 million. Although the actual average yield earned on investments at 9.64% for the year was lower than the budgeted figure of 11.50%, higher monthly average investment balances throughout the year provided the additional income to exceed the budget amount. Other income pertains mostly to MINISIS licencing fees, \$157 000, and approximately \$13 000 for publications income.

The total 1984–1985 Parliamentary grant to IDRC, for regular programs, is expected to increase by 15.2% to \$71.9 million, which includes \$3.0 million allotted for

energy research. In addition, the Cooperative Programs grant is anticipated to be \$9.1 million, an increase of 82% over the current year. The Centre has estimated that it will earn approximately 9.5% on its investment portfolio. The overall increase in Centre revenues is expected to be 19.2%.

## Development research and related expenditures

The Centre strives to maintain a high level of expenditures in development research and related areas because they relate directly to resources provided to the developing countries. Although there is no steadfast rule, the Centre's available resources are budgeted in such a way as to ensure this. The level of such expenditures, compared with budgetary levels, and their distribution by activity are indicators of how well IDRC has achieved certain financial objectives.

In 1983–1984, expenditures directly related to research projects and to Centre projects — the development research category — increased 19.7% to \$41.5 million; research related activities increased 17.0% to \$6.2 million. The rate of increase in expenditures was slightly below the target where shortfalls occurred in the projected levels of new projects (\$0.2 million) and the level of progress payments on previously approved projects (\$1.3 million).

Appropriations for 1983–1984 reached the budget target of \$93.5 million and a 25.7% increase over the level reached in 1982–1983. Project commitments, at \$88.0 million, represented 104% of the budget and a 29.7% increase over the previous year.

The 1984–1985 plan for IDRC allows for total appropriations of \$120.0 million, an increase of 28.4% over 1983–1984. The largest portion of this increase, 81.5%, will be allotted to the support of new research projects, 12.6% will be assigned to regional office operations and technical support, and the remaining 5.9% to division management and administration.

### EXPENDITURES (\$ million)

	Budget		Actual							
	1985	% of total	1984	% of total	1983	% of total	1982	% of total	1981	% of total
Development research	\$49.9	58.6	\$41.5	59.2	\$34.7	58.7	\$30.3	61.1	\$26.8	62.5
Research related activities	7.9	9.3	6.2	8.9	5.3	9.0	4.1	8.3	3.0	7.0
Technical support and regional office operations	15.5	18.2	12.2	17.4	10.2	17.2	8.2	16.5	6.9	16.1
<b>Total research and research related</b>	<b>\$73.3</b>	<b>86.1</b>	<b>\$59.9</b>	<b>85.5</b>	<b>\$50.2</b>	<b>84.9</b>	<b>\$42.6</b>	<b>85.9</b>	<b>\$36.7</b>	<b>85.6</b>
Division management	3.9	4.6	3.3	4.7	3.0	5.1	2.3	4.6	2.2	5.1
Administration	7.9	9.3	6.9	9.8	5.9	10.0	4.7	9.5	4.0	9.3
<b>Total</b>	<b>\$85.1</b>	<b>100.0</b>	<b>\$70.1</b>	<b>100.0</b>	<b>\$59.1</b>	<b>100.0</b>	<b>\$49.6</b>	<b>100.0</b>	<b>\$42.9</b>	<b>100.0</b>

*Above data do not include amounts related to contract research.*

## Technical support and regional office operations

To respond to Third-World requests and to facilitate contacts with recipients, IDRC maintains overseas regional and liaison offices. Costs are also incurred for program personnel, who provide technical support, monitor project development, and advise on

project management. Total expenditures in this category, for 1983–1984, were \$12.2 million, an increment of 19.6% over 1982–1983. As an allocation of total expenditures, this represented an increase to 17.4% from 17.2%.

Centre growth in direct research support, to a large degree, is dependent upon recruitment of professional staff, especially those involved in new project development and the provision of technical services to existing projects funded by the Centre. As a result, this area is expected to increase 27.0% to \$15.5 million in 1984–1985.

Increased decentralization and the need for more specialists in the field are answers both to the needs expressed by grant recipients and to more effective management.

## **Division management**

The costs of operating the IDRC program divisions and, in particular, the costs involved in program management, development, and control are identified as division management. This category totaled \$3.3 million in 1983–1984, a 10% increase over 1982–1983, and represented 4.7% of the total IDRC expenditures in 1983–1984.

Division management expenditures are expected to total \$3.9 million in 1984–1985, an 18.2% increase over 1983–1984. As a proportion of total Centre expenditures, however, this will represent a decrease to 4.6%.

## **Administration expenditures**

To support its overall operations, the Centre requires certain policy and executive, as well as administrative and service, functions. Within the context of IDRC, such functions are represented by the Board of Governors, the offices of the Executive, Secretary and General Counsel, Comptroller General and Treasurer, and Human Resources.

The total operating costs (\$654 000) for the Centre's computerized management-information system (IMIS) have been included in this category of expenditures. It was felt that the total operating costs should be charged to administration until management was satisfied that the new system was fully functional and adequately met users' needs. It is the intention that these costs will be charged out to the respective user divisions for the 1984–1985 fiscal year.

Administration expenditures amounted to \$6.9 million, 4.5% over the budgeted amount and an increase of 16.9% over the previous year. Their proportion of total expenditures, however, decreased from 10.0% to 9.8%.

In 1984–1985, the ratio of administration costs to total expenditures is forecast to decrease to 9.3% for a total of \$7.9 million. This will reflect an increase of 14.5% over 1983–1984.

## **Contract research**

IDRC administers research projects on behalf of other donor organizations. Funds for such projects are provided by the donor and are reported in the Centre's financial records when project disbursements occur. Donor funds in excess of recorded expenditures are reported as a liability on the Centre's balance sheet. For the 1983–1984

fiscal year, contract research expenditures totaled \$0.4 million. This area of activity is expected to increase substantially in 1984–1985.

## **Equity of Canada**

The equity account decreased \$0.1 million to a total of \$7.9 million as at March 31, 1984, whereas the estimated level was \$6.3 million. Of the \$7.9 million, the largest portion pertains to the energy and cooperative program funds at \$3.3 million and \$1.0 million respectively.

## **Personnel strength**

As at March 31, 1984, IDRC person-years totaled 404.25, which was 9.4% higher than the total 369.5 reported last year. The largest portion of this increase (66.2%) was in the program divisions.

The overall person-year levels for 1984–1985 are expected to reach 452.25, an increase of 11.9% over 1983–1984. It would be impossible to maintain the Centre's high level of quality in both its research program and its administrative functions without an increased number of experts to support the major expansion projected over the next few years. Centre management is committed, in its strategic planning, that the rate of growth in personnel should not match the growth in the Centre grant.

## **Grant from Parliament of Canada**

The grant from the Parliament of Canada includes funds appropriated specifically for the Cooperative Programs and the energy program.

### **Cooperative programs**

The grant includes \$5.0 million for Cooperative Programs to support research collaboration between groups in Canada and those in developing countries with the aim of enhancing their indigenous capabilities. This additional grant was accepted on the understanding that the Cooperative Programs were not to divert the Centre from its own objectives, nor involve financial or staff resources beyond grant funds specifically received for such programs.

To comply with these conditions, the Centre has adopted a reporting basis that reflects direct expenditures for Cooperative Programs as well as allocations for Centre support and investment income. The amount allocated as investment income is based on actual cash flows related to the operations of Cooperative Programs and the actual rate of return experienced by the Centre in its investments. The amount allocated as part of research operational support, to cover services provided by the IDRC program and administrative divisions participating in Cooperative Programs, has been based on the ratio of Centre program-support costs to direct Centre program research and research related expenditures.

In 1984–1985, Cooperative Programs will receive a Parliamentary grant of \$9.1 million. It is expected that this level will support an appropriation level of \$18.8 million, an increase of 104% over the current year. A complete financial reporting of Cooperative Programs follows; the net revenue balance is available for future Cooperative Program activities:

	1984	1983
<b>Revenue</b>	<b>\$5,179,782</b>	<b>\$2,617,694</b>
Grant	5,000,000	2,500,000
Interest	179,782	117,694
<b>Expenditure</b>	<b>4,334,300</b>	<b>2,477,528</b>
Research and support		
Cooperative Programs	2,351,707	1,530,720
Other divisions	1,556,588	724,243
Allocated administration expenditure	426,005	222,565
<b>Excess of revenue over expenditure</b>	<b>845,482</b>	<b>140,166</b>
<b>Funds available at the beginning of the year</b>	<b>154,636</b>	<b>14,470</b>
<b>Funds available at the end of the year</b>	<b>\$1,000,118</b>	<b>\$ 154,636</b>

### Energy program

Pursuant to a commitment made by the Government of Canada in August 1981 at the United Nations Conference on New and Renewable Sources of Energy, additional funds of \$10 million are being provided to the Centre over the next 4 years to increase energy research in developing countries. During the years ended March 31, 1984, and March 31, 1983, \$2.0 million was received each year and included in the grants from the Parliament of Canada to the Centre, of which \$0.6 million and \$0.1 million have been spent respectively during the years. The balance of \$3.3 million remains unspent, thereby contributing to the increase in the Equity of Canada. These funds will be expended in the future on energy-related research projects approved by the Centre.

## COOPERATIVE PROGRAMS — CENTRE SUMMARY

### SUMMARY OF APPROPRIATIONS (\$000) as at March 31, 1984

	Approved budget 1984-1985	Approved budget 1983-1984	Approved appropriations	Balance
<b>Cooperative Projects</b>	<b>\$15,200</b>	<b>\$6,825</b>	<b>\$6,862</b>	<b>\$ (37)</b>
Agriculture, Food and Nutrition Sciences	3,100	1,500	1,538	(38)
Health Sciences	675	600	668	(68)
Social Sciences	1,200	700	935	(235)
Information Sciences	500	500	—	500
Fellowships and Awards	450	—	250	(250)
Communications	25	25	27	(2)
Cooperative Programs	9,250	3,500	3,444	56
<b>Division Activity Projects</b>	<b>\$ 1,235</b>	<b>\$ 755</b>	<b>\$ 732</b>	<b>\$ 23</b>
Agriculture, Food and Nutrition Sciences	160	70	85	(15)
Health Sciences	35	30	21	9
Social Sciences	130	75	78	(3)
Information Sciences	80	50	121	(71)
Cooperative Programs	830	530	427	103
<b>Technical Support</b>	<b>\$ 1,088</b>	<b>\$ 757</b>	<b>\$ 507</b>	<b>\$250</b>
Cooperative Programs	614	411	301	110
Other divisions (imputed)	474	346	206	140
<b>Division Management</b>	<b>\$ 539</b>	<b>\$ 474</b>	<b>\$ 439</b>	<b>\$ 35</b>
Cooperative Programs	369	293	331	(38)
Other divisions (imputed)	170	181	108	73
<b>Administration (imputed)</b>	<b>\$ 708</b>	<b>\$ 466</b>	<b>\$ 426</b>	<b>\$ 40</b>
<b>Total</b>	<b>\$18,770</b>	<b>\$9,277</b>	<b>\$8,966</b>	<b>\$311</b>



## CENTRE TOTALS

### FINANCIAL HIGHLIGHTS (\$000)

	Budget 1984	Actual 1984	Budget vs actual (%) variance)	Actual 1983	1983 vs 1984 (%) change)
<b>FINANCIAL ACTIVITY</b>					
<b>Revenue</b>	<b>\$69,800</b>	<b>\$70,039</b>	<b>0.3</b>	<b>\$62,146</b>	<b>12.7</b>
Grant from Parliament of Canada	62,400	62,400	—	56,700	10.1
Cooperative Programs	5,000	5,000	—	2,500	100.0
Investment and other income	2,400	2,639	10.0	2,946	(10.4)
<b>Expenditure</b>	<b>\$72,007</b>	<b>\$70,174</b>	<b>(2.5)</b>	<b>\$59,117</b>	<b>18.7</b>
Existing projects	30,445	29,132	(4.3)	24,919	16.9
New projects	19,086	18,542	(2.9)	15,078	23.0
Regional and liaison offices	3,486	3,478	(0.2)	2,764	25.8
Technical support	9,273	8,704	(6.1)	7,446	16.9
Division management	3,078	3,377	9.7	3,045	10.9
Administration	6,639	6,941	4.5	5,865	18.3
<b>Excess of (expenditure over revenue) revenue over expenditure</b>	<b>\$ (2,207)</b>	<b>\$ (135)</b>	<b>93.9</b>	<b>\$ 3,029</b>	<b>(104.4)</b>
<b>PROGRAM ACTIVITY</b>					
<b>Appropriations</b>	<b>\$93,489</b>	<b>\$93,498</b>	<b>0.0</b>	<b>\$74,395</b>	<b>25.7</b>
New projects	71,013	70,998	0.0	55,275	28.4
Regional and liaison offices	3,486	3,478	(0.2)	2,764	25.8
Technical support	9,273	8,704	(6.1)	7,446	16.9
Division management	3,078	3,377	9.7	3,045	10.9
Administration	6,639	6,941	4.5	5,865	18.3
<b>Commitments</b>	<b>\$84,426</b>	<b>\$88,011</b>	<b>4.2</b>	<b>\$67,842</b>	<b>29.7</b>
Projects	61,950	65,511	5.7	48,722	34.5
Regional and liaison offices	3,486	3,478	(0.2)	2,764	25.8
Technical support	9,273	8,704	(6.1)	7,446	16.9
Division management	3,078	3,377	9.7	3,045	10.9
Administration	6,639	6,941	4.5	5,865	18.3

*Above data do not include amounts related to contract research.*



## CENTRE TOTALS

### FINANCIAL HIGHLIGHTS (\$000)

	Budget 1985	Actual 1984	Actual 1983	Actual 1982	Actual 1981
<b>RESULTS OF OPERATIONS</b>					
<b>Revenue</b>	<b>\$ 83,500</b>	<b>\$ 70,039</b>	<b>\$ 62,146</b>	<b>\$ 50,507</b>	<b>\$ 44,181</b>
Grant from Parliament of Canada	71,900	62,400	56,700	46,200	42,000
Cooperative Programs	9,100	5,000	2,500	1,000	—
Investment and other income	2,500	2,639	2,946	3,307	2,181
<b>Expenditure</b>	<b>\$ 85,180</b>	<b>\$ 70,174</b>	<b>\$ 59,117</b>	<b>\$ 49,612</b>	<b>\$ 42,875</b>
Development research	49,885	41,499	34,662	30,276	26,766
Research related activities	7,878	6,175	5,335	4,134	2,985
Research operational support	19,468	15,559	13,255	10,467	9,134
Administration	7,949	6,941	5,865	4,735	3,990
<b>Excess of (expenditure over revenue) revenue over expenditure</b>	<b>\$ (1,680)</b>	<b>\$ (135)</b>	<b>\$ 3,029</b>	<b>\$ 895</b>	<b>\$ 1,306</b>
<b>PROGRAM ACTIVITY</b>					
<b>Appropriations</b>	<b>\$120,035</b>	<b>\$ 93,498</b>	<b>\$ 74,395</b>	<b>\$ 60,784</b>	<b>\$ 49,892</b>
New projects	92,618	70,998	55,275	45,582	36,768
Regional and liaison offices	4,299	3,478	2,764	2,340	2,066
Technical support	11,221	8,704	7,446	5,787	4,888
Division management	3,947	3,377	3,045	2,340	2,180
Administration	7,950	6,941	5,865	4,735	3,990
<b>Commitments</b>	<b>\$106,946</b>	<b>\$ 88,011</b>	<b>\$ 67,842</b>	<b>\$ 55,216</b>	<b>\$ 48,123</b>
Projects	79,529	65,511	48,722	40,014	34,999
Regional and liaison offices	4,299	3,478	2,764	2,340	2,066
Technical support	11,221	8,704	7,446	5,787	4,888
Division management	3,947	3,377	3,045	2,340	2,180
Administration	7,950	6,941	5,865	4,735	3,990
<b>Outstanding commitments</b>	<b>\$ 83,400</b>	<b>\$ 64,000</b>	<b>\$ 49,100</b>	<b>\$ 41,380</b>	<b>\$ 39,800</b>

*Above data do not include amounts related to contract research.*

**INTERNATIONAL DEVELOPMENT RESEARCH CENTRE**  
**TOTAL PERSONNEL STRENGTH AND PERSON-YEAR LEVELS AND PROJECTIONS**

	Approved 1984-1985		Actual March 31, 1984		Actual March 31, 1983	
	Positions	Person- years	Personnel strength	Person- years	Personnel strength	Person- years
<b>Program divisions</b>	<b>309</b>	<b>298.5</b>	<b>265</b>	<b>264</b>	<b>239</b>	<b>241</b>
Agriculture, Food and Nutrition Sciences	52	51	43	43.75	43	42.25
Health Sciences	33	29.5	23	20.25	21	19.75
Social Sciences	49	48	47	46.25	41	40
Information Sciences	35	34.5	26	28	26	26.75
Project related staff	45	44.5	45	46	42	42
Cooperative Programs	18	15.5	12	10	7	7
Office of Planning and Evaluation	10	10	11	11.25	11	10.5
Regional and Liaison Offices	11	10.5	8	7.75	7	7
Fellowships and Awards	11	10.5	9	9	6	7
Communications	45	44.5	41	41.75	35	38.75
<b>General management</b>	<b>154</b>	<b>151.25</b>	<b>144</b>	<b>138</b>	<b>124</b>	<b>124.5</b>
Executive Office	21	20.5	18	13	8	9.5
Office of the Secretary and General Counsel	20	19.75	20	19.25	19	17.75
Office of the Comptroller General and Treasurer	91	89.5	87	87	79	82
Human Resources	17	16.5	15	14.5	14	12.25
Internal Audit	5	5	4	4.25	4	3
<b>Secondments</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2.25</b>	<b>2</b>	<b>4</b>
<b>Sabbatical/study leave provision</b>	<b>—</b>	<b>0.5</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>Total</b>	<b>465</b>	<b>452.25</b>	<b>411</b>	<b>404.25</b>	<b>365</b>	<b>369.5</b>

*Above data exclude employees hired locally by regional offices and project advisers.*



AUDITOR GENERAL OF CANADA

VÉRIFICATEUR GÉNÉRAL DU CANADA

AUDITOR'S REPORT

To the International Development Research Centre  
and  
The Honourable Jean Chrétien, P.C., M.P.  
Secretary of State for External Affairs

I have examined the balance sheet of the International Development Research Centre as at March 31, 1984 and the statements of operations, equity of Canada and changes in financial position for the year then ended. My examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as I considered necessary in the circumstances.

In my opinion, these financial statements present fairly the financial position of the Centre as at March 31, 1984 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

A handwritten signature in blue ink, appearing to read "Ray Dubois".

Raymond Dubois, C.A.  
Deputy Auditor General  
for the Auditor General of Canada


Ottawa, Canada  
June 4, 1984

# INTERNATIONAL DEVELOPMENT RESEARCH CENTRE

## BALANCE SHEET as at March 31, 1984

	1984	1983
<b>ASSETS</b>		
<b>Current</b>		
Cash	\$ 292,165	\$ 339,798
Investments (Note 3)	16,379,708	14,667,511
Accounts receivable	685,257	688,017
Prepaid expenses	661,244	345,391
	<u>18,018,374</u>	<u>16,040,717</u>
Recoverable deposits	182,806	153,158
Property and equipment (Note 4)	3,501,636	2,847,736
	<u>\$ 21,702,816</u>	<u>\$ 19,041,611</u>
<b>LIABILITIES</b>		
<b>Current</b>		
Accounts payable and accrued liabilities (Note 5)	\$ 10,736,463	\$ 8,451,515
Funds provided for contract research	387,985	132,673
Obligation under capital lease	58,966	—
	<u>11,183,414</u>	<u>8,584,188</u>
<b>Long-term</b>		
Obligation under capital lease (Note 6)	345,233	—
Accrued employee separation benefits	2,255,458	2,402,937
	<u>2,600,691</u>	<u>2,402,937</u>
	<u>13,784,105</u>	<u>10,987,125</u>
<b>EQUITY</b>		
<b>Equity of Canada</b>	<u>7,918,711</u>	<u>8,054,486</u>
	<u>\$ 21,702,816</u>	<u>\$ 19,041,611</u>

Approved:

  
Comptroller General  
and Treasurer

  
President

# INTERNATIONAL DEVELOPMENT RESEARCH CENTRE

## STATEMENT OF OPERATIONS for the year ended March 31, 1984

	1984	1983
<b>EXPENDITURE</b>		
<b>Development research</b>		
Project grants	\$ 35,028,345	\$ 29,901,338
Centre projects	6,470,802	4,760,359
	<u>41,499,147</u>	<u>34,661,697</u>
<b>Research related activities</b>		
Project development and support	3,197,026	2,603,093
Information dissemination	1,839,571	1,708,522
Development research library	1,138,760	1,024,037
	<u>6,175,357</u>	<u>5,335,652</u>
<b>Research operational support</b>		
Technical support	8,704,415	7,446,150
Regional and liaison offices	3,477,706	2,763,436
Division management	3,376,809	3,045,380
	<u>15,558,930</u>	<u>13,254,966</u>
<b>Contract research</b>	<u>436,935</u>	<u>311,401</u>
<b>Total research and support expenditure (Schedule 1)</b>	<u>63,670,369</u>	<u>53,563,716</u>
<b>Administration expenditure (Schedule 2)</b>	<u>6,940,920</u>	<u>5,864,982</u>
	<u>70,611,289</u>	<u>59,428,698</u>
<b>REVENUE</b>		
Grant from Parliament of Canada	67,400,000	59,200,000
Investment and other income	2,638,579	2,945,929
Contract research	436,935	311,401
	<u>70,475,514</u>	<u>62,457,330</u>
<b>EXCESS OF (EXPENDITURE OVER REVENUE)</b>		
<b>REVENUE OVER EXPENDITURE</b>	<u>\$ (135,775)</u>	<u>\$ 3,028,632</u>

**INTERNATIONAL DEVELOPMENT RESEARCH CENTRE**

**STATEMENT OF EQUITY OF CANADA  
for the year ended March 31, 1984**

	1984	1983
<b>BALANCE AT THE BEGINNING OF THE YEAR</b>	<b>\$ 8,054,486</b>	<b>\$ 5,025,854</b>
Excess of (expenditure over revenue) revenue over expenditure	<u>(135,775)</u>	<u>3,028,632</u>
<b>BALANCE AT THE END OF THE YEAR</b>	<b><u>\$ 7,918,711</u></b>	<b><u>\$ 8,054,486</u></b>

# INTERNATIONAL DEVELOPMENT RESEARCH CENTRE

## STATEMENT OF CHANGES IN FINANCIAL POSITION for the year ended March 31, 1984

	1984	1983
<b>SOURCE OF FUNDS</b>		
Operations		
Excess of (expenditure over revenue) revenue over expenditure	\$ (135,775)	\$ 3,028,632
Items not affecting funds		
Depreciation and amortization	645,832	503,391
Provision for employee separation benefits	200,514	506,511
Loss (Gain) on disposal of property and equipment	365	(9,768)
	<u>710,936</u>	<u>4,028,766</u>
Increase in current items other than cash and investments	2,286,133	1,474,603
Obligation under capital lease	366,574	—
Proceeds on disposal of property and equipment	15,099	64,035
	<u>3,378,742</u>	<u>5,567,404</u>
<b>USE OF FUNDS</b>		
Additions to property and equipment	1,315,196	1,084,865
Payment of employee separation benefits	347,993	318,689
Increase in recoverable deposits	29,648	43,119
Repayment of obligation under capital lease	21,341	—
	<u>1,714,178</u>	<u>1,446,673</u>
<b>INCREASE IN FUNDS</b>	<b>1,664,564</b>	<b>4,120,731</b>
<b>FUNDS AT THE BEGINNING OF THE YEAR</b>	<b>15,007,309</b>	<b>10,886,578</b>
<b>FUNDS AT THE END OF THE YEAR</b>	<b>\$ 16,671,873</b>	<b>\$ 15,007,309</b>
<b>Represented by:</b>		
Cash	\$ 292,165	\$ 339,798
Investments	16,379,708	14,667,511
<b>TOTAL</b>	<b>\$ 16,671,873</b>	<b>\$ 15,007,309</b>



## INTERNATIONAL DEVELOPMENT RESEARCH CENTRE

### NOTES TO FINANCIAL STATEMENTS

March 31, 1984

#### 1. Authority and objective

The International Development Research Centre as a Corporation without share capital was established in 1970 by the Parliament of Canada through the International Development Research Centre Act. The annual grant received from the Parliament of Canada is pursuant to External Affairs Votes 45 for the years ended March 31, 1984 and 1983.

The objective of the Centre is to initiate, encourage, support, and conduct research into the problems of the developing regions of the world and into the means for applying and adapting scientific, technical, and other knowledge to the economic and social advancement of those regions.

#### 2. Significant accounting policies

The financial statements have been prepared in accordance with Canadian generally accepted accounting principles and reflect the following policies:

##### Property and equipment

Property and equipment are recorded at cost and depreciated over their estimated useful lives. Leasehold improvements are amortized over the terms of the respective leases. The methods and rates used to provide for the depreciation and amortization of property and equipment are as follows:

	Method	Rate
Computer hardware and systems software	Straight line	20%
Leasehold improvements	Straight line	$6\frac{2}{3} - 20\%$
Office furniture and equipment	Diminishing balance	20%
Vehicles	Diminishing balance	30%
Equipment under capital lease	Straight line	20%

##### Research expenditure

Certain expenditures for development research, research related activities, and contract research are charged to operations when disbursed and as they become due under the terms of contractual agreements. All other research expenditure is recorded on an accrual basis.

##### Contract research

The Centre enters into agreements to undertake contract research on behalf of various donor agencies. The Centre recognizes contract research revenue at the time that the related expenditure is incurred. Funds received in excess of contract research expenditures incurred are reflected in current liabilities.

### Pension costs

Employees of the Centre are covered by the Public Service Superannuation Plan administered by the Government of Canada. Contributions to the Plan are required from the employees and the Centre. These contributions represent the total liability of the Centre and are recognized in the accounts on a current basis.

### Income taxes

The Centre is exempt from any liability for income taxes.

### Foreign currency translation

Monetary assets and liabilities are translated into Canadian dollars at the rate of exchange in effect at year-end. Nonmonetary assets are translated at rates prevailing at the respective transaction dates. Foreign currency transactions are translated into Canadian dollars by the use of an average exchange rate that closely approximates the rate in effect at the transaction date. Exchange gains and losses are included in operations for the current period.

## 3. Investments

Investments consist of short-term notes and deposits and treasury bills held with:

	1984	1983
Canadian chartered banks	\$ 9,448,940	\$ 9,744,231
Governments and governmental enterprises	5,949,218	—
Commercial enterprises	981,550	1,950,582
Trust and mortgage companies	—	2,441,915
Foreign bank — exchange certificates	—	530,783
	<u>\$ 16,379,708</u>	<u>\$ 14,667,511</u>

## 4. Property and equipment

	1984			1983
	Cost	Accumulated depreciation and amortization	Net	Net
Computer hardware and systems software	\$ 1,976,787	\$ 731,246	\$ 1,245,541	\$ 1,348,653
Leasehold improvements	1,750,953	898,473	852,480	679,099
Office furniture and equipment	1,258,208	620,732	637,476	524,703
Vehicles	573,915	245,707	328,208	295,281
Equipment under capital lease	437,931	—	437,931	—
	<u>\$ 5,997,794</u>	<u>\$ 2,496,158</u>	<u>\$ 3,501,636</u>	<u>\$ 2,847,736</u>

## 5. Accounts payable and accrued liabilities

	1984	1983
Accrued liabilities — projects	\$ 7,491,383	\$ 5,707,656
Accrued annual and other leave benefits	1,421,118	1,384,102
Other	1,823,962	1,359,757
	<u>\$ 10,736,463</u>	<u>\$ 8,451,515</u>

## 6. Long-term obligation under capital lease

The future minimum lease payments under capital lease are as follows:

Year ending March 31	
1985	\$ 108,636
1986	108,636
1987	108,636
1988	108,636
1989	<u>108,636</u>
Total future minimum lease payments	543,180
Less amount representing interest at 13.5%	<u>138,981</u>
Present value of the obligation	404,199
Less current portion	<u>58,966</u>
	<u>\$ 345,233</u>

The obligation under capital lease is recorded at an amount equal to the present value of the minimum lease payments using the interest rate of 13.5% implicit in the lease.

## 7. Operating leases

The Centre has entered into various lease arrangements for office premises, equipment, and staff accommodation, in Canada and in various countries. The total payments under such lease arrangements will be as follows:

Year ending March 31	
1985	\$ 2,319,027
1986	1,559,348
1987	1,194,943
1988	603,638
1989	<u>16,300</u>
	<u>\$ 5,693,256</u>

## 8. Contractual commitments — project grants and project development

The Centre is committed to make payments totaling up to \$64,000,000 during the next 4 years subject to funds being provided by Parliament and subject to compliance by recipients with the terms of project agreements. The Centre has also submitted formal

grant offers to prospective recipients totaling \$21,300,000 and is awaiting acceptance of these offers.

## **9. Contingencies**

The Centre is a defendant in an action for damages and costs allegedly sustained by the plaintiff. Management and counsel are of the opinion that the Centre has defenses against any significant claim and accordingly no provision has been made in the financial statements in respect of this claim.

## **10. Comparative figures**

The 1983 comparative figures have been reclassified to conform to the statement presentation adopted in 1984.

## INTERNATIONAL DEVELOPMENT RESEARCH CENTRE

SCHEDULE OF RESEARCH AND SUPPORT EXPENDITURE  
for the year ended March 31, 1984

	1984				1983
	Development research	Research related activities	Research operational support	Contract research	Total
<b>Programs</b>					
Agriculture, Food and Nutrition Sciences	\$ 14,072,417	\$ 357,261	\$ 3,178,334	\$ 244,327	\$ 17,852,339
Social Sciences	10,445,904	697,456	3,118,533	24,873	14,286,766
Information Sciences	5,490,832	437,361	1,801,025	12,834	7,742,052
Health Sciences	5,588,048	264,002	1,438,597	17,373	7,308,020
Fellowships and Awards	3,564,201	67,298	—	—	3,631,499
Cooperative Programs	1,385,509	334,584	631,614	23,596	2,375,303
					\$ 15,702,448
					12,473,020
					6,254,468
					6,356,493
					2,916,450
					1,474,230
<b>Program related activities</b>					
Regional and Liaison Offices	—	488,023	3,477,706	—	3,965,729
External Liaison and Relations	7,236	192,098	607,094	—	806,428
Information Dissemination	129,024	1,839,571	1,306,027	—	3,274,622
Development Research Library	—	1,138,760	—	—	1,138,760
Special Program Activities	815,976	358,943	—	113,932	1,288,851
	\$ 41,499,147	\$ 6,175,357	\$ 15,558,930	\$ 436,935	\$ 63,670,369
					\$ 53,563,716

## INTERNATIONAL DEVELOPMENT RESEARCH CENTRE

**SCHEDULE OF ADMINISTRATION EXPENDITURE**  
**for the year ended March 31, 1984**

	<b>1984</b>	<b>1983</b>
Salaries and benefits	\$ 4,623,727	\$ 3,954,254
Rent and accommodation	515,448	461,967
Office and sundry	490,853	404,352
Travel and relocation	414,663	224,513
Depreciation and amortization	358,925	268,505
Professional and special services	203,285	180,197
Governors' meetings	171,286	175,778
Telecommunications	123,850	130,289
Interest	23,924	—
Insurance	14,959	65,127
	<u><u>\$ 6,940,920</u></u>	<u><u>\$ 5,864,982</u></u>

## Fellowships

The general purpose of the Fellowships and Awards Division is to assist in the training and upgrading of the qualifications of individual researchers, managers, and planners in scientific fields related to the broad mandate of IDRC. The Division's program aims at building their research capabilities and, thus, strengthening research institutions in the Third World.

The Fellowships and Awards Division endeavours to meet these objectives by offering various categories of awards, which vary in nature and number, according to changing needs as perceived by the Centre. The program focuses principally on individuals from the least-developed countries and places greater emphasis on professional upgrading than on basic training. Tenure takes place in centres of excellence located, in order of priority, locally, regionally, in Canada, or in another developed country. IDRC-award holders are expected to return to their home country at the end of tenure.

Although the focus is on training and upgrading scientists and professionals from developing countries in fields that parallel the research interests of IDRC, support for Canadian professionals in development-related activities remains an important element of the program and complements the Centre's commitment to place Canadian expertise at the service of the developing countries through cooperative research projects.

The award categories in 1983–1984 were:

- Research fellowships;
- Pearson fellowships;
- Program-related awards;
- Project-related awards; and
- Young Canadian researchers.

In addition to the individual awards listed below, the Centre supported the enrollment at the Hague Academy of International Law of 20 young trainees from developing countries, who will benefit both from the training and from the exposure to international law.

As well, the Division sponsored 11 group-training programs. These are included in the project summaries on page 28.

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### Research fellowships

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The research fellowships have enabled senior researchers from developing countries and Canada to spend up to 12 months producing a work of mutual concern and benefit to IDRC and the fellow. Fiscal year 1983–1984 was the last year in which the awards were offered. During the year, fellowships were granted to seven researchers. Five are listed in the project summaries, on page 29; the other two were:



Jorge Graciarena, Chile

To complete a study on comparative analysis of the transitions to democracy in Latin American southern-cone countries.

Location: Buenos Aires, Argentina

Ahmed Mohiddin, Kenya

To continue research on the theme "African version of social democracy" and to conduct seminars.

Location: Norman Paterson School of International Affairs, Carleton University, Ottawa, Canada

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### Pearson fellowships

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The Pearson fellowships are named after former Canadian Prime Minister Lester B. Pearson who was Chairman of IDRC's Board of Governors from 1970 until his death in December 1972. They are offered to young public servants from developing countries who have had at least 3 years' working experience in the service of their government. Candidates are nominated through Canadian missions abroad and IDRC's regional offices. Pearson fellows spend 9–12 months in Canada where they pursue an individual nondegree study program consisting of practical work and academic studies.

During 1983–1984, nine Pearson fellowships were awarded:

Maria Carlota De Souza Paula, Brazil

To study science and technology policy.

Location: Centre for International Research and Training, Carleton University, Ottawa, Canada

Dipendra P. Dhakal, Nepal

To study public administration and financial management.

Location: Carleton University, Ottawa, Canada

Gnahoua Honore Godo, Ivory Coast

To study soil science and to gain practical experience in federal and provincial institutions.

Location: Faculté des Sciences de la Terre, Laval Université, Quebec

Sosaite Lene, Samoa

To study and gain practical experience with the Public Service Commission of the Government of Nova Scotia.

Location: School of Public Administration, Dalhousie University, Halifax, Canada

Dae-Hyun Park, South Korea

To study the development, implementation and evaluation of international technical cooperation programs.

Locations: International Development Research Centre and International De-

velopment Office, Association of Universities and Colleges of Canada, Ottawa, Canada

V.K. Rugambwa, Tanzania

To study management, administration, and social-research methodology and to gain practical experience with agricultural institutions and agencies.

Location: University of Guelph, Guelph, Canada

Isidro Sobrecarey, Philippines

To gain practical experience at the Policy Development and Analysis Directorate of the Planning and Coordination Branch, Ministry of Public Works.

Location: Public Works Canada, Ottawa, Canada

Edgardo Valencia, Mexico

To study and gain practical experience in the area of food policy and production.

Location: University of Guelph, Guelph, Canada

Su Yan, China

To study public administration, particularly in the area of science and technology policy.

Location: University of Victoria, Victoria, Canada

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## Program-related awards

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Program-related awards are aimed at increasing the human resource base of Third World research institutions. These awards are intended for researchers as well as administrative and financial personnel. Proposed training programs, generally not exceeding 24 months, must be endorsed by the candidates' institutions and vary from practical attachments to academic studies leading to a degree (graduate studies, preferably at the master's level). Studies may take place in a Third World country or Canada or, under special circumstances, in a developed country other than Canada. Members of IDRC's regional staff review applications and recommend candidates for awards. After consultation with program staff in Ottawa, final approval is given by the Fellowships and Awards Division. The following people received program-related awards in 1983–1984:

- P. Abario, C. Candasan, S. Koonlarp, M. Laron, and D. Reyes, Network of Agricultural Centres, Asia  
To participate in a training course on integrated fish farming.  
Location: Regional Lead Centre, Wuxi, China
- Jeanne Adiwinata, Indonesia  
To study the culture of amniotic fluid cells (cytogenetics).  
Location: Faculté de Médecine, Laboratoire de Cytogénétique Médicale, Paris, France
- Zaida Alonzo and Lerma Amansec, Philippines  
To undertake on-the-job training in project accounting and financial monitoring and evaluation of vouchers.  
Location: International Development Research Centre, Singapore
- Fatimah Arshad, Malaysia  
To complete the requirements for a doctoral program in food science.  
Location: University of British Columbia, Vancouver, Canada
- K.T. Augusthy, Nepal  
To undertake doctoral studies in biology.  
Location: McGill University, Montreal, Canada
- Amadou Ba, Mauritania  
To obtain a master's degree in demography.  
Location: Université de Montréal, Montreal, Canada
- Devindra Bir Basnyet, Nepal  
To take a master's degree course in industrial relations, with specialization in human resource development.  
Location: Institute of Industrial Relations, University of the Philippines, Quezon City, Philippines
- Gregory Begumisa, Uganda  
To study and conduct predoctoral research on industrialization strategies and technology transfer in Kenyan metal-working and capital-goods production.  
Location: Carleton University, Ottawa, Canada
- N'Golo Coulibaly, Mali  
To complete a doctoral thesis in administration and education policy.  
Location: Université Laval, Quebec, Canada
- N. Diah and M. Tohiyat, Malaysia  
To take a training course on fisheries economics.  
Location: Universiti Pertanian, Serdang, Malaysia
- Patricia Ellis, Barbados  
To complete requirements for a master's degree in adult education.  
Location: University of Southampton, Southampton, United Kingdom
- Wondemagegnehu Eshetu, Ethiopia  
To study drug policy and control in Canada.  
Location: Health Protection Branch, Health and Welfare Canada, Ottawa, Canada
- Clarita Franco De Machado, Colombia  
To pursue postdoctoral studies in education.  
Location: Ontario Institute for Studies in Education, Toronto, Canada
- John W.K. Gara, Uganda  
To study policy formation and negotiation

- techniques for petroleum development.  
Location: Commonwealth Secretariat,  
London, United Kingdom
- Rita Giacaman, Jordan  
To study sociology of development with  
emphasis on the medical aspects and  
issues relating to women and health.  
Location: University of Essex, Colchester,  
United Kingdom
- Bhupendra P. Giri, Sri Lanka  
To study toward a master of science  
degree in agricultural economics.  
Location: University of Peradeniya,  
Peradeniya, Sri Lanka
- Gu Bin-He, Djati Widagodo, Leda Handog,  
Nopadol Phuwapanish, Abdul Rab Qureshi,  
K.A. Dongre, and Kishor K. Upadhyaya, Net-  
work of Agricultural Centres, Asia  
To undertake studies at the fourth  
aquaculture training program for senior  
aquaculturalists.  
Location: Southeast Asian Fisheries De-  
velopment Center, Iloilo, Philippines
- Celina Guzman de Faerron, Costa Rica  
For graduate training in paediatrics.  
Location: The Hospital for Sick Children,  
Toronto, Canada
- Mohamed S. Halfani, Tanzania  
To complete a doctoral thesis entitled  
"Externally Financed Development in  
Tanzania: The Incongruence Between  
Goals and Outcomes."  
Location: University of Toronto, Toronto,  
Canada
- Dr Jianyuan Huang, China  
To undertake training in the field of  
scientific and technical information.  
Locations: Canadian Institute for Scientific  
and Technical Information and Interna-  
tional Development Research Centre,  
Ottawa, Canada
- Alfred I. Ihekoronye, Nigeria  
To consult resource materials and com-  
plete the writing of a textbook on basic  
food science and technology for the  
tropics.  
Location: University of Alberta, Edmon-  
ton, Canada
- Oscar Jaramillo, Colombia  
To pursue a master's degree in communi-  
cations.  
Location: University of Texas at Austin,  
Austin, USA
- N.M. Jayasekera, Sri Lanka  
To work on the design and development  
of a debt-recording management system.  
Location: Commonwealth Secretariat,  
London, United Kingdom
- Humberto Jimenez, Costa Rica  
To study toward a master's degree in  
information sciences (forestry).  
Location: Universidade Federal do Para-  
ná, Curitiba, Brazil
- Ezekiel Kalipeni, Malawi  
To conduct field work for a doctoral thesis  
on internal migration and development in  
Malawi.  
Location: University of Malawi, Zomba,  
Malawi
- Oumar Kane, Senegal  
To study and obtain a certificate in nurs-  
ing, with specialization in community  
health.  
Location: Université de Montréal,  
Montreal, Canada
- Anacleti K. Kashuliza, Tanzania  
To study toward a master of science  
degree in agricultural economics.  
Location: University of Guelph, Guelph,  
Canada
- Ismail B.A. Kechik, Malaysia  
To undertake a training course on fisheries  
economics for noneconomists.  
Location: Universiti Pertanian Malaysia,  
Serdang, Malaysia
- Victoria Kessi  
To study toward a graduate diploma in  
education.  
Location: Department of Secondary Edu-  
cation, University of Manitoba, Winnipeg,  
Canada
- Nelson K. Kile, Solomon Islands  
To pursue a training program in seafood  
processing.  
Location: College of Fisheries, St John's,  
Canada
- Bingjun Lei, China  
To pursue a master of science degree in  
design, measurement, and evaluation.  
Location: McMaster University, Hamilton,  
Canada

- Pisake Lumbiganon, Thailand**  
To participate in 15 summer seminars on population.  
Location: East West Population Institute, Honolulu, USA
- Sundarshan Mathema, Nepal**  
To undertake field research for a doctoral thesis in agricultural development economics for the University of the Philippines at Los Baños.  
Location: Kathmandu, Nepal
- Pius Raj Mishra, Nepal**  
To undertake a master's degree program in development communication.  
Location: University of the Philippines at Los Baños, Philippines
- Sonia Munoz de Tigreros, Colombia**  
To pursue a master of arts degree in communication.  
Location: Universidad del Valle, Cali, Colombia
- Aliaga J. Murillo, Bolivia**  
To undertake studies leading to a certificate in adult education.  
Location: Ontario Institute for Studies in Education, Toronto, Canada
- Robert Mwanga, Kenya**  
To pursue graduate studies leading to a master of science degree in agronomy (crop production and management).  
Location: University of the Philippines at Los Baños, Philippines
- Zong-Zan Ni, China**  
To carry out postgraduate studies in clinical epidemiology.  
Location: McMaster University, Hamilton, Canada
- Gérard Nimpagaritse, Burundi**  
To study toward a master's degree in mining engineering.  
Location: École Polytechnique, Montreal, Canada
- Freddie R. Obligacion, Philippines**  
To undertake a master's degree program in information and computer science.  
Location: East West Communication Institute, Honolulu, USA
- Johnny Roy Ortiz, Peru**  
To pursue a master's degree in rural development.  
Location: Instituto de Enseñanza e Investigación en Ciencias Agrícolas, Chapingo, Mexico
- Kityo Wandu Paddy, Uganda**  
To pursue a master of science degree in forestry.  
Location: University of Dar es Salaam, Morogoro, Tanzania
- Subbiah Ponnuraj, India**  
To study toward a master's degree in public-health sciences.  
Location: National University of Singapore, Singapore
- John Quansah, Ghana**  
To study toward a master's degree in agricultural engineering (tropical crop storage and processing).  
Location: Cranfield Institute of Technology, Silsoe, United Kingdom
- Dr N.H. Ravindranath, India**  
To undertake studies on energy and material flow in a regional ecosystem and to produce a scientific report on the work.  
Location: University of Sussex, Brighton, United Kingdom
- Julio Valladolid Rivera, Peru**  
To write a book based on research conducted on the cultivation of four tuber crops of the High Andes.  
Location: Centro Agronómico Tropical de Investigación y Enseñanza, Costa Rica
- Luis Angel Montoya Salas, Costa Rica**  
To complete a doctoral thesis on television in Costa Rica.  
Location: Université de Paris, France
- Samora Sefapaano, Botswana**  
To carry out field work for a doctoral thesis entitled "The Political Economy of Adult Education in Botswana with Special Reference to the Agricultural Sector."  
Location: University of Botswana, Gaborone, Botswana
- Rama Nath Sharma, Nepal**  
To undertake a master of science program in zoology.  
Location: University of Guelph, Guelph, Canada
- Ausayakhun Somsanguan, Thailand**  
To pursue a master of health science degree program.  
Location: Johns Hopkins University, Baltimore, USA

Yvonne St. Hill, Barbados

To pursue a master's degree in environmental studies.

Location: Dalhousie University, Halifax, Canada

Luis Tejada, Spain (Colombian resident)

To complete a doctoral thesis entitled "Basis for a Participatory TV Colombian Policy — Design of Open Access Model for Representative Social Groups."

Locations: Universidad Externado de Bogotá, Bogotá, Colombia, and University of Barcelona, Barcelona, Spain

William Eboso Umbima, Kenya

To study and observe documentation services and information handling.

Location: Centre for Overseas Pest Research, London, United Kingdom

Ramiro Wahrhaftig, Brazil

To attend an international course on rural energy planning.

Location: Twente University of Technology, Enschede, Netherlands

B. Widada, Indonesia

To pursue a master's degree in education.

Location: Macquarie University, North Ryde, Australia

Xu Dunhuang and Xu Lin, China

To participate in an advanced training program in educational planning and administration.

Location: International Institute for Educational Planning, Paris, France

Marc Yamande, Central African Republic

To participate in a public health course (toward a master's degree) at the Centre régional de développement sanitaire.

Location: World Health Organization, Brazzaville, Central African Republic

Osman Ziko, Egypt

To attend courses in administrative studies and visit major Canadian newspapers.

Location: York University, Toronto, Canada

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### Project-related awards

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IDRC's project-related awards are intended for researchers who have been or will be associated with IDRC-supported projects. Training programs vary from short-term courses tailored to the needs of the project, to academic studies leading to a degree (graduate studies, preferably at the master's level). As with the program-related awards, studies may take place in a Third World country or Canada or, under special circumstances, in another developed country. The duration of tenure generally does not exceed 24 months. Program directors recommend candidates for awards and final approval is given by the Fellowships and Awards Division.

Pilar Campana, Chile

To work toward a doctoral degree in anthropology.

Location: University of Durham, Durham, United Kingdom

S.A. Chamshama, Tanzania

To attend a forestry research course.

Location: University of the Philippines at Los Baños, Los Baños, Philippines

Rajesh Chandra, Fiji

To conduct fieldwork for a doctoral thesis on industrialization in Fiji.

Location: University of the South Pacific, Suva, Fiji

Peter Choo Piang Fong, Malaysia

To conduct a study on computer education in schools.

Location: Ontario Institute for Studies in Education, Toronto, Canada

Dr Cui Zhi-Jiu, China

To be trained in field and laboratory research techniques used in Canada.

Locations: University of British Columbia, Vancouver, and University of Ottawa, Ottawa, Canada

A. Desta, Ethiopia

To undertake research on strategies for improving teaching at the tertiary level with a view to preparing a manual.

Location: Queen's University, Kingston, Canada

N. Dharma, Indonesia

To receive training in fish genetics.

- Location: Dalhousie University, Halifax, Canada
- Halifa Drammeb, Gambia**  
To conduct field research as part of a training program in research management at the Natural Resources Institute of the University of Manitoba.  
Location: Auburn University, Auburn, USA
- Ramon Fogel, Paraguay**  
To complete a doctoral degree in sociology.  
Location: University of Kansas, Lawrence, USA
- Marcel Galiba, Senegal**  
To pursue doctoral studies in agronomy.  
Location: Texas A&M University, College Station, USA
- Sirisena Gamage, Sri Lanka**  
To study toward a doctoral degree in sociology.  
Location: York University, Toronto, Canada
- Belainesh Gebre-Hiwot, Ethiopia**  
To study toward a diploma in human nutrition.  
Location: London School of Hygiene and Tropical Medicine, London, United Kingdom
- Ben Nasr Hafedh, Tunisia**  
To study biological nitrogen fixation by the acacia tree.  
Location: Office de la recherche scientifique et technique outre-mer, Dakar, Sénégal
- M. Hafeez, Pakistan**  
To pursue a master's degree in sociology.  
Location: University of Saskatchewan, Saskatoon, Canada
- M.M. Hassanin, Egypt**  
To complete a doctoral thesis entitled "The Influence of Child Mortality upon Fertility in Rural Egypt."  
Location: City University, London, United Kingdom
- Berhanu Hika, Ethiopia**  
To attend the International Union of Forestry Research Organization's work conference on provenance- and genetic-improvement strategies for tropical forests.  
Location: Harare, Zimbabwe
- Bosede Folasade Iyun, Nigeria**  
To attend a short course on medical statistics.  
Location: London School of Hygiene and Tropical Medicine, London, United Kingdom
- A.M. Khurad, India**  
To gain experience in tissue culture and the production of insect cell lines.  
Location: Forest Pest Management Institute, Environment Canada, Sault Ste-Marie, Canada
- G.S. Kowero, Tanzania**  
To attend a forestry research course.  
Location: University of the Philippines at Los Baños, Los Baños, Philippines
- Gabriela Lopez, Chile**  
To study toward a doctoral degree in education.  
Location: Ontario Institute for Studies in Education, Toronto, Canada
- Manuel Marfan, Chile**  
To work on a doctoral thesis in economics.  
Location: Yale University, New Haven, USA
- Ntengua S.Y.S. Mdoe, Tanzania**  
To pursue a master of science degree in agricultural economics.  
Location: University of Guelph, Guelph, Canada
- Ociti P. Obwoya, V.G. Rushalaza, J.K.K. Msechu, and J.S. Kasonta, Uganda and Tanzania**  
To attend a workshop on farming systems.  
Location: University of Zimbabwe, Harare, Zimbabwe
- Michael Omolewa, Nigeria**  
To conduct a study of delivery systems for distance education in Canada as a prelude to similar work in Nigeria.  
Location: University of British Columbia, Vancouver, Canada
- Anny X. Rivera, Chile**  
To pursue a master's degree in education.  
Location: Harvard Graduate School of Education, Cambridge, USA
- Rigoberto Rivera, Chile**  
To complete a doctoral degree in anthropology.  
Locations: York University, Toronto,

- Canada, and University of Durham,  
Durham, United Kingdom
- A. Shiferaw and T.A. Alemayehu, Ethiopia  
To study toward doctoral degrees in geology.  
Location: Carleton University, Ottawa, Canada
- S. Sudarto, Indonesia  
To receive training in fish genetics.  
Location: Dalhousie University, Halifax, Canada
- Oleko Tambashe, Tunisia  
To complete a doctoral thesis on human fertility (social sciences).  
Location: Vrije Universiteit Brussel, Brussels, Belgium
- D. Vargas and D. Sadia, Philippines  
To attend a training course on the prevention of postharvest losses of rice paddy.  
Location: Asian Productivity Organization, Manila, Philippines
- Ismael Wong Cantera, Panama  
To study toward a master's degree at the Southeast Asian Fisheries Development Center (SEAFDEC).  
Location: SEAFDEC, Iloilo, Philippines

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### Young Canadian researchers

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- Young Canadian researchers are normally doctoral students registered in a Canadian university. The aim of this program is to encourage their involvement in scientific areas of concern to IDRC, and to give them, at the same time, exposure to problems of Third World countries. Canadian applicants studying in the following fields will be considered: agriculture, food, nutrition, health, information, sociology, policy studies, economics, education, communications, energy, earth sciences, finance, administration, and closely related fields. Students at the master's level may be considered for awards in the fields of health sciences, finance, administration, and communications. Study, placement, and research programs take place in Third World countries for a period of up to 12 months. Award holders are selected jointly by staff of IDRC's program divisions and the Fellowships and Awards Division.
- Yusuf-Ali Al-Mooji, University of Waterloo  
To undertake research on salinization of groundwater in northeastern Brazil.  
Locations: Centro de Energia Nuclear na Agricultura, São Paulo, Brazil, and University of Tucson, Tucson, USA
- Kathryn McGinnis, University of Guelph  
To conduct research on aphid resistance in cowpeas in Nigeria.  
Location: International Institute of Tropical Agriculture, Ibadan, Nigeria
- Françoise Béliveau, Université du Québec  
To conduct research on the relation between cultural penetration and technology transfer through TV programming in China.  
Location: People's University of Beijing, Beijing, China
- Richard Phinney, Journalist, Toronto  
To undertake research on the link between development and media.  
Location: National Broadcasting Commission, Port Moresby, Papua New Guinea
- Dona Bowers, Frances Kilbertus, Brenda Mulroy, and Stewart Reid, McMaster University  
To work in hospitals and on health-care projects.  
Location: Sierra Leone, Ghana, and India
- Marie Ruel, Université Laval  
To conduct research for a doctoral thesis entitled "Design and evaluation of a program to monitor vitamin A deficiency in Nicaragua."  
Location: Ministry of Education, Managua, Nicaragua
- Sarah Eldridge, Stephen Eldridge, and Caroline M. Van Es, University of Ottawa  
To gain first-hand experience of medical services.  
Locations: Queen Elizabeth II Hospital, Maseru, Lesotho, and Mohale's Hoek District Hospital, Mohale, Lesotho
- Jane Taber, Journalist, Ottawa  
To study the North-South news flow with emphasis on the issues surrounding the new world information order.  
Location: Gemini News Service, London, United Kingdom

Ricardo Samuel Trumper, University of Toronto

To undertake research on domestic labour and women's work in Chile.

Location: Facultad Latinoamericana de Ciencias Sociales, Santiago, Chile

Claudette Viens, Serge Brouillet, Martin Champagne, and Guillaume Robert, Univer-

sité de Montréal

To study tropical medicine.

Locations: Upper Volta and Cameroon

David Weiss, University of Alberta

To undertake research in agricultural economics.

Location: Centro Internacional de Agricultura Tropical, Cali, Colombia



## Publications and films

Just as the program activities of the Communications Division are concerned with the dissemination of research results in the Third World, its support function within the Centre is to publish a wide range of scientific and technical publications.

In 1983–1984, the Division published 55 books, covering most of the research areas supported by IDRC's other program divisions. The Division also operates an information program for the Centre to inform special audiences in Canada and abroad about the role of research in development. One of the key components of this program is *The IDRC Reports/Le CRDI Explore/El CIID Informa*, a quarterly magazine published in three separate language editions. It reports on the work of the Centre and provides a forum for discussion of vital development issues. It is supplemented by technical as well as wide-interest films produced within the Division.

The Division also produced a feature-article service for print media in developing countries.

A list of publications and films resulting from Centre-supported research follows. Catalogues of all those issued by the Centre are available on request.

### Centre publications

***IDRC annual report 1982–1983/Rapport annuel CRDI 1982–1983***, Ottawa, Ont., IDRC/CRDI, 1983. 144 p. IDRC-003/83e,f.

***Le monde de l'alphabétisation : politiques, recherche et action***, Ottawa, Ont., CRDI, 1983. 159 p.: ill. IDRC-117f.

***Preventing school failure: the relationship between preschool and primary education: proceedings of a workshop on preschool research held in Bogota, Colombia, 26–29 May 1981***, Ottawa, Ont., IDRC, 1983. 178 p. IDRC-172e.

***Evitando el fracaso escolar: relación entre la educación preescolar y la primaria: informe del seminario sobre investigación preescolar celebrado en Bogotá, Colombia, mayo 26–29, 1981***, Ottawa, Ont., CIID, 1983. 184 p. IDRC-172s.

***L'avenir des peuples pasteurs : compte rendu de la conférence tenue à Nairobi (Kenya) 4 au 8 août 1981***, Galaty, J. G., Aronson, D., Salzman, P. C., et Chouinard, A.,

réd., Ottawa, Ont., CRDI, 1983. 432 p.: ill. IDRC-175f.

***Aspectos relevantes de la educación primaria rural en Colombia: trabajos presentados en un seminario celebrado en Bogotá, Colombia, el 16 septiembre de 1981***, Ottawa, Ont., CIID, 1984. 102 p. IDRC-188s.

***Systèmes de conférence informatique pour les pays en développement : compte rendu d'un séminaire tenu à Ottawa (Canada) du 26 au 30 octobre 1981***, Balson, D., Drysdale, R., et Stanley, B., réd., Ottawa, Ont., CRDI, 1983. 51 p. IDRC-190f.

***Le séchage des produits alimentaires : compte rendu du colloque tenu à Edmonton, Alberta du 6 au 9 juillet 1981***, Yaciuk, G., réd., Ottawa, Ont., CRDI, 1983. 110 p.: ill. IDRC-195f.

***La pêche secondaire . . . un cadeau des mers : rapport d'une consultation technique sur l'utilisation des prises secondaires dans la pêche des crevettes, tenue à Georgetown (Guyane) 27 au 30 octobre 1981***, Ottawa, Ont., CRDI, 1983. 163 p.: ill. IDRC-198f.

**Pesca acompañante del camarón . . . un regalo del mar: informe de una consulta técnica sobre la utilización de la pesca acompañante del camarón celebrada en Georgetown, Guyana, 27-30 octubre 1981**, Ottawa, Ont., CIID, 1983. 175 p. IDRC-198s.

**Organización y conflicto: la educación primaria oficial en Colombia**, Gómez-Buendía, H., y Losada-Lora, R., Ottawa, Ont., CIID, 1984. 319 p.: ill. IDRC-199s.

**Élevage des bivalves en Asie et dans le Pacifique : compte rendu d'un colloque tenu à Singapour du 16 au 19 février 1982**, Davy, F.B., et Graham, M., réd., Ottawa, Ont., CRDI, 1983. 88 p.: ill. IDRC-200f.

**Cultivo de bivalvos en Asia y el Pacífico: trabajos presentados en un seminario celebrado en Singapur del 16 al 19 de febrero de 1982**, Davy, F.B., y Graham, M., ed., Ottawa, Ont., CIID, 1984. 94 p.: ill. IDRC-200s.

**Pompes à main communautaires : recherche et évaluation en Asie**, Sharp, D., et Graham, M., réd., Ottawa, Ont., CRDI, 1984. 80 p.: ill. IDRC-204f.

**Tecnología de bombas manuales: investigación y evaluación en Asia**, Sharp, D., y Graham, M., ed., Ottawa, Ont., CIID, 1984. 72 p.: ill. IDRC-204s.

**Le financement du développement éducationnel : compte rendu du séminaire tenu au Mont Sainte-Marie (Canada) du 19 au 21 mai 1982**, Ottawa, Ont., CRDI, 1983. 164 p. IDRC-205f.

**Basic housing: policies for urban sites, services, and shelter in developing countries**, Laquian, A.A., Ottawa, Ont., IDRC, 1983. 163 p.: ill. IDRC-208e.

**A place to live: more effective low-cost housing in Asia**, Yeung, Y.M., ed., Ottawa, Ont., IDRC, 1983. 216 p.: ill. IDRC-209e.

**Fish quarantine and fish diseases in South-east Asia: report of a workshop held in Jakarta, Indonesia, 7-10 December 1982**, Ottawa, Ont., IDRC, 1983. 79 p.: ill., IDRC-210e.

**Leuceana research in the Asian-Pacific region: proceedings of a workshop held in Singapore, 23-26 November 1982**, Ottawa, Ont., IDRC, 1983. 192 p.: ill. IDRC-211e.

**Educational research environments in the developing world**, Sheaffer, S., and Nkin-

yangi, J.A., ed., Ottawa, Ont., IDRC, 1983. 288 p.: ill. IDRC-213e.

**Devindex 1982: index to selected literature on economic and social development/index d'ouvrages sur le développement économique et social**, Ottawa, Ont., IDRC, 1983. 302 p. IDRC-214e,f.

**SALUS: low-cost rural health care and health manpower training: an annotated bibliography with special emphasis on developing countries, volume 10**, Bechtel, R.M., ed., Ottawa, Ont., IDRC, 1983. 148 p. IDRC-216e.

**SALUS: low-cost rural health care and health manpower training: a cumulative index to volumes 1-10**, Bechtel, R.M., ed., Ottawa, Ont., IDRC, 1983. 150 p. IDRC-217e.

**Searching: review of IDRC activities 1983**, Ottawa, Ont., IDRC, 1984. 40 p.: ill. IDRC-220e.

**Quête d'avenirs : rapport d'activité du CRDI en 1983**, Ottawa, Ont., CRDI, 1984. 40 p.: ill. IDRC-220f.

**Búsqueda: reseña de las actividades del CIID en 1983**, Ottawa, Ont., CIID, 1984. 40 p.: ill. IDRC-220s.

**Educational financing in developing countries: research findings and contemporary issues**, Schiefelbein, E., Ottawa, Ont., IDRC, 1983. 168 p.: ill. IDRC-TS38e.

**Financement de l'éducation dans les pays en développement : conclusions de recherche et contexte actuel**, Schiefelbein, E., Ottawa, Ont., CRDI, 1983. 168 p.: ill. IDRC-TS38f.

**Projets de logement urbain pour les ménages à faible revenu : bibliographie commentée des recherches subventionnées par le CRDI et la BIRD**, Ottawa, Ont., CRDI, 1983. 64 p. IDRC-TS41f.

**Universal primary education in Tanzania**, Omari, I.M., Mbise, A.S., Mahenge, S.T., Malekela, G.A., and Besha, M.P., Ottawa, Ont., IDRC, 1983. 87 p. IDRC-TS42e.

**Systèmes internationaux d'information socio-économique : étude d'évaluation des programmes de type DEVSIS**, Aiyepoku, W.O., Ottawa, Ont., IDRC, 1984. 103 p. IDRC-TS43f.

**Checklist of publications associated with IDRC and recorded in AGRIS: 1975-1982**, Ottawa, Ont., IDRC, 1983. 79 p. IDRC-TS44e.

*The latrine project, Mozambique*, Ottawa, Ont., IDRC, 1983. 95 p. IDRC-MR58e.

*Sistema nacional de bibliotecas y servicios de información en Barbados: informe de una consultoria (septiembre 1981)*, Keren, C., Ottawa, Ont., CIID, 1983. 47 p. IDRC-MR68s.

*Proceedings of the regional workshop on wood energy in East Africa: Nairobi, Kenya, 5-8 October 1982*, Ottawa, Ont., IDRC, 1983. 241 p. IDRC-MR73e.

*Research management for food industries: an international working symposium hosted by the Agriculture, Food and Nutrition Sciences Division of the International Development Research Centre and the International Union of Food Science and Technology, Ottawa, Canada, 4-6 October 1982*, Ottawa, Ont., IDRC, 1983. 137 p. IDRC-MR75eR.

*Report of a seminar on biochemical conversion of lignocellulosics*, Ottawa, Ont., IDRC, 1983. 57 p. IDRC-MR79e.

*Shelterbelt effects in tropical and temperate zones: summary of findings for African drylands*, Jensen, A.M., Ottawa, Ont., IDRC, 1983. 61 p. IDRC-MR80e.

*Les effets des brise-vent en zones tempérée et tropicale: revue des connaissances relatives à l'Afrique sèche*, Jensen, A.M., Ottawa, Ont., CRDI, 1983. 68 p. IDRC-MR80f.

*Teoría y práctica de la educación popular*, Gajardo, M., ed., Ottawa, Ont., CIID, 1983. 557 p. IDRC-MR81s.

*A current awareness bibliography for IDRC-supported fisheries projects, vol. 7, no. 2*, Szpakowska, Z., compiler, Ottawa, Ont., IDRC, 1983. 31 p. IDRC-MR82e,f,s.

*Research management for food industries: summary report of coordinated regional meetings held in Nairobi, Singapore, and Bogota on 23-25 May 1983*, Rubin, L.J., compiler, Ottawa, Ont., IDRC, 1983. 34 p. IDRC-MR83e.

*Aid for education: the political economy of international cooperation in educational development*, Weiler, H.N., Ottawa, Ont., IDRC, 1983. 49 p. IDRC-MR84e.

*A current awareness bibliography for IDRC-supported fisheries projects, vol. 7, no. 3*, Szpakowska, Z., compiler, Ottawa, Ont., IDRC, 1983. 31 p. IDRC-MR85e,f,s.

*Research for development — Mid-Canada and the Third World: proceedings of a seminar organized by the University of Manitoba and the International Development Research Centre, Winnipeg, Manitoba, 19-21 April 1983*, Ottawa, Ont., IDRC, 1983. 118 p. IDRC-MR86e.

*Financial and administrative management of research projects in Eastern and Southern Africa (FAMESA): proceedings of a seminar by research policymakers on financial and administrative management of research projects in Eastern and Southern Africa (FAMESA) held in Nairobi, Kenya, 24-25 January 1983*, Abe, L.O., and Jorssen, V.G., ed., Ottawa, Ont., IDRC, 1983. 74 p. IDRC-MR87e.

*A current awareness bibliography for IDRC-supported fisheries projects, vol. 7, no. 4*, Szpakowska, Z., compiler, Ottawa, Ont., IDRC, 1983. 43 p. IDRC-MR88e,f,s.

*The university and intellectuals in Chile*, Ottawa, Ont., IDRC, 1983. 117 p. IDRC-MR89e.

*Informe de la III reunión de trabajo sobre sistemas de producción animal tropical: Turrialba, Costa Rica, 22-25 de febrero, 1983*, Ruiz, M.E., y Li Pun, H.H., ed., Ottawa, Ont., CIID, 1983. 133 p. IDRC-MR90s.

*Taller sobre metodología de investigación en fincas: San Carlos, Costa Rica, noviembre 29-diciembre 4, 1982*, Mateo, N., y Moreno, R., ed., Ottawa, Ont., CIID, 1983. 150 p. IDRC-MR91s.

*Análisis de las innovaciones educativas para lograr reducciones de costos*, Stromquist, N.P., Ottawa, Ont., CIID, 1984. 59 p. IDRC-MR92s.

*Oil crops: proceedings of a workshop held in Cairo, Egypt, 3-8 September 1983*, Riley, K.W., ed., Ottawa, Ont., IDRC, 1984. 178 p. IDRC-MR93e.

*Specialized information analysis centres in international development: report on a meeting sponsored by the International Development Research Centre held at The Chateau Montebello, Montebello, Quebec, Canada, 4 to 8 October 1982*, Ottawa, Ont., IDRC, 1984. 60 p. IDRC-MR94e.

*A current awareness bibliography for IDRC-supported fisheries projects, vol. 8, no. 1*, Szpakowska, Z., compiler, Ottawa, Ont., IDRC, 1984. 49 p. IDRC-MR95e,f,s.

## **The IDRC Reports/Le CRDI Explore/EI CIID Informa**

Published in three separate language editions, *IDRC Reports* is a quarterly magazine of report and comment on the work supported by IDRC and on related activities in the field of international development. Total circulation of the English, French, and Spanish editions is about 20 250 per issue, of which slightly more than 50% is to developing countries, 30% within Canada, and the remainder to other industrialized countries. The magazine is published in January, April, July, and October.

## **IDRC Features/Reportages CRDI**

A monthly news-feature service on scientific, technical, and educational subjects related to development is provided free of charge to newspapers and magazines in the developing world. During the past year, some 30 features and a similar number of shorter pieces, written by IDRC staff and other selected contributors, were distributed in English and French to about 600 publications in 92 countries.

## **Echo**

*Echo*, IDRC's bilingual staff newsletter, appears as a single "flyer" every 2 weeks and in a larger format in June, September, December, and March. It aims to inform staff, both at head office and in the regional offices, of issues and events of interest to them.

## **Films**

### **(Produced by Neill McKee)**

***Prescription for health: clean water — hygiene — sanitation***, 16 mm, 23 min., promotes personal hygiene and community practices that can help break the cycle of infection. It was produced in collaboration with the Centre's Health Sciences Division, the World Health Organization, and the Oxford Committee for Famine Relief (OXFAM). The film is aimed primarily at health-care workers and at water and sanitation engineers and technicians in developing countries; it is also a prime source of information for policymakers.

## **Publications and texts by Centre staff**

IDRC staff are frequently called upon to participate in workshops and seminars, to speak at conferences, and to contribute to scientific journals. In addition, many of the

research projects supported by IDRC generate their own publications — reports, texts, and newsletters — that, although not produced or distributed by the Centre, form an important part of the effort to disseminate research results as widely as possible. The following sections list as many of these documents as were available at the time of publication of this report. Anyone interested in obtaining copies of the documents should contact the normal sources (authors, institutions, libraries, or bookstores), although IDRC will try to supply copies of items not available elsewhere. In case of short supply, preference will be given to researchers in developing countries.

Angus, J.G., Hasegawa, S., Hsiao, T.C. Li-boon, S.P., and Zandstra, H.G. 1983. The water balance of post-monsoonal dryland crops. *Journal of Agricultural Sciences* (Cambridge), 101, 699–710.

Banta, G.R., and Jayasuriya, S.K. 1984. Economic analysis of new technologies (Chapter 10). In *Basic procedures for agro-economic research*. Manila, Philippines, International Rice Research Institute, 134–142.

Barnett, Andrew. 1983. Energy, research and development policy: some analytical issues. Paper presented to the Energy Research Priorities Seminar held in Ottawa, Canada, 8–10 August 1983. 16 p. (mimeo.)

Belayneh, H., Riley, K.W., Tadessa, N., and Alemaw, G. 1983. The response of three oilseed *Brassica* species to different planting date and seed rate in Highland Ethiopia. *Proceedings of the Sixth International Rapeseed Congress*, Paris, May 17–19, 858–864.

Bélisle, François, J. 1983a. The anticipated impact of rising energy prices in Latin American urbanization. In Lentnek, B., ed., *Contemporary Issues in Latin American Geography*. Conference of Latin Americanist Geographers, Muncie, IN, USA. Vol. 8, 23–33.

1983b. Population and urbanization trends in the Caribbean Basin. Paper presented at the International Studies Association Annual Meeting, Mexico City, 6–9 April 1983. 15 p. (mimeo.)

1983c. Tourism and food production in the Caribbean. *Annals of Tourism Research*, 10, 497–513.

- Brandreth, M. 1983. Education and training: one donor's view. Paper presented at the International Conference on Education and Training for Agricultural Library and Information Work, Nairobi, March 1983. Ottawa, Ont., IDRC, 21 p.
- Buzeta, Ramón. 1983a. Research requirements for fisheries development in the Third World: two case studies, Asia and Latin America. Paper presented to the Conference on Pacific Marine Resources, Valparaiso, Chile, 13 May.
- 1983b. El programa de pesquerías del CIID en Latinoamérica. Paper presented to the 5th Symposium on Latin American Aquaculture, Valdivia, Chile, 5 September.
- Campbell, Marilyn, and Graham, Michael. 1983. Multilanguage publishing: the IDRC experience. Paper presented at the International Rice Research Institute conference — Copublication: Strategies for Multilanguage Publication in Agriculture, 28 November–1 December 1983.
- Danieliuk, F.A. 1983. Process encyclopedia: a software tool for modelling. In Application of mini- and micro-computers in information, documentation and libraries: International Conference on the Application of Mini- and Micro-Computers in Information, Documentation and Libraries, Tel-Aviv, 13–18 March 1983. Amsterdam, The Netherlands, North-Holland, 685–694.
- Fox, Elizabeth, and Meisler, Stanley. 1983. Mass communications in the Falklands/Malvinas. Media, Culture and Society, London, UK.
- 1984a. Buenos Aires: the weight of the past. The Atlantic, January.
- 1984b. Controversia. Revista Chasqui, Quito, Ecuador.
- Head, I.L. 1983a. Address to the Seminar on Research for Third World Development, University of Manitoba, Winnipeg, 19 April. 14 p. (unpublished typescript).
- 1983b. Address to the 10th World Congress on the Prevention of Occupational Accidents and Diseases, Hull, Quebec, 9 May. 18 p. (unpublished typescript).
- 1983c. Address to the Conference on Development Education, University of Calgary, 7 July. 19 p. (unpublished typescript).
- 1983d. Address to the National Defence College of Canada, Kingston, Ontario, 12 September. 39 p. (unpublished typescript).
- 1983e. One World or Three? Address to the Annual Conference on Public Issues and Philosophy, Simon Fraser University, Vancouver, B.C., 13 October. 18 p. (unpublished typescript).
1984. Allocution prononcée à l'ouverture publique de l'Assemblée du Conseil des Gouverneurs du CRDI, Dakar, Sénégal, 28 mars. 10 p. (texte inédit).
- Hulse, Joseph H. 1983a. Biotechnology: new horns for an old dilemma. Background paper presented to the Club of Rome (Winnipeg), September.
- 1983b. Food and agricultural technology. Paper presented to the 7th Western Hemisphere Nutrition Congress, Miami, Florida, 11 August.
- 1983c. Food resources and responsibility: a tale of two worlds. Presidential Address to the Australian and New Zealand Association for the Advancement of Science, 53rd Congress, Perth, Australia, May 1983.
- 1983d. Food science and society. Presidential Address to the International Union of Food Science and Technology, 6th World Congress, Dublin, Ireland, September 1983.
- 1983e. Food science, for richer or for poorer, for sickness or for health. IFOST (Institute of Food Science and Technology) Proceedings, 16 (1).
- Jayasuriya, S.K., and Banta, G.R. 1984. Data collection for evaluation of new technologies at research sites. In Basic procedures for agro-economic research. Manila, Philippines, International Rice Research Institute, 213–230.
- Kayongo-Male, Henry, and Kategile, Jackson A. 1984. Quantification of agricultural by-products commonly used in animal feeding. Paper presented at the African Research Network on By-products (ARNAB) Workshop on Methodologies, Addis Ababa, Ethiopia, 5–13 March 1984.
- Ker, A.D.R. 1983. IDRC's experience with research networks and specialized information services. Paper presented at the Joint Australian Development Assistance Bureau–Australian Centre for International Agricultural Research–IBSRAM Meeting, Townsville, Australia, 12–16 September, 12 p. (mimeo).

- King, David J., Bautista, Germelino M., and Thiesenhusen, William C. 1983. Farm households on rice and sugar lands: Margen's village economy in transition. In Ledesma, Antonio J., Makil, Perla Q., and Miralao, Virginia A., ed., *Second View from the Paddy*. Institute of Philippine Culture, Ateneo de Manila University.
- Kirkby, Roger. 1983a. Address to the Regional Workshop on Groundnut Production and Research in Southern Africa. Lilongwe, Malawi, 26–29 March.
- 1983b. Introduction and objectives. Paper presented at Regional Workshop on Banana Production and Research in Central and Eastern Africa, Bujumbura, Burundi, 14–17 December 1983.
- 1983c. The farming systems perspective and IDRC in Eastern and Southern Africa. Paper presented at the Seminar for Senior Agricultural Research Administrators from Eastern and Southern Africa, Nairobi, Kenya, 18–20 April 1983.
- Krugmann, Hartmut, and Goldenberg, Jose. 1983. The energy cost of satisfying basic human needs. *Technological Forecasting and Social Change*, 24, 45–60.
- Leatherdale, D., and Perera, M.J.C. 1983. *Thesaurus of coconut terminology* (provisional issue). Lunuwila, Sri Lanka, Coconut Research Institute, 172 p.
- Li Pun, H. 1982a. Alimentación de vacunos en confinamiento en el trópico. Trabajo presentado en el Curso sobre Aspectos Nutricionales en los Sistemas de Producción Bovina, SEA–Instituto Interamericano de Ciencias Agrícolas–Centro Agronómico Tropical de Investigación y Enseñanza, Santo Domingo, República Dominicana. 42 p.
- 1982b. Anatomía y fisiología del rumen. Charla ofrecida en el Curso de Producción de Leche y Extensión organizado por MIDA–FAO. Divisa, Panamá.
- 1982c. Requerimientos nutricionales de los rumiantes. Charla ofrecida en el Curso de Producción de Leche y Extensión organizado por MIDA–FAO. Divisa, Panamá.
1983. El enfoque de sistemas en la investigación en producción animal. Presentado en el Seminario organizado por el proyecto de Camélidos Sudamericanos, Instituto Veterinario de Investigaciones Tropicales y de Altura, Lima, Perú, 1–5 agosto 1983.
- Mateo, Nicolás. 1983a. El CIID y la investigación en cultivos andinos. Tercer Congreso Internacional de Cultivos Andinos, La Paz, Bolivia.
- 1983b. Investigación en sistemas de cultivos en fincas de agricultores: marco de referencia. Paper presented at the On-Farm Testing Workshop, La Paz, Bolivia.
- 1983c. Manejo de investigación en fincas de agricultores. Paper presented at the On-Farm Testing Workshop, La Paz, Bolivia.
- 1983d. Red de investigación en sistemas de cultivos andinos. Paper presented at the Meeting on Technology Transfer for Quinoa, La Paz, Bolivia.
- Mateo, Nicolás, Aguilar, David, Fiallos, Wilberto, Trejo, Jorge, y Salgado, Jorge. 1982. Efecto de periodos de descanso de suelo en el rendimiento e incidencia de *Pseudomonas solanacearum* en papa en Honduras. *Revista Fitopatología*, 17(1), 24–29.
- Mateo, N., and Li Pun, H. 1983. Farming systems research networks in selected countries of Latin America. Paper presented at the Farming Systems Symposium, Kansas State University, Manhattan, Kansas, USA. 24 p.
- Pye, Elwood, and Tzong-biau Lin, ed. 1983. *Tourism in Asia: the economic impact*. National University of Singapore Press. 351 p.
- Rathgeber, Eva. 1984a. The transfer of paradigms of higher education and research between Canada and Kenya: a case study in medicine. Nairobi, Kenya, Bureau of Educational Research, Kenyatta University College, Research Paper 1106.
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