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Review of IDRC Activities 1983

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INTRODUCTION

When the Parliament of Canada created IDRC in 1970, it employed special legislative language to express its intent: "A corporation is hereby established to be called the International Development Research Centre consisting of a Board of Governors . . ." The statute then provided that Governors "must have experience in the field of international development or experience or training in the natural or social sciences or technology." Provision was also made for the Board to be of an international character.



The Board of Governors' meeting in Ottawa in October 1983.

In a very real sense then, the Board is the Centre; it consists of persons of distinguished qualifications; it is reflective of 11 different countries (six of them in the developing regions of the world). Governors meet every six months to monitor Centre activities, to consider proposals for new research projects, and to share with one another their perceptions of the needs of developing countries and the means by which IDRC can most effectively respond to those needs. The discussions of these persons — whose names are listed on page 40 — are as expressive of the reality of the world within which the Centre functions as it is possible to be. These are not theoreticians speaking: they reflect life. Nor do they speak only as advisers: they are the Centre's decision-makers. When IDRC's Governors exchange views, Centre management pays heed, realizing that from no other source could Centre staff draw such wise counsel.

When the Governors met in late 1983 in Ottawa, the concerns they expressed were a vivid reflection of conditions in developing countries. So harsh are circumstances for the great majority of the population in much of sub-Saharan Africa, one Governor was prompted to suggest that the Centre explore the possibility of supporting research in survival techniques. The plight of millions, he said, is now so desperate that normal development processes are inadequate to prevent mass starvation and, probably, outbreaks of infectious diseases.

Another Governor emphasized how important it was that the Centre continue to regard development as much more than a mere economic issue. The social dimension is the ultimate key. "Given that that is the case," said another, "are we sufficiently attuned to the functions and effectiveness of political and judicial institutions in the different countries?"

"The research climate in many developing countries is now more hostile than I can recall it ever having been," added another Governor. "The pressures on governments, particularly in Africa, are so intense and the time periods within which they function are so short, that they are quite unsympathetic to longer-term studies. They need immediate results."

"All the more reason," said a colleague, "to encourage researchers to consider, at the outset of their work, the necessary linkage between research and practical application. Developing-country scientists must be encouraged to address the problems around them: their laboratories are their societies."

The Board gave its approval to 61 projects in the course of its three-day meeting and received reports on 130 other, smaller, projects that had been approved during the previous three months. As each proposal was examined, and information was produced in response to Governors' queries, the discussion made clear that the basic Centre policy of human-resource building — of enhancing the indigenous scientific competence of the developing countries — continued to appeal to the Board as sound and wise. "IDRC performs an important role," one developing-country Governor summed up, "because it supports not only projects, it supports people."

*Ivan L. Head
President, IDRC*

OVERVIEW

Development in a World of Interdependence

THE severe global recession of the 1980s has served to demonstrate the growing and irreversible interconnectedness of all the nations of the world. What underlies this increasing interdependence, says the World Bank's *World Development Report 1983*, is the massive volume in trade and capital flows among all countries.

Developing countries remain particularly vulnerable to the economic fluctuations of the industrialized world. In 1950, the developing-country share of export trade was 36 percent; by 1980, that share had dropped to 21 percent. Another profoundly alarming economic trend is the foreign debt of the developing countries. From 1972 to 1982, the foreign debt of the developing countries rose from US\$91 billion to US\$529 billion.

The middle-income countries — mainly in Eastern Asia — have managed to maintain a certain economic momentum and have avoided heavy borrowings with their crushing interest burden.

Many countries in Latin America, however, have not been able to do so and have been forced to devalue their national currencies dramatically to prevent a liquidity crisis. The situation in this region is so serious that some Latin American countries are now speaking openly of declaring a moratorium on debt payments.

Low-income countries in Africa are particularly dependent on exports of primary commodities and have suffered the most from global economic turbulence. Their per-person income

has continued to fall, and it is now believed that it will be lower by the end of the present decade than it was in 1960.



Cooperation, not protectionism, will ensure that the global recession does not inflict further damage.

According to another recent report released by the World Bank, in sub-Saharan Africa — the Sahel — the combined effects of chronic, widespread drought and the impossible task of servicing debts and loans are almost nightmarish. The agricultural sector is a particularly worrying element in the overall African situation. Raw data now being examined by the International Food Policy Research Institute (IFPRI) suggest that for the past 10 years there has not been any increase in yield per hectare for any food crop — a circumstance distinct from that in the two other major developing regions. At the same time, there has been no overall increase in land dedicated to food crops.

As the *World Development Report* states: “The crisis of the past few years has highlighted the bonds that join the economies of the developed and developing countries.” It is only through enhanced international cooperation, and not through economic and other forms of protectionism, that the global recession can be prevented from inflicting further damage.

In the context of the global recession, which is only now beginning to ease, development must be seen in a truly long-term perspective. It calls for policies that will make for fundamental changes in the future, and yet be practical and viable now.



The Sahel: almost nightmarish.

The Research Environment

The economic recession has had a marked effect on the research environment in the developing countries. In many, research budgets have been cut or frozen.

In several parts of West Africa, the combination of high inflation and depressed output has meant that many researchers have been preoccupied mainly with personal survival. Fledgling infrastructures in education, research, and communications are nearing collapse. Such an assault on social, economic, and political structures could mean that the critical achievements of the past two decades in the areas of agriculture, literacy, and health will disappear.

In one African country, funds for travel to the field sites of government-sponsored research projects were stopped, effectively wiping out one year's work. The collapse of the East African Community (EAC) in the early 1970s has resulted in the disappearance of a number of regional scientific journals and in the inability to produce the proceedings of important workshops and conferences.

In other parts of the world, especially in Latin America, economic and political conditions are leading to serious, and sometimes terrible, human repercussions. These vary from general governmental suspicion or disapproval of scientific inquiry, particularly in the social sciences, to outright repression and persecution of researchers.

The supply of research funds from the international donor community to the developing countries has also been constrained as a result of the economic recession. This has tended

to diminish, disperse, and demoralize fragile research infrastructures.

In the midst of this bleak scenario, however, there is a ray of hope. In some parts of the world, particularly in Asia, research communities, institutions, and systems have made significant progress. Some countries have created national research coordinating bodies that either possess or have the potential for directing research resources to better effect. Some have substantially increased their budget allocation for research. In 1982, India increased direct investment in scientific research from US\$576 million per year to US\$888 million.

The IDRC Response

The Centre was established and continues to be run mainly along disciplinary lines. The major program disciplines are: Agriculture, Food and Nutrition Sciences (AFNS); Health Sciences; Social Sciences; and Information Sciences.

The AFNS Division did not implement any major changes in program direction in 1983. It plans, however, to place greater emphasis on stimulating the demonstration and adoption of some of the agricultural technologies developed over the past years. Closely related to this is a planned shift toward more projects on integrated farming

and postproduction methods. Another change will be toward more projects in social forestry — that is, trees for food, fuel, fodder, and fertilizer.

One of the most significant program changes has taken place in the Health Sciences Division, where a maternal and child health program, started in 1983, accounts for 30–35 percent of the division's budget. Components of the previous programs on fertility regulation methods and rural health-care delivery have been included in this new program.

The division's long-term strategy calls for the construction of regional health profiles. These will cover key indicators of needs and priorities, such as institutional research capacity, availability of qualified human resources, and general health status. In particular, the division will give high priority to strengthening local research



Policies must make for fundamental changes in the future and yet be viable now.

capacity and to research in specific disease sectors.

In the Social Sciences Division, concern in 1983 continued to be focused on providing combined forms of support where research environments appear fragile and institutions untested. The division recognizes the need for workshops, study tours, group and individual training, consultancies, and short-term research funding to help lay the foundations of viable research structures.

The strategy of the Information Sciences Division in 1983 continued to be the fostering of cooperative information systems through which information collected by one country can be made available to many others. Of importance is that projects of this sort have an enduring quality. In this sense, the division consistently provides funding to establish true programs of support to research and development with the inherent objective of assuring continuity beyond a specific project-termination date.

The division also began to provide greater support for the development and testing of methods and tools that can be used by cooperative information systems: for example, in the area of telecommunications to facilitate information transfer through affordable techniques of data transmission.

In 1983, the Fellowships and Awards program became a fully operational division, further emphasizing the importance that the Centre attaches to the provision of formal training opportunities in development research.

The Cooperative Programs Division, created as a unit in 1980 to fund projects that encourage direct collaboration between research institutions in the developing countries and their counterparts in Canada, has now established an earth sciences program. A large share of the division's budget remains open for the exploration of new research areas. Proposals

have been received in such diverse fields of applied science as electronics and genetic engineering.

The pages that follow contain a brief review of the present outlook and research-development priorities in each of the major developing regions and they highlight some of the Centre's responses to these priorities in 1983. A description of the Centre's efforts in Canada to stimulate thinking and concern about development issues is also presented.

AFRICA



asbestos, and vermiculite. However, the resource bases of individual nations vary from great abundance to extreme paucity.

The Present Outlook

The severe worldwide recession has been particularly difficult for the fragile economies of many African nations. Faced with the ever-present task of surmounting terrible environmental difficulties, a poorly developed resource base, sometimes frightening shortfalls in agricultural production, and draining social and political conflicts, these countries groan under the weight of debt-servicing charges that are almost beyond the point of endurance.

It is the low-income, oil-importing countries that have suffered the most, with an increasing percentage of precious foreign-exchange earnings needed to finance the importation of oil and petroleum products. Even with the recent decline in oil prices, the sometimes sharp devaluation of national currencies has meant that, in real terms, they continue to pay even more for oil.

In some of the oil-exporting countries too, economic disarray is severe. On the assumption that oil revenues would continue to rise, they invested heavily in their social and physical infrastructures and bolstered capital investments with heavy external borrowings.

Agriculture is also suffering. The vicissitudes of climate, such as the relentless and devastating drought in Southern Africa, have turned Zimbabwe and a number of other countries from net food exporters into net food importers. And in other regions, particularly the Sahel, the need for fuelwood, combined with a recurrent drought, continues to turn more potential farmland into desert waste.

Although Africa is not overpopulated, population growth nonetheless is the highest in the world. Most countries have simply not

AFRICA'S 30.4 million square kilometres make it the second largest continent in the world; it is exceeded only by Asia. Its two most spectacular land features are the Great Rift Valley and the Sahara Desert. The rift is one of the longest such systems on the Earth. It passes from the Red Sea in the north, through the highlands of Ethiopia, and then through East Africa where it divides before reappearing in Southern Africa.

The awesome Sahara is part of an immense desert stretching some 4800 kilometres across Northern Africa. This great sea of shifting sands, so inescapably present in the African geopolitical reality, is the result of subtropical subsidence of air that prevents significant cloud formation and is a dominant feature of the general atmospheric circulation of the globe.

The Sahara in the North and the Kalahari Desert in the Southwest cover nearly 28 percent of the African continent. An additional 20 percent is covered by soils that are too poor to sustain significant vegetation. Almost as extensive are the ferrallitic soils that have suffered extensive leaching of the nutrients essential to most food crops.

One can begin to understand why, when three-quarters of the people of Africa live in rural areas, agricultural production is chronically low and constitutes one of the continent's most serious problems.

Some African soils, however, are rich in copper, chromium, and gold. There are also large known reserves of minerals such as potassium and phosphorus that can be processed into agricultural fertilizers. There are abundant supplies of the raw materials of the cement industry as well as other building materials such as gypsum,

been able to match population growth with food production, and the demand for services and jobs, especially in urban areas, does not augur well for the next few years.

The Research Environment

The global recession means that the challenge faced by the research community in Africa has never been greater. Development as a prescription for survival takes on a particularly poignant meaning in these difficult circumstances.

Seemingly relentless desertification, crop losses because of poor processing and storage, and the difficulty of finding an appropriate level of farm mechanization make agricultural production the unquestioned research priority in Africa.

The need is for shelterbelts, the restoration of treed areas, and much improved yields of food legumes, which are the cheapest and most regular supply of protein throughout much of the continent.

In the last decade, North Africa has witnessed rural–urban and transnational migrations of the work force on a scale unprecedented since the eighth century and the spread of Islam. This phenomenon, particularly as it manifests in the receiving countries, has been identified as a major problem in a recent in-depth study of the region’s research priorities in the social sciences.

Applied technology in the area of communications and information is lacking. This hampers the sharing of scientific knowledge and progress in research, especially applied research.

The continued widespread presence of such crippling parasitic illnesses as schistosomiasis and acute and severe diarrhea is a major preoccupation of health researchers. And, with industrialization, occupational diseases and hazards are now a concern, whether they result from the use of potentially toxic chemicals or of machinery.

Only a better trained work force can take up the challenge of assuring that Africa takes its rightful place in a world of sophisticated technology. High levels of illiteracy and the need to adapt education to the continent’s development priorities are the two main targets of education specialists.

Regional Office for the Middle East and North Africa

IDRC’s regional office in the Egyptian capital of Cairo serves 22 countries with a total population of 240 million people straddling two continents — an area that stretches from Iran in the east to Morocco in the west and covers 14 million square kilometres.

Since 1970, IDRC has funded some 119 projects in the region, totaling over \$21 million.

The countries

Algeria	Malta
Bahrain	Morocco
Cyprus	Oman
Democratic Yemen	Qatar
Egypt	Saudi Arabia
Iran	Sudan
Iraq	Syria
Jordan	Tunisia
Kuwait	Turkey
Lebanon	United Arab Emirates
Libya	Yemen

The Agriculture, Food and Nutrition Sciences (AFNS) Division's forestry program in the region continued in 1983 to address the need to contain desert lands by supporting research on the construction of shelterbelts and the restoration of treed areas in North Africa and throughout the Sahel.



Nurturing seedlings to contain the sands of the deserts: an awesome task.

The Ministry of Agriculture in Egypt, with IDRC support, is working with scientists from the International Potato Center (CIP) in Peru to adapt the use of improved potato seeds to the planting practices of the small growers in the Nile River Delta.

In the Sudan, a country with immense agricultural potential, the division continued in 1983 to support Sudanese scientists in establishing a comprehensive program of legume research on faba beans, lentils, and haricot beans. The second phase of this long-term project emphasizes on-farm trials.

In 1983, the AFNS Division continued to support international agricultural research centres. Major project support will enable the International Center for Agricultural Research in the Dry Areas (ICARDA), in Syria, to breed and screen genetic material and to develop cultivation practices conducive to increased production of food legumes.

The beneficial effects of breastfeeding to both mother and child are widely known. Following earlier research, a project supported by the Health Sciences Division is helping Egyptian scientists to determine the

pattern of ovulation in nursing women during and after postpartum amenorrhea, the period during which menstruation stops after a woman gives birth.

In many developing countries, only meagre services are available for maternal health care. With support from Health Sciences, researchers have undertaken a study of the problems in the delivery of maternal health care in rural Sudan and will test and evaluate a method for improving it.

Ongoing research activities in developing countries sometimes suffer from lack of coordination and documentation. IDRC's Information Sciences Division has expanded its support to the information centre of the Syrian Ministry of Agriculture, which will now collect, record, and disseminate data on agricultural research projects in collaboration with the Current Agricultural Research Information System (CARIS) of the United Nations' Food and Agriculture Organization (FAO).

Date palms, originally cultivated in the Near East and North Africa, are among the oldest cultivated crops in the world. As date trees die, few new plantations are being established because of high costs and low prices for the produce. Information Sciences provided funding in 1983 to the Palm and Dates Research Centre in Iraq to establish an information storage and retrieval system to serve researchers and extension officers trying to help small-scale farmers in poor areas of the region.

In Turkey, a number of private institutions, governmental agencies, and universities are conducting research on new and renewable sources of energy. Little is known about their efforts, however, and they work in relative isolation from each other and from the industrial sector. A project supported by the Social Sciences Division will permit researchers to produce and dis-

seminate an inventory of research activities and publications on selected new and renewable sources of energy in Turkey.

In Egypt, the absence of a consistent regional-development strategy has allowed new industries to concentrate in Cairo and Alexandria. With support from the Centre's Information Sciences Division, the Institute of National Planning in Cairo will prepare a series of industrial planning maps to help assess the implications of different development strategies throughout the country.

Regional Office for West and Central Africa

The IDRC office located in Dakar, the capital of Senegal, serves 24 countries with a total population of 200 million. The most acute problems in the region are agricultural and socioeconomic.

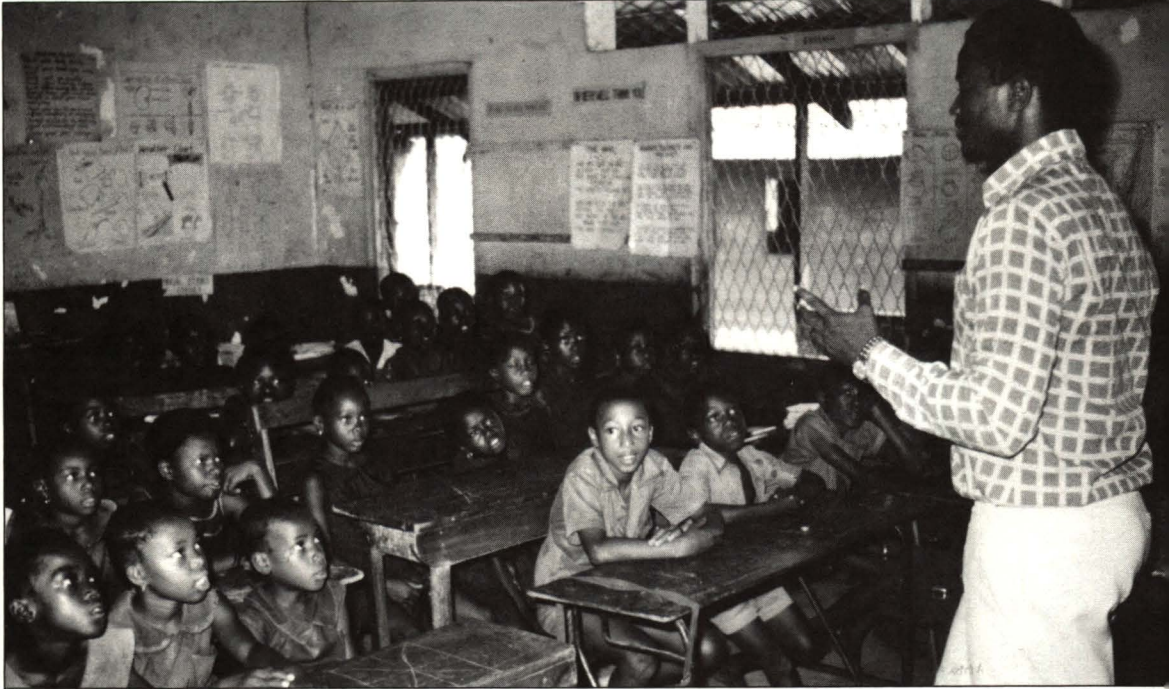
Since 1970, IDRC has financed more than 186 projects in the region, totaling about \$27 million.

The countries

Angola	Guinea-Bissau
Benin	Ivory Coast
Cameroon	Liberia
Cape Verde	Mali
Chad	Mauritania
Congo	Niger
Central African Republic	Nigeria
Equatorial Guinea	Senegal
Gabon	Sierra Leone
Gambia	Togo
Ghana	Upper Volta
Guinea	Zaire

The Social Sciences Division has been the most active with respect to the number of projects, although the AFNS Division is still the largest in terms of the amount of money spent.

In the social sciences, there are three priority areas: the consequences of large-scale human migrations from



Education must be suited to the development needs of each society.

rural to urban areas; the economic viability of modernizing small agricultural operations; and educational systems suited to the development needs of each society.

Research supported by the Social Sciences Division in 1983 includes a complete evaluation of the role played by irrigation in Niger. Personnel requirements, income, and soil productivity will be studied in three areas with different cultivation systems: rainfed, irrigated, and the system used on the alluvial plain along the banks of the Niger River.

The training of management per-

sonnel to conduct research in education has long been a major problem in francophone Africa. Another project of the Social Sciences Division will train 15 researchers each year in research methodologies appropriate to the study of the educational processes peculiar to West Africa.

In most African countries, the output of nationalized industries is poor. The lack of local technical skills is at the root of the problem. In Ghana, the division has supported a project to determine the effect of local technologies on the productivity of nationalized industries and to assess

the level of nationalization of the country's industries.

In 1983, the AFNS Division continued to support research in the Congo to select the highest yielding and most disease-resistant varieties of cassava, to determine their acceptability to the farmers, and to assess their possibilities for industrial use. Similar research is under way to develop varieties of rice suited to the conditions of West Africa.

In Upper Volta, the first phase of a project supported by the AFNS Division identified the best methods for storing cowpeas to reduce the estimated 40 percent production losses caused by insects, fungi, and rodents. The second phase, funded this year, is designed to implement the improved storage systems. It includes demonstrating the methods tested in the first phase to farmers and popularizing construction techniques.

In Nigeria, the division continued to support research on windbreaks,

essential to improve farming and stop erosion in the countries of the Sahel. Initially, the research concentrated on identifying the best species of trees, perfecting efficient planting techniques, and assessing their agronomic and economic impact. The work already begun will be followed up with comparisons of the benefits of planting shelterbelts as opposed to conventional windbreaks.

The objective of the Information Sciences Division is to improve the dissemination of scientific knowledge in Africa. For instance, it helped to establish a documentation centre at the Organization for Research on African Food and Nutrition (ORANA), located in Dakar, Senegal.

The division also supported an information-gathering project in 1983, with a view to setting up a computerized data base at the Sahel Institute in Bamako, Mali. The assistance is part of a collective effort to gather and disseminate scientific and technical information in the Sahelian countries. The Sahelian Scientific and Technical Information and Documentation Network (RESADOC) — a decentralized cooperative information system established by the Permanent Interstate Committee for Drought Control in the Sahel (ICDCS) — is directly involved.

The Cape Verde archipelago off the western tip of Senegal has been independent only since 1975. Although small, this former Portuguese colony has established a good reputation for its dynamism and good management of international aid. Despite its efforts, however, it remains extremely poor. The Information Sciences Division has provided considerable assistance to give the Cape Verde government access to international scientific documentation through the Pan-African Development Information System (PADIS).

In West Africa, as in other regions of the Third World, tropical diseases



Agriculture: the key to Africa's economic future.

such as malaria, schistosomiasis, and leishmaniasis are a major obstacle to development. The Health Sciences Division provided assistance to the World Health Organization's (WHO) Special Programme for Research and Training in Tropical Diseases. The aim of this program is to bring all the appropriate specialists together in a multidisciplinary approach to fight these diseases.

The training and development of African science writers is one of the primary interests of the Communications Division. In 1983, it subsidized a training course at Yaoundé in Cameroon for science writers from several francophone African countries. It also supported the Association internationale des journalistes scientifiques africains (AIJSA) whose principal objective is the dissemination of scientific and technical information in the popular media.

Regional Office for Eastern and Southern Africa

IDRC's office in Nairobi, Kenya, is responsible for an area consisting of 19 countries with a total population of 135 million.

Since 1970, the Centre has supported 154 projects in the region with a total value of about \$24 million.

The region's priority is to reach a significant level of technological self-reliance so that it is no longer totally dependent on economic policies and directions taken abroad. This is a great challenge to the research community.

During 1983, IDRC's Information Sciences Division and its Communications Division initiated a number of activities aimed specifically at collecting information on the research environment. The Centre has supported avenues for publishing and disseminating scientific information and, at the same time, strengthening and improving the quality of published material. For instance, important material support has been provided to several journals of social science to allow them to continue to publish. A project begun in Nairobi in 1983 is assisting three research institutions in the region to strengthen their in-house technical editing capacity and to establish long-range publishing programs.

Information Sciences continued to give major support in 1983 to the International Council for Research in Agroforestry (ICRAF) in two areas: the question-and-answer service in agroforestry to deal with scientific and technical queries from concerned scientists and research institutions, as well as to assist the Council in establishing its own information and documentation capabilities; and improvement of the Multiperiod Budgeting and Economic Assessment of Perennial Crop Intercropping System (MULBUD) software package designed to perform economic analyses of agroforestry schemes.

The countries

Botswana	Mozambique
Burundi	Rwanda
Comoros	Seychelles
Djibouti	Somalia
Ethiopia	Swaziland
Kenya	Tanzania
Lesotho	Uganda
Malagasy	Zambia
Malawi	Zimbabwe
Mauritius	

In Ethiopia, plans for the production of a much-needed national atlas have lagged behind similar efforts in other countries. A project supported by Information Sciences will allow the Ethiopian Mapping Agency to produce an atlas containing 64 pages of coloured maps and accompanying texts.



Storing crops: losses must be reduced after harvest.

The AFNS Division has emphasized research on root crops and oilseeds. At the same time, it has ensured that, within crop-improvement programs, scientists try to understand problems at the farm level and test promising new technologies with farmers to facilitate acceptability.

Following a request from the Council of Ministers of the Southern African Development Co-ordination Conference (SADCC), AFNS provided major support in 1983 to enable the Zimbabwean Ministry of Agriculture, on behalf of SADCC, to identify and

develop the most efficient existing agricultural postharvest systems in the region. These include food processing, storage, and preservation technologies, rural food industries, and marketing and distribution systems. SADCC's request reflected the commitment of Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, and Zimbabwe to harmonize their economies.

Traditional methods of farming and ranching are associated with a low level of agricultural productivity for much of the rural population in Kenya.

ICRAF has identified Eastern Africa as an ecological zone in which agroforestry research should be initiated and AFNS has supported a project that will enable Kenya's Agricultural Research Institute to develop agroforestry systems for the semi-arid areas throughout the region.

Sorghum is the staple cereal for most inhabitants of Somalia, a nation seriously deficient in food. Earlier support from AFNS enabled Somalia to establish an enduring national sorghum program. Continued support in 1983 means that researchers will be able to develop technology acceptable to small-scale farmers in the rainfed growing areas of Somalia to improve sorghum production and utilization.

The Health Sciences Division funded a new project in Kenya on the control of schistosomiasis. This widespread parasitic disease, transmitted through contaminated water with snails as the intermediate host, is one of the leading causes of illness and death in the developing world. The project in Kenya will evaluate the effectiveness of an innovative, community-based approach to fighting schistosomiasis. Another Health Sciences project in Kenya enabled the Ministry of Health to begin to plan effective control programs to prevent eye infections in the newborn. The results will be of significant interest to many other countries in the Third World.

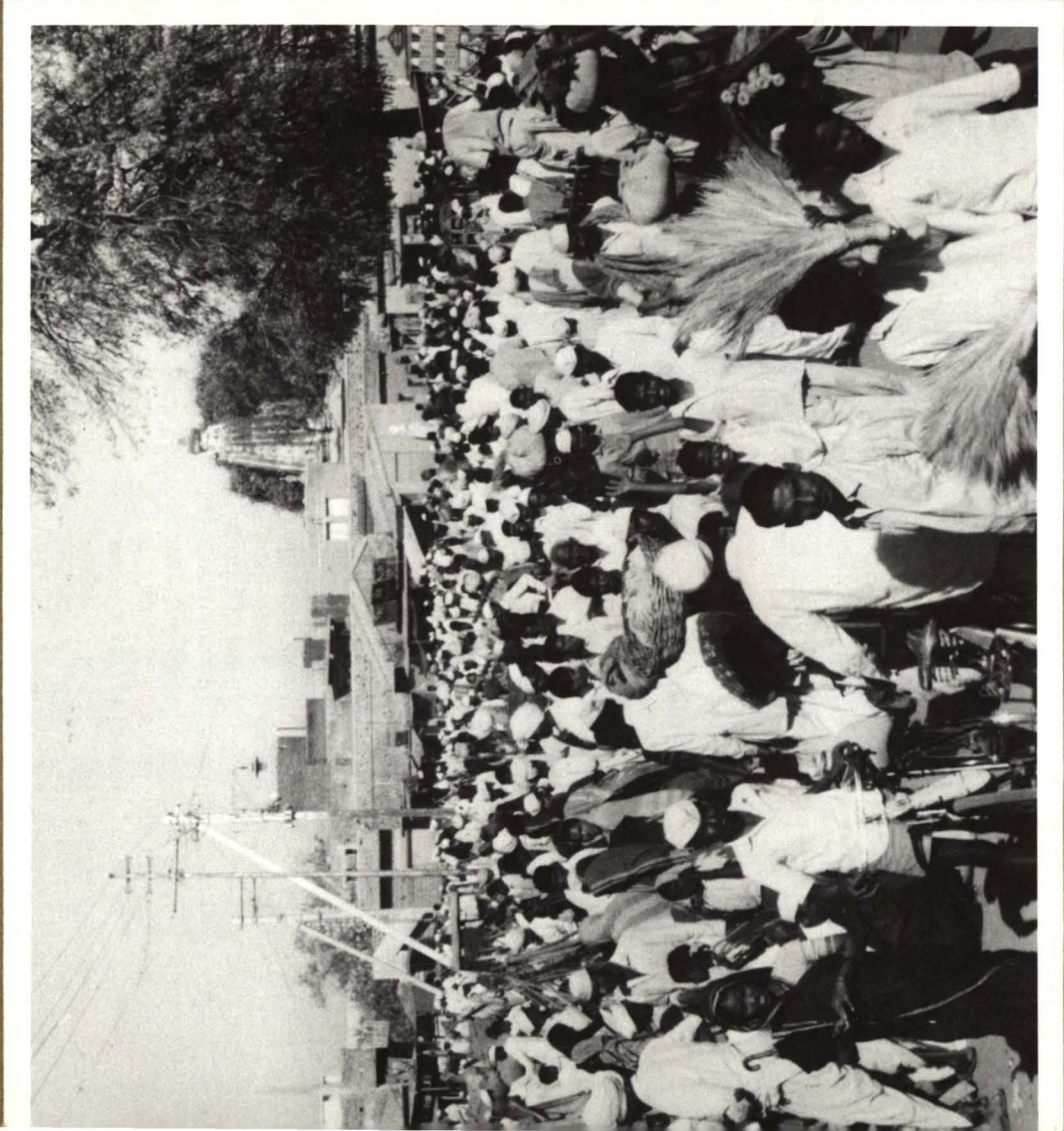
IDRC's Social Sciences Division is particularly concerned with rural development in Southern and Eastern Africa. In Kenya, one consequence of rapid population growth is pressure on relatively scarce agricultural land. The division supported a project to analyze the interrelationships between agricultural development and population variables.

The fisheries along Somalia's extended coastline are seriously underexploited. Although the government is keen to develop this important

source of food, it lacks information about the coastal communities engaged in artisanal fishing. Support from the division in 1983 will enable researchers to investigate the fish catch and fishing techniques in the north-eastern region of the country and help plan the development of coastal fishing.

During the 1970s, the countries of sub-Saharan Africa experienced major macroeconomic problems — accelerated inflation, serious balance-of-payments deficits, fiscal and debt crises, and reduced growth. The Social Sciences Division provided major financial support to design a macroeconomic analysis program on the issues affecting the economic stability of countries throughout the region and to enhance the capacity of local scholars and institutions to conduct high-level research in the field.

ASIA



ASIA is the world's largest continent; it is also its most diverse and complex. Its 44 million square kilometres encompass a host of ethnic groups with hundreds of languages and countries at every stage of development. There are thousands of years of social and cultural evolution between the high technologies of nations such as Singapore and South Korea, and the primitive hunting and fishing economies of remote forest tribes in Borneo.

Perhaps the most popular and evocative image of Asia is its enormous population. Half the human race lives there: two-and-a-half billion people. The two most populous nations on Earth are in Asia — China and India — and two other countries — Indonesia and Japan — each have a population exceeding 100 million. Asia's rate of population growth is a little over two percent per year and, although there is increasing awareness of the awesome challenge and difficulty this may mean in the future, the continent's population will probably be close to four billion by the end of this century.

Less than 10 percent of Asia is under cultivation. In recent years, however, the development of high-yielding varieties of rice and other cereals has had a marked impact on Asian agriculture. The continent now accounts for fully 60 percent of the world's rice production. Wheat, maize, sorghum, and millet are also cultivated on a large scale in such countries as China, India, Iran, Pakistan, and Soviet Asia.

Asia's continental immensity assures it great mineral wealth. There are abundant reserves of coal, oil,

natural gas, uranium, bauxite, and other ores, and it has vast water resources and therefore great potential for hydroelectricity and irrigation.

The textile industries, particularly the cotton sector, have expanded greatly in Asia since the end of the Second World War. Japan and India are the world's largest exporters of cotton textiles. China, Hong Kong, South Korea, Taiwan, Pakistan, and the Philippines have also increased in importance as exporting nations.

Western civilization owes much to Asia. In fact, it was only in the 18th and 19th centuries that significant industrial and technological achievements and innovations began to shift from Asia to Europe. Three centuries before Christ, when European culture was still embryonic, Asians had already refined the arts of cooking, pottery, and the smelting of ores. In agriculture, irrigation was practiced widely, as was crop rotation. Literacy was advanced. A form of paper and elaborate scripts were in use. Artists used the techniques of wood carving, stonecutting, calligraphy, and the casting of metals for exquisitely beautiful works. Empires had evolved intricate systems of rules and laws delegating power and authority to institutions at various government levels, in the process creating complex bureaucracies.

The Present Outlook

Of all the countries of the developing world, those in Asia have best withstood the inflictions of the present global recession. This is partly because they started from a relatively strong position. China and India, for instance, had an impressive record of progress in agriculture and steadily increasing exports. And they were not so dependent upon foreign trade as to be devastated by reductions in it.

Malaysia and Indonesia, middle-income oil-exporting countries, were able to rely on accumulated foreign-exchange reserves from oil revenues as

an effective cushion against a decline in export earnings.

Also, significantly, although trade declined on the international level, it expanded considerably within the region. In 1981 and 1982, intra-regional trade, as a percentage of trade with all countries, increased from 19 percent to 26 percent for exports, and from 15 percent to 20 percent for imports. Moreover, the Association of South East Asian Nations (ASEAN) has achieved progress in the areas of preferential trading arrangements and the establishment of industrial joint ventures in the private sector.

The Research Environment

In Asia, as elsewhere in the world, it is important for researchers and their national governments to identify and define the socioeconomic, health, and other issues to which they should give priority. Although some research institutions in the region are quite evolved, others are not yet sufficiently developed and lack information structures with enough data to guide inquiries into their countries' pressing questions.

Particularly wanting are the areas of health, social sciences, and information processing. In the health sciences, research is needed in basic health services in rural and urban slum areas, new types of health personnel, and effective health education. High priority must also be given to the improvement of water-supply systems and sanitation in squatter settlements and rural areas. In the countries undergoing rapid industrialization (e.g., Hong Kong, Singapore, and South Korea), studies on occupational health and safety have become a priority.

One of the weakest research structures in Asia is in the field of information gathering and dissemination, particularly at the national and sub-national levels. Some of the major libraries are attached to transnational institutions where financial support has resulted in the introduction of re-

sources in terms of labour, expertise, and equipment. These information services rarely reach the grass roots, however, and the need is to develop information infrastructures on an individual-country basis.

Regional Office for Southeast and East Asia

Since 1970, IDRC has funded 577 projects in Asia, totaling \$77 million. Until the opening in 1983 of the Regional Office for South Asia, in New Delhi, all the projects were within the province of the Centre's office in Singapore.

In the South Pacific region, many of the newly independent island-nations, isolated and scattered across a vast expanse of ocean, must rely entirely on foreign sources of information. The Information Sciences Division

The countries

Afghanistan	Laos
Bhutan	Malaysia
Brunei	Papua New Guinea
Burma	Philippines
China	Singapore
Fiji	South Korea
Hong Kong	Thailand
Indonesia	Tonga
Kampuchea	Viet Nam

in 1983 provided major funding support to create a bibliographic centre — the Pacific Information Centre — on development-oriented literature. This regional facility, to be located at the library of the University of the South Pacific in Suva, Fiji, will serve as the focal point and secretariat for a South Pacific information network.



Development of high-yielding varieties of rice and other cereals has had a marked impact on Asian agriculture.

A major project of this division in 1983 was to provide substantial funding to establish an Information Centre on Development-Policy Modelling, at the Systems Research Institute (SRI) in Poona, India. The project involves the development of computer-based models for large-scale simulation in the formulation of broad socioeconomic policies.

Information Sciences sponsored an important project on the use of remote sensing to help Thailand better manage its mangrove resources and at the same time safeguard the welfare of

rural populations earning their living from the mangrove environment. This will be of interest to other countries because, throughout the coastal regions of Southeast Asia, mangroves — delicate ecosystems consisting of evergreen swamp forests — are being depleted at an alarming rate.

The Health Sciences Division is particularly concerned with three problem areas in Asia: water resources and sanitation; occupational health; and population growth.

A new project is supporting a study in Hong Kong, the Philippines,

Singapore, and South Korea to evaluate working conditions and occupational health services in selected small-scale industries dealing with metal-working, lead, and lead compounds.

Pesticide poisoning in developing countries is being increasingly recognized as a serious public health problem. The Expert Committee on Insecticides of the World Health Organization (WHO) estimated in 1972 that more than 500 000 cases of accidental pesticide poisoning occurred annually, and that about half of those cases were in developing countries. The Health Sciences Division, in 1983, began supporting a project to examine the problem of pesticide poisoning in four Southeast Asian countries to help national governments formulate effective policies and programs to control the problem.

Since 1976, IDRC has been supporting research to develop more effective pumping systems for rural water supply. These projects have demonstrated convincingly that simple polyvinyl chloride (PVC) components can be used to manufacture hand pumps, making it possible to maintain and repair them at the village level with local resources. Health Sciences is now supporting the development of an instruction manual for the installation, maintenance, and repair of the PVC pump in Asia. The manual will be designed for illiterate and semiliterate villagers and will incorporate their input.

The division also sponsored a project on nonsurgical sterilization of women. Researchers will study the feasibility of using quinacrine hydrochloride, a well known drug on which human and animal data are extensive, in clinical trials in Indonesia, Malaysia, and Thailand.

In the past decade, the Agriculture, Food and Nutrition Sciences Division (AFNS) has funded



Major research projects have been funded in aquaculture and mariculture.

many major research projects in Asia, especially in crops and cropping systems, animal husbandry, and aquaculture and mariculture.

In India, where crop damage by locusts can be devastating, the division is supporting a project to find biological control agents for grasshoppers and locusts. If the project succeeds, the results could be of incalculable benefit to the agriculture of many other countries.

The division provided major funding support in 1983 to the Indian Council of Agricultural Research (ICAR) to continue its work on the genetic improvement of the "minor millets." These occupy some 4.5 million hectares in India and are subsistence crops for some of the poorest tribal and other rural people in South Asia and Africa.

The Philippines relies heavily on imports of oil for its energy needs. The AFNS Division is administering a project to utilize the gas from charcoal manufacture to fuel small-scale electric generators, and to find useful applications for the chemical by-products of charcoal production such as wood tar, acetic acid, and methanol. At present, these products are wasted and create a health hazard to the community by polluting the environment.

IDRC's Social Sciences Division, in 1983, began sponsoring an assessment of the impact of a large integrated rural-development project in 40 villages in the economically depressed district of Nang Rong in Thailand. Of particular significance is the fact that the project will provide valuable training for many social scientists, public-health experts, and agricultural economists.

On the Indian subcontinent, the division has supported a project on patterns of child mortality and morbidity. This is research to which the Centre has always provided active support.

In Malaysia, a project began in 1983, in collaboration with the Health Sciences Division, to investigate the sale and promotion of pharmaceuticals. The results could provide input for the formulation of a comprehensive national drug policy and be of great interest to health professionals who often do not have access to accurate information on many of the drugs that are commonly prescribed.

The division is also supporting an in-depth fertility study in China that will compare fertility, family planning, and other population characteristics of households in three provinces. This is a rare opportunity to understand better the dynamics of China's population, now estimated at one billion.

New IDRC Regional Office for South Asia

On 2 June 1983, the Centre opened its second office in Asia. Located in New Delhi, the South Asia Regional Office will oversee projects in India, Bangladesh, the Maldives, Nepal, Pakistan, and Sri Lanka. The new office will be particularly valuable in helping the Singapore office concentrate further support on the weak research structures in the Pacific region.

The countries

Bangladesh
India
Maldives
Nepal
Pakistan
Sri Lanka

LATIN AMERICA and the CARIBBEAN



SOUTH America alone, from the Isthmus of Panama in the north to Tierra del Fuego in the south, covers 18 million square kilometres. There is great wealth in this region, and it consists of much more than the promise of gold and silver that lured the first explorers to America.

The Amazon Basin — the greatest river basin in the tropical world — has immense rain forests with perhaps the Earth's most important reserve of natural resources. At least 117 species of trees have been identified in an area as small as one square kilometre. The Amazon Basin has potential for agriculture and animal husbandry, and recent geological explorations have found mineral resources and oil. The greatest challenge facing Brazil and its Amazonian neighbours (Bolivia, Ecuador, French Guiana, Guyana, Peru, Surinam, and Venezuela) is, however, to preserve the delicate ecological balance that sustains the fertility of the soil.

There are large petroleum reserves around Lake Maracaibo in Venezuela, the coastal plains of Ecuador and Peru, along the eastern Andes of Bolivia, and in southern Patagonia, in Argentina. Latin America is also rich in iron ore and has large deposits of copper, tin, and manganese.

Industrialization is not advanced, however, and the economic base is largely agricultural. Although large amounts of coffee, wheat, and maize are produced, only five percent of the land is arable and, as in other developing regions, agricultural production is chronically inadequate. In the Caribbean, for instance, much of the land is porous limestone and seriously deficient in nutrients essential to agricul-

ture. And although the Caribbean has potentially important fisheries resources, they remain at an artisanal level and are unable to meet the area's needs.

Ethnologically, the region is one of the most diverse and vibrant in the world. Thousands of languages and dialects have been catalogued, documenting an unmatched linguistic and cultural multiplicity. The Caribbean alone has some 50 distinct geographical, political, and cultural entities. In spite of the region's astonishing diversity, however, most of its component countries share the same heritage — the Hispanic culture and an experience as former plantation colonies.

The Present Outlook

Of the developing regions of the world, Latin America has perhaps been the most dramatically affected by the global economic recession. The region's crushing external debt and rampant inflation have devastated national currencies. In Argentina, Brazil, and Chile, currencies have depreciated to one- or two-thousandths of the 1914 value in terms of the U.S. dollar. At the end of 1982, these three countries had a combined net liability of US\$76 billion. Simply to service this debt in the face of falling exports has meant extreme economic vulnerability.

In many countries, the growth rate of the gross domestic product (GDP) has fallen sharply. Between 1970 and 1974, the average annual growth was 7.4 percent, but by 1981 it was only 1.2 percent.

An important positive trend, however, has been a significant increase in intraregional trade, somewhat lessening dependence on selling a narrow range of export commodities to North America and Western Europe.

Behind many of the region's economic difficulties is the "energy squeeze." Over the last few decades, the region's economic development — particularly in industry and transport —

has been closely related to the availability of relatively low-cost, oil-intensive technologies. These were imported from developed countries and used as substitutes for those based on traditional energy sources, which were usually abundant and economical.

Throughout Latin America and the Caribbean, low agricultural production is emerging as a critical and chronic problem. Several countries that were previously food self-sufficient are now rapidly becoming net food importers.

The Research Environment

The Latin American and Caribbean region has a relatively well developed research environment. What is required, however, particularly in the agricultural and energy sectors, is an assurance of continued help in funding and of more contacts with the international research community.

In most countries of the region, external funds represent 10–35 percent of the total investment in research. In some of the smaller countries, they account for as much as 60 percent of the total funding for research. These sources are extraordinarily important as national research budgets are either cut or frozen and the foundations of research infrastructures erode.

There are several other major obstacles for research in Latin America. First, many countries have not been able to link private research activities (conducted mainly by organizations involved in export crops such as coffee and sugar) with those carried out through public resources. An emerging factor is the increasingly important role likely to be played by local private foundations as funding sources. In the future, it will be critical to mobilize such resources for research from the private sector.

Second, political crises in the area generate a great deal of anxiety within the research community. Establishing professional contacts with colleagues

in other countries is one way to give much-needed reassurance and support.

A third constraint to the effectiveness of research programs is the region's limited capacity for research management, which results in inefficient utilization of scarce resources. There is also the need — as in other developing regions — to forge a link between research and policymaking so that results may be effectively applied in the field.

Regional Office for Latin America and the Caribbean

The IDRC office in Bogota, Colombia, serves a region made up of 32 countries with a population of some 300 million people. Since 1970, the Centre has supported more than 527 research projects in the region for a total value of \$70 million.

The countries

Antigua	Guatemala
Argentina	Guyana
Bahamas	Haiti
Barbados	Honduras
Belize	Jamaica
Bolivia	Mexico
Brazil	Nicaragua
Chile	Panama
Colombia	Paraguay
Costa Rica	Peru
Cuba	Saint Lucia
Dominica	Saint Vincent
Dominican Republic	Surinam
Ecuador	Trinidad and Tobago
El Salvador	Uruguay
Grenada	Venezuela

IDRC, through its Office of Planning and Evaluation (OPE), has been especially concerned with monitoring the research environment in the region. For example, in 1982, a study was carried out in Costa Rica by IDRC and the Consejo Nacional de Investigaciones Científicas y Tecnológicas (CONICIT), and a preliminary report was published detailing the size and characteristics of the country's scientific community and its overall research orientation.

In Colombia, a study was initiated to evaluate the impact of IDRC-funded research carried out by the Centro de Investigaciones Multidisciplinarias en Desarrollo Rural (CIMDER). The IDRC-funded study attempted to apply and evaluate a strategy for rural development based on a system of primary health-care delivery that could eventually be used for activities in such other sectors as agriculture, education, and sanitation.

The Information Sciences Division's projects in Latin America and the Caribbean have concentrated on four areas: agricultural information, information on population problems, education information, and information related to development issues for policy- and decision-makers.

The division continued to provide substantial funding support to regional and transregional information centres in 1983. For instance, it has been cooperating for eight years with the Pan American Center for Sanitary Engineering and Environmental Sciences (CEPIS), a specialized body of the Pan American Health Organization (PAHO). The result has been the setting up of the Pan American Network for Information and Documentation in Sanitary Engineering and Environmental Sciences (REPIDISCA). With Centre support, the network is growing rapidly. In addition to the 30 national centres now operational, 8 new centres are being developed, and another 11 institutions have expressed a desire to



Fertility research: the relationship between poverty and population growth is not fully understood.

join the network during the next consolidation phase.

Market information related to the production and sale of nontraditional export crops in the Caribbean region is virtually unavailable. This has severely constrained the growth of intraregional trade in food products. Information Sciences support enabled the Association of Caribbean Transformation (ACT) to begin to develop and test a pilot market-information system that will provide current market information on domestic food commodities in three countries of the region.



Diseases about which little is known threaten the growth and survival of South America's camelids.

South American camelids (alpaca, guanaco, llama, and vicuna) live in an area of approximately five million hectares in the High Andes of Argentina, Bolivia, Chile, Ecuador, and Peru. However, the survival and growth in numbers of these animals are threatened by diseases and the lack of scientific knowledge necessary for efficient husbandry. Support from the division helped the Instituto de Fomento Lanero (INFOL) in La Paz, Bolivia, and the Instituto Veterinario de Investigaciones Tropicales y de Altura (IVITA) in Lima, Peru, to create a specialized information service on South American camelids.

IDRC's Agriculture, Food and Nutrition Sciences Division (AFNS) has concentrated on two research areas within the region: animal sciences, and crops and cropping systems. Projects dealing with the latter have contributed to an important change in the traditional approach to agricultural research in the region — more and more, scientists are demonstrating in their work an understanding of the farmers' opportunities and constraints.

The AFNS Division provided substantial funding to a research network

(PRACIPA) created by the International Potato Center (CIP) in Lima, Peru. This support will enable a project in five Andean countries to increase the rate of exchange of information and germ plasm and to promote training for farmers and technical staff.

The Fundación para la Aplicación y la Enseñanza de las Ciencias (FUNDAEC) in Cali, Colombia, has achieved a high degree of success both in rural education and in cropping-systems research. In the process, FUNDAEC has emerged as an important model for national and international institutions. With continued support from the AFNS and Social Sciences Divisions, FUNDAEC will conduct research in annual and perennial cropping systems as well as train young farmers, grammar-school teachers, and agronomists in a unique project combining rural education with small-holder cropping-systems research.

The necessity of providing employment to migrant settlers in the Amazonian region of Peru is already known through a project supported by the AFNS Division. The project yielded valuable insights into the complex ecology and production systems of the rain forests. Continued support in 1983 will permit further research to be carried out on the development of improved dairy-beef production systems appropriate to the unique Amazonian conditions and the preferences of the farmers.

Health Sciences projects in the region show a substantial concentration on rural health-care delivery systems, fertility control, and tropical diseases.

Over the past few decades, Costa Rica, like some other more developed Third World countries, has significantly improved the health of its people. More recently, however, and for reasons that are not clear, this trend has shown signs of reversing. The Centre's Health Sciences Division has pro-

vided major funding support for a project that will try to identify the social determinants, environmental conditions, and health characteristics of pregnant women that could explain the rising rates of low birth weight and neonatal mortality recently observed in Costa Rica. The results of this work could be of great interest to other countries.

In spite of major advances in diagnosis and therapy, infectious diseases continue to claim the lives of millions of people in developing countries. Although chemotherapy has been used successfully to treat chronic infections, such as leprosy and tuberculosis, the drugs of choice are too costly for most Third-World countries. In 1983, the division began to support a project to evaluate a short-term drug regimen to treat pulmonary tuberculosis in Brazil, where some 30 million people are thought to have had a history of the disease. The results may be of significant benefit to many developing countries faced with a high prevalence of infectious diseases.

Because of ecological conditions in Latin America, a devastating epidemic of yellow fever — a mosquito-transmitted infectious disease — could break out at any time and the present supply of vaccine is completely inadequate. A project supported by the division will seek to modernize and improve production facilities for yellow-fever vaccine in Colombia and Brazil.

IDRC's Social Sciences projects in the region have concentrated on two program areas: population, and science and technology. The second is an area in which Latin American social science researchers have taken a particular interest in the last decade.

Argentina's education system is one of the most developed in Latin America. However, the socioeconomic and political conditions of the past several years have had a serious nega-

tive impact on it, particularly at the secondary level. The Centre's Social Sciences Division supported the Facultad Latinoamericana de Ciencias Sociales (FLACSO) in Buenos Aires to analyze the structure and role of secondary education in Argentina in the context of the country's economic and political processes.

Although the central districts in the major cities of Latin America are known to suffer from poor housing, limited essential services, and pollution, there has been little research on these problems. The division supported a project that will analyze the socioeconomic and environmental problems of the central districts in Corrientes and Catamarca, in Argentina, and Montevideo, in Uruguay. The project will focus on the role of community participation in the rehabilitation of central districts.

Like many of the other economies of the Caribbean, Jamaica faces difficult economic conditions, one of the most dominant being a chronically high level of unemployment. Funding support from the division in 1983 will enable the Institute of Social and Economic Research (ISER) at the University of the West Indies, in Jamaica, to draw up a comprehensive profile of the spatial and sectoral mobility of the Jamaican labour force and develop suitable methodologies for assessing the interrelationships between labour-force mobility and national development strategies.

CANADA and the THIRD WORLD



IN an interdependent world, no nation can stand alone and claim immunity from the economic and other vicissitudes buffeting the world. Canada, as a major trading nation, is perhaps more conscious than some developed countries of the need for economic and other forms of cooperation. Although one hears occasionally of "aid weariness," of a certain lassitude toward foreign assistance, the Government of Canada remains committed to appropriating 0.5 percent of the gross national product (GNP) for overseas development assistance by 1985 and to reaching 0.7 percent of GNP by 1990.

In particular, IDRC is concerned with stimulating interest in development issues within Canada's academic and research community, and with forging effective, strong links between institutions at home and those in the Third World: these may be academic, governmental, or private-sector institutions. The two key means for doing this are the Cooperative Programs Division and the Fellowships and Awards Division.

Cooperative Programs Division

Each year, an estimated \$150 billion is spent on research and technical development around the world: developing countries account for about three percent of this total. Of the three million scientists and engineers involved in these activities, only about 13 percent are employed in the Third World.

This stark disparity led developing countries at the UN Conference on Science and Technology for Development, held in Vienna in 1979, to ask

for greater access to research. Canada's response was the creation of a new program, administered by IDRC, that would enable developing countries to share in Canadian research and development expertise. IDRC's Cooperative Programs Unit was created in 1980 and became a full division in 1983.

Although the main objective of the division is to promote collaboration between research groups in developing countries and their counterparts in Canada, these cooperative projects respect the Centre's mandate of responding to the expressed needs of the nations of the Third World. Another important component of the division's philosophy is to encourage multidisciplinary research that could not be undertaken by any of the Centre's major program divisions. The division also seeks to help developing countries complement applied research at home with basic research in Canada, research involving sophisticated techniques and expensive equipment that put it beyond the reach of many developing countries for the foreseeable future.

An excellent example of the multidisciplinary approach in action is the Riverbank Erosion Impact Study in Bangladesh. Each year, the plight of the rural poor in Bangladesh is exacerbated by the flooding of three major river systems that permanently displaces thousands of people by eroding away their meagre landholdings. Until this year, there had been little interchange between the physical and social scientists on the subject, or between the research community and the planners. Now, however, a major cooperative project will bring together researchers from the Department of Geography of Jahangirnagar University, Dhaka, and the University of Manitoba, Winnipeg. By mobilizing the expertise of many disciplines and institutions half a world apart, this project will attempt to develop techniques for forecasting river-channel

migration and policy options for dealing with its effects.

In 1983, the Cooperative Programs Division financed a large prospecting project in West Africa. A Canadian engineering company, Cartier-Monenco, has become a partner of the Senegal Peat Company. The goal of the project is to identify potential peat sites in the region of the Casamance and Siné-Saloum rivers. It is hoped that the use of peat will permit a considerable reduction in the consumption of the heavy fuel imported into Senegal to meet domestic energy needs, and contribute to the conservation of the country's forests.

Over the past several years, the East China Normal University (ECNU), in Shanghai, has been collaborating with the University of Victoria, in British Columbia. ECNU is responsible for training lecturers and teachers for some 200 normal colleges and secondary schools throughout China. With financial support from the division, ECNU will collaborate with the

University of Victoria in the design and implementation of seven specific research projects in curriculum and cognitive development, evaluation, educational administration, adult education, and computer-assisted instruction.

Liaison with other donor agencies is important to the Centre. For instance, IDRC shares information on development-research priorities and activities with other agencies to maximize the general effectiveness and impact of development assistance. The Centre and five other agencies are currently carrying out a pilot project to create a shared data base — the Inter-Agency Development Research Information System (IDRIS). It is intended that this information be made available to developing and other countries concerned with development issues.

Fellowships and Awards Division

"The decisive factors of production in improving the welfare of poor people are not space, energy, and cropland; the decisive factors are the improvement in population quality and advances in knowledge." These are the words of Nobel laureate and former IDRC Governor Theodore W. Schultz. The idea that investing in people is basic to achieving economic progress is at the centre of all IDRC projects.

The activities of the Fellowships and Awards Division (FAD) are a direct application of this strategic idea, and seek to build up the human capital of researchers, administrators, managers, and planners needed for development.

In 1983, the Fellowships Program, which had been administered by the Office of the Secretary and General Counsel, became a full division. The change reflects the growing importance the Centre attaches to direct human investment in the training of researchers.



Research for the benefit of humanity.

FAD assists in the training and upgrading of the qualifications of individuals working in fields related to the broad mandate given IDRC: agriculture, health, information, communications, and social and economic policy. A variety of awards, study grants, and training programs are supported. The principal focus is on people from the least-developed countries, and on professional development rather than basic training. Award holders pursue their studies at recognized centres of excellence in research or education either locally, within their region, or in Canada or another developed country. Award holders are expected to return to their home country at the end of their program to apply their newly refined skills.

In 1983, the division spread its investment in people over a range of awards and training activities.

A senior fellowship enabled a senior researcher from India to undertake a one-year working sabbatical to study changes in agriculture in South Asia and how they will affect food-grain production.

Ten Pearson fellowships, honouring the late Canadian Prime Minister, Lester B. Pearson, allowed young public servants from developing countries to pursue professional training in Canada. In 1983, the fellowships were in the field of health care.

Eight Canadian professionals in mid-career were given professional development awards to improve or update their skills and knowledge in international development or to adapt their skills to development needs. Topics included the impact of communications and development projects aimed specifically at women.

Thirty-five program-related awards went to researchers, administrators, and financial personnel in developing countries to undertake training programs of either an academic or applied nature. Among them: training in science journalism for a West African



Investing in people is basic to achieving economic progress.

newspaper reporter; study toward a master's degree in library science for an awardee from Sri Lanka; and a short course on solar disinfection in water supply and sanitation for two award holders from Lebanon.

Thirty-seven pre- and postproject awards enabled researchers who have been, or will be, involved in IDRC-supported research in developing countries to undertake training related to the needs of their research. Higher degree studies have been undertaken in civil engineering (Mexico), education research (Nepal), epidemiology (Sudan), and plant biology (Togo), to name just a few fields.

Seven young Canadian researchers took up awards designed to encourage the involvement of doctoral and master's students in the scientific concerns of development. Tropical medicine and anthropology were among the disciplines studied.

The division also contributed to training programs offered by the International Foundation for Science in Stockholm, Sweden, and the Hague Academy of International Law at The Hague, The Netherlands.

In addition to the different individual awards, the division sponsored eight group-training programs designed to improve technical, research, and administrative skills

through intensive practical training. This activity provided the opportunity, for example, for industrial researchers from around the world to investigate problem-solving methods in small-scale food industries.

The division sponsored a number of training courses in developing countries. One such project enabled Kasetsart University, in Thailand, to organize a one-month regional workshop on the socioeconomics of livestock production. Another, on research on urban problems in the developing countries, permitted a working group of the International Geographical Union to train specialists in the use of the latest techniques and methods of analysis; the course was held at the Universiti Sains Malaysia in Penang. A third project supported a follow-up research course aimed at familiarizing forest research officers from Asian and Pacific countries with the principles and practice of forest research, emphasizing wood production rather than utilization.

Information Seminars in Canada

Canada has a great wealth of experience and expertise on which to draw in assisting developing countries in harnessing research for human well-being.

IDRC's Communications Division has been active in helping to create bonds between the research community in Canada and the Third World. In 1983, the University of Manitoba and the division cosponsored a workshop to inform researchers and policymakers from Saskatchewan, Manitoba, and northwestern Ontario about research for Third-World development. It was an occasion to exchange information on mid-Canada's experience in various research fields

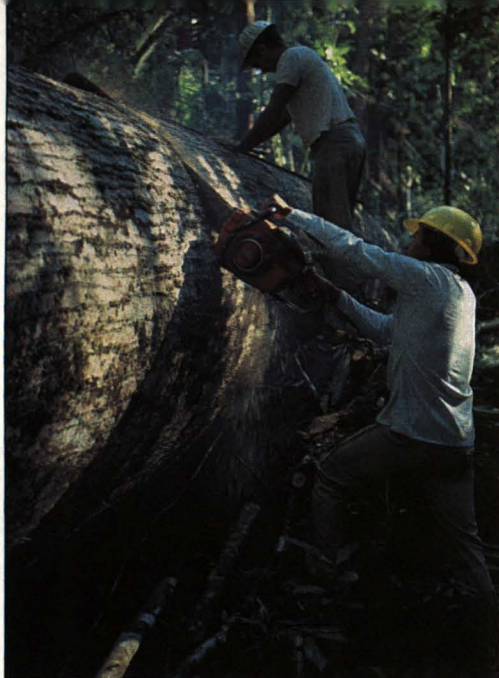
and to identify the capacity within the region for collaboration with developing-country research institutions. The three-day program focused on social science research, the geosciences, crops and cropping systems, postproduction systems, information systems, and communicable diseases.

Energy Research

A new area of research for the Centre, and one in which there was a significant development in 1983, is energy. The energy crisis continues to be felt much more acutely in the South than in the North. In developing countries, the energy crisis means much more than the inconvenience of higher gasoline prices. It means that the daily struggle to find wood for cooking or heating has become harder because all the available trees have been cut. It means farmers cannot afford the petroleum-based fertilizers or chemicals necessary for adequate food production. It means that meeting the bill for oil imports leaves little in the national budget for spending on health or education.

In response to the urgings of developing countries at the 1981 UN Conference on New and Renewable Sources of Energy in Nairobi, Canada pledged \$10 million for energy research to aid the Third World. IDRC was asked to begin the work needed to help developing countries make the transition to sustainable sources of energy.

In 1983, IDRC and the United Nations University in Tokyo jointly established an Energy Research Group (ERG) composed of 10 eminent energy specialists from developing countries. An independent body, ERG will survey the existing and potential capability of developing countries to conduct energy research and development. The group aims to work out the energy-research priorities for developing countries and to suggest how research resources can be better allocated.



Energy: the challenge is to not destroy the environment.

Office of Planning and Evaluation

In a rapidly changing research environment, constant reconnaissance and analysis are needed to maintain the flexibility — or agility — to respond to genuinely changed needs and priorities.

In the Office of Planning and Evaluation (OPE), IDRC has just such a capacity. OPE assesses the Centre's projects and programs and provides the information needed to adjust operations and planning to remain effective and efficient.

For instance, in Ethiopia, IDRC has undertaken, with the Ethiopia Science and Technology Commission, an evaluation of the Centre's activities in relation to research priorities and developmental needs.

In Southeast Asia, where the Centre has been active for over a decade, a prospective study, funded in 1983, will scout for new ideas and recommendations for the planning of its activities in the region.

In addition, OPE calls upon the experience and resources of the Centre's six regional offices: in Colombia, Egypt, India, Kenya, Senegal, and Singapore. Each year, as OPE reviews the scientific environment and research priorities in the developing countries, it also coordinates detailed reports from the regional offices. These constitute an important element in the materials examined by the Centre's Board of Governors and by the scientific staff.

IDRC's Resources Sector

Experience shows that many research projects have had only limited success — or have even failed — because of weaknesses in financial administration or human-resources planning. In recent years, some of IDRC's support divisions have begun to play an active role in helping research institutions eliminate or avoid these problems.

IDRC's Resources Sector, composed of the Office of the Comptroller General and Treasurer and the Human Resources Division, is currently funding a review of the management practices of a number of research institutions in the Sahel region of West Africa. The information gathered will be used to help design a series of training courses for all levels of management. It will also help in the formulation of recommendations to each institution on how to improve management and to each donor on how to ease the administrative burden placed on the recipient institution by the various demands of donors.

The Resources Sector has also funded management workshops in the Philippines, Singapore, and Thailand designed for research-project leaders and financial managers, as well as government representatives. Another project in East Africa is developing curriculum modules for training at various levels in the research organizations of the region.

Books

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(Also available in English IDRC-195e)

By-product utilization for animal production: proceedings of a workshop on applied research held in Nairobi, Kenya, 26-30 September 1982. B. Kiflewahid, G.R. Potts, and R.M. Drysdale. 158 p. IDRC-206e

Cassava toxicity and thyroid: research and public health issues: proceedings of a workshop held in Ottawa, Canada, 31 May-2 June 1982. F. Delange and R. Ahluwalia. 148 p. IDRC-207e

Basic housing: policies for urban sites, services, and shelter in developing countries. A.A. Laquian. 163 p. IDRC-208e

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Leucaena research in the Asian-Pacific region: proceedings of a workshop held in Singapore, 23-26 November 1982. 192 p. IDRC-211e

Searching: review of IDRC activities 1982. 40 p. IDRC-212e.
(Also available in French IDRC-212f and Spanish IDRC-212s)

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R.M. Bechtel. 148 p. IDRC-216e

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150 p. IDRC-217e

Educational financing in developing countries: research findings and contemporary issues. E. Schiefelbein.

168 p. IDRC-TS38e

(Also available in French IDRC-TS38f)

Universal primary education in Tanzania.

I.M. Omari, A.S. Mbise, S.T. Mahenge, G.A. Malekela, and M.P. Beshu. 87 p. IDRC-TS42e

International socioeconomic information systems: an evaluative study of DEVSIS-type programs. W.O. Aiyepku. 100 p. IDRC-TS43e

(Also available in French IDRC-TS43f)

Checklist of publications associated with IDRC and recorded in AGRIS: 1975-1982.

79 p. IDRC-TS44e

Magazine and News Service

The IDRC Reports/Le CRDI Explore/El CIID Informa —

Published in three separate language editions, this 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 20 000 per issue, of which 52 percent is to the developing countries, 32 percent within Canada, and the remainder to other countries.

IDRC Features/Reportages CRDI — This news-feature service on scientific, technical, and educational subjects related to international development is published 10 times each year and distributed free of charge to selected news media in the developing world. During 1983, 35 feature articles written by IDRC staff and selected contributors were distributed in English and French to some 600 publications in 97 countries. Several news agencies in the Third World also distribute IDRC Features.

Films

Prescription for Health: Clean Water • Hygiene • Sanitation —

Every day in developing countries, waterborne diseases such as cholera, typhoid, and dysentery kill thousands of people, mostly children. The IDRC film "Prescription for Health," released in October 1983, promotes personal hygiene and community practices that can help break the cycle of infection. The film is aimed primarily at health-care workers, and water and sanitation engineers and technicians in developing countries. It is also intended as a prime source of information for policymakers. The 23-minute, 16-mm colour film, shot on location in Asia and Africa, was produced by IDRC's Communications Division.

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