

Health Sciences Division Statement

International Development Research Centre

Annex: Position Papers

October 1988

Health Sciences Division Statement

Volume I

Table of Contents	<i>i</i>
Preface	<i>iv</i>
Executive Summary	1
Introduction	5
I. IDRC Overview	7
IDRC's Mandate, Mission, Objectives	7
Reassessment of Centre Strategy	8
II. Health Sciences Division Overview	11
History of the Division	11
Status of the Health Sciences Division	12
Mission and objectives	12
Organization	12
Project and program development	15
Management and administration	16
Need for a Divisional Strategic Plan	17
III. Assessment of the Existing Health Research Situation	19
Demand Assessment	19
Indicators of health status	20
Indicators of coverage by primary health care services	20
Canadian emphasis on health research ODA	22
Other demand factors	22
Supply Assessment	24
Comparative Analysis of Demand and Supply	25
IV. Health Sciences Division Program Assessment	29
Program Analysis	29
Funding patterns	29
Project focus	32
Assessment of Available Resources	34
Budget	34
Person years	35
V. Operational and Strategic Issues	37
Responsiveness and the Hands-On Approach	37
Capacity Building	37
Project Size	37
Relevance to Beneficiaries	38
Professional Staff	38
Evaluation	38
Program Strategy	38

Health Sciences Division Statement

Volume II

VI. Research Strategy	41
VII. The Research Programs	45
Health and the Community	46
Scope and priorities	46
Themes	48
Program profile	50
Health Systems	50
Scope and priorities	51
Themes	52
Other issues	57
Future directions	58
Health and the Environment	58
Scope and priorities	59
Themes	59
Summary	63
Special Initiatives	64
VIII. The Strengthening of Indigenous Research Capacity	67
IX. Regional Strategies	71
X. Staffing	75
XI. Budget	77
XII. Division Management	79
Operations	79
Information	79
Other Division Activities	81
XIII. Evaluation	83
Hierarchy of Evaluation	84
Stripe evaluations	85
Division-level evaluations	85
Program-level evaluations	85
Evaluation of themes	85
Evaluations of groups of projects	86
Evaluations of projects	86
Project Completion Reports	86
Resources Required	87
Conclusions	87
Figures and Tables	89

Annexes

- 1. A Nutrition Thrust in the Health Sciences Division**
- 2. Building Research Capacity in Developing Countries**
- 3. Research in Health Education: Possibilities for the Health Sciences Division**
- 4. Evaluation in the Health Sciences Division**
- 5. Support of AIDS-Related Research**
- 6. Toxic Substances and Health**
- 7. Women, Health and Development: Perspective from the Health Sciences Division**
- 8. Regional Strategies: With Particular Reference to the Health Sector**

A NUTRITION THRUST IN THE HEALTH SCIENCES DIVISION

March 1988

J. Cervinkas

TABLE OF CONTENTS

PAGE

I.	Nutrition and Development	1
II.	Overcoming Malnutrition: A brief history of trends in research and development activities	1
III.	Approaches for a HSD Nutrition Thrust	6
IV.	Recommendations	11
V.	References	14

Appendices *

Appendix 1	HSD Support to Nutrition Research
Appendix 2	Suggested Areas of HSD Support to Nutrition Research
Appendix 3	Draft on Food and Nutrition in WARO. January 1988 by C. de Sweemer.
Appendix 4	Memorandum from E. Weber to R. Young on "Nutrition: Presentation to Management Committee" dated January 5, 1988.

A NUTRITION THRUST IN THE HEALTH SCIENCES DIVISION

I. Nutrition and Development

Adequate nutrition is a basic requirement that must be met if people are to enjoy good health and a minimum standard of well-being. Malnutrition is "both a consequence and a determinant of underdevelopment. It is fundamentally a product of poverty, yet in turn it erodes a country's human capital, thus further tightening the web of poverty. The deprivation caused by malnutrition stands out as an intolerable denial of a basic need and human right".¹

It is estimated that today one fifth of the world's population does not get enough to eat. This year alone, over 20 million people, mostly children, will die from starvation and diseases related to malnutrition.

For those who do survive, often under varying degrees of malnutrition, the attainment of their full human potential can be forever out of reach. Particularly disturbing are the strong indications that the nutritional situation is deteriorating in a number of countries where macroeconomic adjustments have been made, with pre-schoolers and women the main victims².

II. Overcoming Malnutrition: A brief history of trends in research and development activities

The focus of research on nutrition over the years has generally reflected the conceptualization of the causes of malnutrition current at the time. Up until the 1970's the bulk of scientific research was basically generated in food technology institutes, agricultural research centres and medical laboratories. The emphasis was on technological and biochemical research: this being the result of a view that malnutrition was the consequence of limited availability and/or utilization of

food at the level of the individual and community. In the 1950's and 1960's, protein deficiency was considered the major cause of third world nutrition problems and this led to substantial investment in research on protein as a food source. This narrow view of the causation of malnutrition led to the development of technical fixes for malnutrition, such as single cell proteins and fish protein concentrates. In this era, research resources were also concentrated on the development of weaning food mixtures, on basic and clinical research on nutrient metabolism, and on the interrelationship between nutritional status and infection. Also the health sector increasingly played an important role in the prevention and management of malnutrition through its activities related to the prevention, detection and treatment of diseases.

In general, the failure of these approaches to make any significant indent on malnutrition, plus the realization that lack of energy was the fundamental cause of protein-energy malnutrition, resulted in a radical realignment of priorities in allocation of resources for research. Attention in the scientific community turned instead towards the further harnessing of science to increase yields in order to improve nutrition, an objective that agricultural scientists had been actively pursuing since the 1950's, alongside research on tropical agro-industrial crops.

In the early 1970's the Green Revolution arrived, bringing fertilizers, pesticides and new high-yield seeds to improve nutrition. While the Green Revolution often did result in a significant increase in food production, it did not however live up to the expectations it raised. When the accounting was done it was found that, while it was possible to significantly increase crop yields in many situations, hunger and malnutrition persisted and the gulf between the rich and the poor had in many cases widened.

With this experience it could no longer be assumed that increasing yields, while necessary, would be sufficient to improve nutrition. Factors such as access to resources, especially capital or arable land, were undeniably important determinants of access to food and consequently, better nutrition and health.

By the mid-1970's the move in the development and research communities was to finally regard malnutrition as being grounded in a complex array of relationships that needed to be identified,

analyzed and understood before effective solutions could be formulated and implemented. The multi-dimensional nature of malnutrition has been graphically portrayed in diagrams prepared by a number of authors, including E.T. Kennedy and P. Pinstrup-Anderson (figure 1) and A. Pacey and P. Payne (figure 2). While researchers continued to conduct narrow investigations into specific aspects of the problem of malnutrition and their work contributed substantially to the body of scientific knowledge on food and nutrition, the limitations of isolated interventions aimed at alleviating malnutrition were recognized without a doubt. Research horizons had to be broadened and solutions had to be more comprehensive in their approaches.

Multi-sectoral nutrition planning, integrated into broader development policy planning and programmes, was then actively promoted as the panacea to the problem of malnutrition. The purpose of the planning exercise was to identify a range of policies and programmes which would set out a comprehensive, systematic and cost-effective approach to alleviating malnutrition. The various agencies of government were to be mobilized in a well co-ordinated plan of attack on malnutrition. Food and nutrition problems were to be viewed holistically, with solutions requiring that action cut across major sectors such as agriculture, health and education, and the ministerial jurisdictions responsible for these sectors.³

By the 1980's however, the hope that multi-sectoral nutrition planning would lessen widespread malnutrition had dimmed considerably. In general, the approach had proved to be difficult to operationalize. It was overly holistic and ambitious, unrealistic in terms of national government capabilities and its expectations for intersectoral collaboration and too demanding on facilities for data collection, analysis and application. And of serious concern, the ultimate beneficiaries - the malnourished - did not receive the attention they deserved and needed.

Nonetheless, the experience with multi-sectoral nutrition planning has left a valuable legacy. As Alan Berg⁴ points out in an eloquent rebuttal to John Osgood Field's assessment that nutrition planning is dead, "nutrition problems and their solutions are today being looked at very differently than before this all started". Many people working in action projects or in research have been stimulated to broaden their vision and think more holistically and analytically about the multiple causality of malnutrition. The incorporation of nutrition improvement objectives into practical schemes in areas such as community and rural development, primary health care, agricultural development, and employment and income generation is now widely accepted as a desirable goal. Many of these activities have been undertaken by NGO's, community groups and other organizations.

The orientation of organizations like UNICEF, (e.g. with its GOBI programme and the Situational Analyses it undertook in many countries) and other UN agencies (e.g. in the multi-agency approach to nutritional surveillance) and that of IFPRI (the International Food Policy Research Institute) has also clearly been influenced by an approach based on the multi-sectoral analysis of the causes of malnutrition.

Additionally, at various levels there are examples to be found of successful multi-sectoral operational efforts to alleviate malnutrition. Large-scale models of successful nutrition interventions which are clearly multi-sectoral are the Tamil Nadu Integrated Nutrition Project and the experiences in the state of Kerala, both in India. On a smaller scale, many NGO's have also successfully undertaken initiatives to combat malnutrition - A characteristic of these successful interventions is that, prior to deciding upon appropriate interventions, a systemic analysis of the food and nutrition situation has been undertaken. As a result it is found that the proposed interventions often fall outside of the health and nutrition sectors, and may involve a broad range of desired actions. Importantly, decisions to improve a community's health and nutrition status have often necessitated social and political changes: scientific knowledge is often not enough.

Without a doubt, a thorough appreciation of the factors contributing to malnutrition in a given context before identifying appropriate interventions is fundamental to the success of nutrition improvement initiatives. Moreover, there is much potential for achieving improvements by involving the appropriate people in the more localized identification and analysis of the causes of malnutrition. Depending on the situation, this could mean, for example, the participation of members of the local community, government authorities, academics or researchers. This local analysis can then lead to a decision on the choice of intervention and the strategy for change.

If the analysis is done at the community level, it will be necessary to identify those actions which can be undertaken by the community itself and those in which the authorities or specific sectors should be involved. This community diagnosis of malnutrition is sorely needed and is an area in which there is a gap in both reported experiences and the literature. Interesting approaches to community analysis and action on malnutrition are described in a few publications though, including Helping Health Workers Learn (5) and Community Diagnosis of Nutritional Problems by C. de Smeester (6). There is also much to be learned from writings in the adult education and participatory research fields about community-based problem identification and analysis, and from the agricultural field concerning the methodology of Rapid Rural Appraisal.

The experience of groups which have conducted nutrition activities based on community participation and local analysis of the food and nutrition situation may be important to examine. Both the impact of such activities on health and nutritional status and the process of community involvement in the identification and implementation of interventions are aspects that need further study. The challenge here may be to promote collaboration between NGO's and governmental programmes and to disseminate more widely the experiences and outcomes achieved by such groups.

While local analysis, planning and action can be promoted, it is necessary however to recognize the limitations on alleviating malnutrition that may exist in the local context. It would be wrong to place the burden of responsibility for malnutrition on those who may be powerless to change a given situation due to their lack of political influence or authority over operational programmes. "Top-down planning", the analysis and change of policies that may affect health and nutrition status (e.g. consumer prices, land ownership, agricultural policies regarding land use, migration and labour policies) and the involvement of those in positions of power to influence decisions that affect nutritional concerns (e.g. academic, health care planners and providers, agriculturalists, economists, etc.) will likely also be needed.

III. Approaches for a HSD Nutrition Thrust

It is with the preceding background in mind that approaches for HSD nutrition initiatives need to be considered. The challenge for the HSD (and indeed, for the Centre) is to move beyond an identification of the many known gaps in knowledge towards the formulation of strategies and approaches that we expect will make some impact on nutritional status. Given the magnitude of the problem of malnutrition globally and the real difficulties one faces when attempting to ameliorate malnutrition, it will be necessary to be realistic in terms of expectations for research funded by IDRC to make an impact on malnutrition.

In many cases, much more than research or work within the agriculture and health sectors may be needed to improve nutrition significantly. Indeed, it may be found that changes in the social, economic and political order (e.g. land reform, food subsidies, provision of safe water supply, income generation) can make the greatest impact on nutritional health.

So then, the question remains: What can the HSD do to make a substantial contribution to ameliorate malnutrition? How can our resources best be allocated for research on nutrition?

In the project mode of assistance to research the possibilities include the following:

- a) As in the past, continue to fund nutrition projects on an ad-hoc basis as proposals are submitted, in those topic areas proposed by the researchers and with the conceptual and methodological approaches they suggest. While such an approach may not contribute much to strengthening a particular theme area or network of researchers, it may be valuable for the local context and fit well into the context of that research institution and programme. In choosing this route however, one can expect only a limited impact of the research. By trying to do everything at once, we might in retrospect find that we have done very little.

A review of the support given to nutrition specific-research by the HSD since 1971 is found in Appendix 1.

- b) The HSD can take a more pro-active stance, and fund only proposals on IDRC-identified priority research topics and/or on priority target groups. The advantages to such an approach would be that it might be possible to develop a strong, focused programme in a single area. On the other hand, this approach would likely be seen to be unresponsive to local needs and priorities, taking the control over goal-setting out of the hands of the researchers and placing it in the donor's hands.
- c) The HSD could continue to fund nutrition proposals on an ad-hoc basis, but will consciously and systematically try to ensure that the following elements are contained in the proposal: (1) a multi-disciplinary perspective on the problem and the involvement of the corresponding range of appropriate technical expertise; (2) the research should be action-oriented, not stopping only at the fact-finding stage but stimulating, and even undertaking, the implementation of intervention programmes where appropriate; and 3) the research should be community-based where appropriate, with members of the community involved in the research process.

Community-based nutrition research would begin with careful community study and exploration of questions on the how and why of malnutrition problems. Here, in-depth knowledge is needed of local customs, and beliefs, food availability and market forces, health problems and services, and the socio-economic and political environment.

With such an approach it is expected that research conducted and solutions posed will be more relevant to the food and nutrition problems faced by communities. In adopting this approach to applied nutrition research, however, there are a number of limitations that will need to be recognized and addressed if the approach is to succeed. These include the following: the pursuit of narrow research interest arising from a yet widely prevalent narrow view of malnutrition and the research needed to overcome it; the lack of exchange between disciplines both in the academic and non-academic areas; the lack of a community approach practised by most nutritionists and researchers working on food and nutrition problems; and the lack of knowledge on the part of nutrition researchers regarding identification of nutrition problems and the range of research possibilities to address them.

Suggested areas of HSD support to nutrition research can be found in Appendix 2.

Given the complexity and magnitude of nutrition problems and the lack of research infrastructure found in many countries, it is proposed that research project support alone as provided in the past cannot be an adequate Centre response to the problem of malnutrition and certainly cannot be thought of as a Nutrition Thrust. If the HSD (and again, the Centre) wishes to build and strengthen a nutrition programme focus, it will be necessary to go beyond the effective demand expressed in reasonably good proposals and build the base needed to lay a sound foundation for a serious attempt at alleviating malnutrition. Areas to be emphasized should include: the promotion of attitudinal change towards nutrition interventions and community-based work; the development of research skills; the strengthening of food and nutrition research institutions; and the support by IDRC (in both financial and personnel terms) of innovative modes of assistance to nutrition related activities.

Some of the approaches that the HSD can adopt if it wishes to strengthen its nutrition research focus are outlined below:

- a) Research activities that work towards the goal of establishing networks of complementary projects should be promoted and supported. Such activities might well take the form of joint, inter-programme or inter-divisional projects.
- b) Collaboration with other organizations involved in initiatives to improve nutritional status can be sought to assure complementary inputs to development programmes.
- c) The development of Strategic Plans for Nutrition Research Support should be encouraged for each IDRC region. As these are developed they should be given every consideration and support possible. It is expected that Divisions besides the HSD would contribute to such plans and that resources, both financial and human, beyond the present Divisional allocations may well be required. The formulation of regional strategies might also present challenges to the traditional ways in which HSD has supported research. Besides the funding of projects, activities such as the organizing of workshops may be seen to be of high priority as well as the need to offer support to innovative presentations of proposals (e.g. such as the projects Applied Nutrition Research (Kenya) 3-P-86-0073 and the WHO-IDRC Small Grants Programme on Health Services Research in Africa 3-P-87-0269.

The development of strategies to overcome the regional food and nutrition problems is already underway in WARO and SARO. In WARO, Dr. de Sweemer has prepared a draft discussion paper on "Food and Nutrition in WARO" (copy attached as Appendix 3) in which the organization of a number of training workshops and the creation of a nutrition network is proposed. In SARO, R. Young (AFNS) and S. Mowat (SS) have long shown interest in inter-divisional support of nutrition research and are leading the discussion on plans for a SARO Nutrition Thrust. It is expected that they will soon submit a proposal for a two year project on nutrition, the funds to come from Centre reserve funds. An outline of this proposal is presented on pp. 4-5 of Appendix 4. The main components of this project are: a Senior Nutrition Advisor to assist the SPO in developing the regional nutrition programme; a nutritionist to assist with programme development and to conduct short studies on problem identification and NGO activities; a review of factors contributing to the success of nutrition interventions; and regional workshops on specific items of interest.

- d) Support for the development of capacity for conducting multi-disciplinary research in the area of nutrition, as needs to be emphasized, as Third World researchers are frequently isolated not only geographically but also according to discipline. Capacity building is especially necessary in Africa where the institutional and research base is very weak. This would require a continuous and prolonged effort over many years. In this regard it may be useful to assess, by region, the capacity of institutions to carry out nutrition research. The review could entail inventories of nutrition research and training institutes including information on courses available, professional staff and their areas of expertise, research equipment, library facilities and an assessment of the multi-disciplinary capacity of existing institutions.

- e) Training of nutrition researchers in various topics will be required. As stated in Dr. de Sweemer's draft on "Food and Nutrition in WARO" the following focus may need special attention in the training of capable nutrition researchers: principles of nutrition epidemiology; assessment of nutritional status; methodologies of community intervention for the different nutrient deficiencies; and the analysis and interpretation of nutrition data.

Also needed is the promotion of attitudes and/or skills that enable nutritionists to undertake multi-disciplinary and/or community-based research studies. Training support either through fellowships, or preferably, a series of workshops might go a long way to improve the research capacity in nutrition.

- f) The creation of awards or prizes to recognize creative, original applied nutrition research undertaken by young scholars can be promoted.
- g) The support of the publication by IDRC of a manual for use by researchers and primary health care workers on Community Diagnosis and Management of Nutrition Problems might be a useful activity to undertake in collaboration with the Communications Division. To my knowledge, such a manual does not exist and could serve as a catalyst to challenge and change the attitudes of the research community regarding the role of the researcher in the identification of nutrition research priorities and the methodologies needs to solve the problem in question.
- h) The HSD could become involved in the development and/or adaptation of methodologies in the area of problem identification in community nutrition. Here, experience with the methodologies of rapid nutritional assessment and of rapid rural appraisal might be useful to examine. Emphasis would be placed on methodologies to generate focused, manageable and relevant data to address the research question at hand.

More efficient tools might also be developed for more effective ways of analyzing and interpreting nutrition-related data and of disseminating research results.

- i) The HSD can be a partner in the facilitation of the pooling together of existing knowledge on nutrition research, with the goal of delineating gaps needing review and research. In this connection, the NWG has recommended that IDRC fund a consultative meeting of representatives of international agencies and scientists working in nutrition to review the current status of orientation of nutrition research and to determine future research needs. It might also be useful to fund specific country initiatives which focus upon the identification of priority nutrition research problems and the ways and means to address them.
- j) The HSD can promote the collection and analysis of community-based case studies dealing with malnutrition. The successes and failures of the various approaches (many probably undertaken by NGO's) can be analyzed and IDRC can play a role in publishing and disseminating this information.

IV. **Recommendations**

- 1. The HSD should continue to be involved in, and support, the work of the interdivisional Nutrition Working Group.
- 2. Research supported by the HSD should have the following general characteristics. It should:
 - (a) Promote, when appropriate, community participation through the involvement of the community in the research process;
 - (b) Be oriented towards the application of existing knowledge for the solution of concrete problems, for which operational objectives should be formulated;
 - (c) Respond to the identification of national and local priorities that has been based on an analysis of the multiple causes of malnutrition; and
 - (d) Promote multi-disciplinary approaches to the investigation of food and nutrition issues.
- 3. The HSD should encourage the submission of regional strategies for a nutrition thrust. Preferably, these plans should be jointly developed with colleagues in other Divisions. Once regional strategies have been submitted, they should be given the support needed to see that they are carried out.

4. Support to nutrition research training and human resources development needs to be increased. The organization of IDRC-supported workshops on various themes and/or problems of malnutrition should be given a high priority. A number of workshops on the following topics should be supported over the next four years: principles of nutrition epidemiology; assessment of nutrition status; methodologies of community intervention for the major nutrition deficiency diseases; and the analysis and interpretation of nutrition data. Plans for such training should be developed in the regions, with sizeable support (with financing and logistics of organizing the workshops) coming from Ottawa.
5. The HSD should become involved in the development and/or adaptation of methodologies to identify and help solve community nutrition problems. In this regard, the HSD should support the preparation of a publication on the subject of either "Community Diagnosis and Management of Nutrition Problems" or "Nutritional Assessment Methodologies and the Interpretation of Growth-Related Data".
6. Support should be given to an examination of experiences in conducting nutrition interventions characterized by community participation and local analysis of the food and nutrition situation. Here, the HSD could support i) a review of NGO's involved in activities that influence nutrition or ii) a review of factors that either promote or impede success in interventions that improve nutritional status.
7. The pooling together of existing knowledge on nutrition research in order to delineate gaps needing review and research should be supported. Useful activities here could include: the support of a consultative meeting organized by IDRC to bring together representatives of international agencies, development organizations and scientists working on food and nutrition problems to review the current orientation of nutrition research and recommend future research directions and priority themes; the financing of specific country or regional initiatives which focus on the identification of priority nutrition research problems and the ways and means to address them; or the preparation of a document summarizing the views of a variety of organizations (e.g. academic, NGO's, multi-lateral and bi-lateral donors) involved in nutrition activities and/or nutrition research regarding priority needs in nutrition research.

8. The investigation of research capacity in nutrition should be supported. This activity is best completed in the regions and with the active involvement of local researchers. The investigation could entail the compilation of inventories of nutrition research and training institutes, including information on courses available, professional staff and their areas of expertise, research equipment, library facilities and an assessment of the multi-disciplinary capacity of existing institutions.

REFERENCES

1. Austin, J.E. and Zeitlin, M.F. "Nutrition Interventions: A Conceptual Framework". In Nutrition Intervention in Developing Countries: An Overview. pp. 5-14. Edited by J.E. Austin and M.F. Zeitlin, Cambridge: Oelgeschlager, Gunn and Hain, 1981.
2. Pinstrup-Anderson, P. "Macroeconomic Adjustments and Human Nutrition". Food Policy. 13 (1988): 37-46.
3. Field, J.O. Multisectoral Nutrition Planning: A Post-Mortem . Food Policy. 12 (1987): 15-28.
4. Berg, A. "Rejoinder: Nutrition Planning is Alive and Well, Thank-you". Food Policy. 12 (1987): 365-375.
5. Werner, D. and Bower, B. Helping Health Workers Learn. Palo Alto: Hesperian Foundation, 1982.
6. De Sweemer, C. "Community Diagnosis of Nutritional Problems". Contact Special Series 4 (april 1987): 47-50.

APPENDIX 1

Health Sciences Division Support to Nutrition Research

In order to study the nature of HSD support to nutrition research the support given to this area by the HSD since 1971 was reviewed. By searching the PINS database using a number of descriptors and by manually searching the listing of all projects supported by HSD, a listing of projects supported was produced. The complete listing of these projects by region plus a brief description of each is available upon request.

From 1971 up to FY 1986-87 a total of 53 nutrition projects was funded by the HSD. Appropriations for these projects total CAD 7,173,930 (i.e. 9% of the total appropriations for the HSD for this same time period). Table 1 shows the appropriations for these nutrition projects and the number of projects funded by fiscal year, HSD appropriations by fiscal year and percent of HSD appropriations taken up by nutrition projects by fiscal year.

Table 1: HSD Appropriations by fiscal year

To nutrition-specific projects			To all HSD projects		
fiscal year	amount	count	amount	count	%*
71-72	0	0	833,000	N/A**	N/A
72-73	0	0	1,821,000	N/A	N/A
73-74	322,492	1	3,404,000	N/A	N/A
74-75	0	0	3,661,000	N/A	N/A
75-76	0	0	4,996,000	N/A	N/A
76-77	0	0	4,070,000	N/A	N/A
77-78	432,000	1	3,824,000	35	11
78-79	28,810	1	4,045,000	27	1
79-80	232,310	3	3,291,000	26	7
80-81	755,855	5	3,739,000	38	20
81-82	987,230	5	6,010,000	37	16
82-83	0	0	5,801,000	29	0
83-84	1,616,540	18	8,356,000	62	19
84-85	1,261,079	8	8,006,000	58	16
85-86	1,053,879	4	8,740,000	60	12
86-87	<u>483,735</u>	<u>7</u>	<u>10,421,000</u>	<u>72</u>	<u>5</u>
	7,173,930	53	81,018,000	N/A	N/A

*This column refers to % total HSD appropriations for nutrition projects.

**N/A - figures not available for this report.

Table 2 shows the appropriations and number of projects funded by region during the period 1971 to end of FY 1987.

Table 2: Appropriations for and number of nutrition-specific projects by region

Regional Office	Amount	Count
ASRO	1,084,673	12
EARO	528,761	5
LARO	2,538,644	19
MERO	603,760	4
SARO	422,930	4
WARO	<u>1,475,252</u>	<u>7</u>
Subtotal	6,654,020	51
Global	<u>519,910</u>	<u>2</u>
Total	7,173,930	53

By far the highest proportion of projects have been concentrated in the LARO region (total no. = 19) with ASRO also showing a relatively moderate amount of nutrition research activity at 12 projects, this parallels the overall HSD trend in support of these regions. The numbers funded in all other regions are quite low. The reasons for these low numbers bear investigation. One can speculate that important factors for this situation in these regions might include: lack of regional representatives, thereby reducing the division's ability to identify researchers and stimulate development and submission of proposals; the existence of a weak research infrastructure (especially in WARO and EARO) rendering the submission of research proposals difficult; lack of clearly established Divisional priorities accorded to regions of highest need; and in the case of SARO, its relatively new existence. Also of note is the fact that many countries in all regions have not received support for nutrition research. Again, the reasons for this situation are worth investigating.

Of the 53 projects supported by the HSD, three were joint projects with other divisions as shown in Table 3.

Table 3: Funding of joint projects in nutrition by Division

Division	Social Sciences	AFNS	IS	Coop	Communications
No. of projects with HSD	2	--	--	1	---
Project No.	3-P-84-0049 3-P-85-0269	--	--	3-P-86-1035	---

In view of the Centre call for interdivisional research on problems of nutrition this apparent lack of collaboration is striking. However, the reasons for this situation would need to be further explored before conclusions are drawn. For example, this joint collaboration reflects only those projects that were jointly funded: it does not give any indication of whether or not there was indeed collaboration at various stages of project development or implementation, or of the extent of multi-disciplinary input that occurred in the field.

The nutrition projects supported by the HSD cover a variety of topics. Each of the projects was assigned to one of the research topic areas in order to see where research funding emphasis has been placed by the HSD. This assignment was done with reference only to the project abstract and therefore might misrepresent the focus of research actually undertaken. In those cases where the proposed research investigated a number of the research topics, the project was assigned to that topic which seemed to be the predominant focus of the project. Table 4, on the following page, summarizes these findings.

While time does not permit a detailed analysis of these findings, it can be stated that the HSD has funded research on a wide range of nutrition topics. In particular, research support has gone to projects dealing with infant/child feeding (i.e. 14/53 projects or 26%): only one of these projects was in Africa. Most of these projects deal with one or more of the following: breastfeeding promotion; the promotion of appropriate weaning practices; and nutritional assessment.

Nine projects have been supported on the topic of the interrelationship between nutrition and infection. Focus of research in these projects included: the effect of nutritional status on incidence and/or duration of infection.

A few studies have been done on each of the major forms of malnutrition, with research focus ranging from studies to establish the magnitude and scope of the prevalence of the deficiency in question, to studies on the associated risk factors to research involving the design and evaluation of preventive and/or control programmes.

Research on maternal nutrition has focused on the metabolic effects of oral contraceptives on lactation, the relationship between lactation and postpartum amenorrhea and the determination of the quality and quantity of breastmilk. Interestingly, no studies have been funded on the effect of nutrient supplementation (or maternal nutritional status) on pregnancy outcome.

Studies on various aspects of nutrition policy and planning have received minimal support. Nutrition research training and human resources development also seems to have received little support. To establish if this is an accurate statement though, it would be necessary to check the DAP's that have been issued over the years and the support given to nutrition training by FAD.

It is of interest to note that while many of these studies are community-based, community participation in the research process is a rare occurrence. It also seems that a narrow disciplinary focus characterizes most projects.

Besides the support given by the HSD to the projects herein designated as nutrition-specific, the HSD has given much support to projects on topics that can influence nutritional status: for example, water supply and sanitation; strengthening of PHC services; immunization programmes.

APPENDIX 2

Suggested Areas of HSD Support to Nutrition Research

This section outlines proposed topics for HSD funding in nutrition research. These topics cover a wide range of activities, reflecting some (but certainly not all) of the unmet research needs that exist in the field of nutrition research for development as determined by a brief review of sources highlighting research priorities for nutrition research (e.g. - United Nations documents; published articles in food and nutrition journals and texts; researchers and field workers). These topics relate primarily to the following critical food and nutrition issues that affect nutritional status:

- (i) the major nutrient deficiencies which continue to be significant public health problems in many of the developing regions of the world (i.e. protein energy malnutrition; nutritional deficiency anemias; vitamin A deficiency; and iodine deficiency);
- (ii) the shift in food production from subsistence to cash crops;
- (iii) the lack of stated nutrition policies or plans and/or the lack of analysis of them;
- (iv) lack of basic education and primary health care services for the poor regarding health and nutrition;
- (v) ecological crisis situations (e.g. drought, floods);
- (vi) increased rural to urban migration resulting in negative consequences on health and nutrition as per capita food production declines and the migrant adopts new patterns of food consumption; and
- (vii) declines in breastfeeding duration and consumption of an inadequate weaning diet.

In correspondence to the recent reorganization of the HSD into three new programme areas, an attempt has been made to assign the research topics (without prioritizing them) to the most appropriate programme. Depending upon the focus of a particular research proposal however, the topic might certainly fall instead into another programming area or Division.

Due to both the inherent overlap between HSD programme areas and the multi-causal nature of malnutrition, many of the research topics would benefit from the expertise available in a programme area other than the one assigned to it in this list or indeed, from collaboration with another Division(s). The research

topics listed are followed by a bracket indicating other programmes or Divisions that might be involved at some stage in such research. Clearly research on nutrition can cut across all programme areas and divisional boundaries and offers countless opportunities for multi-disciplinary collaboration between colleagues both within and outside of the H.S.D.

A. Health and the Community

- Maternal nutrition (e.g. breastfeeding protection and promotion; effect of supplementation during pregnancy and lactation on pregnancy outcome).
- Infant and child nutrition (e.g. studies on the KAP with regards to breastfeeding, infant and child feeding; weaning foods).
- Development of non-invasive, convenient, precise and economical methods for nutritional assessment and monitoring (HSR).
- Prevalence surveys prior to the design of interventions for the prevention and control of specific nutritional deficiencies.
- Studies on the influence of socio-cultural and of environmental factors on food consumption patterns (H&E).
- Effect of malnutrition on work capacity and performance.
- Investigation of traditional foods consumed and their contribution to nutrient intake and of methods of food processing (H&E, AFNS).
- Nutrition education for the public and for health workers, including the development and testing of effective, culturally-appropriate educational methodologies and tools (HSR, SS, COMM).
- Investigation of the food behaviour and nutritional status of new high risk groups appearing in many countries (e.g. the elderly; the young, unemployed, single male; single females marginalized from society).

- Research on the impact on nutritional status of factors such as cropping patterns, women's time use, income-generating schemes and new technologies (AFNS, WID).
 - Research to define the nutritional characteristics of the population under study (i.e. nature, extent, causes of malnutrition) before planning an intervention (H&E).
 - Studies on the effect of rural-urban migration and of refugee movements on nutritional behaviour and status (HSR, SS).
 - Studies on food distribution within the household and its effect on nutritional health (WID, SS).
 - Studies on the relationship between dietary habits and non-communicable diseases such as hypertension, coronary heart disease and diabetes mellitus (H&E).
- B. Health and the Environment

- Research on toxic factors in foods (AFNS)
- Nutrition effects of seasonal variations in food availability (H&C).
- Nutritional effects of food preparation and processing techniques (AFNS).
- Household and community food storage systems (AFNS, EES.)
- Consumer protection and food quality (e.g. research on street foods: sanitary aspects of its preparation and distribution, nutritional quality, affordability, etc..) (H&C, AFNS, SS, WID).
- Interrelationship of malnutrition and infection (H&C).

C. Health Systems Research

- Evaluation of nutrition research training and manpower development (H&C, FAD).
- Effect of agricultural policies and practices on food availability (AFNS, WID).
- Food, nutrition and development policy research (H&C, SS, AFNS).
- Evaluation studies of nutrition interventions, including education and primary health care programmes, and also of the unintended consequences of other development interventions on nutritional status.(e.g. comparisons of biological impact and feasibility of interventions under varying socio-economic circumstances; strengthening of delivery of nutrition services through PHC programmes)(H&C).
- Operational research to plan, implement, monitor and evaluate nutrition programmes (e.g. food for work schemes; school feeding; feeding of refugee populations; supplementation or fortification schemes to overcome nutritional deficiencies)(H&C).



INTERNATIONAL
DEVELOPMENT
RESEARCH CENTRE

APPENDIX 3
CENTRE DE RECHERCHES
POUR LE DEVELOPPEMENT
INTERNATIONAL

MEMORANDUM

NOTE DE SERVICE

TO/A : All program officers WARO
FROM/DE : Cécile De Sweemer
REF : HS/CS/052/88/nd
SUBJECT/SUJET : Draft on Food and Nutrition in WARO

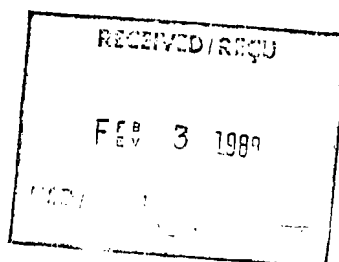
DATE : 26/1/88

Please find attached a draft on Food and Nutrition in WARO. I have written it as a first think piece coming from my admittedly limited perspective.

I am painfully aware the AFNS contributions don't come through as clearly as they should.

Please comment, redraft or formulate your own as I am most eager we can discuss a prefinal draft in April so that we get the administrative WARO mechanisms which should undergird this clear also.

cc: Pierre Sané
Jenny Cervinskis



BUREAU REGIONAL POUR L'AFRIQUE CENTRALE ET OCCIDENTALE
B.P. 11 907 CD ANNEXE — DAKAR



MEMORANDUM

NOTE DE SERVICE

TO/A : All program officers WARO
FROM/DE : Cécile De Sweemer
REF : HS/CS/051/88/nd
SUBJECT/SUJET : Food and Nutrition a West and Central African Perspective

DATE :26/1/88

We have taken cognizance of the proposed Nutrition thrust and want to specify our regional perspective at least tentatively. Two factors can only be determined as time goes by:

1. how much research capacity exists in the region or can be developed starting from the multiplicity of relevant disciplines;
2. how much of the stimulation can be done through an interdivisional coalition FAD/AFNS/HS (to be decided tentatively in April) how much will have to be born by HSD.

Food and Nutritions issues in WARO region

In the region no studies have been done that permit a comprehensive statement of the present day nutritional problems. Still the outlines are known:

- the nutritional problems show themselves both as chronic malnutrition (endemic) and famine (epidemic);
- the chronic malnutrition is most prevalent in children and women and is due to four major deficiencies: pcm and anemia and in particular ecologies also endemic goiter and vit A. for which strategies for control are known but largely unapplied (annex 1);
- the agricultural and ecological crisis and rural-urban migration lead to an ongoing decline in per capita food production. This accentuates the caloric deficit among urbanised poor;
- the urban economic crisis (particularly pronounced in Nigeria and Zaïre) means traditional caloric supplies are becoming outpriced. This leads to shifting dietary habits: relying almost exclusively on white rice or white bread. One sees now adult male and female kwashiorkor in Zaïre, one can expect protein-deficiency beri-beri, Vit B2 , Vit C deficiency to become more important everywhere in West and Central Africa among the marginalised of any age or sex.

.../2

Where before 1980 one could confidently estimate about 30% of children in W and C Africa were malnourished mostly due to intra-familial maldistribution and lack of nutritional knowledge, we now have an unknown %, but > 30% of malnourished children and sheer economic unavailability of food seems to become a major reason.

The applied research agenda

The research agenda dictated by our comprehension of the present problem should be of interest to several divisions of IDRC.

1. Community diagnosis (HSD with SSD and CD?)

We need diagnosis of who is malnourished, with what kind of malnutrition, what people's perceptions are of the "problem", what the discernible causes are at household, village and national level.

This needs wherever possible to be participatory research (see in annex 2 my paper on community diagnosis of nutritional problems).

A special effort needs to be made to look for new types of problems (B1 B2 Vit C deficiencies protein deficiency in adults) and new high risk groups such as the old (more than 16% live alone in Nigeria and Zaïre), the young unemployed single urbanised male, the marginalised widowed and divorced or single females who are domestics, beggars, and occasional prostitutes.

These studies also have to go beyond simple epidemiology into perceived causes as well solutions, which the community can initiate. The results of such research would need local application first, but also be widely publicized to the general public.

2. Nutritional Policy Research (AFNS, SSD and CD?)

Most countries in the region have no stated nutritional policy or plan. Access to land (within a reasonable distance from the village), to water, to agricultural implements and inputs, to the knowledge on new techniques and to credit as well as reasonable pricing policies, marketing and distribution are necessary to agricultural production but not sufficient to assure the production will be locally consumed or be translated into food purchases.

It would seem more studies need to be done that are critical analyses of the agricultural economics of nations and administrative subunits. The agricultural crisis is widespread and deep and unlikely to respond to technological fixes, before major changes in policies. Policy research would need to raise awareness of decision makers and literate public opinion to gain some momentum.

3. Policy Action Research (AFNS, SS, IS and HSD)

In case any of the nations or intergovernmental organisations of the region were to declare a nutrition policy or were to change one of the policies we suspect to affect nutrition, it would be important to do a policy analysis and an evaluation of the impact. This may ask a commissioned study by a regional group.

4. Community Action Studies (HSD - SS and possibly other divisions?)

Communities that have gone through a community diagnosis will choose a mix of appropriate activities including nutrition education and agricultural extension. The activities will need evaluation. This evaluation we should support.

Sometimes a professional group may propose to develop nutrition education in absence of a community diagnosis. Our support should be limited to those cases where in fact modules are being developed of nutrition knowledge that can be used and applied by communities.

WARO has at present very limited nutrition activities:

1) 3P-086-1035-02 in Chad. A multidisciplinary team aims to study the nutritional status in the waddis where through agricultural extension new vegetable cultures have been introduced; the research will try to measure the access and cost of land, the production, marketing, storage, consumption and nutritional status of vulnerable groups. The policies involved are both traditional (access to land) and newly introduced (production) as well as ad hoc local initiatives (marketing, storage). The nutritional status is further mediated by formal and informal taxes, intrafamilial distribution and nutrition knowledge.

2) 3P-83-0246

Nutritional Anemia in CAR, which limits itself to descriptive epidemiology.

3) 3A-87-4951 non-invasive hemoglobin Estimation in Nigeria. This PODA will permit innovative technology to be developed useful to later community diagnosis projects.

4) Two PODAS under consideration would permit:

- development of a research protocol for a project in Republique of Congo basically attempting a community diagnosis with unfortunately very minimal community participation;
- further analysis with community involvement of the data of 3P-84-0174 Sevrage au Mali.

In fact the limitation on present applied research activities in Nutrition in the region are manifold:

1. Very few nutritionists with real research capacity are active in the region. Between Mali, Congo and Chad, I found one or more of the following not really understood:

- principles of nutrition epidemiology
- " " " assessment
- " " " policy
- methodologies of community intervention for the different deficiencies
- methodology of analysis and interpretation of nutrition data

2. Very few nutritionists have a community or a policy approach or truly understand even what it would take (most striking in Mali and Congo).

3. There is no ready political support for this kind of research into a condition which is found politically and socio-culturally embarrassing (only slightly less so than AIDS).

4. Good nutrition research has no ready support from the donor community.

Our activities should try to be responsive to the needs and therefore in this difficult situation go beyond the effective demand expressed in reasonably good proposals.

First of all we need to better undergird the initiatives that have been or are being taken; we propose therefore some workshops and creation of a nutrition network

- to involve all present and past grantees with nutrition interest in one (or more if needed) workshops on computerisation and use of general software such as Lotus 123 and SPSS;
- to involve the same group in workshops on the use of CDC software for anthropometric analysis;

- to use the data existing in Mali and Benin and being gathered in Chad to develop an analytical protocol for dietary consumption by infants and children;

- to encourage a network between all concerned sharing both experiences with community participation, with field methodology and with application of putative solutions. It is too early to judge where the point of gravity should fall for the network, so to test the situation and prevent fore-closure one workshop should be organised in each of the possible places.

Second to stimulate new initiatives and enrich existing ones, by larger workshops on causal mechanisms and importance of the 4 to 6 most prevalent deficiencies as well as strategies of intervention and research agendas.

Indeed the agricultural, social and biomedical elites of West and Central Africa largely ignore the epidemiology, causation and importance of the existing deficiencies. A fortiori their notions on strategies are even vaguer! We had just a request to train a physician in biophysics...so that he can help solve the endemic goiter problem in Burkina Faso. Décidement quite a high tech solution.

We may need to seek to enlarge the nutrition network with new recruits through these workshops. The network will need early on to link also with organisations like ISRA, IITA, FAO, UNICEF and WHO which can all be vital to its meaningful survival and expansion, later on it should also seek to influence the existing training programs of the faculties of medicine, agriculture, social sciences or special institutes like PAID, CESAG.

The training workshops on analytical methods for present and future grantees as well as the more general workshops on the deficiencies will have to involve FAD.

Last but not least we should seek may be in collaboration with FAO or/and FF to have a good nutrition policy analysis done, which can be used as an effort to raise awareness of national decision makers and general public opinion.

cc: Pierre Sané
Jenny Cervinskas

COMMUNITY DIAGNOSIS OF NUTRITIONAL PROBLEMS

by Cécile De Sweemer

How much of a problem malnutrition is in a community, or even whether or not there is a famine, is strangely enough, not self-evident; it takes careful community study before facts are clear. The reason is partly that malnutrition hits mostly mothers and children, two categories who have no say in most community councils or churches. Moreover, malnutrition is often not recognized by the community for what it is; it may be called a natural weakness or a supernatural disease.

Similarly, for famine, the first victims are the marginalized, the poor for whom it may be considered a natural condition to be malnourished – and who are very unlikely to come and complain to a gathering of leaders as they are accustomed to not being heard.

How can a community or church be more sensitive and detect problems of nutrition early?

1. Chronic malnutrition

The advice given in the article "Growth Monitoring" should help to set up a simple surveillance system that can indicate not only how frequent malnutrition is in children under 1 year, under 3 years, under 5 years, but also whether the situation is growing better or worse over the years. Birthweights are one of the most reliable indicators of whether adult women are significantly malnourished. A well-fed population has less than 5% of low birthweights. Again one can follow any long-term improvement or deterioration in these percentages and treat increases in percentages as serious danger signs.

2. Famine

Famines are usually predictable even before people starve. They are the outcomes of diminished food availability and/or of the ability to buy the available food because of pricing. Both mechanisms go often hand in hand.

These two mechanisms increase the numbers of people hit and the severity of the malnutrition that hits them.

In famine, again the worst hit are the poor and among them the women and the children. As a famine continues, weight/height measurements of children and adults alike permit identification of groups most in need of immediate help and permit follow-up of their rehabilitation. Quite often communities only begin action when excess deaths have obviously occurred due to starvation, and even adult males are starting to show effects of hunger. This could be avoided entirely if communities were closely monitoring birthweights and child malnutrition and recognizing that rising percentages of these reflect nutritional distress in communities which demand further investigation.

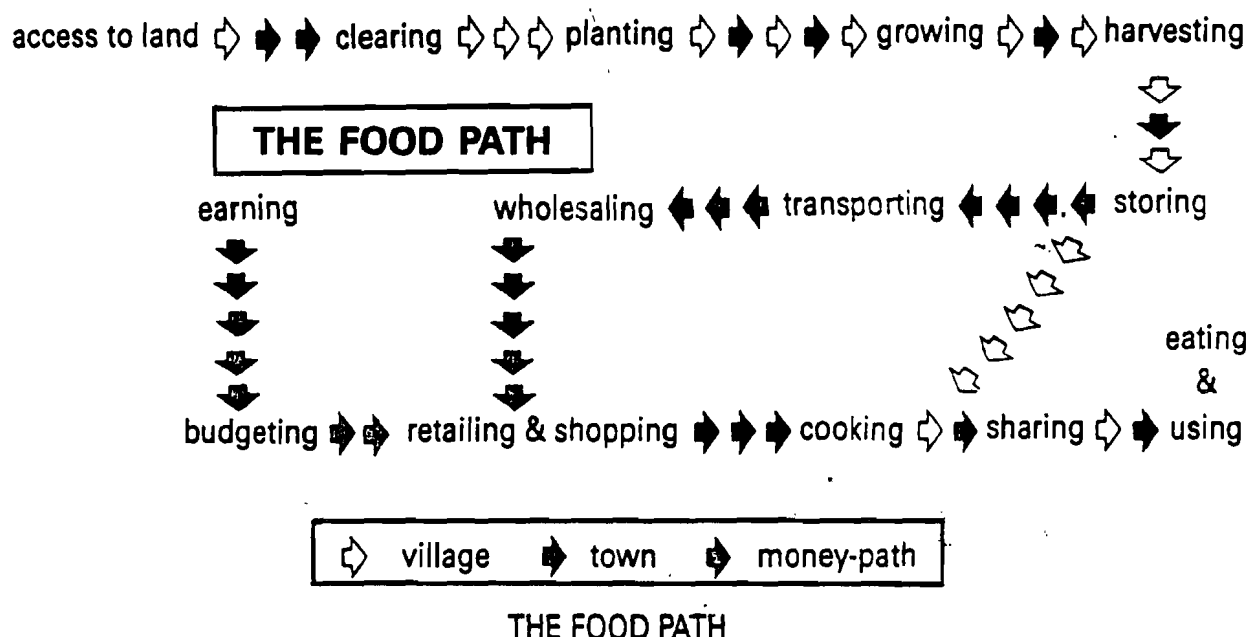
Such investigation should not be done by professionals in isolation from the community. It should be based on discussion in the community with responsible leaders and, as far as possible, with a fair representation of women and of the poorer people in the community.

Guide to discussion

1. As a starter, the professional health team can present some findings on malnutrition in the community. Together the group can discuss:
 - nature and severity of the problem;
 - which people experience the most malnutrition
 - which people are most likely to be in danger of experiencing the problem (this question should be posed several times as no one likes to think about it, but the protection of the vulnerable is important)
2. The following food path (Fig. 1) can be used as a basis for systematic discussion.

In its present shape, this food path is just a very general idea but in the discussion in a given com-

Figure 1



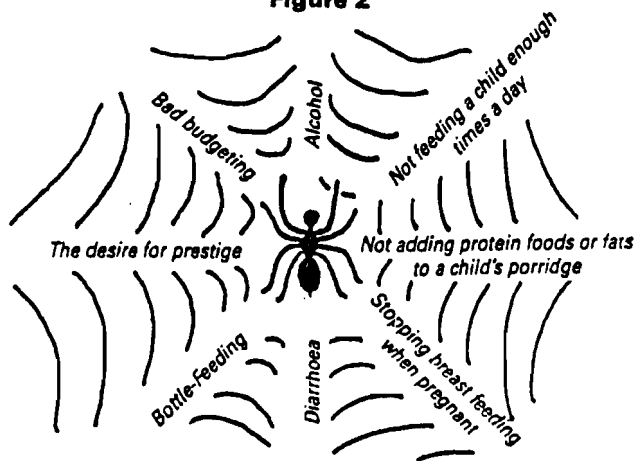
From *Manual for Child Nutrition in Rural India*, De Sweemer, Sengupta and Takulia, VHA 1978.

munity, one can review and remember how things are actually done. Put up the food path for your community for all to see. It may be that people will start mentioning blocks on the food path as you develop it. List them separately so as not to be forgotten. Once you have a complete food path for your community, start systematically to look for important blocks; follow the arrows.

1. Do all families have sufficient access to land? Are the landholdings equitable? Where rotational cultivation is practised, are the cycles becoming shorter?
2. Is the clearing and ploughing of the land easy? Are there enough people to do it?
3. Is there enough water and fertilizer, enough high-quality seeds?
4. Are people too ill to work hard in the fields? (malnutrition, anaemia, malaria, river blindness)
5. Is the community growing enough food for its own use? If not, why not?
6. Is the community growing the right crops? (non-food-cash crops versus food crops, selected crop varieties and animals, kitchen gardens, balance between cereals or tubers and legumes, oily crops)
7. Are there plant or animal diseases or pests that attack the crops?
8. How is storage done? Is there much loss to pests or bad weather?
9. Is there trouble selling crops? (transport, middlemen, markets, prices below cost, taxes on farming)
10. Are there kitchen gardens? plots with legumes?
11. Are there blocks on the money path? (no jobs, no work in agricultural off-seasons, bad budgeting in families, bad shopping, high taxes, high school fees)
12. Are children born too quickly (birthspacing of less than 3 years)? Are there more children than wanted?
13. Is there enough fuel to cook food?
14. Are children breast-fed until at least 18 months? Are children given supplementary foods from the age of 5 months? Are the children's shares clearly set aside and sufficient? Are they given properly balanced multi-mixes?
15. Are there food taboos that limit the intake of protein and amounts of food of mothers or small children?

It is clear from these questions that many of these blocks are tied together. The diagram in Figure 2 shows how this was visualized in a Punjabi programme. It may be good to discuss for your com-

Figure 2



Tied Together Like a Spider's Web

From *Manual for Child Nutrition in Rural India*, De Sweemer, Sengupta and Takulia, VHA, 1979.

community which blocks are related and put them in spider-web diagrams. Now you are ready to discuss which blocks can be attacked by the community, the authorities or the professionals or by cooperation between all. How the action can be carried out and when and how the community should review the results. Programmes that deal with chronic causes of malnutrition in a community are also long-term prevention against famine. Programmes that supplement the malnourished are often necessary to tide people over and conscientize the community. But they do not in and of themselves solve the problem. In fact they may help people to be sufficiently satisfied that they do not feel motivated to face problems.

So before undertaking supplementation and during supplementation programmes, it is necessary to explore the above questions on the why and how of hunger and to help the community design corrective actions.



INTERNATIONAL DEVELOPMENT RESEARCH CENTRE

CENTRE DE RECHERCHES POUR LE DEVELOPPEMENT INTERNATIONAL

MEMORANDUM

TO: E. Weber
FROM: Richard Young
OUR REF:
SUBJECT: Nutrition: Presentation to Management Committee

RECEIVED

JAN 12 1988

I. D. R. C.

MAIL ROOM

DATE: January 5, 1988

YOUR REF:

As we discussed in Delhi last month, I am providing some thoughts which might be incorporated into the document you intend to present to Management Committee. These have basically been derived from the responses to the NWG document (as well as the document itself), our recent meetings on nutrition and my own current analysis and reading.

- I believe it is fair to state that the document prepared by the NWG has received general support from all Divisions.
- There is also consensus that definite regional initiatives should now be developed, based on the recommendations of the document and the ideas subsequently received.
- Community orientation and broad problem identification exercises, based on rapid appraisals, should be the starting points. Criteria for selecting regions/communities would include factors such as the perceived extent of malnutrition, existence of ongoing action programs, agroclimatic characteristics, presence of related IDRC activities and others. Particular groups vulnerable to malnutrition within selected communities, and therefore candidates for targetted interventions, would be automatically identified by means of the appraisal. The program would thus not be limited in the first instance to any discreet group.
- There is a felt need for methodology adaptation and development in the area of problem identification in community nutrition. Most of the published work on rapid rural appraisal is related to farming and commodity systems. The SARO study in Indian drylands may represent a reasonable basis for formulating approaches. The objective should be to develop and disseminate methodologies which can produce quick but reliable results to assist nutrition policy makers. In the latest issue of Food Policy, Berg¹ (quoting M. Griffiths) states ".....follow the same type of planning procedures that combine national priorities with community needs. Our research may point to the need for legislation, a consumer subsidy, sanitation infrastructure and an intensive education effort to improve household practices. Often we cannot implement the entire package. But at least we understand the context and the priorities and are guided accordingly. The end product is no longer a poster

1. Berg, A (1987). Rejoinder: nutrition planning is alive and well, thank you. Food Policy 12 (4), 365-375.

or a nutrition talk promoting the four food groups." Clearly, though, the kind of problem identification exercise mentioned is still in its infancy and needs further attention and development. Here, I see a definitive future role for IDRC, likely in collaboration with other international agencies involved in nutrition support.

- For any given region or community focus, the impact of national food policies should be evaluated, in addition to local factors affecting nutritional status. IDRC should channel its attention to both community and policy making levels to gain a clear, overall picture of relevant factors. Collaboration with IFPRI is a possibility for policy research. Such work should be related to ongoing, action programs and not conducted in isolation.
- There is a need for more detailed assessment of the work of NGO's and for documentation of successes. IDRC could seek to act as a link between field NGO's and government policymakers, to strengthen NGO's that deliver and to disseminate their approaches and results more widely.
- All the above activities should sensitise governments and policymakers to nutritional problems and causes, long-term solutions and opportunities for short-term alleviation of malnutrition in vulnerable groups. Active collaboration with international donors, eg. UNICEF, WFP, should be cultivated in the course of this exercise.
- Much scope exists for developing more appropriate marketing, promotional and communications techniques to improve practices which affect nutrition and to create demand for agricultural products and processes. The collaborative effort in this area being pursued in relation to the Food Enterprises (India) project may become a model for wider dissemination.
- IDRC's ongoing programs should be encouraged to articulate nutrition objectives. However, the framework for inputs to specific nutrition projects by the programs should be provided by community/problem identification work, i.e. a community/people orientation must be promoted on which to build relevant, priority technical programs.
- We have been asked to more clearly address the linkages between agricultural production and nutrition. Self-sufficiency in food production is of course crucial to maintain food security and the nutritional wellbeing of populations. Nevertheless, it has now been widely demonstrated that food production alone is insufficient to generate overall nutritional adequacy for the poor and most vulnerable. Given recognition of the fact that increasing the purchasing power of the poor is fundamental to long-term nutritional

improvement, programs such as CAPS, Fisheries and Forestry should review the possible impact of their support on income generation and access to food. Creation of surpluses, marketing and the conversion of agricultural produce to higher value consumer products will play an important role. AEP, PPS, SSD and the nutrition group could assist other programs in articulating the above and in introducing the necessary components to provide a more vertical, systems orientation.

- For long-term rehabilitation of the most malnourished (eg. landless, tribals), IDRC could contemplate the development of a model which effectively combines improving the wellbeing of people with developing the environment and its productive capacity. Land reclamation, resettlement, agroforestry, farming systems, food conversion and market linkages are balanced in sustained nutritional rehabilitation of the most deprived. As we have discussed, the BAIF model holds important lessons for this process and is most relevant as a viable and sustained nutrition intervention. The impact should be explored and documented in a nutrition context.
- Because nutrition as a subject is complex, involving many disciplines, a nutrition program should not be accommodated within any one sector, eg. agriculture, health. In the past, each discipline has seen overly specific solutions to malnutrition. The working group mechanism has been useful in formulating an overall strategy for the Centre and identifying possible entry points for Centre contribution. The working group arrangement, however, may not now be the appropriate way to proceed. Action should be developed in the regions (SARO, WARO and EARO are priorities) with an individual nominated to take the lead in overall coordination and able to draw upon resources from different divisions.
- To further develop the above approaches, some options for utilizing the DAP funds requested for next FY are as follows:-
 - i) A consultative meeting of representatives of international agencies working in nutrition to review current problem identification exercises and determine future needs.
 - ii) Studies to test the application of rapid appraisal methodologies for nutritional assessment in African communities.
 - iii) Evaluation of the effects of national policies on food pricing and availability in selected African countries, possibly with IFPRI.
 - iv) Assessment of the capabilities, activities and requirements of African national institutions and NGO's working in nutrition.

- v) Surveys to identify like-minded resource people active in nutrition and collation of their expertise and experience.
- vi) Computerisation of material used to date and recommended by the NWG as a good basis to the nutrition initiative - initiation of an information network and sharing of relevant information on nutrition between the regions.
- vii) Study of the factors that contributed to substantial nutritional gains amongst the poor in certain countries and regions (eg. Sri Lanka, Kerala, China).

Options i) - iv) would be priority activities in my opinion.

- The regional nutrition thrust, to be submitted by SARO as a two-year project for Centre's reserve funds, should comprise the following components :-

1. A Senior Nutrition Adviser to assist the SPO in developing the regional program, enhance the Centre's profile in nutrition, recommend projects and institutions, organise workshops and liaise both at high government and NGO levels.
2. A Nutritionist to conduct surveys and short studies on problem identification and NGO activities, collect background information, prepare papers and information documents and generally assist program development.
3. A review of NGO activities and linkages to government policies on nutrition, factors important for targetting and delivery of nutrition improvements, management issues and sources of training for field workers. The overall objective will be to link successful NGO's more adequately with national programs and strengthen/ disseminate their approaches. This activity will culminate in a regional workshop to formulate projects for potential IDRC/interagency support.
4. Further problem identification exercises, dissemination of knowledge on methodologies and nutrition problems and causes, design of training programs in appropriate techniques, creation of linkages to both government and NGOs, interfacing national food policies with community analysis. Again, to be the topic of another regional workshop.
5. Further elaboration of novel marketing/communications techniques and linkages to promote better nutrition practices among the poorer sectors and to stimulate depressed rural economies. (Based on an expansion of experiences gained through Food Enterprises - India)

6. Consolidation of a core group of like-minded specialists in nutrition, marketing and economics to develop and advise on nutrition-oriented activities in the South Asian region.

Please forgive the lengthy memo but hope you can distil out points which may be emphasized to management committee.

Regards.

 .

cc: H. Zandstra

ns

Draft
(14 /03 /1988)

BUILDING RESEARCH CAPACITY IN DEVELOPING COUNTRIES

With Particular Reference to the Health Sector

A POSITION PAPER

Presented to
The Division of Health Sciences
International Development Research Centre (IDRC)

by

KARL A. SMITH

TABLE OF CONTENTS

	Page
Introduction.....	1
Elements of One Successful Model of Capacity Building.....	4
IDRC and Research Capacity Building.....	7
- An Evolution in Thinking	
Integrated Support for Research Institutions (ISRI).....	14
- Present thinking and some questions	
Selection and Support of Candidate Institutions for ISRI.....	21
The Nurture and Growth of ISRI Institution.....	30
The Relationship of ISRI Activities to IDRC's Regional Plans.....	31
Specific Examples of Actual Potential ISRI-type Activities.....	34

Evaluation.....	36
The Health Sciences Division and ISRI.....	38
Consortium Funding.....	41
Associated Activities of Other Health-Oriented Groups.....	42
Next Moves for IDRC-HSD in ISRI.....	43
Summary.....	45
Bibliography.....	47

Research Capacity Building in Developing Countries

Introduction

In addressing this topic, one confronts a number of phrases which are similar in meaning but different in scope. Research Capacity Building connotes either starting where nothing exists, or expanding on an already existing base. Research Capacity Strengthening suggests more of the latter - building on an existing infrastructure. Research Institution Strengthening could be a modality for either Research Capacity Building or Research Capacity Strengthening.

An obvious deficiency in the health sector in the developing world is the relative lack of a capacity to undertake relevant research and to bring the results to bear on policy formulation and decision-making. One can cite an example, less than 20 years ago, of how a particular Ministry of Health decided on budget allocations for the ensuing year by simply adding x percent to the previous year's allocations. This example illustrates the shortcomings, including a lack of relevant data and/or the minimal capacity to analyse them and draw rational conclusions. Important policy decisions regarding the allocation of meagre resources were thus made on an ad hoc, subjective basis.

Within the last two decades many countries have come to realize that they need such a research capacity if they are to use their scarce, and in some instances dwindling, resources optimally. Indeed the strengthening of indigenous research capacity is often the first priority for national health research institutions and researchers, as well as decision-makers. This need was underlined, for example, in a paper by Dr. T. Nchinda, formerly a professor at the Centre Universitaire en Sciences de la Santé (CUSS), Cameroon, now with TDR/WHO, at a conference, jointly sponsored by IDRC and the University of Waterloo, on Research for Third World Development, which was held at Waterloo in May 1985.

This increased awareness has come about in part through the efforts of the World Health Organization (WHO), in part through activities of other agencies interested in improved health in the developing world such as the Rockefeller Foundation, the Ford Foundation, the Swedish Agency for Research¹ (SAREC), and some of the (other) UN agencies (UNDP, the World Bank among them).

Much impetus has been given to Research Capacity Strengthening by the WHO since the Alma Ata meeting in 1978, from which the declaration of Health For All by the Year 2000 (HFA/2000) emerged; and stemming from the realization that, in order to attain the goal of HFA, there were major implications for health services, health systems and health policies: how they were organized, managed, financed, evaluated. This necessitates a functioning research capacity in the developing countries. One of the WHO programs, the Special

Programme for Research and Training in Tropical Diseases (TDR) has become in many ways a model for Research Capacity Building and reference will be made to it several times in this paper.

At its 27th meeting in October 1985, WHO's Global Advisory Committee on Medical Research spent much of its time examining and discussing the Report of its Subcommittee on Health Research Strategy for HFA/2000. The following passage from that report is worth quoting:

"Attention must be given to the organization and support of research on the delivery of health services so that diverse disciplines and sectors are brought together into effective working teams, so that research groups are effectively linked with communities on the one hand and policy-makers on the other, and so that adequate support for research is available.

Capacity for research in this field, at both individual and institutional levels, is seriously limited, and concern must be directed towards the building of local capabilities with support from national and international sources".

The activities referred to are the essence of health systems research; and WHO constantly promotes the goal of self-reliance in such research in the developing countries. Today one would hardly find a ministry of health in a

developing country making decisions about resource allocations on as "intuitive" basis as in the example previously given. A great deal of the credit for bringing about this change must go to WHO, though other agencies have also played a significant part.

Elements of One Successful Model of Capacity Building

The WHO views Research Capability Strengthening as a long-term effort, consisting of two main elements:

- . training and
- . institution strengthening activities

As mentioned previously WHO's Special Programme for Research and Training in Tropical Diseases (TDR) is credited with having mounted one of the most successful programs for building and strengthening capacity in health research. Since there are many lessons to be learnt from this program, some details of the approach adopted are given here.

From the perspective of the TDR program, institution strengthening activities have two goals:

- . strengthening applied field research; and
- . promoting fundamental research

The modality for achieving these broad goals is three types of institutional grant:

- . capital grants
- . short-term support grants
- . long-term support grants.

Capital grants cover buildings and the purchase of major equipment and furnishings. Short-term support grants cover specific items, including research costs. Long-term grants cover any or all of these items, and usually include salaries and operating costs. The first two are used during initial phases of strengthening, or for well-established institutions needing single grants to improve their research capacity. The last, the main instrument for strengthening institutions, is normally of at least 5 years' duration, with occasional extension for another 3 years. Another type of long term support goes for the organization of long post graduate courses. These grants therefore provide core or program support, as well as the costs of specific research. Post-doctoral support for the continued growth of the institution; and funds and materials for implementing new courses which may attract not only nationals but also foreign students, can also be a part of the institutional grants.

Expected outcomes from this institutional strengthening include:

- . improvement of the scientific infrastructure
- . creation of new research facilities
- . development of human resources
- . support of post graduate education relevant to the prevailing disease patterns
- . promotion of sound management practices, through and including networking and continuous monitoring.

As for the training element, a necessary complement of institution strengthening, specific disciplines and areas which are emphasized include:

- . epidemiology
- . social sciences as applied to health
- . continuous self evaluation, with the development of appropriate indicators.

The emphasis on social sciences is worth noting when considering plans by IDRC for strengthening research capacity.

IDRC and Research Capability Building

An Evolution in Thinking

In fulfilling its mandate "to encourage and support development through research", IDRC decided since its inception to use the project mode - the support of specific research projects. Many difficulties soon emerged, among them the relative lack of research capacity in the developing world, more acute in some regions like Africa than in others. A certain measure of research capacity building was therefore necessary.

As it became increasingly obvious that the research infrastructure in some countries and regions was deficient, the need for the Centre to become involved in training was clear. The Fellowship and Awards Division (FAD) was created in response to this need; and FAD's role and responsibilities have evolved, increased and diversified over the years in response to increasingly complex demands for training.

Most divisions of IDRC have used existing project-related training mechanisms such as pre-project awards, post-project awards and the various other Centre awards to help in building research capacity. These provide training, usually of relatively short duration, to enhance the skills of principal investigators and/or other members of research teams. Some divisions have used these mechanisms to a greater extent than have others; some have also built in relatively longer-term training, sometimes leading to degrees at the doctoral

level. However, it has become more and more evident that other mechanisms are required; and from time to time calls have been made for seriously examining and testing such other mechanisms for capacity building/strengthening.

Centre directions and emphases have been changing simultaneously, in consonance with changes taking place in the world which the Centre serves. Succeeding changes in Management Committee and Board personnel have also had their impact on corporate thinking. Taken together, these developments have led to the present situation in which the Centre appears ready to pick up the challenge of strengthening research capability by a mode other than project support. The following is a brief review of how this position has evolved, with some of the landmarks along the way.

As early as 1973, shortly after IDRC came into being, its president, in discussing policy issues, questioned the appropriateness of the then existing balance in Centre support among institution-building, training and project support; and the relative emphases of core support as distinct from project support.

In 1980, PPR II quoted a call from the President to the Board to examine ways, other than through project support, for varying the Centre's approach to the strengthening of institutional capacity, given the great variation found in such capacity in developing countries.

In 1981 the Board approved institutional support to social science institutions in parts of Latin America to help them survive in politically hostile environments. (With increased flexibility in Centre policy, this approval was withdrawn in 1986).

In 1983 Management Committee recommended core support for institutions in countries with weak infrastructures; and the institution-building need was echoed in the Board resolution in PPR VI in that year.

Building institutional capacity received another boost in 1984 and 1985 as a result of evaluations of selected IDRC projects, which highlighted weaknesses in the capacity of some institutions in Ethiopia, Tanzania and Thailand.

In Board deliberations surrounding PPR VI in October 1984 a resolution was passed endorsing "experimentation by the Centre to identify and expand on alternative forms of support to the project mechanism which could, in some cases, address development research requirements more effectively".

In PPR VII (1985), in an apparent change of emphasis, capacity building figured as a secondary objective. By Board resolution, research for development was viewed as more important.

However, an issue addressed in the joint deliberations of President's and Management Committees in the spring of 1986 was integrated support for research institutions, seen as a means for coordinating inputs from various

divisions, for achieving greater coherence in Centre programs, and for enhancing the application of research results. Capacity strengthening thus seems to have been restored to prominence.

In July 1986, Management Committee asked the Office of Planning and Evaluation (OPE) and the Regional Directors to make recommendations on integrated support for research institutions (ISRI); and the President requested Regional Directors to identify potential recipient institutions.

OPE produced a paper outlining deficiencies in the strict project mode, including under-funding for research supporting functions (library and laboratory facilities, publications, training capacity, administrative capacity); the lack of coordination among divisional inputs in supporting large recipient institutions; and the difficulty in mobilizing the interdisciplinary efforts needed to move from research results to their application for problem solving. Components for ISRI-type support, criteria for identifying candidate institutions and mechanisms for implementing ISRI were proposed; and sources of possible funding were noted.

The Regional Directors supplied lists of national research institutions councils and centres, universities and colleges, societies, as well as of regional and international institutions. Some stressed that the lists were provisional, impressionistic; and that each institution had to be carefully examined before applying ISRI.

Meetings of the President with management in the spring of 1986 allowed not only discussion of institution strengthening, but also refining of the Centre's objectives. The process continued with the Board of Governors meeting that October.

In March of 1986, formal statements were adopted on the Centre's view of development, its mission and its objective; and this event was seen by some as signalling a new phase of strategic planning for the Centre. These statements have important implications for the approach to ISRI, and parts of them are repeated here, as abstracted from PPR IX (1988/89 - 1991/92).

The Centre views development as a process for the benefit of people; with decisions made by the people of the developing countries themselves and not by IDRC. There is a reminder that people's needs must have higher priority than scientific interest. The implication is for linkages, through the researchers, between the research institution and the community, and the latter's involvement not only in the research itself but in the application of the results. The institution must be appropriate and relevant to the situation and the problems needing solutions.

In the mission statement, the emphasis is on development through research and research-supporting activities, promoting the indigenously determined social and economic advancement of the developing regions of the world with particular focus on the problems of poverty. The implications of this are touched upon in a following section on Selection of Institutions.

The Centre's objective, very forcefully re-stated, is the support of research of direct relevance to and demonstrable potential for third world development, with relative emphasis on poverty problems; and, to that end, to assist developing countries to build and maintain indigenous research and research-supporting capacity ... mainly in terms of human resources. This is a clear call for more training as well as for other inputs, additional to the project mode.

Other statements in PPR IX are of relevance to ISRI. As an example, a clear distinction is made between clients (researchers) and beneficiaries (people), reiterating definitions given in PPR VII. The emphasis was on people. There are implications therefore for what sorts of clients and institutions are supported. In this and in moving towards decentralization of decision-making the Centre is also signalling the discretionary powers of regional program staff, as well as their role in shaping divisional/regional strategies.

Additionally, the notion of development thrusts was introduced - "the identification of problems common to a geographic region and/or a particular aspects of development", as well as the promotion of "coordinated research programs" directed at prevailing problems. This has implications for the ISRI decisions made in any particular region and/or country.

PPR IX examined modalities of (IDRC) support: project or program? If program, is core or institutional support included?

It appears that the Centre was de facto increasing support for institutional activities; and this, with the heightened discussions in 1986 reported above, hastened an analytic process leading to an ISRI paper, produced by OPE in October 1987. This is discussed below.

Note should also be taken of the recent report to the Parliament of Canada by the Winegard Committee* which stressed that Canada's overseas development efforts must give priority to human resource development. The philosophy and activities of IDRC, as well as the decentralization and increasing delegation of decision-making authority to the regional offices were deemed worthy and held up as a model--even if not a perfect one. This has clear implications for ISRI-type activities.

In summary, soon after its inception IDRC realized that the project mode would be inadequate if used as the sole instrument for fulfilling its mandate; it was increasingly perceived that the project mode had deficiencies and limitations, both for the recipients and for the Centre, and accepted that in practice other research-supporting activities were being covered under that umbrella; the evolution of Centre thinking over the years has given full legitimacy to the idea of building research capacity in developing countries; and, most recently, it has been acknowledged that not only should we try to

* The Parliamentary Standing Committee on External Affairs and International Trade.

ensure that the main outcome of our activities be development, but that development should benefit people. This reinforces strong implications for capacity strengthening. Since we have limited resources and cannot be all things to all persons, then we must focus our support more carefully, with coordinated, planned interdivisional inputs and with particular attention to regional/geographic needs. One vehicle suggested for experimentation in achieving all of these ends is the Integrated Support for Research Institutions, applied on a selective basis. This is discussed in the following sections of the paper.

INTEGRATED SUPPORT FOR RESEARCH INSTITUTIONS (ISRI):

Present thinking and some questions

Present Thinking

The discussion paper "Approaches to Strengthening Research Institutions", prepared and presented by IDRC's Office of Planning and Evaluation (OPE) in October 1987, acknowledges the importance of institution-building in the development literature; admits that for 15 years it had been the subject of policy discussion within IDRC; and states that IDRC's contribution to institution-building up to then had been implicit rather than explicit.

Two recommendations emerged from the paper; that:

- with regard to the need, consciousness be raised throughout the Centre;
- as a complement to project funding, longer term, coordinated support be considered for selected institutions (paraphrased).

These recommendations were made after careful review of the literature relating to the concept of institution-building, as well as case studies of strategies employed by several development-oriented agencies: USAID, UNDP, The World Bank, SAREC, WHO (the two special programmes have been referred to previously). The elements of relatively successful models are enumerated and lessons for the future are given; suggested criteria for successful institution building are detailed; and, using comments made by IDRC staff as a basis, policy guidelines for IDRC in ISRI are proposed. The reader is referred to the document for further details.

It is clear from the review that no well-proven or universally accepted model exists for institution-building. However, all the different approaches adopted by the various agencies seem to incorporate certain minimal imperatives: strong and dedicated leadership; competent management; and linkages to the environment in which the institution operates, to the infrastructure, to the external environment, and to the end user of the research product.

As previously mentioned, the paper identifies two fairly successful models: WHO's Human Reproduction and Tropical Diseases Research Programs. Both have

taken a similar approach to building research capacity, consisting essentially of long term (5 to 10 year) planning for a programme; a quite substantial training component; support for equipment and supplies; and close monitoring, with the institutions furnishing reports on activities and publications at fairly frequent intervals.

The remaining parts of this paper are devoted mainly to an examination of what the Centre, and specifically the Health Sciences Division, might do in ISRI. In so doing, the author is in part reflecting the contents of OPE's ISRI paper.

Some Questions

The call by OPE for consciousness raising is a reasonable one, given the need for a multidisciplinary approach to ISRI, and the necessity to convince everyone that the effort is worthwhile.

However, before IDRC engages in any new and formal manner in integrated support for research institutions, there are basic questions which must be addressed, options which have to be examined.

The first set of questions has to do with levels of Centre support for research capacity strengthening:

- will there be an experimental period during which one or two institutions' needs will be addressed?
- will the ISRI, in these circumstances, be a full, interdivisional exercise, with interdisciplinary inputs, coordinated to make an institution a multidisciplinary, multisectorally responsive research facility, serving a critical national or regional role?
- or will the first efforts be more modest, with the principal inputs being made from one division into an appropriate institution, related to the particular division's program and its associated disciplines, but with necessary and adequate inputs from other divisions to ensure a holistic dimension; as well as rounded, intersectorally linked outputs from the recipient institution?

An example would be to have the HSD as the principal contributor in strengthening a selected health research institution in a particular region, but with inputs from appropriate other disciplines such as those available in the social sciences, in order that the recipient institution might develop the capacity to research not only the biomedical aspects of a particular health problem or syndrome, but also the social and behavioural facets. The institution, in turn, would link the research output not only to the Ministry of Health, and its programme, but also to other social services.

The recommendations in the ISRI paper, as well as the antecedent discussions and their evolution, point to the multidisciplinary, multisectorally responsive model.

The second question has to do with whether IDRC would wish to be a partner with other agencies - Canadian; other, international or bilateral. Within such a model one could again conceive of either the unisectoral or the multisectoral approach, both mentioned in the preceding paragraphs.

There are of course mixes of these options. There could concurrently be ISRI activities with inputs from several divisions as well as some with preponderant single program inputs; and in either case there could be solely Centre or Division support, or multi-agency support involving IDRC.

From formal and informal discussions which have been taking place in IDRC it appears that there would be no objection to multi-agency efforts at ISRI.

The third question relates to the number and locations of institutions selected for ISRI attention. The answers would to a considerable extent depend on the responses to the first two questions. Again the impression from existing Centre documents and from staff is that there should be modest beginnings, the Centre cautiously moving to select and experiment with a limited number of institutions in Africa, where the need is greatest; later attention should focus on Asia and Latin America.

The fourth genre of question has to do with whether, having decided on a region, one selects one regional institution; one institution in one country; several institutions in the same country; or several institutions in several countries. To these questions there would likely be a variety of answers, reflecting the opinions of management, the Board, programme and regional staff. Need and feasibility would have to be demonstrated in the given local situations; but with IDRC's limited resources some of these alternatives are not tenable.

A fifth question is whether one would encourage single institutions working in isolation; or networking, which can take many forms. Experience suggests that the latter is preferable, ensuring greater vitality through the linkage. However, there are cost implications.

Another question is whether the Centre should be creating new research institutions, or strengthening existing ones. This is a question touched upon only lightly in the Centre documentation reviewed. There is some support for the idea of creating institutions, especially where little or no research capacity exists. This would be an enormous task, with great risks, possibly taxing the relatively modest human and financial resources of IDRC, particularly if attempted alone. Such an experiment should be contemplated only in circumstances in which the demonstrated need is excessively great, where no infrastructure already exists, but most of the other criteria for institution strengthening adopted (see next section) apply. However, it is

difficult to imagine such a situation; and if it did exist, IDRC should preferably lead an aid consortium in meeting the need.

There are special situations in which the product might effectively be a new institution, though; such as when inputs are made which change the orientations, operations and curricula of research/academic institutions to such an extent that while they are being coordinated and focused, new entities emerge. Through its ISRI support IDRC could also bring together several national institutions, with related and overlapping interests and activities, but which at present operate separately, into one institute, in the manner that this has been done in parts of North America, thus effectively creating a new research institution. Such a situation would also offer an opportunity to steer the new creation away from a western model, in terms of its research interests, its relevance to regional needs, its *raison d'être*. The Centre could in effect be helping thereby to create new models of National Development Institutes in which there could be such innovations as faculty cross-appointments.

In a somewhat different sense IDRC might, through its inputs, partly transform what is essentially a service or development agency into one which has a minimal research capacity. Such is the case with the recently approved project for support to the Bharatiya Agro-Industries Foundation (BAIF) in India (3-P-87-0161). There could be limited opportunities in the future for this type of institution strengthening.

Other questions have to do with themes or foci that in the local settings would have to be stressed in building up the capacity of these institutions; and, of course, the difficult issue of evaluation and an evaluation plan. The latter point is briefly addressed later.

SELECTION OF CANDIDATE INSTITUTIONS FOR ISRI

As has been stated previously, it seems generally agreed that priority should be given to Africa for institution strengthening; and, for a number of reasons (weakest infrastructure among them) topmost priority to francophone Africa. Great need is also perceived in parts of Asia, notably Indonesia; and in parts of Latin America. Following is a set of suggested criteria for selecting candidate institutions.

Criteria for Selection of Institutions

Of the possible criteria, some are general, applicable if Centre wide, multidisciplinary support is contemplated; others are more specific to health sciences considerations. They are not set down necessarily in priority order.

For consideration for IDRC's ISRI support, it would be desirable that an institution:

- (i) exists in a stable political environment;
- (ii) has a national role and function in terms of what it strives to do, how, for whom;
- (iii) is sensitive to national (as distinct from international) needs; while not being a slave to national whims and fancies; having some autonomy;
- (iv) is predominantly and ultimately people and community oriented; rather than laboratory and biomedically and/or high technology - for the sake of "keeping up" with the Joneses"; and will research problems at district/community level;
- (v) already has a "critical mass" of competent researchers, in "adequate" numbers (quality and quantity of output)
- (vi) has support from national authorities, who are ready, willing and able to assume the costs of running the institution, and this to an increasing degree over time, as external support is phased out.
- (vii) has a plan for long-term staff development, with built in opportunities for staff career advancement;
- (viii) already has links to national sector-related programs;

- (ix) has practised careful selection of high-calibre nationals for staffing; and staff is kept reasonably content through acceptable levels of salary and other perquisites;
- (x) tends to publish locally/regionally; and there are appropriate vehicles for doing so;
- (xi) undertakes research work of demonstrable relevance to the sectoral needs of the nation/region; and not those of the researchers.
- (xii) has leaders committed to the institution's activities, actual and potential.
- (xiii) has leadership which is bright, flexible, sensitive and at the same time resolute.
- (xiv) has an association or working relationship with other sectors (faculties), such as social sciences, agriculture (in the case of health).

There are doubtless many other criteria which could be listed.

With respect to (iv), and in relation to health research, there is much argument at present concerning the relative merits of investing limited resources in the developing world in research related to social, behavioural and environmental aspects of health problems which are nation-or region-specific, as against their investment in biomedical research, as related to prevalent disease syndromes and health problems, that can only be done locally. This latter is seen as "frontier" or "national" research, adding new knowledge, some of which can be useful internationally. While this view has undoubted validity, it is likely a minority one today. IDRC should invest predominantly in the former while realizing that there is bound to be a need for both types of investment

Furthermore, with respect to any IDRC-HSD initiative, it is suggested that, at least to begin with, we should be thinking regionally (or in large countries, nationally). Other criteria might then be:

- (xv) acceptability regionally of such an institution as a model, leader;
- (xvi) acceptability nationally of such an institution assuming such a regional leadership role (with all its implications);
- (xvii) the existence of evidence of linkages, or proposed linkages, with other similar (in terms of orientation, interest) national institutions in the region.

The intent is that the selected institution, both during and after strengthening, should play the role of strengthener in turn (the idea of "Centres of excellence" helping weaker vessels, assuming leadership roles, engaging in "technical cooperation among developing countries - tcdc... etc).

There is a place for first-world collaboration with such regional institutions in limited high technology and/or biomedical research as necessary, and as related to specific local problems - in the manner of the Centre's present cooperative projects (certainly in health). However, in keeping with IDRC's philosophy, well-accepted and respected, and part of our comparative advantage, all our efforts should be towards the paramount aim of indigenization.

Final selection of experimental ISRI institutions.

Were IDRC to contemplate proceeding along the suggested lines, discussions should take place not only with the personnel of the candidate institutions, but also with relevant scientific bodies nationally and regionally, people's organizations, interested and appropriate private and voluntary groups (in health, for example the African Medical and Research Foundation (AMREF) in Kenya), other interested international and bilateral agencies. By these means the Centre would ensure that its development, mission and objective goals were met.

A few, perhaps not more than 2, institutions should then be chosen in Africa, one francophone in West or Central Africa, one anglophone. This is suggested because, as previously stated, there seems to be a general acceptance that the greatest need is in Africa; and in Africa, greatest in the francophone regions. Selective strengthening could then be planned, implemented, managed, monitored and evaluated. This would entail careful data collection and analysis about prevalent problems, priority problems (decisions made on basis of severity; size of the burden (of morbidity, mortality in the health sector); economic impact; feasibility of useful research and of finding practical solutions, etc.)

Institutional profiles should also be carefully constructed at this stage, covering all important dimensions of structure, process and function. This will be useful not only for ensuring whether an institution is a suitable candidate for ISRI funding, consistent with the ISRI philosophy; but also in providing baseline information for later evaluation.

Once the final selection of institutions has been made, for each a development and action plan should be elaborated, taking into account cost implications, and monitoring and evaluation components built in.

Some possible elements in ISRI support

If predominantly or solely IDRC (or HSD) funded, the following would be reasonable elements of ISRI:

- (i) staff salaries;
- (ii) short term training (skill sharpening);
- (iii) long term training (skill acquisition);
- (iv) provision of consultants, as necessary only, especially as related to (ii), above;
- (v) re-entry grants for long-term trainees, for research;
- (vi) small grants;
- (vii) library support, including modern equipment;
- (viii) instituting or strengthening information systems (computers, software, training of appropriate people);
- (ix) strengthening communications capability (audio-visual material; production of materials, etc);
- (x) specific research grants.

If other agencies are involved:

- (xi) IDRC might furnish minimal equipment and supplies; other agencies more substantial items;
- (xii) buildings, other special facilities supplied by others;

- (xiii) maintenance capabilities strengthened (engineers, mechanics, technicians and their appropriate training); this by others or by IDRC;
- (xiv) equipment replacement - by others;
- (xv) the biomedical or other sectorally-specific high technology component of the research, supported by IDRC; or, if other agencies involved, predominantly by them.

It is understood that, where IDRC is the sole funding agency, these elements of core and other essential program support will nevertheless be adequately addressed.

Training

It is clear that training will be a major component of any ISRI. Help would be obtained from appropriate IDRC divisions, and if necessary from others outside the Centre, in determining the necessary inputs and the placement of candidates (preferably in environments similar to those at home). In cases in which health would be the focus training would be given to properly prepared individuals; and would include disciplines such as epidemiology; biostatistics; health systems research including health policy analysis and health economics; social anthropology, health education, planning and management.

Training Modes

As will be obvious from the above, the preferred training modes should be:

- short term skill transfer, preferably locally or regionally, using local or regional experts when feasible, Canadian expertise otherwise.
- long term, formal training, for disciplinary skill acquisition, at the most appropriate institutions, given the need for high calibre graduates. The above criteria would apply to the extent deemed necessary and rational.
- periodic workshops on specific topics or for fulfilling specific, demonstrable needs (eg. interpersonal relations, public relations, cultural sensitivity, computer applications, etc.)
- refresher and up-dating courses, meetings, perhaps on a regular, periodic basis; preferably regional in scope.

It is understood that the most modern methods of pedagogy, including adult education and problem solving approaches (learning by doing) will be employed, using acknowledged experts.

With respect to any experiment in francophone Africa, excellent opportunities will be afforded for collaboration, as desired, with francophone Canadian institutions, especially in Quebec.

THE NURTURE AND GROWTH OF ISRI INSTITUTIONS

In order to increase the chances for the survival and growth of institutions, given ISRI support by IDRC, the following actions should be taken:

- give preferential project support to such institutions;
- encourage the trained personnel to begin playing, as soon as possible, their roles as trainers of trainers, the latter coming from within the country and/or other institutions in the region. (Later there might be a shift in support, less going to the ISRI institutions, more to the "trainee" ones);
- IDRC should take the lead in pointing the ISRI institutions to other, diverse sources of funding; in fact playing a brokering role;
- IDRC must help to strengthen the ISRI institutions' links (twinning) with other (Canadian) institutions, while guarding against their being overwhelmed by outside interests.

- IDRC must help (through network funding, for example) ISRI institutions to forge links with other institutions in other regions having similar research interests.
- IDRC must likewise help to bring together researchers from various (ISRI and other) institutions to periodically exchange experiences, information and thinking and thereby also help to strengthen collaboration and networking.
- IDRC must encourage, and help to arrange, local and regional consultation by ISRI institutions on behalf of private or international organizations.

THE RELATIONSHIP OF ISRI ACTIVITIES TO IDRC'S REGIONAL PLANS

As already implied any ISRI initiatives that IDRC is contemplating should have local inputs, including those of the regional IDRC staff, certainly with respect to the nomination and selection of candidate institutions. Such initiatives should tie in with regional strategic plans. Regional plans are as yet still being discussed and prepared; to the extent that they have been proposed for Africa, they are outlined here:

(a) East and Southern Africa

- (i) Training, facilities, supplies and research funding for confronting the serious, deadly and major problem of the AIDS epidemic.
- (ii) Long term measures to address the recurrent problems of drought, famine, starvation, malnutrition, undernutrition.
- (iii) greater efforts to ensure that research results are translated into action.
- (iv) trying to identify and mobilize continuing support for activities whose initiation IDRC supported and/or is not interested in (further) supporting.

Attending to some of these problems will need structural economic and political adjustments at the national level, among other things; and these are largely beyond the capacity of IDRC to engineer. However, our material support, and the dialogue surrounding the channeling of this support, could have substantial effects even in these spheres.

The greater use of research results is an area which is at present becoming the focus of much Centre attention at several levels.

The very act of serious discussion with national leaders and relevant groups leading up to any ISRI activity is likely, in itself, to ensure better and wider use of research results; and this for any region of the world in which we're operating. It must also be noted that IDRC is already trying many strategies to ensure better use of research results; and the experience gained can be applied in ISRI.

(b) West and Central Africa

The priority activities so far proposed for this region include:

- (i) general training in research skills, at all levels (including analytic skills: epidemiology, biostatistics, health systems research);
- (ii) training in planning and management skills;
- (iii) action research, operational research, demonstration projects;
- (iv) research into major public health problems (AIDS, major endemic diseases such as trypanosomiasis (sleeping sickness)).
- (v) skills as related to water management and sanitation; and relevant research.

These preliminary notions tend not only to indicate the extent of need; but to underline the disparate needs, as related to the different environments, the different levels of infrastructure development in different parts of Africa.

Much more information needs to be gleaned - either from existing data or indeed from new research efforts. The nature, extent and complementarity of interdivisional IDRC support for ISRI in these differing circumstances would need to be carefully worked out.

Specific Examples of Actual and Potential ISRI-type Activities

Apart from the now common (for HSD) collaboration, particularly with SSD, in project development, the HSD has engaged, largely on its own in a centre context, in several institution strengthening projects.

One example is the project in which, in collaboration with CIDA and McGill University, the HSD is supporting epidemiology training for Ministry of Health Staff in Ethiopia (3-P-86-0283).

Another, from which it is hoped that the experience will provide useful lessons for the future, is the present project in Sri Lanka (3-P-86-0125) in which there is research capacity/institutional strengthening through training and the support of specific research. There is also some program support. Collaborators include the WHO and McMaster University.

In a recent development the HSD has been approached by an African country for long-term support for the development and rationalization of a national capability for public health research. This is clearly an ISRI type endeavour in which the division can help to mould and shape the final product.

In another situation, where a thriving health research facility exists, supported by government, it has been suggested that IDRC could very well help to strengthen the capacity in the disciplines of social and behavioural sciences, thereby enhancing its holistic and multisectoral possibilities for linkages, and its relevance to the society in which it exists.

In China a project is contemplated (the proposal is being presented to the March Board meeting: 3-P-87-1041) in which there will be post-graduate training of researchers in nutritional sciences, combined with the support of specific research and some programme support. Canadian collaboration is with the University of Toronto.

The Nutrition theme at the Centre level is an obvious candidate for true ISRI, with opportunities for inputs from most, if not all, of the divisions.

(A paper on Nutrition has also been prepared by the HSD).

Another Centre theme now under discussion for potential development is "Shelter". This could also lend itself to multisectoral (multidivisional) collaboration - true ISRI.

EVALUATION

Evaluation is not an easy undertaking even under the best of circumstances. Various frameworks exist, different approaches are used by different people, depending on their backgrounds, disciplinary affiliations, the purposes for which the evaluation is to be used. An imperative is that for evaluation to be successful, it must be appropriate, properly planned and preferably built in before rather than attempted after, the activities to be evaluated get underway.

If ISRI activities were entered into by IDRC especially if on an experimental/trial basis, then proper evaluation would be a vital element, necessary for guiding later expansion, if contemplated.

As indicated above, a proper plan, with all necessary elements, would need to be first elaborated, following preliminary discussions, reviews, compilation of institutional profiles. Targets would need to be set, processes worked out. There should be repeated monitoring, feedback, restructuring in the light of new information. Evaluation, at preset times, should be done by a joint evaluation team. Represented should be at least IDRC; other contributing agencies, if any; the particular institution; the appropriate national authority and a neutral, external expert.

Without going into too many details about the most relevant and appropriate evaluation plan for ISRI activities, here are a few examples of possible output indicators:

- staff development: number of established posts, career paths, etc
- support attracted - national, international; kind, quantity
- no. and types of people trained
- no. and types of projects undertaken; successes/failure
- no. of projects whose results translated into action
- no. of papers produced, published, where
- no. of linkages formed nationally, internationally
- no. of workshops, meetings, short training courses mounted. Who participated; evaluations.

This is but a short, indicative list of indicators, in an area that is not at all easy. Other, more qualitative indicators, would include the feelings of national statutory bodies, departments, scientific institutions, private and voluntary agencies as to the work, worth and impact of the institution. Very importantly, the feelings of people's organizations and community groups as to the relevance, and helpfulness of the institutions in solving their problems and improving their life status should be gauged.

It should be noted that papers on Evaluation and on Health Education have also been prepared by the HSD.

THE HEALTH SCIENCES DIVISION AND ISRI

a) Collaboration With Other Divisions

It is assumed that whether the Centre and the Health Sciences Division go for one or another of the options for ISRI mentioned previously, inputs will be multidisciplinary, with varying degrees of interdivisional collaboration and linkage depending on the particular choices. The most obvious partner for the HSD is the Social Sciences Division whose restructuring, still in progress, is likely to facilitate such interdivisional collaboration, and in a mutually complementary fashion. In light of the HSD's holistic approach to health problems, behavioural facets will have to be approached with help from the SSD; similarly, in problems of say infant mortality, inputs will be necessary (as in the past) from health scientists to complement those of the population scientists/demographers in SSD.

Inputs from the Communications Division and from Information Sciences will also be required since information generation and its internal flow, as well as information dissemination, are important for institutional management, for decision-making and for generally informing people. Training in these areas will be a necessary facet of any ISRI. Indeed, these are exactly the areas which are often identified as needing specific strengthening in developing countries. Furthermore, as has been said before, when IDRC is involved in training, FAD has critical inputs to make.

There will also be opportunities and imperatives for inputs by the AFNS, especially when nutrition figures in any ISRI, whether at Centre level or at HSD level. Similarly there will be opportunities for inputs from the new division of Earth Sciences and Engineering.

On the other hand, given that health sector activities are accepted as an important element in any development initiatives, it is clear that inputs from the HSD will be relevant in many Centre-wide ISRI activities.

(A paper on Interdivisional Collaboration has also been prepared by HSD).

b) HSD Appropriations for Institution Strengthening/Capacity Building

In a previous section some examples of actual and potential ISRI-type activities in which the HSD is involved were given. They illustrate that the HSD is not only willing, but able to play a leadership role in enhancing health status in the developing world. ISRI is not new to us.

We can see possibilities during the next 10 years for integrated support for predominantly health-sector-related research institutions in 5 or 6 places in Africa, Asia and Latin America (possibly Indonesia, India, Thailand; some of the lesser developed countries or lesser-developed regions of larger countries in Latin America and the Caribbean).

In a previous section there was also discussion about the selection of two institutions in Africa for multidisciplinary, multisectoral strengthening on an experimental basis. The time frame will likely be 10 to 15 years. HSD is keen to make inputs into such Centre-wide ISRI, which will probably increase in scope with time.

In instances of Centre-wide ISRI initiatives, funding might come from special reserves and/or from appropriations from the interested and relevant divisions. Where the initiative is more sectoral (divisional), then funding would come from all the division's programs (for example the three in HSD). In either case an important role is seen for FAD, given the major training component in any ISRI activity.

For the Centre-wide, and the predominantly sectoral (HSD) ISRI efforts, as well as the usual institution strengthening components of the division's projects, HSD is willing to consecrate up to 30 % of its budget: 50-70 % going to the first 2, 30-50 % to the last.

CONSORTIUM FUNDING

Having regard to the nature of ISRI, in any given situation it may be necessary to examine the possibility of consortium funding. Depending on cost and other implications, IDRC might wish to work in collaboration, and in a coordinated fashion, with other agencies with which we have good working relationships, and whose reputations are, in our terms, impeccable. Their philosophy with respect to development issues should match ours.

Commitments on their part, as well as on the part of national authorities, should be clear and unambiguous. We should not enter into such consortia when there are too many caveats, eventualities. Likewise areas of responsibility, authority, decision-making, single or joint, should be clear and agreed to beforehand. In addition there must be an assurance of local, rather than expatriate control.

It must be a cardinal tenet that flexibility be built into the ISRI activities themselves, so that less attention is given to strict adherence to budget line items than is normally the case - while fiscal responsibility is not sacrificed.

ASSOCIATED ACTIVITIES OF OTHER HEALTH-ORIENTED GROUPS

Before closing it might be useful to briefly describe some related activities in prospect or in progress by other health-related groups.

- (i) WHO. Both their programs for Research, Development and Research Training in Human Reproduction (HRP) as well as in Tropical Diseases Research (TDR) support long-term institutional development in member countries of WHO (some documents are quoted in the ISRI paper; these programmes have also been cited in this paper).
- (ii) There is an Independent International Commission on Health Research for Development, in which IDRC is an active player, which is exploring the possibility of setting up a mechanism for mobilizing and making available more funds than are at present available for health research in the developing world. It is also proposing to do case studies of past efforts at institution-strengthening. IDRC should closely monitor developments and available data.
- (iii) In the area of contraceptive research, the Rockefeller Foundation is initiating a program to strengthen biomedical research in institutions in the developing world, in collaboration with WHO. Later, behavioural and other facets of research in contraception/family planning will be funded. IDRC should also follow this closely.

- (iv) The Pew Foundation, has a particular interest in health policy analysis.
- (v) There are other national/international, bilateral/multinational aid agencies which have institution strengthening activities.

NEXT MOVES FOR IDRC-HSD IN ISRI

This is addressed in the context of health-related research with the lead role devolving on the HSD.

- (a) IDRC should set up a small group, consisting of the HSD Director and/or his nominee who, working through a couple of expert consultants on HSD's and after briefing by OPE, will review* relevant ongoing ISRI activities and will approach other agencies for their help. Apart from WHO and the International Health Commission, others might include the German Technical Cooperation Agency (GTZ), SAREC, the Ford Foundation, The World Bank, ODA (U.K.), and the Commonwealth Secretariat. They in turn would participate in nominating candidate institutions for ISRI.

* The review should also include existing models such as INCLEN (the International Clinical Epidemiology Network and FETP the Field Epidemiology Training Program of CDC, WHO).

- (b) Depending on the degree of interest evinced , there should be a joint mission of interested agencies, of say 4 weeks' duration, to visit and closely study, with local involvement and proper preparation beforehand, a short list of about 4 to 6 African universities/research institutions. Naturally, there would be an IDRC regional office input.
- (c) Based on their report, and on agreed criteria they would choose 2 centres (1 francophone, one anglophone) and make the necessary detailed arrangements with all concerned to use them as experimental models.
- (d) In elaborating plans, due notice and attention must be given to intersectoral linkages.
- (e) As well IDRC (and others) should have an eye at that time to helping consolidate strengths from various institutions into one health-related research "institute".
- (f) The plans should be brought to Centre attention for examination.

NOTE: 1. Detailed procedures for bringing the initiative to IDRC's Board would be as usually followed, and as outlined in the ISRI paper.

2. Definitions of terms as used in this paper and in the ISRI paper are as found in the latter paper.

Summary

The concept of Strengthening Research Capacity in the developing world has been examined, and examples of past attempts to do so cited. One of the more successful examples happens to have been in the health sector, and the characteristics of this (WHO/TDR) have been detailed.

Suggestions are made as to how the Centre, preoccupied for several years with the need to find new ways of strengthening research capacity, might go about it. The Centre's own documents have been helpful in arriving at these suggestions. The proposed approach is quite similar whether centre-wide, multidisciplinary efforts are contemplated, or whether they are unisectoral. In any case the HSD is shown as ready and willing to make its contribution, in fact already leading the way (examples are given).

In the case of the HSD the ultimate objective would be, in a sectoral sense, to help generate culturally relevant and specific knowledge for bringing about changes in health systems, and for hopefully solving priority health problems, especially those afflicting the most vulnerable population groups. The ultimate aim is to improve the health status of the less privileged populations of the developing world.

In the broader multisectoral context the aim of the HSD, as of other sectors in IDRC, is to accelerate the process of development, for the benefit of people. The HSD is ready for the interdivisional collaboration necessary for selecting candidate institutions in order to strengthen their research capacity; for making the necessary and adequate inputs for training and programme support, working with other agencies if necessary; and for doing a proper evaluation of inputs and outcomes. Most importantly, the HSD is prepared to consecrate eventually about one-third of its budget resources for these activities.

BIBLIOGRAPHY

1. Report of the Advisory Committee on Medical Research, Sub-committee on Health Research Strategy for HFA/2000, WHO, Geneva, November 1985.
2. Strategies for Primary Health Care: Technologies Appropriate for the Control of Disease in the Developing World. Walsh, Julia A. & K.S. Warren (Eds). University of Chicago Press, 1986.
3. PAHO's Orientation and Program Priorities in 1987-1990, in WHO Bull. 20 (3), 1986 pp. 320-329.
4. XXV Meeting of the PAHO Advisory Committee on Health Research, in PAHO Bull. 20(4), 1986, pp. 428-432.
5. Discussion Notes: Integrated Support for Research Institutions, (IDRC) OPE Working Group: MC 86/34, October 1986.

6. Report of the Ninth Meeting of the Scientific and Technical Advisory Committee (STAC-9) TDR/WHO, 17-20 March 1987; WHO, Geneva.
7. Approaches to Strengthening Research Institutions. IDRC Discussion Paper. Office of Planning and Evaluation, October 1987.
8. Program and Policy Review: IX; 1988/89-1991/92, IDRC. August 1987.

**RESEARCH IN HEALTH EDUCATION:
POSSIBILITIES FOR THE HEALTH SCIENCES DIVISION**

Position Paper prepared for In-Depth Divisional
Review (IDDR)

Feb. 1988

Jane MacDonald
Ilse Zandstra

We would gratefully like to acknowledge the collaboration of the following individuals in the reviewing and editing of this position paper:

Dr. S. Bearpark, McMaster University, Hamilton
Ms. J. Cervinkas, Programme Staff, IDRC, Ottawa
Ms. D. Farlow, Community Health Researcher
Centre for Research Education in
Human Services, Kitchener
Dr. M. Gomes, Social Scientist, Ottawa
Mr. K. Hoffman, Health Planner, Ottawa
Dr. V. Neufeld, IDDR Consultant,
McMaster University, Ottawa
Dr. R.D. Smith, Associate Professor-Sociology,
York University, Toronto
Ms. K. Wardrop, Health Promotion Coordinator, CPHA, Ottawa

TABLE OF CONTENTS

	Page
I INTRODUCTION.....	1
II MAJOR INFLUENCES ON THE DEVELOPMENT OF HEALTH EDUCATION.....	3
A. COMMUNITY HEALTH INFLUENCES	
a. Sanitary Phase.....	3
b. Medicalization Phase.....	4
c. Behaviour Modification Phase.....	4
d. Health Promotion Phase.....	6
B. EDUCATION INFLUENCES.....	8
C. SOCIOCULTURAL INFLUENCES.....	11
D. DEMEDICALIZATION OF HEALTH	11
III CRITICAL REVIEW OF HEALTH EDUCATION RESEARCH IN DEVELOPING COUNTRIES.....	13
A. CRITICAL REVIEW OF 32 DEVELOPING COUNTRY HEALTH EDUCATION PROJECTS	13
B. SUMMARY OF HSD RESEARCH SUPPORT IN HEALTH EDUCATION	14
C. LESSONS FROM PROJECT EXPERIENCE	17
D. GAPS AND NEEDS ARISING FROM THE CRITICAL REVIEW	18
IV RATIONALE FOR HEALTH EDUCATION	20
V THE ROLE OF RESEARCH IN HEALTH EDUCATION	24
VI HSD POSSIBILITIES FOR RESEARCH IN HEALTH EDUCATION.....	29
A. FRAMEWORK FOR HEALTH EDUCATION RESEARCH SUPPORT.....	29
B. PRIORITY AREAS FOR HSD CONSIDERATION IN HEALTH EDUCATION RESEARCH.....	35
VII RECOMMENDATIONS FOR ACTION	38
REFERENCE.....	i
ANNEX	viii

I Introduction

The purpose of this paper is to propose and evaluate strategies for Health Sciences Division (HSD) research support in health education over the next four years (up to 1992).

During the past four years about 12% of projects supported by the HSD have had a health education component. From the beginning of Centre activities to 1986-87, 55 projects funded by the HSD (or 10% of the total funded) were described as "health education" projects. Yet even a cursory reading of these project summaries suggests wide variation in methodologies, research design, philosophy, intended outputs and definitions of "health education". In addition, many of these projects, while being multidisciplinary in nature, have been carried out solely by health scientists whose primary mission has been to improve the health of individuals or communities. Although this in itself is a valid mission, it has often been carried out without the understanding of how and to what extent cultural, sociological, political and environmental factors influence health and health maintenance/seeking behaviours. This situation has been further hampered by a lack of collaboration between the adult educators and health scientists.

This present IDDR of the HSD is therefore an appropriate time for reviewing past experiences, evaluating the broader shifts in the practice of health education, examining the philosophies which have influenced its practice and implementation, and determining priorities and strategies for HSD supported research in this area over the next review period.

It would be difficult, however, to understand the importance of research in health education and therefore in the HSD without first examining the topic in a broader context.

The objectives of this paper are to:

- a) provide a brief historical review of philosophies and strategies which have influenced health education;
- b) present an analysis of current health education philosophies and strategies;
- c) assess the role of research in health education;
- d) critically review health education research in developing countries;
- e) present recommendations as to IDRC's role in health education research;
- f) present recommendations as to HSD's approaches to health education research;

- g) propose recommendations as to the types of health education research that IDRC and HSD should encourage; and
- h) present possibilities for inter-divisional collaboration.

II MAJOR INFLUENCES ON THE DEVELOPMENT OF HEALTH EDUCATION

A) Community Health Influences

In order to place the current concept of health education into perspective it is useful to outline some of the major historical events which may have influenced the way that society has viewed health. By doing this, it may be possible to explain why we have today such a broad range of ideas regarding health education. Four major emphases or approaches are characterized within the community health sector:

- a. Sanitary phase
- b. Medicalization phase
- c. Behaviour modification phase
- d. Health promotion phase

These approaches to health were modified as experience and practice affected theory. As a result, philosophy and practice of health education has been continually changing. In developing countries particularly, culture, traditional beliefs, educational levels, infrastructure and available finances are all important factors in the maintenance and improvement of health status. However it should also be noted that the official health system in most developing countries has been based on biomedical principles and philosophies imported from "developed" countries.

a. Sanitary Phase

During the last century great advances in preventive health were made in the industrial world. Notably, John Snow tried in 1854 to shut down the Broad Street water pump in London because he believed (after scientific investigation) that cholera was being spread through the drinking water from that pump. The concept of a water-borne disease was a radical departure from known theory and no one believed him. It took another two cholera epidemics before he was proven right.

During this time, sometimes called the "sanitary" phase, the field of community health was based largely on the study of environmental and social conditions in the communities. An example was the involvement of public officials in a critique of the "poor laws" in Britain at that time. Much of the emphasis was directed towards convincing the legislators and authorities to develop measures, such as laws and sewage systems, to advance the health of the public. By comparison, little effort was directed towards educating members of the community. Therefore, although the great preventive health strategies and accomplishments of the last century were aimed at improving sanitary conditions, they did not involve the communities except as end-users of the services provided.

b. Medicalization Phase

The second phase in public health history can often be linked to technological advancement and the development of drug therapies around the turn of the century. Focus shifted from the preventive sanitary actions of the mid 1800's to the development and use of 'miracle' drugs. For the medical profession the health of the individual became the important focus and the communities and families were relegated to secondary positions.

To some degree these technical advances made it possible to ignore or forget the social, cultural and environmental causes of disease. All attention was focussed on the life-saving effects from antibiotics and the long-term immunity provided by the new vaccines (e.g.) smallpox.

Health practices changed: they became largely diagnostic and treatment oriented rather than preventative. Practitioners became diagnosticians and specialists in particular diseases. The focus was on the particular health problem of the individual rather than on the health problems of the community at large as in the previous sanitary phase. Health education in this phase emphasized following instructions and utilizing the new discoveries.

c. Behaviour Modification Phase

Beginning around the 1950's, there was an increasing awareness that individualized medical and technical solutions were not always the answer to complex public health problems. Medical interventions and pharmaceutical products were expensive solutions to what seemed sometimes to be fairly simple problems. In 1974 Marc Lalonde, then Minister of Health and Welfare in Canada, produced a landmark document, A New Perspective on the Health of Canadians. This document equated health education and prevention with healthy lifestyles. While recognizing the environment as an important health determinant, it recommended that individuals and organizations accept more responsibility and become more active in matters affecting their mental and physical health. This document, which has influenced health education practices throughout the world, placed most of the responsibility for health problems entirely on the individual. Solutions to health problems were also seen as individual.

The concept of an individual's "lifestyle" as being a major determinant of her/his health status gained greater acceptance among health workers, but, with it, came the practice of

"blaming the victim". It was thought that individuals should take responsibility for keeping fit, eating nutritious food, and generally leading healthy lives. Often overlooked was the fact that significant social and environmental factors prevented the individual from attaining this "healthy" lifestyle. Focus was placed on changing individual health habits and not on the socio-economic and political factors causing poor health. Individuals were held liable for situations in which they often had little or no control. The assumption underlying health education activities was that individuals would enjoy better health if they would only act in the manner recommended by health workers.

Lifestyle and individual responsibility had now acquired a place in the community health jargon. Community health practitioners became concerned not only with health risks but with lifestyle risks: In Canada, people were exercising too little, drinking too much, smoking and eating too much. In third world countries, women prepared the wrong foods, fathers drank away their family's meagre earnings, mothers breastfed too little, families did not boil their water and couples did not plan their families. Individuals did not understand or take responsibility for their health.

In order to change people's "unhealthy" behaviours it was therefore necessary to find out what people did, why, and what their belief systems were. One of the foundations, therefore, of the behaviour modification approach became the KAP (Knowledge, Attitude and Practices) model. The KAP model was founded on the simple premise that if only people were informed about the relationship between behaviour and health, they would change their health attitudes and ultimately their unhealthy behaviours.

The basic criticism that can be made of the behaviour modification approach to health education is the view that behaviour change was seen as the primary objective; it was less important to help people understand why they were ill or to help them change personal and social conditions that encouraged ill health. The individual continued to be viewed as essentially independent of her or his surroundings, unconstrained by social events and processes (Crawford, 1977).

In addition, the focus on individual responsibility and choices made this model particularly inappropriate for most developing countries where the "poorest of the poor" really have little individual control over the factors which influence their ill health.

The final outcome of this behaviour modification phase was that, policies and practices which sicken people were not challenged; the victim continued to be forced to accommodate to the causes of illness; and primary prevention remained an elusive goal. (Freudenberg, 1984).

These various critiques and the experiences of health workers, adult educators, and communities, heralded in a new approach to both community health and health education in the 1980's.

d. Health Promotion Phase

The philosophy underlying this approach is broader than that of its predecessors. With the limited success of the mass contraceptive programmes in the third world and the "lifestyle" programmes in developed countries like Canada, health professionals have begun to reconsider concepts with which to promote health.

The idea of "lifestyle choices" which can be made freely by any individual does not adequately recognize the reality of living conditions in either the developed or the developing world. The physical and socio-economic environments are often deciding factors which largely determine what "lifestyle" an individual may have. And, for most individuals of the lower socio-economic groups, key "lifestyle" choices - such as place of employment, housing and diet - are often not choices at all.

The understanding of the profound link between an individual's physical well-being and the circumstances in which she or he lives has deeply affected the nature and goal of health interventions, particularly those that involve any element of what is referred to as health education. This new understanding places health activities in the hands not only of the health professionals, but also in the hands of communities, politicians, educators, etc. The role of the health workers and health educators may frequently be seen as a collaborator or a catalyst for change rather than a mere provider of a health service or just a health "teacher".

Such a broad view of the community health field immediately places upon it both a burden and a challenge. The burden is the inherited hierarchy of a health service delivery system; the diagnosticians and specialists inherited from the medicalization phase; and the lifestyle experts inherited from the behaviour modification phase. Health workers are now asked to listen and be sensitive to the various factors that influence a person's health. They are also asked to participate more actively in health projects organized by communities themselves. No longer are they viewed as the experts in all areas of health care. The challenge for most health workers is to step out of a disciplinary straightjacket and work with communities in improving health and the social and environmental factors which affect health.

The major causes of death in the developing world (e.g.) diarrhoea, malaria, acute respiratory infections and their modes of transmission, need to be understood and dealt with by both community members and health professionals.

In addition, the scarcity, expense and ineffectiveness of "western" health services in developing countries is forcing health administrators and planners, who desire to increase the coverage and effectiveness of their services, to look again at their programmes and consult with the communities. One of the most underutilized resources in health is the capacity of community members to organize and carry out health programmes building on their own traditions, realities and needs.

As a result of these conditions and the new understanding that health development is not a matter of compliance but one of participation, the active involvement of the community is generally believed to be necessary for a health programme to be successful. Involvement of villagers in the planning, implementation and evaluation phases is therefore important. In addition, health education strategies in communities require detailed and in-depth information about the community's beliefs and practices regarding health and health care.

Community participation can also be encouraged around a health theme. Specific community problems can provide a starting point for community members to discuss the constraints and causes and to propose practical solutions based on their own realities. One of the critiques of the previous behaviour modification phase was that individuals do not necessarily change "unhealthy" behaviours just because they are told to by health professionals. Various authors (Tonon, Issley) have found that active community participation in health education programmes positively influences behavioural changes in health practices.

Dr. Halfdan Mahler, former Director General of the World Health Organization (WHO) states that "public health is in a process of change and that our understanding of what constitutes health is broadening...Health is reinstating itself as a collective effort, drawing together a wide range of actors, institutions and sectors within society towards a goal of a 'socially and economically productive life'." He argues that public health needs to move into positive and active advocacy for health. It needs to enable individuals and communities to develop what he calls "health potential". (Health Promotion, 1986, p. 1).

Perhaps one of the most significant changes in the move to developing "health potential" is the concept of health promotion.

Health promotion is the process of enabling individuals and communities to increase control over the determinants of health and thereby improve their health.

It represents a mediating strategy between people and their environments, combining personal choice with social responsibility for health to create a healthier future. Health promotion is not only concerned with enabling the development of lifeskills and community competence to influence factors determining health, but it is also concerned with environmental intervention to reinforce factors supporting healthy living conditions and to change those factors preventing or prohibiting healthy lifestyles. (Nutbeam, 1986).

Health promotion as a concept therefore goes far beyond the insular approaches dealing with prevention of disease (medicalization phase) and the improvement of sanitation (sanitary phase). Health promotion includes much broader basic principles such as:

- working with people not on them;
- starting and ending with the local community;
- taking into account the underlying as well as the immediate causes of ill health;
- balancing a concern with the individual and the environment;
- emphasizing the positive dimensions of health; and involving all sectors of society and the environment (Nutbeam, 1986).

Within the health promotion framework, health education has also needed to broaden its focus from individual behaviour modification to a more holistic approach based on the realities of communities and individuals. As the concepts broaden, so do the conceptual differences.

The changing forces in the community health movement, from sanitary to medicalization to behavioural modification and now to health promotion have influenced the practice and theory of health education. Health education has had to fit in with the predominant model of the day. However, other factors outside of community health have also influenced the theory and practice of health education.

B. Education Influences

The previous section has attempted to outline changes in orientation and emphasis in the community health field that have affected the theory and practice of health education.

This section comments on changes within the discipline of adult education which have had and are likely to continue to have a marked effect upon the practice of health education. As with health education, adult education can mean many things to many people.

The majority of health education programmes have, in some way, involved an adult audience. However, discussions about health education often seem to focus on the health aspect and neglect the education component, particularly adult learning principles.

In the early 1950's the predominant orientation in adult education was towards behaviour modification. The aim of behaviour modification is to modify or eradicate symptoms or undesired behaviour and develop more desired behaviour (Kidd, 1973). It is not a matter of coincidence that this focus and orientation in adult education occurred at the same time as the community health sector began also to focus on health behaviour modification.

However, over the past thirty years there has been a transition in adult education focussing less on teaching and more on learning. Previously the focus was on transmitting knowledge: filling the empty vessel. Think of the millions of books and pamphlets in every language and in every country that have as their subject how to teach, how to train, how to instruct, how to propagandize. The vast majority deal with the way one human being imposes his or her will or knowledge or skill upon another. Consciously or unconsciously most of them are about how a communication is shaped and directed - almost always from the point of view of the director or giver of that communication (Kidd, 1973). The major emphasis was how most effectively to change behaviour so as to purchase or adopt a particular product, message or behaviour.

However, in much the same way that community health moved from changing unwanted behaviours to developing the health potential of people, the focus of adult education has moved from teaching to learning - a more active approach. People are not merely the passive recipients of information or the mere absorbers of facts. Learning is an active process that involves an analysis of new information based on previous experiences and attitudes, and ultimately a decision about whether to integrate or to act upon this information.

A few basic principles underline adult education as it is now viewed:

- learners themselves are the richest resource for learning;
- learning relates to life;

- learning cannot be imposed;
- people learn best by doing;
- there is strength in learning together;
- adults learn best when they are not under stress; and
- success reinforces learning. (Cervinskaskas, 1984).

The importance of the word "education" in health education cannot be stressed enough. Too often there has been more concern with the transmission of the health message and not enough analysis of the most appropriate educational approaches with which to work. It has often been assumed that anyone with a bit of health knowledge can "educate" or teach; this has proven to be false. Adult education has an important role to play in the development of primary health care (PHC) in the community. It informs people about problems and solutions and helps the community gain access to PHC activities. It helps to mobilize people to act to improve their own health and to gain control over it. As people become mobilized and feel able to control their own lives, adult education can help integrate health development with other sectors.

Perhaps one of the most influential persons in adult education has been Paulo Freire, a Brazilian educator. In Freire's approach, all educational programmes must confront the conditions of the real world which are causing the problem (Freire, 1970). The educational process should lead to the development of "conscientization" - a critical consciousness which is achieved through a dialogue between facilitator and learner and through action taken upon problems that have been identified and analyzed.

Freire has called this educational process "problem-posing education" and has argued that the teacher is no longer merely the "one-who-teaches" but simultaneously is taught in the exchange. The student, while being taught, also teaches. Active community participation and control is inherent in this process.

The Freirian approach has been used successfully in many third world countries in both literacy and health education programmes. For many, Freire's philosophy has formed the basis of the 'popular' health education movement.

Placed in the context of popular adult education, health education is moving from purely information dissemination towards an active role in helping people and communities to understand and change their own social environments and thus to promote their own

health. The participatory and active approaches to adult education fit nicely with the health promotion philosophy (see pg. 8).

C. Socio Cultural Influences

Cultural anthropology has also influenced the theory and practice of health education. With the recognition that knowledge and attitudes were important to health practices, more work was done by medical anthropologists in this area. Research on health seeking behaviour and health beliefs and practices in various cultural settings has abounded for many years. However, only recently has it been recognized as an important consideration in health education. Much of the original anthropological research was conducted in isolated tribal communities. Many anthropologists simply ignored medicine or studied exotic folk healers and healing rituals for their symbolic and religious rather than their medical interest (Kleinman, 1980). This focus perhaps led health professionals to the conclusion that most medical anthropological research was a bit eccentric and not really applicable to community health programmes.

However, over the past 15 years medical anthropology has begun to take on a more health-oriented focus. The information gained from these studies has supported the emphasis towards advocating community control and lay knowledge. All communities have had to face illness and death and all have evolved their own ways of dealing with these issues, some based on thousands of years of beliefs and experience. The role of cultural anthropology in health education is to discover how these belief systems work in order to give the best possible chance that any health education intervention will be not only culturally appropriate, but effective.

D. De-medicalization of Health

During the 1970's a move away from the medical model and the physician dominated health care system gained greater prominence. The women's movement in industrialized countries played a particularly important role in trying to demedicalize health care and placed much of the control of that care back where they felt it belonged - in the hands of the people themselves. In the developed world we have witnessed the increase of many self help groups to deal with various health and social issues e.g., alcoholism, chronic diseases, childhood illnesses, drug abuse, etc. In the developing world we have seen a much greater emphasis

on community involvement in the control of PHC programmes. For example, villagers have been asked to participate in the delivery of PHC programmes, communities have formed health committees, women's groups have begun to ask questions of health workers and traditional medicine practices have become important aspects of some PHC programmes.

All of these movements have altered the role of health workers in health education and strengthened the role of the communities and individuals in maintaining and improving their own health. Inherently these have also influenced health education programmes and methodologies.

III. CRITICAL REVIEW OF HEALTH EDUCATION RESEARCH IN DEVELOPING COUNTRIES

In order to better identify the research needs and research gaps in health education, various health education research projects in developing countries were critically reviewed. This included an analysis of 32 developing country health education projects; a review of IDRC-supported research in health education; and some lessons from project experience prepared by other reviewers. Because of the way that health education research has been conducted in the past, it has not always been possible to show positive health effects. This could be taken to mean that health education interventions are not effective in improving the health status of a population. It is more likely, however, that health education programmes have not paid enough attention to how an intervention is planned and implemented and to what happens between the time this intervention is introduced into the community and the evaluation. This review was done in order to provide the HSD with information on needs and gaps in the health education research field. These gaps can then be addressed in future planning.

A. Critical Review of 32 Developing Country Health Education Projects

Thirty-two published articles were identified that either assessed the impact of the health education interventions or included an evaluation component. (See Annex). The research was assessed under four elements which are important to consider in health education interventions - the involvement of community; the intervention itself; the type of study conducted; and the type of evaluation performed.

Community participation -Although it is generally advocated that any health education intervention must be appropriate to the community involved, it was found that this aspect was not always addressed. Although some of the articles reviewed discussed the importance of socio-economic variables when planning a health education intervention some, did not. About two-thirds based their intervention on an assessment of health needs in the community but did not always say how this was accomplished.

Health education intervention - The health education intervention, including the location, who carried out the intervention, etc. was described in the majority of the articles reviewed. However, most of the studies provided little

information on "how" the health education intervention was carried out or of the research process involved in preparing and testing the health education materials. As well, none of the reviewed studies compared different educational approaches, only the effect of presence or absence of an educational programme. This makes it difficult to generalize from one situation or geographic location to another.

Study design - The articles reviewed varied in their study designs from having an experimental design, to being descriptive studies with no attempt at quantifying the results. For the most part the lack of application of rigorous scientific methods, such as randomization, controls, statistical testing, discounting confounding variables and possible measurement bias, as well as lack of baseline data made it difficult to attribute positive changes to the education intervention or to decide which approach was most effective.

The majority of the articles reviewed concentrated on epidemiological quantitative research frameworks and placed little emphasis on qualitative or process methodologies.

Evaluation/Outcome - Although behaviour change is not always easily quantifiable, a measure of this was most often used as an indication of program effectiveness. Change in knowledge was also offered as evidence of program effectiveness and less often, change in health status.

Of the studies reviewed, only a few made an attempt to evaluate the programme in terms of audience coverage achieved and a few looked at their programmes in terms of cost-benefits.

Nearly all studies reviewed claimed positive results for either knowledge, behaviour or health status change. This could represent a bias against publishing negative results. However, given the lack of appropriate study designs and evaluative mechanisms in the majority of these projects, it is difficult to attribute any change to the health education intervention or to decide which health education approach is most effective.

B. Summary of HSD Research Support in Health Education

Using the NEWPINS data base and the descriptor health education, it was found that from the beginning of Centre activities up to FY 1986-87, a total of 61 projects in health education or with a health education component, had been supported Centre-wide. Table 1 presents the data according to the Division providing the grant.

Table 1: Health Education Projects by Program Division up to FY 1986-87

	DIVISION				
	COMMUNICATIONS	HEALTH SCIENCES	INFORMATION SCIENCES	SOCIAL SCIENCES	AFNS
No of projects	3	52 2 Joint HS/COMM 1 Joint HS/SS	2 Joint IS/COMM	-	-
TOTAL	3	55	3	-	-

The table shows that the Health Sciences Division has supported 55 research projects in health education or with a health education component. The total for the other Divisions is 6 projects supported. The HSD projects can be categorized within four broad program areas, with several sub-categories:

Maternal and Child Health - family planning

- pregnancy
- oral rehydration therapy
- breastfeeding
- nutrition (including weaning)
- child health (general)

Disease Transmission and Control - diarrheal and parasitic diseases

- sexually transmitted diseases

Water Supply and Sanitation - health education

- health education associated with technology introduction

Health Services Research - health services

- medical education

Table 2 (below) presents a summary of these 55 projects, according to the program areas outlined above. (These do not in all cases coincide with the previous HSD sectors). Except for health services research, the projects are nearly evenly divided among maternal and child health (19), disease transmission and control (15) and water supply and sanitation (17). Nearly half of the projects dealing with health education also involve the introduction of water or sanitation technology (usually handpumps and latrines).

Table 2: Summary of HSD Supported Projects in Health Education or with a Health Education Component (from the beginning of Centre activities up to FY 1986-87).

Maternal and Child Health	Family Planning	Pregnancy	ORT	Breast-feeding	Nutrition (incl. weaning practices)	Child health (general)	TOTAL
No of Projects	1	1	4	4	6	3	19
Disease transmission and Control	Diarrhoeal and parasitic diseases		Sexually transmitted diseases				
No. of Projects	13		2				15
Water Supply and Sanitation	Health education		Health ed. associated with technology introduction				
No of Projects	6		11				17
Health Services Research	Health Services		Medical education				
No. of projects	2		2				4
TOTAL							55

Note: Table 2 analysis was done with reference to project abstracts only and therefore reflects the work proposed to be done by the project and not work actually undertaken.

In addition, nineteen final technical reports (see Annex p. xiii for listing) of completed health education projects supported by the Health Sciences Division (FY 1980-81 to FY 1984-85) were randomly chosen and critically reviewed. The results of this review must be interpreted cautiously since the criteria for health education projects, that now have an emphasis on multidisciplinary aspects, adult education and community participation, were different when these projects were developed.

This review shows that much of the research with a health education component took the form of pilot, demonstration or technology development projects. This is not surprising, given the Centre's mandate to support applied research of interest and direct benefit to developing countries. It was evident that when the health education was not central to the project, or when it was coupled with a health intervention, this aspect did not always receive priority attention from the researchers. For example, health education projects in conjunction with the latrine construction or with efforts to enhance community participation did not evaluate the efforts of the health education intervention. However, when health education research was the main focus it was well documented in the final reports.

Researchers were often focussed on developing a variety of educational materials (manuals, pamphlets, radio programs, a health card, etc.). In most projects, an evaluation of the content of the instructional materials was also developed. However, the pretesting and cultural adaptations of these same materials was usually not a focus. In general, final reports showed that the lack of suitable control groups and inadequate research designs allowed only tentative conclusions to be drawn from much of the research conducted.

C. Lessons from Project Experience

Several other authors have compiled critical reviews of health education projects. Some of these reviews are summarized as follows.

Michael Favin (1986) analyzed twelve health education campaigns in developing countries with a view to comparing evaluation results. Outreach or coverage; changes in knowledge, attitude and behaviour; health impact; and cost effectiveness were assessed. Only one, the Nutrition Education Campaign (Philippines) attempted to evaluate the impact of the campaign on health status. Favin felt that this lack of evaluation was due to the fact that it was difficult to do and added to the cost of a campaign. As well, relatively few programmes attempted to evaluate the effects of health education on behaviour. Most programme evaluations have relied on other indicators such as percent of target audience hearing the message, percent understanding and retaining the message, increase in knowledge, etc.

Janet Jenkins (1983) assessed seventeen mass media campaigns in developing countries. She concluded that "...unfortunately evidence on effectiveness and cost is rare". This does not mean that the projects were not successful, just that evidence of

success was not always available. However, the most dramatic results were obtained when the media was complemented by personal support such as consultation with health workers or by correspondence with tutors for distance learning.

A study of community health education in 47 Commonwealth countries was commissioned by the Commonwealth Secretariat (Walt, 1983). One of the aspects looked at by the consultants was whether the health education units had tried to evaluate any of their programmes. It was found that although many countries had made attempts to assess their activities, evaluation was not built in as an on-going process.

D. Gaps and Needs Arising from the Critical Review

The critical review of research, projects and studies with a health education focus showed that in certain instances health education interventions can have a positive effect on knowledge, attitudes or behaviour related to health. This, in turn, can have a positive impact on the health of the people concerned. However, as shown above, the claims of positive effects on health are often based on scanty scientific evidence. Many questions remain unanswered regarding the efficiency, effectiveness and cost-effectiveness of health education programmes. The need for appropriate research methodologies and evaluation techniques is obvious. In addition to more rigorous experimental and quantitative designs, more attention must be paid to qualitative and process methodologies. In addition to this major point, we would like to highlight the major areas of concern in each of the previously defined categories.

The Community

As stated earlier, community participation is important for the success of health education programmes. However, it does not appear that many communities have been actively involved in the planning, implementation or evaluating of their health education programmes--rather they have usually been regarded as "targets" or "receptacles". Data are therefore needed on the most effective ways of involving communities in defining their health problems, in carrying out their programmes and in evaluating the impact of the health education interventions on community health priorities. Qualitative methodologies will be important in obtaining this information.

In addition, a priority area for research in health education concerns the area where people's felt needs overlap or conflict with epidemiologically assessed needs. How is some degree of compromise reached?

The Health Education Intervention

Much more focus is needed on the process part of health education. Process indicators need to be developed as well as an analysis of the most effective communication approaches which can be utilized in a given situation. Rather than focussing primarily on content, more attention needs to be given to the methodologies used, the process involved and the effect of interpersonal relationships.

Evaluation

More research needs to be done to understand the relationship between knowledge, attitudes, practices and behaviour. In the health education field there is some discussion about the effect of attitudes on behaviour and vice versa. This needs to be explored further. In addition, studies are needed to assess the effectiveness and cost-effectiveness of various methods of health education. This is especially important if programmes are going to be replicated on a larger scale. The whole area of evaluation is vital to health education and probably one of the most difficult to address. Research has hitherto focussed on "hard" quantitative variables, process and qualitative indicators now need to be incorporated.

This critical review has provided us with current indicators of the state of health education research. Using this basis, as well as the historical influences, it is now possible to formulate a policy for the HSD.

IV. RATIONALE FOR HEALTH EDUCATION

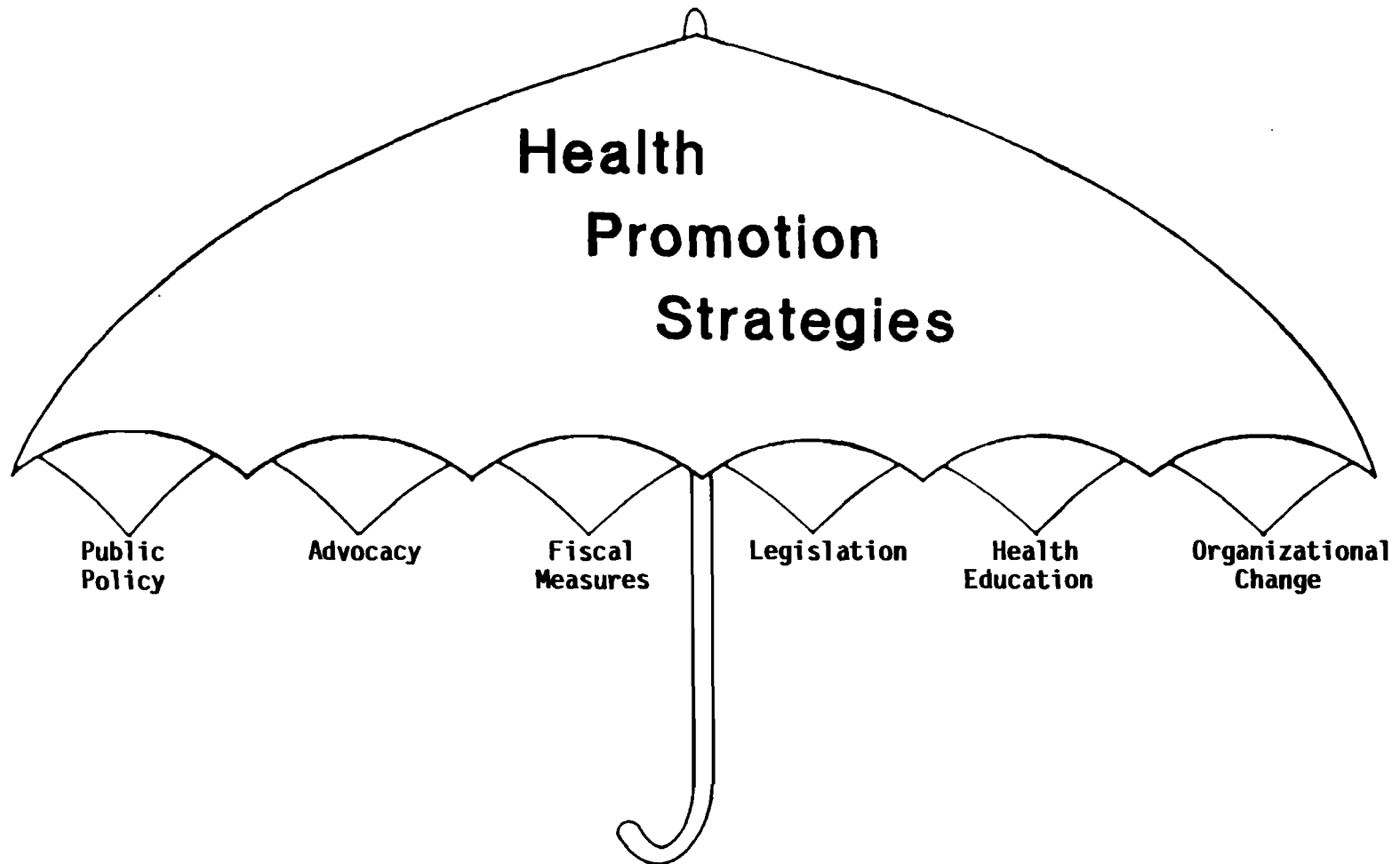
The signing of the Alma Ata agreement in 1978 declared that "people have a right and a duty to participate individually and collectively in the planning and implementation of their health care", and that "the education concerning prevailing health problems and the methods of preventing and controlling them was the first of eight essential activities in primary health care (PHC)". (WHO, 1983, p.8).

However, within the new health promotion framework where does health education fit and what do we mean by it?

The health promotion philosophy is a community based, socio-ecological approach to health. Rather than focussing on individual solutions to individual problems it seeks to determine community responses and actions to community and social problems (which also influence individual behaviours).

Health promotion has often been viewed as an "umbrella" with various strategies emanating from it. Figure 1 presents conceptually where health education would fit into the health promotion umbrella and which other strategies are also under this umbrella. It should be remembered that all of these strategies work towards the goal of health promotion which is to enable individuals and communities to increase control over the determinants of health and thereby improve their health.

Figure 1*



*Adapted from "Re-stating the case for health education" by Ken Allison, Sandy Bollenbach, Ann Pederson and Barbara Davis. 16 November, 1987. Unpublished.

These various health promotion strategies are not mutually exclusive - they are very interconnected. However, the important issue is that health education is placed within an overall framework. It is one strategy that may be considered to improve health. At the same time it may also be necessary to consider other strategies such as changes in public policy or fiscal measures. Concepts such as the coordination of healthy public policy, the creation of healthy environments and the empowerment of communities - the symbols and the rhetoric of the new health promotion - have evolved after an analysis of the various factors influencing health.

In this new era of health promotion and adult education, how should health education be defined? We propose the following working definition for the HSD:

Health Education refers to learning experiences designed to assist and mobilize individuals or communities in the control of their own health, as they define it.

This definition places health education in the broader social framework of health promotion. There is an inherent focus on community and individual participation, the societal and environmental constraints are acknowledged, and there is a desire to promote preventive health action. This approach to health education is paralleled in the field of adult education where the emphasis has switched from individual to group learning.

In the philosophy of PHC, health education plays an important role. It assists individuals and communities in understanding their health problems, determining possible mechanisms for dealing with these problems and determining their own priorities. Health education provides information to people that can be utilized by them to improve their health conditions. In addition, through the adult education techniques, communities should begin to critically assess their own living conditions and propose alternatives. Today, health education goes beyond providing basic information to people. It is part of a process which enables people to acquire the resources, appropriate technology, skills and political support that make change possible.

Many community health programmes are now emphasizing the importance of health education as opposed to medical interventions. It has been recognized that communities maintain health beliefs and practices which in no way relate to the western biomedical model. Health workers' knowledge of these beliefs is minimal. It is also recognized that communities must take an active role in this health education and that the real key to improvements in health conditions is through

changing unhealthy environments. For certain health problems, such as AIDS, health education has been identified as the primary modality for coping with the spread of the disease.

It seems that health education is becoming a more prominent part of any PHC programme. However, how is this health education planned, implemented and evaluated?

V. THE ROLE OF RESEARCH IN HEALTH EDUCATION

As the community health sector, adult educators and communities themselves have argued for a stronger and more active role by communities in developing their health potential, health promotion efforts have increasingly and necessarily involved the use of health education in achieving these goals. Health practitioners and adult educators are both marking out new terrain in which the tools of the past cannot merely be adapted and applied to find solutions to problems in practice. The health practitioners are required to step outside of the biomedical disciplines and understand human behaviour and the process of change; the adult educators are required to understand the communities, their health priorities, and the health practitioners and facilitate a dialogue between both. In doing so, they too must step out of their disciplinary boundaries and encourage communication between the practitioners and communities.

There is no single rule of thumb to follow. Communities, health practitioners and adult educators together must experiment to find approaches that are meaningful for particular cultures and traditions in the poor socio-economic environment that characterizes many developing country projects.

Within this context, perhaps one of the most important issues in such a trial and error approach, is the question: does health education work? How? Why? In conditions of fiscal constraint, health educators need to be able to evaluate whether or not their programmes work, and why. Historically, the measurement of the success of health education programmes has been based on quantifiable changes in health attitudes and behaviour attributable to the programme. Unfortunately, particularly with community based programmes, it has been difficult to show any degree of success based on this type of "hard" epidemiological data. The varied and complex conditions which contribute to ill health and the period of time over which disease develops and endemicity in communities declines makes epidemiological variables unreliable indicators of the effectiveness of health education programmes. It is now necessary to examine the role of health education in different ways, and to develop more appropriate process criteria to measure whether or not "it works" and "why" in given situations.

Health education research is complex. Not only do we need to evaluate quantitative, epidemiological outcome variables, we also need to look at process variables and qualitative information. Why do certain programmes work? What influences communities to alter health practices? Why does a certain educational method work? What influence does the setting have? What characteristics should the educators possess? These are all questions which need to be addressed.

Research is an essential component in the development of community appropriate health education programmes. However, where does research fit in to the health education process?

When contemplating any community health programme, various planning stages will need to be addressed. At each of these stages researchable issues will emerge. Health education programmes may need to consider many of these same stages. Each project will have its own community characteristics and particular emphasis, however, it must be remembered that any health programme operates within a political, economic, social and technological environment. These factors all need to be considered when developing appropriate strategies.

Figure 2 (page 26) illustrates a community health planning circle. These various stages can also be applicable to the development of health education programmes. The outer circle depicts the social, economic, political and technological realities which influence all communities; the middle circle depicts the planning cycle; and the inner circle emphasizes process evaluation which should be constant and ongoing.

At each juncture of this community health planning circle specific research issues in health education may need to be examined. Examples of some of these issues might include the following:

a) Identify Need or Opportunity

- what are the health problems?
- what are the traditional health beliefs?
- how does the community perceive its health conditions?
- what does the community want at this time? What will it accept?
- what are the educator's priorities?

b) Set Goals/Objectives

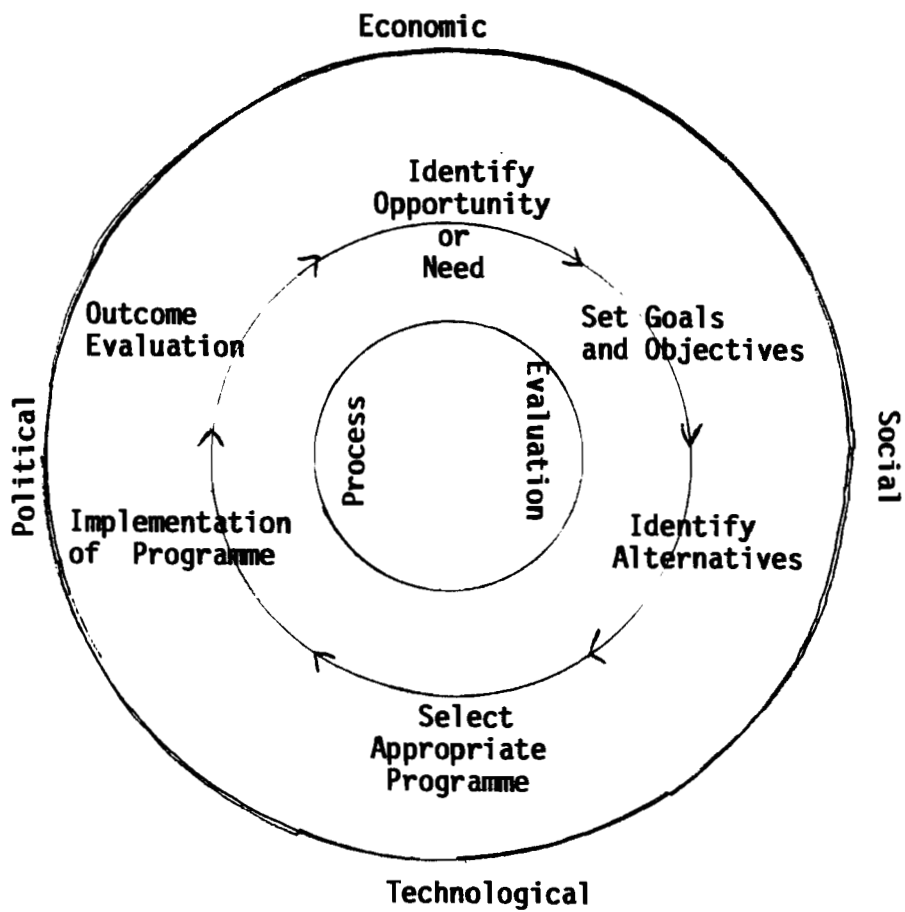
These goals and objectives will determine the criteria for success of the programme. Community and health workers must work together to establish common goals - how is this done? What is the process involved?

c) Identify Alternatives

- what content might address the objectives?
- what types of methodologies and communication modalities should be used?
- who is best suited to coordinate this intervention?

Figure 2

COMMUNITY HEALTH PLANNING CIRCLE



d) Select Appropriate Programme and Approach

- how does a community select the most appropriate programme?
- what are experiences from other groups?
- which programme best addresses the goals?

e) Implementation of Programme

- where and how will the implementation be done?
- who will be involved?
- how will the content be developed?
- what past experiences are available with the group?
- what will be the involvement of health workers and community members?

f) Process Evaluation

- how was the programme implemented?
- what interactions were effective?
- how did the community participate?
- was the message understood?
- who did the programme reach?

g) Outcome Evaluation

- did the project meet its goals, why or why not?
- what was the project's effect on the community?

Given these possible foci for research in a health education project, there are two areas which should be emphasized when contemplating such research.

Varied methodologies will need to be considered in health education research. Although quantitative and epidemiological techniques provide useful baseline and evaluation indicators, they cannot alone provide the subtle information necessary to plan and evaluate programmes. This is where qualitative and participatory research methods are useful. These methodologies provide for a more in-depth view of communities and also encourage more active participation of the communities in the research/action/evaluation process. These various methodologies complement each other and provide different information.

Health education often demands detailed and in-depth information rather than the broad and superficial results characteristic of speedy quantitative surveys. Information is needed on the variations, content and strengths of beliefs; this type of information is not

measurable quantitatively but is critical to the success of health education programmes. For example, in interviews with women (who are often responsible for child care and nutrition in developing and developed country families), information given to a stranger is often different from that given to a trusted friend; thus, though a survey may technically cover a cross section of the community, functionally it is not representative since any particular group will not talk freely except in certain conditions (Ramakrishna, 1987).

Evaluation is a particularly important aspect of any health education programme. Many programmes lack information which could contribute to an evaluation of the outcome. Because programmes are often run on tight budgets it is important for researchers and programme managers to develop continuous evaluative criteria which will support the subsequent evaluation of their health education programme. The correct baseline information must not focus exclusively on morbidity and mortality. More information should be gathered on qualitative health indicators, motivation and understanding. And, with the move towards a health promotion framework, process evaluation is becoming much more important, particularly when the community is actively involved.

An important question is: who does the evaluation? Ideally, community members should be involved and in some cases will carry out their own evaluation. This process requires researchers who are familiar and compatible with adult learning philosophies and techniques.

Health education research is complex and requires the cooperation and collaboration of many actors--health specialists, health educators, educators, sociologists, anthropologists, community organizers, communication experts, and of course, community members themselves. As communities are asked to participate more in their own health care they will need to be given the opportunity to participate in health education research--this also implies that researchers must possess adult educator skills (or collaborate with educators). In order to develop health education programmes which are truly effective and appropriate, researchers must begin to utilize innovative methodologies and work more closely with communities. However, these same innovative researchers and communities must be themselves supported and encouraged while breaking new ground. Evaluation must become a primary focus and sharing experiences must be encouraged. Unless some of these areas are addressed health education research will stagnate.

VII HSD POSSIBILITIES FOR RESEARCH IN HEALTH EDUCATION

In order to delineate possibilities and priorities for HSD involvement in health education research it has been necessary to step backwards and examine the primary factors influencing the theory and practice of health education. In addition, a critical analysis of completed and ongoing health education projects was completed. The following are now some of the main issues facing the HSD:

- how much emphasis does the HSD wish to place on health education research;
- what will be the priority areas for funding support; and
- what will be the mechanisms of this funding.

FRAMEWORK FOR HSD HEALTH EDUCATION RESEARCH SUPPORT

Health education is considered by some researchers to be a priority area for research. So much of what a PHC programme can hope to accomplish is based on the principles of knowledge and participation. However, the ways in which communities and individuals learn; how they participate and how to plan and develop more effective community based programmes are all areas in which IDRC could play a role. The need for innovative, comprehensive health education is unquestionable. The mechanics of doing this research are another matter.

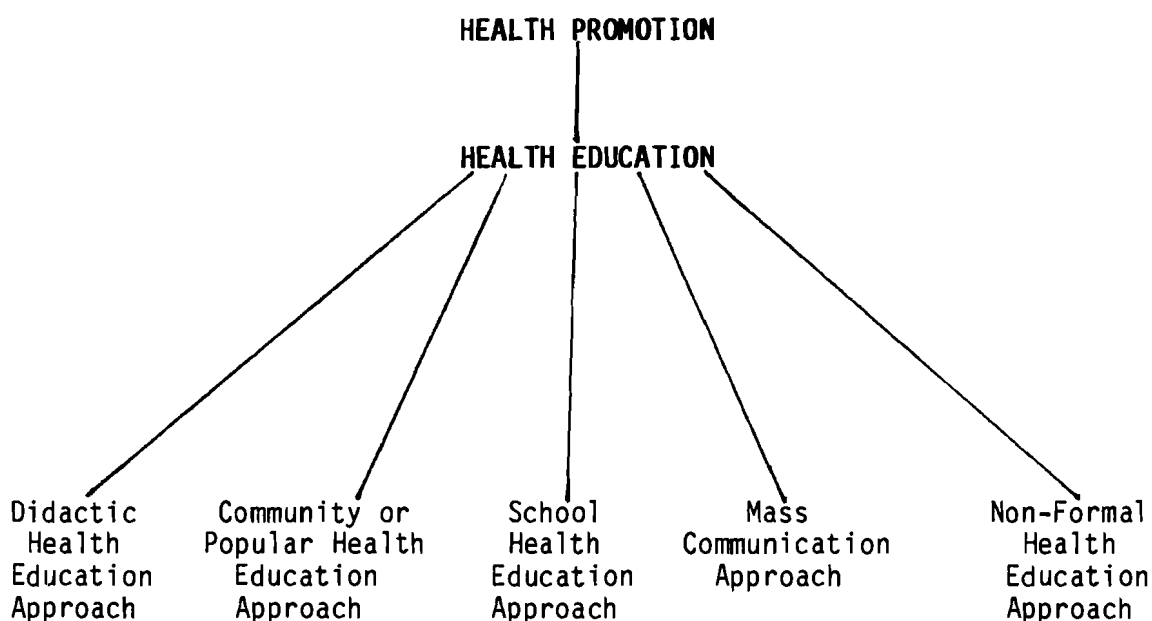
We have situated health education as one of the various strategies within an overall health promotion umbrella (see page 22). In addition we have defined **health education** within a socio-ecological framework as: **learning experiences designed to assist and mobilize individuals and communities in the control of their own health, as they define it.** However, it must be recognized that, although the community based health promotion framework is being "officially" advocated, health education programmes do not all necessarily reflect this shift in philosophy.

Many health education programmes in the developing world still maintain either a dissemination or a teaching philosophy. Examples of the former would be the mass communications campaigns used to promote contraceptives and ORT (oral rehydration therapy). Examples of the latter would be diarrhoea education programmes where mothers are taught to wash their hands, wash the food and defecate in a latrine in the hopes that childhood diarrhoea will decrease. Perhaps the common thread which runs through each of these programmes is the degree of participation of the community or "target" group. The content will likely be very similar.

One of the great difficulties with health education is that people define it differently. When popular educators speak of popular health education they will likely have a very different concept in mind than the nurse who talks about presenting health information to expectant mothers. This semantic difficulty has produced misunderstandings and a lack of clarity amongst health workers, communities and educators.

We would therefore, based on HSD experience and priorities, suggest the following classification for health education research projects. Given the various interpretations and approaches to health education we have delineated the five most common approaches (see Fig. 3). All projects with a health education component should fit into one of these approaches. This framework will allow the HSD to determine where to place its priorities and resources.

FIGURE 3. HEALTH EDUCATION APPROACHES



Within each of these approaches the goal should be to move incrementally towards the health promotion goal. However, each approach will have its own particular strengths, weaknesses and researchable issues and priorities. It should be remembered that the goals and objectives of each health education programme will determine the most appropriate approach to be used.

a. Didactic Health Education Approach

This approach arises from the behaviour modification phase of Community Health. It is the type of health education communication which implies "teaching". It consists of a structured learning opportunity about some aspect of health but usually looks upon the learner as a passive participant in the process. This approach is a common way for health care workers to "get their message across"; whether it be about washing hands, breastfeeding, immunization or the use of condoms.

In this approach a great focus is placed on the content of the message. Indeed, most health education programmes in this category would be focused on a health problem, e.g., diarrhoeal disease. A lesser focus is placed on the process of communicating this message or on the inter-personal interactions between teacher and learner. In this approach the teacher is the person with the information--the expert--the learner is someone who needs to know something (which has often been previously defined by the expert). Written and audio visual materials are commonly used in this approach. Evaluations are usually focused on outcome variables rather than process indicators.

In this approach, the role of the community is often ill defined. Because many of these projects are disease or content focussed, the community may not be a geographic community but rather a group of people with the same health problem who have been grouped together for some specific reason e.g., mothers attending antenatal services at a district hospital who are gathered together before their appointments to learn about nutrition.

HSD has supported various projects in this approach including: High Risk Pregnancy (Indonesia) 3-P-84-0003; Diarrhea/Health Education (Philippines) 3-P-84-0028; and Filariasis Control (Indonesia) 3-P-85-0340.

Some research issues in this approach might include:

- how to determine the learning needs of a very diverse group of people;
- how to plan programmes around these needs;
- use of non-traditional teaching methodologies;
- preparation of culture and community appropriate health education materials (written and audio-visual);
- methods of dealing with difficult environmental situations (crowded waiting rooms; uncomfortable benches; etc.);
- appropriate ways to pre-test any new programme;
- how to do ongoing evaluations and thereby keep the programme up to date;
- how to adapt a standard programme (content) to very different cultural groups;
- determination of appropriate evaluation indicators (both outcome and process);
- testing of methodologies to involve the audience more fully in the programme;
- what are the costs and benefits of these programmes;
- how to train health educators working in this milieu.

b. Community or Popular Health Education

This is an approach which has arisen out of Paulo Freire's work in Latin America as well as from adult education experiences throughout the developing and developed world. During the last decade and with the emphasis on PHC, popular health education has become one of the focal points in the health promotion framework.

One of the basic principles of PHC is the active involvement of communities in the planning, implementing and evaluating of any health education programme. This approach concentrates on fostering community action and mobilizing local resources to solve community-wide health problems.

Various actors may be involved in this approach including health workers, community members, adult educators and social scientists.

Projects cited as examples of this approach are often small, local initiatives. They may be initiated by a community group itself or through non-governmental organizations (NGOs). Each community has its own specific health problems and social history, and problems, and each will need to determine appropriate solutions to these problems.

In this approach the focus is on the process and the personal interactions as well as on the content.

HSD has supported several projects in this modality including: Women, Water and Sanitation: An Action Research Project 3-P-85-0185 and Women in Community Development (Asia) 3-P-87-0033.

Research questions in this approach might include:

- development of methodologies to encourage community participation;
- training of health educators to be involved in community health education;
- analyses of how communities deal with their own health and illness;
- evaluations of the cost-effectiveness of community based initiatives;
- evaluation of the replicability of community based initiatives;
- development of appropriate evaluation methodologies involving the communities;
- comparisons of various popular health education techniques (socio drama, role playing, sculpting, etc.).

c. School Health

In this approach the communication setting is the school and includes pre-school, primary and secondary levels. School health education consists of health education activities occurring as part of a school curriculum. Emphasis in this approach is usually placed on age-appropriate content and effective communication methodologies. In addition, audio-visual and written materials are important factors.

This approach has not been emphasized by either the health or education sectors. It has, in most cases, been left to develop on a rather ad-hoc basis. Curricula often contain outdated health information; written materials are not effectively presented; and teachers are often not well prepared to deal with health issues.

However, there does seem to be an increasing awareness of the importance of health education during childhood and adolescence. This is reflected in an increasing concern for appropriate and innovative curricula as well as enjoyable communication methodologies. Various schools in the African region are exploring ways of linking up with community based health organizations (Sheffield 1987).

HSD has supported several projects in this approach including: Information Exchange with Children (Kenya) 3-P-84-0030; Pre-school Health Education (Indonesia) 3-P-86-0088 and Children as Change Agents (Honduras) 3-P-86-0225.

Researchable issues in this approach might include:

- development of innovative health education curricula;
- evaluation of different health education messages;
- involvement of children in their own health education and evaluation of this participation;
- determinants of evaluation indicators (process and outcome);
- training of teachers in evaluation;
- children being used as data collectors in their communities;
- adaptation of content to age group;
- development of audio visual aids.

d) Mass Communication

This approach is marked by the use of the mass media to communicate messages to reach a dispersed audience. Radio, television, print media, posters, can all be involved. The most common form of mass media used in many developing countries is the radio. Social marketing of health products, and educational campaigns are examples of this approach.

Social marketing is an attempt to use commercial marketing techniques to promote products desirable from a health viewpoint, such as ORT or contraceptives. Social marketing has been gaining widespread acceptance as an educational tool, even though the technique does not allow for interaction with the message-giver and usually focusses on individual behaviour change. It borrows communication and education techniques from commercial marketing.

Educational campaigns often involve mobilizing large segments of the population at various levels, from politicians and government workers to local leaders, to achieve certain stated objectives. This may be to achieve vaccination coverage of a certain percentage of the population, to promote breastfeeding or to improve nutrition. Educational campaigns are often multidisciplinary and may include such varied techniques as social marketing combined with face-to-face communication. IDRC support in this area has been through the following project: 3-P-86-0149 Child Health Radio (Indonesia).

Researchable issues might include:

- evaluation of the impact of mass communication programmes;
- development of more community appropriate strategies;
- evaluation of the long term effects of mass communication techniques on local communities;
- involvement of communities in the planning of mass communication programmes;
- determining which specific health problems are more appropriate to deal with at this level;
- evaluation of the effectiveness of different communication techniques (radio, TV, VCR);

e) Non-Formal Health Education

This approach involves health education activities that take place outside the school or health systems and are distinguished from mass communication strategies by having a smaller audience. These activities can take place wherever people get together--in homes, at community meetings, in markets, etc. For example, an innovative technique has been the use of pre-recorded cassette tapes to communicate messages on a number of topics including nutrition, sanitation and preventive health to women gathered at laundering places in rural Guatemala (Colle, 1977). Another novel approach involved a team of Nigerian health educators who set up booths in the village marketplace to "sell" primary health care ideas to the people. The success of this project led to the involvement of a number of communities in identifying and solving their major health problems (Laoye, 1981).

Possible research issues might include:

- evaluation of the effectiveness and appropriateness of these various ideas;
- utilization of cross cultural comparisons;
- development of evaluation strategies;
- how communities are involved.

Pilot and demonstration projects trying novel ways to reach people to educate them about health issues can often be included in this theme. IDRC support in this area has been through the following projects: 3-P-80-0181 Rural Teachers Health Program (Paraguay); and 3-P-82-0058 Water and Sanitation Film (Asia).

Summary--Although these approaches are individually described, there can be considerable overlap between them and boundaries are not always easily apparent. The same project could contemplate various approaches at different stages. However, given the HSD commitment to community participation, the overriding factor in each modality should be the role of community members. By utilizing this framework the HSD will be able to more easily determine where the majority of its projects now fall and where emphasis should be placed in the future.

B. PRIORITY AREAS FOR HSD CONSIDERATIONS IN HEALTH EDUCATION RESEARCH

Throughout this paper various issues keep reappearing. In order to improve the quality of health education programmes and the impact which these same programmes will have, these issues will need to be addressed. The HSD will also need to consider these areas when planning health education research.

- a. Evaluation - The effectiveness of health education programmes has been difficult to ascertain. Concerted efforts need to be directed towards developing both outcome and process indicators. Qualitative and quantitative research methodologies need to be utilized and amalgamated. With the increased emphasis on community participation, participatory research may also be utilized. Community members need to be actively involved in these evaluations and this participation needs also to be evaluated.

- b. Training - At present there are few health educators trained throughout the developing world and fewer with any research background. IDRC may need to consider finding interested researchers and providing scholarships for post-graduate trainees. In addition, IDRC should consider organizing methodology workshops--this sharing between researchers can often be more valuable than a university course.
- c) Regional Differences - Due to cultural, socio-political and environmental differences, each region should be encouraged to develop its own health education research plan based on the framework set out.
- d) Development of Resource Materials - A constant need in health education research is appropriate resource materials. Researchers often need to be linked to graphic artists or communication specialists who can collaborate with the design of such materials. In addition, community members should be encouraged to participate in the development of their own materials.
- e) Community Involvement - Given the HSD's commitment to community involvement in PHC programmes, this element needs to become a focal point in all health education research. How the community will be involved and to what degree are both questions which will be determined by the research objectives. IDRC could play a fundamental role here in encouraging research that examines the process of community participation.
- f) Multidisciplinary Emphasis - Health education within the health promotion framework, necessarily requires a multidisciplinary focus. Anthropologists, community developers, health workers, educators and community members may need to be involved in the health education programme. This implies collaboration between local researchers that often has not existed previously. IDRC should be prepared to encourage and support this process.

In addition this implies strong interdivisional collaboration within IDRC. Various divisions in the Centre will have potential contributions to make to health education programmes--Social Sciences (educational methodologies, process evaluations, anthropological research, etc); Communications (development of audio visual aids, publications); Information Sciences (networks of health education researchers).

- g) Communication Between Researchers - One of the major difficulties in much health education research is that the results are often not published. Consequently other researchers are unaware of possible new strategies. IDRC could play a fundamental role in establishing and encouraging contacts between researchers through networks, meetings, publications, etc.
- h) Organizations Involved in Health Education Research - Some thought needs to be given to which organizations are best suited to carry out health education research. Frequently, NGO's are the groups who are most closely involved with community members and who have consequently developed innovative community health education programmes. However, these NGO's may lack the necessary expertise to conduct research about these same health education initiatives. Universities and academic institutions, on the other hand, may have the research expertise but lack the community base. We may need to look at strengthening research experience within NGO's; linking NGO's with research institutions; and encouraging research institutions to obtain more community input and involvement.

VIII RECOMMENDATIONS FOR ACTION

1. Project Support

a. Rationale

Given the commitment of the HSD to projects whose beneficiaries will be the "poorest of the poor" and the HSD's interest in encouraging community participation in health, health education research should continue to receive project support.

Recommendation:

That the HSD designate the following as priorities for funding:

- i) proposals which fall into the "community or popular health education" approach;
- ii) proposals which may fall into one of the other four approaches but which also emphasize active community involvement in all phases of proposal development, implementation and evaluation.

b. Rationale

In order to encourage active community participation and control in the development, implementation and evaluation of health education projects, small demonstration projects sponsored by communities themselves or together with NGOs should be supported. These projects will likely be of short duration (18-24 months); focussed on a specific problem which has been identified by a specific community; include process and outcome evaluation measures; and actively involve community members in the project's development, implementation and evaluation.

Recommendation:

That the HSD support over the next four years, a minimum of six community based health education demonstration projects in the community or popular health education approach.

c. Rationale

One of the principal problems in health education research is the lack of adequate, sensitive and appropriate evaluation strategies. Many projects are funded for short periods of time and are not able to adequately evaluate the programme's impact or indeed the process by which the project functioned. In order to permit more effective and innovative evaluations we would recommend support for projects of longer duration (three to four years). The primary focus of these projects should be evaluation. In addition, particular attention should be paid to

evaluations which include quantitative and qualitative indicators of health status, productivity and quality of life. These projects may, out of necessity, sit in universities or research institutions, however, the active involvement of other sectors (government, NGOs and communities) will be important.

Recommendation:

That the HSD support at least three health education projects which have as a focus the development of appropriate evaluation methodologies.

d. Rationale

In several regions multidisciplinary teams are already involved in health education research. Given the importance of a multidisciplinary (including community members) approach these teams should be encouraged and supported.

Recommendation:

The HSD should give high funding priority and encouragement to research teams which are multidisciplinary in nature.

2. Subject Areas

a. Rationale

Two content areas should be considered for priority funding by the HSD:

- i) AIDS - The primary way to deal with the AIDS problem in many developing countries is through health education. HSD could play a fundamental role in encouraging the development of culturally and community appropriate strategies.
- ii) Women's Health - Given the important role of women in health care in the developing world, many health education projects are developed focussing primarily on women. IDRC has committed itself to examining and improving the role of women (WID Unit) in development. HSD could play a fundamental role in encouraging the participation of women in the development, implementation and evaluation of health education research projects which are appropriate to them and their families' needs.

Recommendation:

That the HSD assign a high priority to health education projects in the areas of AIDS and women's health.

3. Regional Networks

a. Rationale

In the field of health education research, researchers are often not aware of other projects similar to their own. This is particularly true for small, community-based NGOs or communities themselves which may have little contact with other groups in the same province, let alone internationally. There are often regional and international similarities which can provide lessons and information for further research.

Recommendation:

That the regional offices, in conjunction with HSD organize one workshop in each region over the next two years, with the purpose of examining the role of research in health education. It will be up to the regions, in consultation with Ottawa, to decide, based on experiences and priorities, what focus this workshop might take; however, the ultimate objective should be the formation of a regional network of researchers involved in health education research. Possibilities for a focus might include:

- the role of research in popular health education;
- evaluation strategies in health education programmes.

Given the Division's focus on communities and multidisciplinary teams, each workshop should include members from the various sectors (including but not limited to academics).

It is further recommended that HSD investigate strategies for linking researchers on a regional basis including:

- a newsletter or update on ongoing projects;
- a periodic mailing of research articles;
- the possibility of establishing a health education research clearing house which would serve as an information point for researchers to contact (this would be particularly useful with educational materials).

4. Training Options

a. Rationale

One of the major areas of weakness in health education is the shortage of persons who are adequately trained to perform research in the field. The shortage is particularly acute in many of the NGOs, where most of the innovative, community based health education research occurs. Conversely in universities and ministries, where a relatively sophisticated research capability may exist, there are often not good links to the non-academic community or to local communities.

Recommendation:

That the HSD over the next two years, investigate alternative strategies for the training of researchers in the field of health education. Such strategies may include the following:

- i) Workshops (provincial, national, regional) to investigate specific research issues (e.g.) participatory research in health education, evaluation techniques;
- ii) Bringing local resource people to work with NGOs or local communities to facilitate the research process by actually being in charge of the research component or by training the health education team in the mechanics of basic research. The involvement of universities and ministries with NGO initiatives should be encouraged;
- iii) Organization of post graduate training for researchers with an aptitude and commitment to the area.

5. Interdivisional Collaboration

a. Rationale

As has been emphasized throughout this paper one of the most important elements of health education research is its multidisciplinary focus. If the HSD is encouraging a multidisciplinary approach from research teams we also need the in-house capacity to respond in a multidisciplinary fashion. This approach needs to be carefully worked out by programme staff from the various divisions which may need to be involved. At the time of writing this paper SSD and HSD have already met and agreed to work closely together on any health education initiatives.

Recommendation:

That over the next year the HSD work with other divisions as appropriate to develop areas of collaboration and a mechanism for collaboration. Possible areas might include:

- i) Social Sciences Division - school health education
qualitative indicators
health attitudes and practices
- ii) Communications Division - mass media approaches
audio visual materials
publications
- iii) Information Sciences - networks between researchers

It is further recommended that, for the next two years, all research proposals whose primary objective is health education, be shared with the appropriate divisions.

In addition it is recommended that an interdivisional group be established in order to develop guidelines for support of health education proposals. The guidelines should be reviewed after 2 years.

6. Inventory

a. Rationale

In order to identify researchers, academics and community groups who are experienced in or have an interest in health education research, both in Canada and in developing countries, the division should develop and maintain several inventories.

Recommendation:

That the HSD organize various inventories over the next year, including:

- i) Institutions in both Canada and developing countries offering appropriate health education courses;
- ii) Developing country researchers and practitioners who are involved in health education;
- iii) Canadian researchers and practitioners who are involved in health education research; and
- iv) NGOs involved in community based health education research.

7. Health Education Research Consultative Group

a. Rationale

Although the HSD has supported health education research the new focus proposed here requires that the division devote more of its resources to health education. In order to assist the HSD in the development and implementation of appropriate health education research strategies, some expert advice maybe necessary.

Recommendation:

That an external consultative group be established within the next six months. This group should be composed primarily of developing country researchers, however, several representatives should also be chosen from the Canadian community. Expertise in this committee should include researchers, practitioners and, hopefully, some community members. This consultative group could also have as its responsibility a three year progress review of HSD health education research.

IX. CONCLUSIONS

An attempt has been made to situate health education within the overall socio-ecological perspective of health promotion. A possible framework for research support within the HSD has been suggested as well as recommendations for action. Health education has become an important area for PHC research. However, much work still needs to be done in the area. The HSD's focus on community involvement is an important step in laying the framework for more appropriate and effective health education research. The research projects and organizations which we support over the next four years will indeed reflect our own commitment to community involvement.

REFERENCES

- Abed, F.H. 1983. Household teaching of ORT in rural Bangladesh. **Assignment Children** 61/62:249-265.
- Akpovi, S.U., D.C. Johnson and W.R. Brieger, 1981. Guinea worm control: testing the efficacy of health education in primary care. **Int'l. J. of Health Education** 24(4):229-237.
- APHA, 1976. Making health education work. **APHA**, Washington.
- APHA, 1987. Criteria for the development of health promotion and education programs. **AJPH** 77(1):89-92.
- Baptista Risi Jr., J. 1984. Nation-wide mass polio immunization in Brazil. **Assignment Children** 65/68:135-157.
- Bassole, A. 1986. Mobilisation generale en faveur de la 'vaccination commando'. **HYGIE** V(1):31-34.
- Brieger, W.R. and J.D. Adeniyi. 1981-82. Urban community health education in Africa. **Int'l. Quarterly of Community Health Education** 2(2):109-121.
- Brieger, W.R. and S.U. Akpovi. 1982-83. A health education approach to training village health workers in Nigeria. **Int'l. Quarterly of Community Health Education** 3(2):145-152.
- Brieger, W.R., J. Ramakrishna and J.D. Adeniyi. 1986-87. Community involvement in social marketing: guineaworm control. **Int'l. Quarterly of Community Health Education** 7(1):19-31.
- Brown, R. and G. Margo. 1978. Health education: can the reformers be reformed? **Int'l. J. of Health Services** 8(1):3-26.
- Burgess, A. 1982. Evaluation of nutrition interventions: an annotated bibliography and review of methodologies and results. 2nd. Ed. **FAO** Rome.
- Campbell, D.T. and J.C. Stanley. 1963. **Experimental and quasi-experimental designs for research**. Rand McNally & Co., Chicago.
- Cervinskas, J. 1984. Organizing for Health, **ICAE**, Toronto.
- Chinemana, F.A. 1986. The need for health education in Zimbabwe: findings from a household survey. **HYGIE** V(1):50-55.
- Clow, D.J. 1985. Control of diarrheal disease in Tonga 1978-83. **British Medical Journal** 290(6469):691-692.
- Colle, R. 1977. Guatemala project: the traditional laundering place as a non-formal health education setting. **Convergence** X(2):32-40.

Crawford, R. 1977. You are dangerous to your health: the ideology and politics of victim blaming. **Int'l. J. of Health Services** 7(4): 11-20.

Ekeh, H.E. 1985. The impact of health education on the nutritional status of low-income group children in Ibadan. **HYGIE** IV(4):15-17.

Ekeh, H.E. and J.D. Adeniyi. 1985-86. Using teachers as change agents in the control of tropical diseases - an extra-curricular approach. **Int'l. Quarterly of Community Health Education** 6(4):323-333.

El-Mougi, M., N. El-Akkad, M. El-Hadi Emam and A.M. Talkan. 1986. Evaluation of a programme of teaching mothers the management of acute diarrhoea. **Journal of Tropical Pediatrics** 32:24-25.

Epp, J. 1986. Achieving health for all: a framework for health promotion. **Health and Welfare Canada, Ottawa.**

Farlow, D., editor, Oct. 1986. Challenging our assumptions: the role of popular education in promoting health. Proceedings of the 5 the Annual Health Promotion Workshop sponsored by the **OPHA and Ontario Ministry of Health, Toronto.**

Favin, M., D. Cebula, R. Saidi and D. Pryor. 1986. Health education: information for action issue paper. **World Federation of Public Health Associations, Geneva.** 90 pp.

Feachem, R.G. 1984. Interventions for the control of diarrhoeal diseases among young children: promotion of personal and domestic hygiene **Bulletin of WHO** 62(3):467-476.

Fernando Duque, L. 1984. The national vaccination crusade in Colombia. **Assignment Children** 65/68:159-178.

Foote, D.R., C. Kendall, P. Spain and R. Martorell. 1983. **Evaluating the impact of health education systems.** unpubl. 8pp.

Freire, P. 1971. **Pedagogy of the oppressed.** Seabury Press, New York, N.Y.

Freudenberg, N. 1984-85. Training health educators for social change. **Int'l. Quarterly of Community Health Education** 5(1):37-51.

Fuglesang, A. 1982. **About understanding.** Dag Hammarskjold Foundation, Uppsala, Sweden.

Garfield, R.M. and S.H. Vermund. 1986. Health education and community participation in mass drug administration for malaria in Nicaragua. **Soc. Sci. Med.** 22(8)869-877.

- Green, E.C. 1986. Diarrhea and the social marketing of oral rehydration salts in Bangladesh. **Soc. Sci. Med.** 23(4):357-366.
- Hardy, E.E., A. Vichi, R. Sarmento, L. Moreira, and C. Bosqueiro. 1982. Breastfeeding promotion: effect of an educational program in Brazil. **Studies in Family Planning** 13(3):79-86.
- Hetta, O.M. and K-J. Lundstrom. 1984. Training rural health staff for oral rehydration therapy in southern Sudan. **Tropical Doctor** 14:151-154.
- Hollis, C. ed., 1986. **Using communications to solve nutrition problems: a compendium.** International Communication Service Publication.
- Hornik, R.C. 1985. Nutrition education: a state-of-the-art review. United Nations ACC/SCN. Nutrition Policy Discussion Paper No. 1.
- Hubley, J. 1984. Principles of health education. **British Medical Journal** 289:1054-1055.
- Isley, R. 1982. Evaluating the role of health education strategies in the prevention of diarrhea and dehydration. **Journal of Tropical Pediatrics** 28:253-261.
- Isley, R. and F. Rosensweig. 1984. Training non-technical workers for rural water and sanitation projects:. **Waterlines** 3(2):9-11.
- Israel, R.C. and J.P. Nestor Tighe. 1984. Nutrition education: state of the art. A review and analysis of the literature. **Nutrition Education Series**, Issue 7, Paris, UNESCO.
- Jain, D.C., P.C. Sunny and J. Prakash. 1986. Role of health education on voluntary community participation in anti-larval measures through clearance of aquatic plants in a brugian endemic area. **J. Com. Dis.** 18(1):54-56.
- Jelliffe, E.F. and D.B. Jelliffe, 1984. Nutrition surveillance - nutrition education. **Journal of Tropical Pediatrics** 30:2-3.
- Jenkins, J. 1983. **Mass media for health education.** Publ. by International Extension College, Cambridge, England.
- Kanno, N.B. and K.A. Dixit. 1985-86. Patient education in Nepal. **Int'l. Quarterly of Community Health Education** 6(3)253-256.
- Khanom, K. and A.K. Salahuddin. 1983. A study on impact of an educational programme on immunization behaviour of parents. **Bangladesh Medical Research Council Bulletin** 9(1):18-24.

- Kickbush, I. 1981. Involvement in health: a social concept of health education. **Int'l. Journal of Health Education**. Suppl. to vol. 24:3-15.
- Kickbush, I. June, 1986. **Health promotion: a global perspective**. Paper presented at the CPHA 77th Annual Conference, Vancouver.
- Kidd, J.R. 1973. **How adults learn**. Follett Publishing Co., Chicago.
- Kielmann, A.A. 1983. **Control of diarrheal disease in the community**. Proc. of the Int'l. Conf. on Oral Rehydration Therapy, June 7-10, 1983. Washington, D.C., Richard Cash, ed. pp. 36-39.
- Kleinman, A. 1980. **Patients and healers in the context of culture**. U. of California Press, Los Angeles.
- Labonte, R. and S. Penfold, 1981. **Health promotion philosophy: from victim blaming to social responsibility**. Health and Welfare Canada, Ottawa.
- Lasch, E.E., Y. Abed, A. Guenina, N.A. Hassan, I.A. Amara and K. Abdallah. 1983. Evaluation of the impact of oral rehydration therapy on the outcome of diarrheal disease in a large community. **Israel Journal of Medical Sciences** 19:995-997.
- Laoye, J. Ade. 1981. Selling health in the marketplace. **World Health Forum** 2(3):367-372.
- Magnus, M.H. 1986. Grado de adaptacion de programas de educacion sanitaria de la comunidad en America Latina y el Caribe. **Bol. Of. Sanit. Panam.** 100(5):477-90.
- Mahadik, V.J. and J. Mbomena. 1983. Impact of health education programme on knowledge, attitude and practice (KAP) of people in cholera affected areas of Luapula Province - Zambia. **Medical Journal of Zambia** 17(2):32-38.
- Mahler, H. 1986. Towards a new public health. **Health Promotion** 1(1):1.
- Manoff, R.K. 1984. Social marketing and nutrition education. A pilot project in Indonesia. **Assignment Children** 65/68:95-113.
- McKillop-Farlow, D. 1987. Achieving health for all: The Epp Report. **Healthsaring** (summer): 9-10.
- Mercado, C.M. 1986. An evaluation of the information, education and communication program in Nepal. Bangkok, Thailand. **UNDP/DTCP**. 154pp.
- Murda, A.E. 1985. Evaluation of a health education program in Tayba Qurashi Village, central Sudan during 1983. **Journal of Tropical Medicine and Hygiene** 88:111-113.

Nangawe, E., E. Sitayo, E. Rowberg, T. McGinn and W. Van Wie. 1985-86. The training component of the Masai Health Services Project, Tanzania. **Int'l. Quarterly of Community Health Education** 6(2):115-129.

Nutbeam, D. 1986. Health promotion glossary. **Health Promotion** 1(1):113-127.

Obi, J.O. and P.C. Osuhor. 1984. The influence of health education on breast feeding practices in Benin City, Nigeria. **Publ. Health, London** 98:84--88.

O'brien Schweser, H. 1980. A manual for community health education for the Caribbean. People-to-People Health Foundation, Inc., publisher, Washington.

Odumosu, M.O. 1982. The response of mothers to health education and the incidence of gastro-enteritis among their babies in Ile-Ife, Nigeria. **Soc. Sci. Med.** 16(14): 1353-1360.

Olaseha, I.O. and G.B. Namanja. 1985-86. Focusing on women for water and sanitation: the case of Mapo Community in Ibadan, Nigeria. **Int'l. Quarterly of Community Health Education** 6(4):335:343.

Pielemeier, N.R. 1985. Mother's knowledge related to child health and nutrition in Ghana and Lesotho. **Journal of Tropical Pediatrics** 31:131-139.

Pratinidhi, A., U. Shah, A. Shrotri and N. Bodhani. 1986. Risk-approach strategy in neonatal care. **Bulletin of WHO** 64(2):291-297.

Pribadi, W., F. Muzham, T. Santoso, R. Rasidi, B. Rukmono and Soeharto. 1986. The implementation of community participation in the control of malaria in rural Tanjung Pinang, Indonesia. **Southeast Asian J. Trop. Med. and Public Health** 17(3):371-378.

Radford, A.J. and R.D. Harris. 1986. Specific strategies in health education. **HYGIE** V(1):38-44.

Rahman, A.S., A. Bari, A.M. Molla and W.B. Greenough III. 1985. Mothers can prepare and use rice-salt oral rehydration solution in rural Bangladesh. **The Lancet** No. 8454. (Sept. 7):539-540.

Ramakrishna, J. and W.R. Brieger. 1987. The value of qualitative research: health education in Nigeria. **Health Policy and Planning** 2(2):171-175.

Rocha, M.R., A. Lima, M. Edmunds, F. Olafson and J. de Codes. 1983. Community child care in urban Brazil. **Pathpapers** No. 10.

Ross, S.M., W.E. Loening and A. Van Middlekoop. 1983. Breast-feeding - evaluation of a health education programme. **South African Medical Journal** 64:361-363.

- Ryan, W. 1976. Blaming the victim. Vantage Books, New York, N.Y.
- Scotney, N. 1976. Health education. AMREF, Nairobi.
- Sheffield, J.R. 1987. Education for health. Lessons learned and new opportunities in eastern Africa. **HYGIE VI(2):22-28.**
- Simpson-Hebert, M. 1987. Hygiene education strategies for Region 1 for the Ministry of Public Health in Thailand. **WASH Field Report no. 210.** Arlington, V.A.
- Stanton, B.F., J. Clemens, T. Thair, K. Khatun and D. Jahan. 1987. An educational intervention for altering water-sanitation behaviours to reduce childhood diarrhoea in urban Bangladesh: formulation, preparation and delivery of educational intervention. **Soc. Sci. Med. 24(3):275-283.**
- Stanton, B.F. and J.D. Clemens. 1987. An educational intervention for altering water-sanitation behaviours to reduce childhood diarrhea in urban Bangladesh. II A randomized trial to assess the impact of the intervention on hygienic behaviors and rates of diarrhea. **Am. J.Epidemiol. 125(2):292-301.**
- Sunny, P.J., D.C. Jain and C.K. Rao. 1984. Impact of health education on voluntary participation in anti-larval measures. **J. Com. Dis. 16(4):335-337.**
- Tiglao, T.V. 1982. Health knowledge attitudes and practices related to schistosomiasis. **HYGIE I(2):31-37.**
- Tom El, A.R., M.H. Matthews, S. Wessley, N. Mubarak and D. Lauro. 1984-85. Introducing integrated health services in a traditional society: the Sudan community-based Family Health Project. **Int'l. Quarterly of Community Health Education 5(3):187-202.**
- Tonon, M. 1980. Concepts in community participation: a case of sanitary change in a Guatemalan village. **Int'l. Journal of Health Education. Suppl. to 23(4):1-15.**
- Tonon, M. 1981-82. A longitudinal study of the impact of village health education on environmental sanitation. **Int'l. Quarterly of Community Health Education 2(4):311-327.**
- Tragler, A.T., S.S. Bhatt and A. Fernandez. 1981. Assessment of health education in nutrition. **Journal of Tropical Pediatrics 27:221-223.**
- UNESCO. 1986. Health education intervention: an annotated bibliography. **Nutrition Education Series 13.** UNESCO Paris.

Vijayaraghaven, K., D. Hanumantha Rao and M.C. Swaminathan. 1982. India Population Project, Karnataka: evaluation of nutrition education activities. **HYGIE** I(3&4):9-14.

Walt, G. and P. Constatinides. 1983. Community health education in Commonwealth countries. **Commonwealth Secretariat**, London.

Walt, G. and P. Constantinides. 1984. Community health education in developing countries. **EPC**, London.

Ward, W.B., A.K. Neumann and M.E. Pappoe. 1981-82. Community health education in rural Ghana: the Danfa Project - an assessment of accomplishments. **Int'l. Quarterly of Community Health Education** 2(2):143-155.

Weiss, C.H. 1972. **Methods for assessing program effectiveness**. Prentice Hall, Englewood Cliffs, N.J.

Westphal, M.F., R.S. Marcondes and M.M. Sampaio. 1984-85. The concept of participation in a program of bronchial asthma control. **Int'l. Quarterly of Community Health Education** 5(4)257-275.

Williams, G. 1986. Kader commitment in Kadiwulyo. **People** 13(2):15-17.

WHO, 1969. **Research in health education**. Geneva.

WHO. 1983. New approaches to health education in primary health care. Report of WHO Expert Committee. **Technical Report Series** 690. Geneva. 44pp.

WHO. **Education for health: manual on health education in primary health care** (unpubl.).

WHO. 1984. **Health Promotion: a discussion document on the concept and principles**. Copenhagen.

Zvandasara, P. 1987. Primary school children's knowledge of health and illness in the Gambia: it's implication for teaching children about disease. **Journal of Tropical Pediatrics** 33:110-112.

ANNEX

CRITICAL REVIEW OF HEALTH EDUCATION RESEARCH IN DEVELOPING COUNTRIES

To better identify the research needs and research gaps in health education, a review of health education research in developing countries was undertaken. This included a critical review of 32 developing country health education projects, a review of IDRC-supported research in health education and some lessons from project experience by other reviewers.

A computerized research was conducted on 'Medlars' (1980 to present) and on 'Popline' to identify articles that discussed the evaluation or impact of health education programs and for articles on health education research that include a discussion of impact of the health education intervention. As well a manual search of several bibliographies and journals for relevant articles on health education in developing countries was conducted (the last three to five years only). These journals were HYGIE, Social Sciences and Medicine, International Quarterly of Community Health Education and Journal of Tropical Pediatrics.

AUTHOR/ ² YEAR	COUNTRY ³	COMMUNITY ⁴			HEALTH EDUCATION INTERVENTION			STUDY DESIGN				EVALUATION/OUTCOME				
		HEALTH NEEDS ASSESSMENT	SOCIO-ECONOMIC VARIABLES	COMMUNITY PARTIC. IP.	DESCRIBED	PLACE	DELIVERED BY	TYPE ⁵	CONTROL	PRE/POST TEST	STATIST. TEST	PROCESS	KNOWLED/ ATTITUDE	BEHAVIOUR	HEALTH IMPACT	COST EFFECT- IVENESS
Schachar Disease Inc. (Ort)																
Seimann 1983	Egypt	V	-	-	V	Community home	Health staff (WHI)*	QUASI	V	Post	-	-	+	+	+	V
Surda 1985	Sudan	-	V	V	-	-	-	DES	-	pre/post	-	-	+	+	-	-
Seach 1983	Israel (Gaza)	V	-	-	-	Health centre	-	DES	-	pre/post	-	-	-	-	+	-
Sette 1984**	Sudan	V	-	V	V	workshops	Project team	DES	-	pre/post	-	-	-	+	-	-
Shaman 1985	Bangladesh	-	-	-	V	home	field worker (WHI)	DES	-	pre/post	-	-	+	+	-	-
Siow 1985	Tonga	-	-	-	-	hospital	physician & health ed. (WHI)	QUASI	V	pre/post	χ^2	-	-	-	+	-
Slasche 1985-86	Nigeria	V	-	V	V	clinic & home	nurses	DES	-	post	-	-	-	+	-	-
Stanton 1987	Bangladesh	V	V	V	V	community	health ed. & health workers	EXP	V	pre/post	χ^2	-	-	+	+	-
Stronon 1981-82	Guatemala	V	V	V	-(p)	community	-	QUASI	V	pre/post	χ^2	-	+	+	-	-
T-Hong 1986	Egypt	V	V	-	V	hospital	physician & nurses	QUASI	V	post	Z test	-	+	+	-	-
Tunou 1982	Nigeria	V	V	-	V	health centre	health worker	DES	-	post	χ^2 t-test	-	-	+/-	+/-	-
Ued 1983	Bangladesh	V	V	V	V	homes	oral replacement workers	DES	-	post	F ratio	V	+	+	- (under analysis)	V

* WHI = with health intervention

** Training of health workers

• χ^2 ; Fisher's; Mann-Whitney U Test; Wilcoxon matched pairs test; Spearman's rho** linear model analysis (2x2 factorial); two-tailed tests for significance; Spearman's rho; χ^2

V done or stated

- not done, not stated

+ positive change

o no change or negative change

(p) described in a previous or companion paper

TABLE 1 CONT'D

LIST OF ARTICLES¹ DESCRIBING AND/OR EVALUATING HEALTH EDUCATION PROGRAMS IN DEVELOPING COUNTRIES

AUTHOR/ ² YEAR	COUNTRY ³	COMMUNITY ⁴			HEALTH EDUCATION INTERVENTION			STUDY DESIGN				EVALUATION/OUTCOME				
		HEALTH NEEDS ASSESSMENT	SOCIO-ECONOMIC VARIABLES	COMMUNITY PARTICIP.	DESCRIBED	PLACE	DELIVERED BY	TYPE ⁵	CONTROL	PRE/POST TEST	STATIST. TEST	PROCESS	KNOWLED/ ATTITUDE	BEHAVIOUR	HEALTH IMPACT	COST EFFECT- IVENESS
Infectious Diseases (Excl. Diarrhoeal Dis.)																
Pribadi 1986	Indonesia	V	V	V	V	village & home	Kaduna (WHO)	DES	-	pre/post	χ^2	V	+	+	-	-
Akpovi 1981	Nigeria	V	V	V	V	village	health care- takers & health ed.	QUASI	V	pre/post	χ^2	-	+	+	+	-
Sunny 1984	India	V	V	V	V	village/ homes	scientists	DES	V	post	-	-	+	o	-	-
Jain 1986	India	V	V	V	V	community	-	DES	V	post	-	-	+	+	-	-
Brieger 1986-87	Nigeria	V	V	V	V	villages	health workers & health ed.	DES	-	-	-	-	+	+	-	-
Garfield 1986	Nicaragua	V	V	V	V	country- wide at all levels	community volunteers (WHO)	DES	-	post	-	V	-	+	+	V+
Mahadik 1983	Zambia	V	-	-	-	-	-	DES	V	post	χ^2	-	+	+	-	-
Family Planning																
Mercado 1986	Nepal	V	V	-	V	-	-	DES	V	post	-	V	+	+	-	-

* not separated out for health ed. component.

V done or stated

- not done, not stated

o positive change

o no change or negative change

(p) described in a previous or companion paper

TABLE 1 CONT'D

LIST OF ARTICLES¹ DESCRIBING AND/OR EVALUATING HEALTH EDUCATION PROGRAMS IN DEVELOPING COUNTRIES

AUTHOR/2 YEAR	COUNTRY ³	COMMUNITY ⁴			HEALTH EDUCATION INTERVENTION			STUDY DESIGN				EVALUATION/OUTCOME				
		HEALTH NEEDS ASSESSMENT	SOCIO-ECONOMIC VARIABLES	COMMUNITY PARTICIP.	DESCRIBED	PLACE	DELIVERED BY	TYPE ⁵	CONTROL	PRE/POST TEST	STATIST. TEST	PROCESS	KNOWLED/ ATTITUDE	BEHAVIOUR	HEALTH IMPACT	COST EFFECT- IVENESS
Nutrition Education (Incl. Breast feeding)																
Ekeh 1985	Nigeria	V	V	-	-	clinic	-	DES	-	post	-	-	-	-	+	-
Vijayaraghavan 1982	India	-	-	-	V	village	health ed. team	DES	-	post	V	V	+	+	-	-
Ross 1983	S. Africa (Zulu)	-(p)	V	-	V	clinic	midwife	EXP	V	post	V	-	+	0	-	-
Obi 1984	Nigeria	V	-	-	-	hospital	health visitor	DES	-	post	-	-	-	0	-	-
Hardy 1982	Brazil	-	V	-	V	hospital	nurses/ health worker	QUASI	V	post	χ^2	-	-	+	-	-
Pielmeier 1985	Ghana and Lesotho	-	V	-	-	clinic	nurse	DES	-	post	-	-	+	-	-	-
Manoff 1984	Indonesia	V	V	V	V	community	kaders	QUASI	V	post	V	V	+	+	+	V
Tragler 1981	India	-	-	-	V	hospital	cook/social worker	DES	-	post	-	same	-	-	-	-
Non-Infectious Disease																
Westphal 1984-85	Brazil	V	V	V	V	hospital	health pro- fessionals	QUASI	V	post	V	-	+	+	+	-
Family (Community) Health																
Ward 1981-82	Ghana	-(p)	-(p)	-	V	village	health workers	QUASI	V	pre/post	-	-	+	+/-	-	-
Tom 1984-85	Sudan	-	-	V	V	village/ home	midwives (MHI)	DES	-	pre/post	-	V	+	+	-	-
Khanom 1983	Bangladesh	-	-	-	V	village/ home	?	DES	-	pre/post	-	-	+	+	-	-

V done or stated
 - not done, not stated
 + positive change
 0 no change or negative change
 (p) described in a previous or companion paper

NOTES TO TABLE

1. Published articles on evaluation of health education interventions or of health education programs with some outcome measurement.
2. Lists first or sole author.
3. Includes research performed in developing countries or in underdeveloped areas.
4. Sub-headings refer to whether the article described or included a statement on the subject.
5. Study design was classified as either experimental, quasi-experimental or descriptive.

V done or stated

- not done, not stated

+ positive change

o no change or negative change

(p) described in a previous companion paper

Final Technical Reports Reviewed

3-P-80-0068 Family Planning Materials/PIACT (Global)
3-P-80-0179 Excreta Disposal (Ecuador)
3-P-80-0181 Rural Teachers Phase II (Paraguay)
3-P-80-0203 Strengthening Role of Hilot (Philippines)
3-P-81-0100 Sanitation Project (Gambia)
3-P-81-0180 Oral Rehydration (S.E. Asia)
3-P-81-0181 Water Project Training (Indonesia)
3-P-82-0039 Soil-Transmitted Helminths (Indonesia)
3-P-82-0053 Sanitary Education (Senegal)
3-P-82-0054 Rural Sanitation (Sierra Leone)
3-P-82-0071 Oral Rehydration Therapy Phase II (Trinidad)
3-P-83-0005 Nutritional Status of Preschool Children (Korea)
3-P-83-0102 Breastfeeding/Child Survival
(Indonesia/Philippines)
3-P-83-0103 Nutrition Education/Weanlings (CFNI)
3-P-83-0177 Alcoholism (Chile)
3-P-83-0203 Toilet Usage (Philippines)
3-P-83-0246 Nutritional Anemia (Central African Rep.)
3-P-83-0285 Promotion of Breastfeeding (Philippines)
3-P-84-0003 High Risk Pregnancy (Indonesia)

EVALUATION IN THE HEALTH SCIENCES DIVISION

A Draft Position Paper Presented for the HSD IDDR

Submitted by: Bob Hertzog
March, 1988

TABLE OF CONTENTS

	PAGE
Executive Summary	1
1. Introduction	2
2. Types of Evaluation	4
3. Hierarchy of Evaluation	7
3.1 "Stripe" evaluations	8
3.2 Divisional-level evaluation	8
3.3 Program-level evaluation	9
3.4 Evaluations involving themes	10
3.5 Evaluation of groups of projects	11
3.6 Evaluation of individual projects	13
3.7 Project completion reports	17
4. Resources Required	18
5. Conclusions	19
Appendix	
Table 1	
Table 2	

Executive Summary

In this paper certain basic questions concerning evaluations to be performed within the framework of a Health Sciences Division evaluation plan are answered, i.e. the "why", "who", "what" and "when" of evaluation. Suggested important dimensions of performance of interest in health research; relevance, process/progress, effectiveness, impact and efficiency, are then presented and discussed.

An analysis of the various components in the IDRC Evaluation system and the missing elements therein which must be incorporated in the divisional evaluation framework is a major focus of this paper. "Middle-level" evaluations, which include the evaluation of programs, themes, groups of projects and selected individual projects, are identified as the area of concentration for the HSD evaluation plan. Examples are then given of specific types of evaluations at each of these levels that should possibly be undertaken within the IDDR cycle. Each of these examples is explained in terms of the dimensions of performance. Other factors to be considered in these evaluations are also noted. The examples are summarized in Table 2 of the appendix.

Although an evaluation framework for the division is presented and examples of evaluations to be performed are provided, the resource issue remains a thorny one. Due to workload constraints, program staff are not likely to have much time to coordinate or participate in the identified evaluation activities. Certain possible means of working around this problem are suggested in the resources section of this paper, notably extensive use of consultants, the use of ongoing evaluation and building evaluation components into projects or groups of projects.

1. Introduction

The purpose of this paper is to present a framework for evaluation in the Health Sciences Division of IDRC. In so doing the paper will address the following basic questions, as relate to this HSD evaluation framework:

- . why are evaluations required?
- . who will use the results of these evaluations?
- . what will these evaluations attempt to measure?
- . what evaluations could possibly be undertaken?
- . how will these evaluations be performed and by whom?
- . when will these evaluations likely be performed?

The questions have engendered considerable discussion in the division. This paper will attempt to present the results of these discussions in a coherent, logical manner.

Evaluation is intended to provide feedback on performance (over varying time frames, as dictated by circumstances) that can be used in planning and policy formulation. This then raises the question of "who will use this information?" Clearly there are several possible groups of users of this information, including the IDRC Board of Governors, Centre Management, Division Management and Program Staff. For purposes of this paper we will assume that the latter two groups will be the primary users of information generated from evaluations undertaken by HSD itself. The Board of Governors and Centre Management will also likely benefit from such evaluations, but their needs will, in most instances, be the focus of Centre-wide evaluations that fall within OPE's responsibility.

The distinction between divisional responsibility for evaluation and that of OPE was clarified in November 1986, when President's Committee and Management

Committee approved certain proposals for modifying the Centre's evaluation system. It was stated that "divisions are primarily responsible for the choice and conduct of project and program evaluations", whereas OPE "should concentrate more on program and largely on policy evaluations of major issues" (MC/36 Annex 1, p. 5). Concerning the evaluations to be undertaken by the divisions, it was also agreed that divisions would prepare evaluation plans, defined as "statements of intention as to which projects and programs are to be evaluated, focussing on the IDDR as the occasion when the results will be used and future evaluation plans formulated". These divisional evaluation plans are an essential component of the IDRC evaluation system. This paper presents a tentative evaluation plan for the the Health Sciences Division for the period covered by the IDDR, suggesting what activities could be evaluated and when these evaluations could take place.

A definition of evaluation proposed by OPE in their January, 1988 draft paper on evaluation planning, i.e. that "evaluation is a retrospective examination of IDRC experience", will generally be used for purposes of this paper (except where otherwise noted). This definition is proposed by OPE as being appropriate in the context of Centre operations. It presupposes that some thought has been given, before the evaluation is carried out, to why the information is required and how it is going to be used.

This paper thus suggests divisional activities to be evaluated, indicating why evaluations should be performed in these specific instances, and also looks at criteria for selecting the activities to be evaluated (i.e. the "what" these evaluations will attempt to measure). It considers divisional activities at various levels. While it is recognized that for each evaluation the responses to the basic questions of who, why, etc. may vary, likely answers at each level of evaluation are discussed. How the evaluations will be performed, however, i.e. the methodology to be followed, will differ in virtually each individual case and

consequently is addressed here in very general terms. For detailed information on the methodology or procedures to be followed in carrying out the evaluations, reference can be made to the OPE Evaluation Procedures Manual, which presents a framework for evaluations, and texts available on this subject.

2. Types of Evaluation

In the literature on evaluation in the health field many schemes for measuring performance, according to various criteria, are proposed. For purposes of this paper we use a scheme presented by Rundall. This scheme was subjectively chosen for discussion in the paper because although it was proposed for evaluation of health care programs, it can also be applied, quite readily, to health research.

Rundall suggests five possible dimensions of performance. These are relevance, progress, effectiveness, impact and efficiency. They are defined as follows:

Relevance evaluation refers to activities designed to determine whether a program is needed.

Progress evaluation, as described, refers to efforts made to assess the extent to which implementation complies with a pre-established plan (N.B.: for purposes of this paper Rundall's definition of progress evaluation has been expanded to include an examination of the **Process** involved in the program or project undertaken, i.e. includes consideration of what was learned in the process of undertaking the activity that can be applied in future similar activities).

Effectiveness evaluation involves looking at whether a program or project meets predetermined objectives.

Impact evaluation considers long-term outcomes of a program or a series of programs.

Efficiency evaluations attempt to relate the results obtained from a specific program or project to the resources used¹.

Although each of the five types of evaluations may be appropriate within the overall HSD divisional evaluation plan at different levels and in different circumstances, at each level and for each use of information certain types of evaluation are of primary importance. In the following paragraphs a brief description is provided of how each type of evaluation fits into an evaluation framework.

The impact of the Division's or the Centre's activities upon the health and well-being of its beneficiaries is in most instances substantially removed in time and substance from the research activities to which it relates.

Consequently, even though impact is the aspect of performance that we might most want to measure, it is extremely difficult to incorporate an evaluation of the impact of a divisional program within the four-year evaluation cycle established to coincide with the IDDR period. Moreover, impact may be more readily assessed when considering activities of a more manageable scope, e.g. a group of related projects, but here again the time factor and a host of other variables must be taken into consideration. Therefore even at this level it is very difficult to evaluate impact.

Relevance should be a major focus of evaluation at the HSD program or theme

¹ Rundall, T.G. Evaluation of Health Services Programs: Public Health and Preventive Medicine, 12th edition, pp. 1831-1847.

level. In the divisional statement (PART I) a comparative analysis of the demand for and supply of health research is presented. This analysis is then combined with an assessment of how each program relates to the identified areas where further support appears warranted. This type of evaluation, at the program or theme level, could be performed on a cyclical basis, every 3-4 years, perhaps best in conjunction with the IDDR. Reviews, which examine the state of research in the world on specific health-related topics, could be included in evaluations of this type.

Effectiveness evaluations, in which results are compared to objectives, are appropriate at virtually all levels. Here the scope could be relatively short term, e.g. assessing whether the project proponents attained their originally stated objectives, or longer-term, e.g. reviewing whether a program has been successful in achieving its explicitly stated goals.

Progress evaluations could be undertaken at all levels, but would be particularly appropriate at the project level. In the context of IDRC operations, they are included in the Project Completion Report (PCR) prepared for each project. PCR's can be used as a tool to identify lessons learnt in undertaking a project and to assess how to better manage the portfolio of research projects funded by the division.

Efficiency has not previously been a major focus of evaluation in the division. In that PCR's look at, among other things, the efficiency of the process followed in undertaking the project, to a limited extent we can say that the question of efficiency is considered at this level. It should be noted, however, that efficiency as defined in these terms is likely to be of equal or greater interest to the recipient than to HSD. Moreover, this still does not address the larger question at the program level of the cost benefit of activities funded by a HSD program. This latter question is much more difficult to tackle for many reasons, e.g. benefits cannot be precisely defined and are not readily quantifiable, measurement of costs and/or benefits must take place over a long time frame,

etc. Concerning cost/effectiveness, although many cost effectiveness models have been suggested in the literature on evaluation in the health field, these models are very difficult to extend to health research. For example, models such as the one proposed by Shepard and Thompson attempt to relate net costs of interventions to net health effects². Again in this instance all associated costs must be measured over a long period and then it is extremely difficult to link health research with the health impact because of many intervening variables. We therefore propose that to the extent possible efficiency will be considered in evaluating programs, but it will not be the primary focus of evaluations at the program level. Efficiency is also addressed, however, outside of the evaluation framework through the ongoing management processes of the division and complementary activities such as internal audit.

3. Hierarchy of Evaluation

In preparing an evaluation plan it is useful to first consider what types of evaluation are currently being performed and what other types of evaluations are required at the divisional level to complement these. At present "stripe" evaluations are performed under the auspices of OPE on issues of Centre-wide concern. Another key element in the Centre's evaluation system is the In-Depth Divisional Review (IDDR) of each program division, which is performed every four to five years. At a more micro level, Project Completion Reports (PCR's), which are a review of the history of a project, are prepared for all completed projects. In addition, program staff review of technical reports from HS funded projects also includes an informal evaluative component.

It is apparent that the element not otherwise considered in the overall Centre evaluation strategy is the evaluation targetted somewhere between the

² Shepard, D.S. and Thompson, M.S. First Principles of Cost-Effectiveness Analysis in Health: Public Health Reports, Vol. 94, No. 6, November-December 1979.

macro level IDDR/stripe evaluations and the micro level PCR's. These "middle-level" evaluations, which include the evaluation of programs, themes, groups of projects and selected individual projects, should therefore be the primary focus of divisional level plans. A divisional evaluation hierarchy, which is a modified version of the one proposed by OPE for Centre evaluation, is presented in Table 1. It shows how each proposed level of evaluation fits into the overall framework. The proposed evaluations to be carried out at each level are summarized in Table 2. Each of these different levels of evaluation are discussed at further length in the ensuing sections.

3.1 "Stripe" evaluations

In their January, 1988 draft paper entitled "Evaluation Planning: Framework of Policy Issues", OPE suggests that division-specific studies could be carried out in some instances to fill gaps in knowledge about Centre-wide ("stripe") issues. In this paper, OPE outlines certain "stripe" evaluations that they plan to conduct over the next few years and some others that are tentative ideas for future evaluations. An assessment of HS experience in certain of these areas, e.g. Institutional Strengthening (ISRI), would normally be an integral part of these OPE-initiated evaluations. Although it is difficult at this point to specifically identify areas in which HSD will undertake evaluations as part of or to complement "stripe" evaluations, certain other possible stripe subjects for evaluation in subsequent years would be Nutrition and Women in Development. The division will continue to work closely with OPE in identifying these policy areas of interest and in carrying out the appropriate portions of these reviews.

3.2 Divisional-level evaluation

The IDDR is the formal review of the HS mission, objectives, strategic plan and the overall performance of the division undertaken by a Board panel. Although impact is of paramount interest in considering the

performance of the division, because of the previously described difficulties in assessing impact the IDDR considers primarily other dimensions of divisional performance, such as relevance and effectiveness. The orientation of the IDDR is essentially toward policy- and program-related matters. Management issues are reviewed on an ongoing basis by Division Management and are considered in the internal audit, which takes place every four years and is seen as being complementary to the IDDR.

3.3 Program-level evaluation

At this level it would be useful to make a distinction between prospective evaluations and the retrospective type of evaluation usually performed in the Centre, as defined by OPE (see p. 3 of this paper). As far as prospective evaluation is concerned, in reviewing their objectives the HSD programs should ensure that their goals are expressed in a manner that will facilitate measurement. In this sense evaluation would be of a prospective nature and would be most concerned with effectiveness. Moreover, to the extent that the success of the strategies selected to attain these goals is assessed (preferably on an on-going basis), the progress performance dimension is also addressed. Program evaluations of this nature might be carried out by groups of "External Peers".

With respect to retrospective evaluation, given that the HS programs have just been significantly restructured, it is unlikely that a program-level evaluation of this type carried out within the IDDR cycle would be of considerable benefit. Once the HSD programs are more firmly established and have had sufficient time to implement their themes, program-level evaluation could more readily be envisaged, probably at some time in the next IDDR cycle.

One activity that is currently being supported by HSD, however, that should be taken into account in considering the relevance of the

division's programs is the Independent International Commission on Health Research for Development. This initiative, which is scheduled to be completed in late 1989/early 1990, should provide information that can be used by HSD in assessing and modifying, if necessary, its programs to enhance their relevance to the Centre's beneficiaries.

3.4 Evaluations involving themes

At the theme level, one can make the same argument as that made regarding the evaluation of the HSD programs, i.e. given the change in program structure, insufficient time will have elapsed during the period covered by the IDDR cycle to permit a meaningful retrospective evaluation at this level. However, in that health education is a key underlying theme for the Health and the Community (HS-COMM) program, this is one area in which the division should consider undertaking an evaluation in the near future. The Health Sciences Division has considerable experience in this area, both in terms of projects whose primary focus is health education/promotion and other projects that have a health education/promotion component. Other divisions, such as Social Sciences Division (SSD) and Communications, have also supported projects on this theme. For this reason, the HS-COMM program proposes that an evaluation be undertaken in collaboration with OPE to look at the methodologies applied in the various divisions' projects. Even though other divisions' projects would be involved, the initiative for this evaluation would come from HS-COMM, thus this evaluation would fall into the HSD "theme" category. Nonetheless, in performing this evaluation, consideration should be given to how the HSD, SSD and Communications programs, as relate to this topic, can best be structured to complement each other. Such an evaluation could also be incorporated into a broad review of this subject area, including not only IDRC experience but also a general state of the art research review and a demand and supply assessment for research in this area. The evaluation could be carried out by a small group of external "Peers" in association with OPE and HSD.

3.5 Evaluation of groups of projects

There are many possible evaluation candidates at the group of projects level. The following is a brief explanation of each of these groups (which are not necessarily mutually exclusive) and the specific evaluation candidates therein:

a) Networks

For purposes of this paper, we will define networks as a group of projects, all with a similar focus, taking place in different institutions and countries, but linked through a coordinating mechanism. In considering possible evaluation candidates from among the HS-supported networks, the Norplant projects immediately come to mind. Even though the Norplant projects do not form a formal network per se, these projects would likely be a good potential evaluation candidate. An external evaluation has already been carried out on the development of this technology. A complementary evaluation, relating to the implementation of this technology, would be very useful in assessing the effectiveness of this group of projects. This would be of particular interest given the amount of money invested by HS in this technology so far and the question that has been raised of "where we go from here", which is one of relevance.

b) Group of projects relating to a specific problem

This would cover projects with different focuses, but all relating to the same problem. Examples of such problems would be leishmaniasis, Hepatitis B, and pesticide poisoning. In such an evaluation, the division would be looking at a group of related projects and interventions that cross program, and in some instances, divisional

boundaries. The main issues here are the interdisciplinary organization and operation of the projects and recommendations concerning future HSD support in these areas, based on the perceived effectiveness and progress.

c) Group of projects with international governmental organizations and international NGOs

International governmental organizations refers to institutions such as WHO, UNICEF, etc. HSD has provided long-term support for several WHO Special Programmes, specifically the Special Programmes for Tropical Diseases Research, Diarrheal Diseases Control and Human Reproduction. Total funding provided by HSD to these three special programs to March 31, 1988 was \$4,347,000.

HSD has also supported initiatives with several international non-governmental organizations (NGOs), notably the Program for Appropriate Technology in Health (PATH) and the Population Council. HSD has funded 35 projects with these two organizations totalling \$10,230,000.

HSD policy with respect to continued support of these international governmental organizations and international NGOs is described in the paper on collaboration presented in the appendix to the HSD divisional statement. Given the large amount of support provided to these organizations to date and the concomitant Board of Governors interest in this subject, assessments of these initiatives would be useful in helping to shape future HSD policy in this area. Concerning support of the WHO Special Programmes, HSD could rely on the annual reports, as well as evaluations of these programmes carried out internally or by outside parties, to assess the overall effectiveness of these initiatives.

Regarding support for international NGOs, a good deal of the funding that has gone to the Population Council in the past relates to Norplant (see the preceding discussion of the evaluation of networks of projects). For PATH, a review of all HSD projects funded with this organization and the results of these projects will be undertaken in the first year of the IDDR cycle (1988/89). The results of this study will be presented to the IDRC Board of Governors.

d) Projects involving innovative methodologies

One of the proposed themes for the H&C program is the development of participatory research methodologies and a better understanding of community dynamics. HSD experience in supporting such projects has been limited to date, but we have recently approved a number of projects that would fall within this category and will likely fund an increasing number in the future. For this reason, an evaluation of several such projects would be useful, towards the end of the current IDDR cycle, principally to obtain a clear understanding of the effectiveness of these projects and the processes involved. Such an evaluation could also be undertaken as part of a broader Centre-wide examination of participatory research initiatives.

3.6 Evaluation of individual projects

In addition to the PCR's prepared for all projects (see Sec 3.7), evaluations would also be useful for several types of projects. These projects can be grouped in the following manner:

a) Pilot projects

The division has supported a number of demonstration or pilot projects. It would be useful to evaluate some of these to determine whether they attained their objectives and were cost effective. Recommendations could then be made regarding further dissemination of the knowledge obtained or technology developed. An example of this would be the Nutrition Education/Weanlings project in St. Christopher/Nevis with the CFNI (Centre File: 3-P-83-0103). A follow-up study has been proposed to evaluate the results and effectiveness of the original project intervention. This evaluative study (Phase II) will be funded as a research project by HSD. This study could fall into the proposed evaluation of all HSD health education related projects, or could be considered by itself. Another similar example would be the DAFF latrines project in Guatemala (3-P-87-0286) in which an evaluation will be undertaken of the effectiveness of the interventions in the first phase of the project. Other follow-up Phase II projects could also be funded by the division to look at how the results of pilot research projects may be applied.

b) Multi-component projects

This would include projects in which the research is being performed in several countries concurrently. This category would include such projects as Heavy Metal River Pollution (Latin America) or the proposed Psycho-Social Support and Pregnancy Outcomes (Latin America) project. Experience gained and lessons learned in the process of promoting South-South cooperation would be of interest. Given the timing of these projects, i.e. the former somewhere in mid-stream and the latter not yet started, it would only be appropriate to consider an evaluation towards the end of the IDDR cycle.

c) Projects with several phases

HSD has supported many multi-phase projects, notably Anticonceptive Technology (India) and Bilharzia (Egypt). The goal of an evaluation of such projects would be to assess what has been achieved so far (effectiveness) and provide recommendations concerning future possible HSD support (relevance). An evaluation of the Anticonceptive Technology (India) project was in fact carried out on behalf of HS by two Canadian consultants, Drs. Robert Kinch and Thomas Wegmann, in late 1985. The results of this evaluation were very positive. The consultants recommended continued IDRC support for the Population Council and a continued or increased level of support for the National Institute of Immunology in India for development of the anticonceptive vaccine.

Additional evaluations of appropriate multi-phase projects should be performed sometime during the middle of the IDDR cycle.

d) Large-scale institution strengthening projects

This could be tied into the "stripe" evaluation relating to institution strengthening that is being planned by OPE (see the preceding discussion of "stripe" evaluations).

One such project we would like to evaluate is the Sri Lankan Health Systems Research project. This project is just getting underway and consequently an evaluation would only be appropriate towards the end of the IDDR cycle. An evaluation is called for given the resources invested in this initiative and the policy implications, i.e. should HSD get involved in other similar initiatives? and if so, in how many, where and to what extent? The focus of such an evaluation would be to assess the effectiveness of the project in meeting its stated objectives, and determining the impact the project has had on

health research in Sri Lanka and (to the extent this can be measured) on the health system and on the health of the beneficiaries. Such an evaluation should have a relatively high priority. Institutional support for BAIF would normally be another evaluation candidate, but this is to be evaluated by OPE and subject to a CIDA-funded, external evaluation.

e) Large projects significant in themselves

These would be projects that are significant in the context of the operations of HS given our investment in them, the potential importance of the research results, etc. Projects that are not otherwise incorporated in the evaluation plan that are over an established dollar limit, in this instance \$750,000, would be included. The purpose of evaluation for such projects is primarily accountability, which relates to cost effectiveness, although the information obtained could also be used for other purposes, e.g. determining future directions (relevance), documenting lessons learned (process). Two such significant projects that would be evaluation candidates are CIMDER Phase II (Colombia) and Perinatal Mortality (Jamaica).

An evaluation of CIMDER is being scheduled sometime in 1988/89 as the researchers are about to reach the mid-point of the project. An evaluation of Perinatal Mortality (Jamaica) would be helpful if carried out within the next 12-24 months as a subsequent phase of this potentially valuable project is already being planned.

f) Projects with built-in evaluation components

Many projects supported by HSD have built-in internal or external evaluation components. An example of such a project would be the recently-approved "Training in Health Management, Phase III" project

(Centre File: 3-P-87-0200). In this project, the program offered is internally evaluated each year and will be subject to an independent evaluation by outside consultants after the fourth year of the project. In the Water Pumping Technology (Malaysia) Phase III project (Centre file 3-P-87-0084) an evaluation component has also been built in to look at the lessons learned in going through the process of technology development to technology implementation that may be applied in other projects. Such "built-in" evaluations will be taken into consideration in related program, policy and project planning decisions.

3.7 Project completion reports

The Project Completion Report (PCR) is a review of the outcome of a project, comparing original objectives with the results achieved. PCRs serve the objectives of corporate accountability and corporate memory. They are prepared for all completed projects. Although not a formal, independent project evaluation per se, PCRs do provide a brief retrospective assessment of each project from the perspective of the Program Officer and division responsible, focussing on several aspects of performance, notably process/progress. The PCR attempts to answer at least six basic questions:

What project results were achieved and did project activities and results follow project objectives and methodology?

Did the project result in building institutional, managerial or individual scientific capability to the extent this was one of the explicitly or implicitly stated objectives of the project?

What publication or dissemination of results have been achieved?

What lessons were learned which would allow IDRC to develop better projects in the future or to improve its policies and practices?

What follow-up action, if any, is required?

Was the project "worthwhile"?

To date, PCRs have been prepared for over 210 completed HSD projects. PCRs are generally put together on behalf of the responsible Program Officer by a Research Assistant, who reviews the project file and compiles the necessary information. Once this is done, the Program Officer reviews the information, adds his/her assessment and signs off on the PCR. This system has been found by the division to be the most expeditious in the circumstances. Over the IDDR cycle, the division will take steps to eliminate the PCR backlog (approximately 90 projects as at the date of writing this paper) and ensure that PCRs are used, as appropriate, in the planning process. In so doing the division will review the PCR format to ensure that these documents will be comparable and as useful as possible.

4. Resources Required

Some possible evaluations and evaluation-related activities are summarized in Table 2. The number of evaluations proposed appears to be at a level equal to or above the amount of the resources HSD can commit to evaluation, if the division applies the oft-suggested 5% guideline, i.e. that up to five percent of divisional professional staff time should be devoted to evaluation-related activities. Recognizing that much of this 5% is taken up on reviewing reports, preparing PCR's and other routine work, it is assumed that consultants will be used extensively in evaluations. Some HSD professional staff may be freed

up from other responsibilities for periods of up to three months to devote their time to evaluation-related activities if resources permit, but at current staffing levels this is unlikely. While divisional staff might directly participate in evaluations, in most instances they would play more of a coordinating role, i.e. helping to establish terms of reference, selecting consultants to perform the evaluation, acting as the liaison between the consultants and the division, etc. To minimize the workload pressures on HSD professional staff arising from evaluation, to the extent possible evaluations will be performed on an on-going basis or built into projects, groups of projects, etc.

5. Conclusions

This paper proposes an evaluation plan for the Health Sciences Division, covering the five years of the IDDR cycle. It is expected that the information generated from the evaluations identified will be of considerable use to the division in the periodic revision of its strategic plan. In the same manner that the division's strategic plan will be updated on a rolling basis, the evaluation plan that has been proposed will be periodically reviewed and modified to help best meet the division's and Centre's requirements.

Appendix

Table 1

HSD EVALUATION FRAMEWORK HIERARCHY

LEVEL OF EVALUATION

CENTRE-WIDE POLICY ISSUES

HEALTH SCIENCES DIVISION

Program:	Health Systems (SYS)	Health & the Community (H&C)	Health & the Environment (H&E)
Themes:	Currently being defined/refined by the programs.		
Groups of Projects:	Networks Group of projects relating to a specific health problem Projects with international governmental organizations and international NGOs Projects involving innovative methodologies		
Projects:	Pilot projects Multi-component, large-scale projects Projects with several phases Large-scale institution capacity strengthening projects Large projects that are significant by themselves Projects with built-in evaluation components		
Project Completion Reports:	Completed for all projects		

Appendix

Table 2

HEALTH SCIENCES DIVISION

SUMMARY OF POSSIBLE EVALUATION AND EVALUATION-RELATED ACTIVITIES

	1988/89	1989/90	1990/91	1991/92
"Stripe" Evaluations of which HSD would participate:		ISRI (1)		
Division:				IDDR
Program:	← ongoing →			
			Independent Int'l Commission	
Themes:		Health Education		
Groups of Projects:	- PATH	- Leishmaniasis or other subject - WHO Special Programmes	- Norplant	- Participatory Research
Projects:	- CIMDER	- Perinatal Mortality (Jamaica)	- Heavy Metal River Pollution or Psycho-Social Support and Pregnancy Outcomes - Bilharzia (Egypt)	HSR Sri Lanka
Projects with Built-in Evaluation Components:				- Handpump Network - Health Mgmnt. Course - (U of T) BAIF
PCRs:	← ongoing →			

(1) actual timing to be determined

SUPPORT OF AIDS-RELATED RESEARCH

Position Paper prepared for In-Depth Divisional
Review (IDDR)

March 1988

S. Simon
L. Gelmon
E. St-Onge
D. de Savigny

The Health Sciences Division Framework for
Support of AIDS-Related Research

1. Introduction

- 1.1 In the past year it has become accepted that Human Immunodeficiency Virus (HIV) infection is the most important pandemic of the century, although its ultimate dimension in terms of incidence, prevalence and mortality remains in question. The current estimate is that at least half of those who become infected with HIV will eventually develop AIDS (Acquired Immunodeficiency Syndrome), a fatal condition for which there is presently neither preventive vaccine nor curative drug. The disease is spreading through all strata of society and to all nations in both the developed and developing world.
- 1.2 On the basis of what is known today about its epidemiology, AIDS could inflict major setbacks upon all sectors of development in those countries worst affected and least able to withstand its impact. By virtue of its mandate, the IDRC has a special role to play in the global campaign against AIDS: to support research needed to contain the virus' further spread in order to sustain and further hard-won advances toward a better life for the world's poor.
- 1.3 Within the Centre, the Health Sciences Division, too, has a special part to play. In order to fulfill its appointed role as coordinator for IDRC sponsorship of research in this field, it must first set forth a rationalized framework for funding -- one which will foster inter-Divisional collaboration, and serve as the basis for a Centre-wide policy on support for AIDS-related research. This paper attempts to provide such a framework.

.

2. The Problem

- 2.1 HIV is principally a sexually transmitted infection which is also spread through contaminated intravenous instruments and needles used for injection; transfusion of infected blood and blood products; or congenital transfer from mother to infant. The current methods available to control its spread aim to interrupt transmission -- health education on limiting the number of sexual partners and following safer sex practices including the use of condoms; sterilization of needles and syringes; screening of blood and organ donors; microfiltration and heat treatment of biological products for infusion.

- 2.2 Globally, HIV predominantly affects men and women between 20 and 45 years of age, society's most productive and reproductive group. Recent studies have revealed HIV seropositivity in up to 20% of a general adult population in some areas of Africa. The potential depletion of this cohort could have significant repercussions in all social and economic sectors. As AIDS spreads, the potential for congenital or perinatal transmission to newborns increases.
- 2.3 Industrialized countries can more readily mobilize the resources needed to limit the transmission of this virus. More affluent and educated populations have a far broader range of options than those available to people in most developing countries, and may be more amenable to modifications of behaviour designed to reduce HIV transmission.
- 2.4 In developing countries, the addition of AIDS to already overburdened health systems and health budgets will be crippling. On the research front, the aggressive attack on AIDS in developed countries has already led to some inappropriate research initiatives by expatriates in developing countries. The comparative advantage of IDRC in helping developing country researchers chart their own course may prove to be a more effective vehicle to assist these countries to develop the means to arrest the spread of AIDS with maximal acceptance by the local populations.

3. Current Needs (1988)

- 3.1 The World Health Organization is coordinating the global campaign against this disease through its Global Program on AIDS (GPA). Since February 1987, the GPA's focus has been principally on the hardware required for the containment of HIV transmission in those developing countries most affected: assisting them to introduce screening for HIV in blood banks; to create local diagnostic laboratory capabilities; and to establish national AIDS committees.
- 3.2 Much research and development needs to be directed toward the so-called "software" component of AIDS prevention in developing countries at greatest risk: i.e. accurate epidemiology of prevalence and transmission; identification and remedy of deleterious practices; promotion of particular cultural traditions that are most likely to reduce transmission risks, etc.
- 3.3 Equally important is the need to prevent the further spread of HIV in developing countries of reportedly current low prevalence, mainly through intensive public education and epidemiologic surveillance combined with laboratory screening. How best to accomplish this demands further investigation.

- 3.4 With a focus still on the software aspect, research is needed on how to integrate national efforts in HIV containment and AIDS management within existing health systems.

4. Suggested Areas for HSD Support of AIDS-Related Research

What follows are proposed themes in AIDS-related research considered appropriate for HSD funding. They have been selected because they address important informational gaps in the overall strategy of prevention in developing countries of estimated high and low HIV prevalence. There is no doubt that well designed and well executed studies in the suggested topics can yield valuable, practical results. How this information is translated into policy and programmes will likely depend mainly on political will and available resources.

The very nature of AIDS makes its research questions multi-sectoral and difficult to fit discretely within the mandate of any particular HSD program. Looking at the problem as a whole we find that we can group all proposed research ideas under five general themes:

- studies on the nature and magnitude of the problem in developing countries;
- studies on technologies for diagnosis and prevention;
- studies on behavioural patterns and their effect on transmission, prevention and control of the disease;
- studies on the strategies and methodologies for prevention through health systems and education systems;
- studies on the development and testing of methodologies and strategies for identifying, monitoring and caring for those who have contracted the disease.

For the sake of presentation, we have attempted to group specific topics reflecting these themes according to the most appropriate HSD Program, without assigning them any particular priority at this time. Some, however, lend themselves to joint development; others transcend individual programs to harmonize with proposed HSD thrusts, such as the AIDS health education initiative; still others logically entail collaboration with other IDRC Divisions, especially Social Sciences, Information Sciences and Communications; and some will serve as entry points in the larger context of research capacity building.

4.1 AIDS Research Directions for Health and the Environment

- 4.1.1 Seroepidemiological surveys in developing countries with suspected high HIV prevalence.
- 4.1.2 Research into the introduction of active surveillance, particularly in developing countries with reportedly low HIV prevalence (i.e. the so-called "second-line" countries).

- 4.1.3 Comparative studies on the signs and symptoms of AIDS in rural, urban and peri-urban settings so that clinical diagnostic criteria could be developed for different levels of health care delivery.
- 4.1.4 Investigations into risk factors associated with the modes of transmission of HIV infection (e.g. sexual transmission, maternal-infant transmission, circumcision, scarification, shaving with common razors, intravenous drug use, etc.) which may be relevant to different socio-economic and ethnic groups.
- 4.1.5 Research into the manifestations of HIV infection and AIDS when underlying infections (e.g. T.B., malaria and other parasites, measles, syphilis) exist and/or occur.
- 4.1.6 Applied research in appropriate low cost technology for the diagnosis of HIV infection and the treatment of AIDS patients.

4.2 AIDS Research Directions for Health Systems Research

- 4.2.1 Health systems research on policy implications leading to formulation of scientifically-based recommendations for national health policies governing such issues as AIDS relating to:
 - Expanded/Universal Programmes of Immunization
 - Breast-feeding campaigns
 - Therapeutic abortions
 - Doctor-patient confidentiality
 - Informed consent
- 4.2.2 Operations research into the integration of AIDS prevention and care activities with those of the national primary health programme, particularly regarding MCH/FP, disease surveillance and management information systems.
- 4.2.3 Research to determine the current and projected costs involved in AIDS-related interventions at each level of the health system, including national health insurance schemes, and to identify and evaluate possible supplementary financing mechanisms.
- 4.2.4 Investigations into the feasibility of marketing and promotion of high grade, affordable, latex condoms, spermicides and similar technologies which may reduce the risk of transmission.

- 4.2.5 Comparative studies on the cost-effectiveness of alternative treatment strategies (e.g. domiciliary vs. inpatient care, different palliative regimes, etc.)

4.3 AIDS Research Directions for Health and the Community

- 4.3.1 Collaborative studies with communities in regions of high HIV prevalence and incidence to elucidate:
 - local behavioural determinants of HIV transmission;
 - indigenous traditions and taboos which modulate the virus' spread;
 - the manner in which particular societies and cultures deal with the victims of AIDS among their members;
 - the possible influence of respected local secular and religious leaders on community behaviour;
 - public knowledge of and attitudes towards AIDS.
- 4.3.2 Joint investigations with communities in regions of low HIV prevalence to identify:
 - local customs and behaviour which would be potentially deleterious in the presence of HIV;
 - beneficial practices which might serve to inhibit HIV transmission if the virus were introduced in the community;
 - public knowledge of and attitudes towards AIDS and the most appropriate approaches to influence their status.
- 4.3.4 Identification of possible factors and co-factors which could contribute to maintaining a positive health status in HIV-infected individuals.

4.4 General Measures

- 4.4.1 Support for the training of developing country scientists, especially in epidemiology, and health systems management.
- 4.4.2 Assistance for institutional development and strengthening for AIDS-related research especially in epidemiology and health systems research.
- 4.4.3 Promotion of networks for developing country researchers in HIV/AIDS.
- 4.4.4 Support for international publications, such as "Panos", which focus on HIV/AIDS in developing countries.
- 4.4.5 Support for Project Identification Workshops coordinated with the WHO/SPA for developing country researchers.

4.5 Strategy Review

Because of the rapid advances and changing opportunities in AIDS research, these research themes and directions of support will be reviewed and reassessed within the Division every six months.

5. AIDS Priority

Finally a most important issue has been recognized by HSD (as it is faced by all other programmes which address AIDS). This new problem of AIDS has not meant new funding. The efforts directed towards AIDS tend to consume resources from other pre-existing programs. What will be sacrificed to support AIDS research? Where will we fix the level of priority? What "across the board" benefits for developing country research capacity and health systems will result from supporting the battle against AIDS?

One goal of HSD's "holistic" approach should be to ensure that a focus on the "new" AIDS problem does not obscure, divert or nullify our activities in pre-existing health problems or issues. These problems will continue no matter what develops in the AIDS pandemic over the next several years. There is a natural tendency to focus on the "trees" and forget the "forest" when confronting a specific problem, but as with all health issues, one should always be mindful of the dialectic between the two.

6. General References

6.1 The First Human Retrovirus, Robert C. Gallo
Scientific American, December 1986

6.2 The AIDS Virus, Robert C. Gallo
Scientific American, January 1987

6.3 AIDS in Developing Countries, Panos Institute, November 1986
(Revised March 1987)

6.4 AIDS in Africa, An Epidemiologic Paradim, Quinn et al
Science, 234: 21 November 1986, pg. 955-963

6.5 Science, 239: 05 February 1988

7. AIDS-Related Projects Supported by HSD during Fiscal Year 1987-88

7.1 Paediatric AIDS (Kenya): 3-P-86-0177 (CAD 441,045)
-- research into paediatric AIDS and perinatal transmission of HIV

- 7.2 Paediatric AIDS (Uganda): 3-P-86-0336 (CAD 74,200)
-- a case-control, prospective study of vertical HIV infection from mothers to children
- 7.3 AIDS Diagnosis (PATH-Global): 3-P-87-0154 (CAD 47,260)
-- joint financing the development of an inexpensive and reliable dipstick test for HIV antibodies for use in developing countries
- 7.4 Conference on AIDS at CESTI, Dakar (Senegal): DAP 3-A-87-4194
-- collaboration with Communications Division in organizing a workshop to formulate a strategy for public education in AIDS via the mass media throughout Africa, with a special focus on Francophone countries.

10.03.88
SS/sd

TOXIC SUBSTANCES AND HEALTH

A Draft Position Paper Presented for the HSD IDDR

Prepared by: Gilles Forget
March 1988

TOXIC SUBSTANCES AND HEALTH

- I. The Chemicalization of Developing Countries
- II. The Pesticide Problem
 1. The scope of the problem
 2. Environmental persistence
 3. Attitudes and legislation
 4. Pesticide storage and application
- III. The toxicity of Natural Chemicals
 1. Plant molluscicides
 2. Water purification agents
- IV. Other Chemicals in the Third World
- V. Avenues for Research
 1. Collecting baseline data
 2. Documenting health effects
 3. Information dissemination
 4. Chemical regulation
 5. Appropriate technology
 6. Standardization of research methodology
 7. Changing community perceptions and attitudes
 8. Intoxications resulting from living conditions
 9. Ecological impact
- VI. The Need for a Multidisciplinary Approach

TOXIC SUBSTANCES AND HEALTH

I. THE CHEMICALIZATION OF DEVELOPING COUNTRIES

Recent estimates(1) suggest that two thirds of the population of less developed countries (LDCs) are exposed to chemicals which may prove harmful to their health. This exposure is likely to increase. The world sales of pesticides used to control disease vectors and crop pests for example, rose from US 8.1 billion in 1982 to US 12.8 billion in 1983. The most rapid growth occurred in developing countries(2) where the cost of exports of various chemicals rose by 650 percent between 1970 and 1980. Some 15,000 individual compounds and more than 35,000 different formulations have come into use as pesticides since 1945(3), so the magnitude of the potential health hazard can be appreciated.

More significant safety regulations in industrialized countries have led to movement of hazardous chemicals and technologies to developing countries. In fact, a significant portion of the pesticides used in the Third World are banned in the exporting countries: 20% of the pesticides exported from the USA for example have had their registration for use in that country cancelled or suspended because of their toxicity to humans or to the environment(2). As developing countries strive to industrialize and develop their agro-industries, technology transfers involving the use of highly toxic chemicals are likely to increase rapidly, particularly in the emerging countries. The concomitant need for labour will mean that more ill-trained workers will find employment in industries making use of dangerous processes and chemicals. Unsafe working conditions will often be compounded by the workers' ignorance or disregard of safety procedures. Ignorance of hazards, the absence of stringent regulations

in the use of hazardous chemicals in industry and agriculture, and the industrialization imperative can spell wholesale disaster in developing nations. Recent chemical disasters in Mexico and Bhopal--to cite extreme examples--have shown that the transfer of hazardous technologies from North to South not only affects workers, but poses a major public health risk to surrounding communities.

II. THE PESTICIDE PROBLEM

The Third World is home to most of the 10,000 principal insect pest species and 600 weed species that curb food production(20). The use of pesticides has helped prevent crop losses in developing countries and thus reduced food shortages. These chemicals have also contributed to reducing the incidence of vector-borne diseases, such as malaria.

Pesticide overuse has started to erode these original benefits, however, mainly because of the appearance of resistant pest species. For example it has been suggested that every kg of DDT (an organochloride insecticide) sprayed on cotton fields in Central America results in 105 additional cases of malaria because of the ensuing appearance of resistant strains of non-target organisms such as anopheline Mosquitoes(6).

1. The scope of the problem

By their very nature, pesticides are toxic to all living things, a fact that users are learning the hard way. To cite the Bhopal Working Group of the APHA(26), "Pesticides are poisons by design". In 1972, the World Health Organization (WHO) estimated from the

published statistics of 19 countries that there were as many as 500,000 cases of pesticide poisoning cases per year. This number is increasing. A recent report(4) states:

"In 1977, based on notifications from several governments and surveys of nine countries, WHO estimated that the number of deaths globally was about 20,640 a year. In 1981, OXFAM, up-dating the WHO figures, estimated that world pesticide-related poisonings were around 750,000 a year. More recently, the Economic and Social Commission of Asia and the Pacific (ESCAP) suggested that pesticide poisoning might amount to two million a year, of which 40,000 could be fatalities".

Concern about the toxic effects of pesticides to humans and domestic animals is growing in developing countries. The orthodox research establishment, however, continues to direct its activities to occupational exposure, more specifically of those workers spraying or directly handling these chemicals. In most cases, only acute cases displaying classic symptoms are consigned to medical records.

Researchers, however, are now increasingly aware of under reporting. Loevinsohn(5) for example, noted an association between occupational exposure to pesticides and an increased mortality from non-traumatic causes in the Central Luzon province of the Philippines. The increased mortality (27%) was correlated with conditions, such as stroke, often associated with (or likely to be confused with) pesticide poisoning. This is a clear indication that the actual incidence of pesticide or toxic chemical-related deaths

may have been grossly underestimated, not only because of poor recording but also perhaps because attending health personnel fail to recognize the symptoms of pesticide poisoning.

The toxicity of pesticidal compounds should surprise no one: Parathion, one of the early organophosphates synthesized and characterized for its anticholinesterase effects, was the parent compound for a series of nerve gases investigated during World War II as possible anti-personnel weapons. Parathion is still used as an insecticide in many countries.

The molecular action of organophosphates on nerve transmission has been extremely well studied(7). But as the large-scale use of pesticides transforms the fields of the Third World into a toxicology laboratory, clinical effects that cannot easily be ascribed to the classic anti-cholinesterase action of these chemicals have been reported, notably a delayed polyneuropathy(8), and, more recently, an intermediate organophosphate poisoning syndrome(9). This syndrome involves the paralysis of a number of muscle-sets including the respiratory muscles, and has resulted in the death of a number of patients. It is distinct from the well defined cholinergic phase characterizing normal, acute cases of poisonings.

The prevalence of these two new syndromes is yet to be evaluated anywhere in the world in relation to declared cases of pesticide poisonings. Many patients released from health centres after treatment for the acute cholinergic phase of organophosphate poisoning may suffer and die from these syndromes unbeknownst to the treating physician. Psychological after-effects of organophosphate

poisonings--impaired concentration, increased distraction, continued visual disturbances, headaches and nervousness even three years after the incident(10)--are also often reported.

Conditions prevalent in the Third World can significantly aggravate the effects of pesticide intoxication. No studies have yet been conducted in rural areas of Third World countries to confirm that conditions such as chronic malnutrition increase the chemical risk. Laboratory studies(13), however, have shown that rats suffering from dietary protein deficiency were more likely to exhibit altered hepatic enzyme activities following the administration of malathion (an organophosphate). Decreased liver protein and lipid contents were also observed. The malnutrition common in Third World countries could therefore make populations, especially women and children more susceptible to intoxication.

Agricultural practices now encourage the large-scale use of herbicides to control weeds and to desiccate some crops prior to harvesting. These compounds are highly toxic. Reports of their carcinogenicity are regularly published, especially in connection with phenoxyacetic acids such as 2,4,D(11,12). The importance of intoxications by one -Paraquat- was illustrated by Mahathevan(14): From 1977 to 1981, post-mortem analysis of 569 pesticide-linked deaths performed in Malaysia, detected herbicides in 326 cases, 310 of which were Paraquat.

Responsive to the particular threat posed by this herbicide, the Health Sciences Division is supporting a study in Colombia (Paraquat Intoxication [3-P-84-0279]). Preliminary results indicate that Paraquat intoxication is not seen in individuals who are not

directly involved with spraying the compound, although it might be widespread in the environment. . A subsample of sprayers is being surveyed to confirm the occupational nature of paraquat intoxication, at least in Colombia.

Other, larger studies in Asia indicate that most reported cases of pesticide poisoning are either suicidal or criminal(15).

These findings agree with those of an IDRC-sponsored study carried out in four Southeast Asian countries--Sri Lanka, Indonesia, Thailand and Malaysia [3-P-83-0089]. They contradict recent reports from Latin America, however. In Costa Rica, for instance, 6.4% of pesticide poisonings were found to be suicidal, while 67.8% were occupational(16). These regional differences could be due to cultural factors or to different research methodologies.

Standardized research protocols and a common terminology are essential to obtaining a clear understanding of the pesticide intoxication situation in LDCs. IDRC could play an important role in these areas.

2. Environmental persistence

The persistence of some pesticides in the environment is another aspect of the problem, particularly in relation to organochloride pesticides, such as DDT, which are still used in some parts of the world to control disease vectors. The danger this presents for humans, and the rest of the biotic environment is illustrated by a study carried out by Atuma(17) which revealed organochloride pesticide residues in a variety of foodstuffs --domestic red meat, poultry, game, and vegetables-- in Nigeria. Because organochlorides

are very liposoluble, they readily find their way from blood into mothers' milk, and thus pose a grave risk for nursing infants. This problem is further compounded by popular practices in many developing countries: in Zambia, for example, it is reported that DDT is commonly used to protect dried fish from pest attacks(18).

Concerted efforts have been made to find new pesticides that are less toxic to non-target organisms. Pyrethroids, a family of compounds originally isolated from *Chrysanthemums* are one example. These insecticides were purported to exhibit a very low toxicity toward non-target organisms, specifically humans. They are neuroactive molecules, but their low dermal absorptive capacity was thought to render them safe for large scale use even by relatively untrained workers.

Severe cases of pyrethroid intoxication have been reported in sprayers of cotton fields in China, however. The Health Sciences Division is therefore supporting a study of the prevalence of Fenvalerate intoxication (a synthetic pyrethrin derivative) in Hubei province, and a further investigation of the etiology of the incidents [3-P-83-0083]. These incidents underline the fact that pesticides, even less toxic compounds, are only safe if they are used properly.

3. Attitudes and legislation

It is becoming evident that the problem of chemical intoxications is partly an attitudinal one. This is true for end-users, but, also at higher levels. For example, Janzen(19) [cited by Philogene(20)] reported in 1985 that South Africa, Egypt, Mauritius and Zimbabwe were the only African countries with a well structured and

comprehensive system of importation and regulation of pesticide usage. In other countries, this type of legislation is sketchy, nonexistent, or imbedded in bodies of legislation indirectly related to pesticides. As a result, the use of organochloride pesticides such as DDT, Dieldrin, Heptachlor, Aldrin, and BHC, banned in industrialized countries for their retention in the environment or their high toxicity are still reported from countries such as Zambia(18).

The formulation of appropriate legislation is made all the more difficult by the lack of personnel in LDCs incapable of making a toxicological assessment of imported pesticides and by the lack of proper laboratory facilities. These countries therefore largely rely on toxicity studies carried out in industrialized countries, often by the producer.

In fact, no one will dispute that the use of pesticides poses health risks to applicators as well as to all individuals exposed to them through environmental contact. This is also very true for environmental contamination of non-target organisms other than humans. As stressed earlier, pesticides are poisonous to most organisms, including human beings. However, as in all cases related to the use of potentially unsafe substances, what developing country governments must strive for is the proper assessment of the risk involved with their use as opposed to the consequences of not using them.

This is really the key question, and it cannot be answered if trained scientists are not available in LDCs. Legislators and civil servants versed in the complexities of risk-assessment of toxic

substances-use are also sorely needed. Such training must therefore be made available in LDCs before the problem of import of unsafe substances can be tackled comprehensively.

In the late 1970s Canada, Finland and the U.S.A. started reexamining studies submitted to gain registration of pesticides. They found that many were invalid. Because the manufacturers did not substitute the required valid toxicity tests as requested, many pesticides were deregistered in these countries(22,23). The rejected invalid studies are still being submitted to LDC governments by exporters, and are still used to determine which pesticides should be imported and registered.

LDCs increasingly use international aid subsidies to purchase pesticides(24). This aggravates the problem because the subsidies enable Third World governments to sell pesticides to end-users at reduced cost, therefore encouraging the use of these chemicals as the preferred method of increasing crop yield. They likewise discourage farmers from using alternate, less chemically-reliant methods of pest control.

4. Pesticide storage and application

The storage of pesticides poses yet another problem. Haynes(25) estimates that as much as 10% of pesticides may be wasted through inappropriate storage.

A study of storage conditions in four African nations, six Southeast Asian countries and in Fiji revealed many improper practices and hazards: Pesticides were stored near fertilizers, seeds, food or

drink; records were not kept; no provisions were made for spills; labels were lacking; containers were corroded and leaking; pesticides were improperly repackaged. The study indicated that most of these problems could have been prevented through prior training of shopkeepers and storage-facility handlers(25). An IDRC-supported study in Southeast Asia corroborates these findings. It found that many instances of fatal poisonings in the home followed the accidental ingestion of pesticide-contaminated meals. This was most often because pesticides were kept in unlabelled containers next to food in the cooking area.

It should be remembered that all pesticides, including those that are still in use in industrialized nations, are dangerous. But although 85% of world pesticide production is used in industrialized countries, the incidence of human poisoning may be 13 times greater in the Third World than in the USA(27). It is doubtful that this large difference can be accounted solely by the higher toxicity of some of the compounds and formulations used in LDCs.

A number of studies supported by the Centre indicate that end users are insufficiently, if at all, informed about the risks posed by pesticides and their misuse. Worse, farmers' attitudes and practices are based on erroneous information, with disastrous results to crops and humans alike.

Pesticides are usually applied by workers using personal sprayers, of which only a few designs exist. Many small landholders use the lever Operated Knapsack sprayer (LOK sprayer).

An assessment of LOK sprayers in Malaysia's Muda irrigation scheme by Anas et al(20) revealed that 20% of 193 sprayers examined had serious faults or were badly damaged. The study also revealed that the farmers' knowledge of the operation and maintenance of the sprayers were seriously lacking.

A separate study further indicated that farmers chose a sprayer for reasons of weight, size, and ease and comfort of use(29). Very little consideration was given to durability, safety, ease of repair and availability of spare parts. The design of a safer, inexpensive sprayer for tropical conditions has generated considerable interest. A recent workshop in Kuala Lumpur (International Conference on Pesticides in Tropical Agriculture, September 1987), focused on this topic.

A recent review of LOK sprayers commissioned by the Centre [3-A-86-4075](30) outlined avenues of research for improving this technology, and recommended possible areas of IDRC involvement.

It thus appears that occupational and accidental poisoning in LDCs can be attributed to a faulty technology allied to a serious lack of knowledge as much as to the high toxicity of pesticides. User attitudes and practices must be changed through appropriate education and sensibilization to the risks.

Such behaviour modification can be achieved. In China, for example, serious organophosphate intoxications were dramatically reduced in a community by involving communities members, from end users to government officials, in a prevention program(21). The poisoning rate decreased despite a marked increase in the community's use of pesticides.

This encouraging report shows that pesticide poisoning can be prevented at the grass-roots, community level, possibly through simple educational exercises and surveillance.

III. TOXICITY OF NATURAL CHEMICALS

The recent search for appropriate, affordable technology has lead to the investigation of a number of locally occurring natural substances for various uses. Some, like synthetic pyrethrins, are now the subject of major investments by commercial concerns.

Optimal and least expensive use of these natural compounds can obviously be made at the point of growth. Some can be used directly; others may need minimal processing by users or cottage industries.

1. Plant molluscicides

Some natural molluscicides have already been identified and show promise in controlling parasitic diseases for which snails are obligatory intermediate hosts. In studies supported by the Centre, in Egypt (Bilharzia phases I to IV [3-P-76-0184, 3-P-80-0194, 3-P-82-0223 and 3-P-87-0204]), two molluscicides of plant origin,

Ambrosia maritima (Damsissa) and Phytolacca dodecandra (Endod) have already shown great promise in laboratory and limited field testing. To date, however, toxicological and environmental impact studies have tended to be ad hoc. Field and community testing of these products requires that they be subjected to the same toxicological screening criteria as synthetic pesticides.

The lack of standard preparation of plants and plant extracts has constrained this testing (32). Unlike synthetic chemical pesticides, locally prepared water extracts of crude plant material contain many additional, unknown substances, not to mention variable concentrations of active ingredients. It is difficult to accurately assess the fate of these compounds and their metabolites in the environment.

Possible hazards of using these compounds include pollution of water used for drinking, bathing and cooling, the bioconcentration of products in food and in the food chain, and potentially toxic effects on non-target species such as a fish on which the community may actually depend for nutrition. These hazards must be assessed before the use of any plant molluscicide can be sponsored and encouraged.

2. Water purification agents

A number of seed extracts have long been used in developing countries as flocculents for removing suspended solids from drinking/cooking water. Systematic research on these natural coagulants is being carried out by a number of organizations interested in appropriate, low cost technology for Third World communities(34). The Centre is no exception (Theythancottai water treatment [India, 3-P-84-0208]).

Long-term use does not necessarily make these compounds innocuous, however, as tobacco well shows. Organizations supporting the study of natural coagulants must therefore, seriously consider toxicity assessments as part of any research program aimed at promoting the use of these chemicals.

Such studies are particularly appropriate in the case of coagulants which are used specifically to treat water before its use for drinking or cooking. As in the case of pesticides, a major hurdle might well be peoples' ignorance of the dangers these substances may pose.

IV. OTHER CHEMICALS IN THE THIRD WORLD

The emphasis placed by LDCs on industrialization as a means to promote development, has led to the appearance of a large number of chemicals in the Third World. Like pesticides, most are potentially toxic. In fact, a large number of processes and chemicals used in the Third World are now banned in industrialized nations because of the unacceptable toxicities.

Many medicinal products are imported and sold in the absence of effective regulation and control by street vendors, for example. One could also argue that imported alcoholic beverages should come under the umbrella of potentially toxic chemicals making an entry in LDCs from their more developed brethren. *Surely, the escalating problem of alcoholism in some areas is a clear sign of this problem.

Other factors also increase chemical risks in developing countries: many chemicals react differently in tropical environments than they do in more temperate climes; safe disposal methods are usually lacking, handling and processing technologies are often not available.

Social and attitudinal problems are of even greater concern. Workers, managers and health experts lack sufficient knowledge of the risk posed by chemicals and of proper handling techniques. Legislation on chemicals is inadequate in the LDCs and enforcement of existing regulations is rarely effective.

The major classes of toxic chemicals affecting the health of individuals in the Third World are: Heavy metals such as lead, arsenic, mercury and cadmium; chlorinated compounds other than the organochloride pesticides -- PCBs, TCDFs, PCDFs, and chlorinated phenols; organic solvents which find their way into the industrial processes now being introduced in developing countries.

Many of these compounds are neurotoxic and oncogenic (i.e. causing cancer). Chronic exposure to threshold levels of these compounds may cause sub-acute symptoms not readily diagnosed as chemical poisonings. Cancers may appear 20 or more years after the initial exposures.

Some chemical toxicants result from community, or even household activities. Indoor pollution, for example, is now attracting a great deal of attention particularly as it affects women who spend much of the day near the cooking fire. Combustion produces a large number of carcinogens such as benzo-a-pyrenes. When cooking is done indoors, airborne particles and irritating gases such as NO_x , CO and SO_x add to the problem. Chronic exposure to these airborne chemicals is now implicated in the high incidence of acute respiratory infections (ARI) in the Third World.

The location of many Third World cities and their slums, in combination with atmospheric conditions leads to the stagnation of cooking- and heating-fire emanations - a domestic smog. Slums are often situated near the industrial cities. Because Third World factories often operate without the sophisticated pollution control technologies used in industrialized countries, a host of toxic byproducts are released in the environment of nearby communities. The most common are heavy metals produced by smelting, tanning, mining etc. These also linger in the air.

What the inhabitants do not breathe in directly, they ingest with their food and beverages on which pollutants have settled. Children's poor sanitary habits make them a particularly high risk group for heavy metal intoxication.

Industrialized countries are partly to blame for the high rate of chemical intoxication in LDCs. Many hazardous chemicals reach the Third World with insufficiently documented toxicity data. A week after the Bhopal incident, for example, toxicologists were still frantically searching standard texts in order to produce definitive medical statements in respect to methyl isocyanate(33). Adequate data must be available to enable users to assess the risks, protect communities and individuals, and provide aid when accidents occur. The Third World governments cannot adequately legislate the use of these chemicals without such information and without adequately trained scientists.

In the transfer of technology, a serious time lag usually occurs between the transfer of industrial processes and that of the appropriate control technologies and regulatory procedures. Both the exporter and importer share responsibility for this "double standard" of safety.

In the Bhopal tragedy, for instance, a number of factors may have been responsible: The failure of local operators to enforce standard operating practices and engineering controls; the parent company's slow withdrawal from the facility; poor training; and some aspects of the policies and requirements of the Indian government(26). As a result, an estimated 100,000 to 200,000 people were exposed to an extremely toxic substance: As many as 20,000 died.

The LDCs' low degree of technological development makes the toxic chemical problem all the more complex and difficult to solve. Many of these chemicals are essential for achieving food self-sufficiency and economic development. But they are dangerous and the health protection technologies are often too expensive for developing countries to import and apply.

V. AVENUES FOR RESEARCH

This brief overview skims the surface of the problems posed by toxic chemicals in the Third World. We have focussed on pesticides because of the risk they pose to rural populations, a group that represents the largest portion of Third World inhabitants.

A number of research opportunities present themselves, many of which lend themselves to IDRC support. A multidivisional approach would be needed in many instances.

1. Collecting baseline data

From the published data, it is clear that the full extent of the incidence of chemical intoxications (particularly of pesticides intoxication) is still unknown, and badly underestimated. More prevalence studies need to be undertaken in developing countries. These studies should address a number of crucial issues: the actual incidence of such poisoning cases; how the physical and social environment affects this incidence; the most frequently implicated pesticides; how the technology used to apply these chemicals influences intoxication rates.

2. Documenting health effects

A number of hidden health effects such as delayed syndromes and misdiagnoses have now been identified, but few rigorous studies of late-onset diseases such as cancer have been undertaken in developing countries. One could also argue that imported alcoholic beverages should come under the umbrella of potentially toxic chemicals making an entry in LDCs from their more developed brethren. Surely, the escalating problem of alcoholism in some areas is a clear sign of this problem.

We should therefore support a small number of studies on the actual rate of under-reporting and the reasons for such under-reporting. Descriptive studies of unidentified symptoms are also needed to allow researchers to better estimate the rates of pesticide intoxications.

Pesticides have been used in LDCs for more than 20 years. Because such a large population has been exposed to these potential carcinogens, retrospective cohort studies of cancers might now be in order. Environmental cancers may become an important cause of death in developing countries with serious implications for public health.

3. Information dissemination

There is a dearth of information on most aspects of toxic chemicals in developing countries. The following areas lend themselves to research:

- a) Most Third World health practitioners cannot recognize classic signs of pesticide poisoning, let alone the symptoms which are only now surfacing. Diagnostic information needs to be collected and distributed to health practitioners and communities.

Poison Information Centres are ideally suited for information disseminations: their establishment and strengthening should therefore continue. Links with developed country institutions should be further encouraged. Operational research into the impact of these centres should also be seriously considered. Attention should likewise be given to their role in community education.

- b) Poison Information Centres could inform those responsible for purchasing and registering toxic chemicals. Operational research is needed on how best to establish linkages between these Centres and decision-makers. Toxicologists trained in the interpretation of toxicity data and able to recommend appropriate substances for import are in short supply in LDCs. In-project training or the provision of fellowships would allow individuals to become proficient in data interpretation and validation, as well as risk-assessment.

4. Chemicals regulations

A number of issues related to chemical risk are directly linked to the lack of legislation. Importation, registration, labelling, transport, storage and use of all chemicals, more specifically pesticides, is often done on an ad hoc basis. The unregulated access to highly toxic chemicals and the lack of enforcement of existing laws may, in fact, be linked to the large number of reported suicides and criminal poisonings with pesticides. Research is needed into the social factors influencing importation and all subsequent handling of toxic chemicals. Information is needed on

how purchasing decisions are reached, how legislation could protect each country's inhabitants, and how training of operators could be improved and enforced.

5. Appropriate technology

The development of appropriate technologies is an important area for research. Projects could include:

- a) The development of safe and efficient pesticide sprayers. Centre support could greatly assist Third World institutions engaged in this work.
- b) The development and testing of protective clothing and equipment adapted to tropical conditions.
- c) The development of cheap, effective industrial control methods to insure the safety of hazardous processes.
- d) The investigation and promotion of alternate means of pest control in the field such as integrated pest management (IPM). Topics such as biological control, destruction of breeding grounds of disease vectors, and the investigation of natural pesticides should be emphasized. Great care should be exercised however to ensure that natural substances are not toxic to non-target species or to the environment.

6. Standardization of research methodology

The lack of standardization in the terminology and methodology makes cross-country comparisons difficult. Such exercises should be encouraged whenever possible. An international workshop was recently sponsored jointly by IDRC and the International Program of Chemical Safety at WHO to standardize a protocol for measuring the incidence of poisoning episodes and their outcomes in developing country settings (3-A-87-4283). This protocol should serve in future projects supported by Poison Information Services and will allow the validation of the methodology. Similar workshops should be held on other toxic chemicals research areas.

7. Changing community perceptions and attitudes

Community attitudes depend on and determine the acceptance of new technologies and knowledge. Research must therefore examine the reasons why poisonings occur: Misconceptions, cultural bias toward a particular technology, lack of understanding, lack of choice, and involve communities in the learning process. Most IDRC supported studies on pesticides have shown that misconceptions and misuse are always instrumental in poisoning episodes. This type of study must continue, preferably in connection with prevalence studies. The process of chemical intoxication in different Third World settings could then be better understood.

8. Intoxications resulting from living conditions

Projects need to be supported on environmental factors such as the effect of indoor pollution on health and ways of preventing it. Solutions need to be culturally acceptable, affordable and easy to maintain if they are to be adopted.

9. Ecological impact

It should be noted that all environmental modifications will affect some, if not all, facets of the biotope. Because they are at the top of the food chain, people have the most to lose from negative aspects. Research is therefore needed on the long term environmental and health effects of the introduction of many biodegradable chemicals such as organochlorides. Less evident topics of research should include the effects of these chemicals on the quality and productivity of food species on which developing country populations depend.

VI. THE NEED FOR A MULTIDISCIPLINARY APPROACH

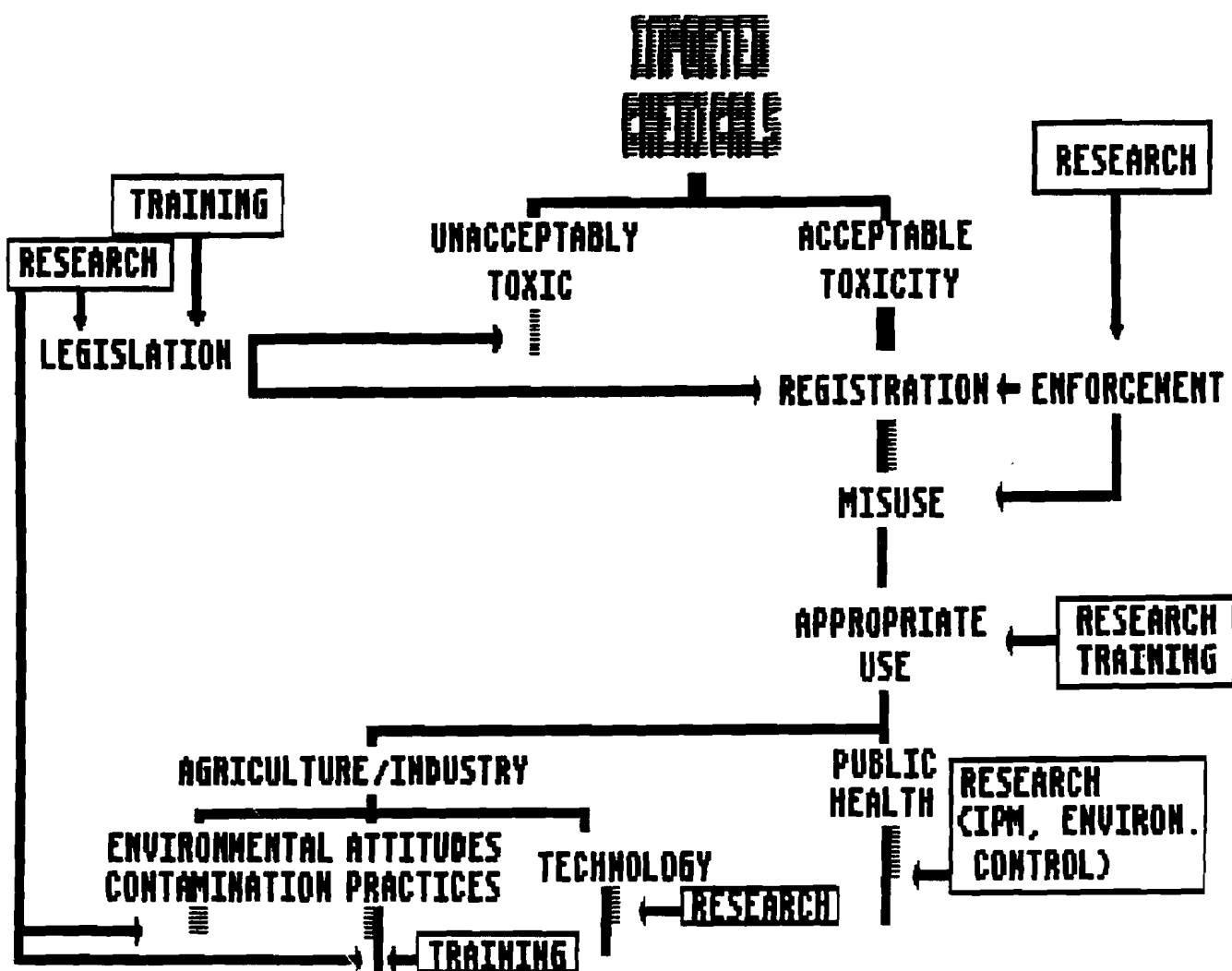
Most of the research topics outlined above are too broad in scope to be addressed easily, if at all, by a single research division. Integrated, multidisciplinary teams of researchers are needed to develop these projects. It is hoped that the dialogue which has started between the Health Sciences and other divisions, in the form of a pesticide Working Group will continue. It should evolve into a concerted Centre-wide effort to develop multifaceted research projects that will produce significant information for improving the health and welfare of communities in developing countries.

REFERENCES

1. Rantanen, J., Taskinen, H. & Rahkonen, E. (1986) Occupational health and chemical safety. North-South Health Dialogue, 1(2): 3-8.
2. World Resources 1986: A report by the World Resources Institute and The International Institute for Environment and Development, 1986. Basic Books Inc., New York.
3. Davies, John E. (1987). Changing profile of pesticide poisoning. New England J. Med. 316 (13): 807-808.
4. Foo, Gaik Sim (1985). The pesticide poisoning report: a survey of some Asian countries. International Organization of Consumers Unions, Malaysia, p.1.
5. Loevinsohn, Michael (1987). Insecticide use and increased mortality in rural Central Luzon, Philippines. Lancet, ??: (June 13 1987) 1359-1362.
6. Chapin, G. & Wasserstrom, R. (1981). Agricultural production and malaria resurgence in Central-America and India. Nature 293: 181-185.
7. Holmstedt, B. (1959). Pharmacology of organophosphorus cholinesterase inhibitors. Pharmac. Rev. 11: 567-688.
8. Senanayake, N. & Johnson, M.K. (1982). Acute polneuropathy after poisoning by a new organophosphate insecticide. N. Engl. J. Med. 306: 761-763.
9. Senanayake, N. & Karalliedde, L. (1987). Neurotoxic effects of organophosphorus insecticides: an intermediate syndrome. N. Engl. J. Med. 316: 761-763.
10. Tabershaw, I.R. & Cooper, W.C. (1966). Sequelae of acute organophosphate poisoning, J. Occup. Med. 8: 5-20.
11. Hoar, S.K., Blair, A., Holmes, F.F., Boysen, C.D., Robel, R.J., Hoover, R. & Fraumeni, J.F. Jr. (1986). Agricultural herbicide use and risk of lymphoma and soft tissue sarcoma. J.A.M.A. 256: 1141-1147.
12. Sterling, T.D. & Arundel, A. (1986). Health effects of phenoxy herbicides: A review. Scand. J. Work Environ. Health 12: 161-173.
13. Bulusu, S. & Chakravarty, I. (1984). Augmented hepatic susceptibility to Malathion toxicity in rats on low protein diets. Environ. Res. 35: 53-65.

14. Mahatevan, R. (1987). Pesticide hazards in the tropics. E.Afr. Newsletter Occ. Health & Safety. April 1987. 4-7.
15. Jeyaratnam, J., de A. Survitatne, R.S. & Copplestone, J.F. (1982). A survey of Pesticide poisoning in Sri Lanka. Bull. of WHO. 60: 615-619.
16. (1986). Pesticides and Health. Human Ecology and Health, 5: 2-3.
17. Atuma, S.S. (1985). Residues of organochlorine pesticides in some Nigerian food materials. Bull. Environ. Contam. Toxicol. 35: 735-738.
18. Mwanza, F. (1987). Zambia moves to block use of DDT. In Gemini News, May 1987.
19. Janzen, J. (1985). Pesticide legislation in East and Southern Africa. West Africa Legislation Workshop, Lomé, Togo.
20. Philogène, B.J.R. (1985). Utilisation et réglementation des pesticides dans le tiers monde: problèmes et perspectives en Afrique. Can. J. Devel Studies, 6: 276-288.
21. Louekari, K., Savolainen, K. & Salminen, S. (1986). Validity of toxicity documents of pesticides and good laboratory practice. Arch. Toxicol., supp.9: 244-246.
22. Current Report (1982). EPA identifies major gaps for 11 chemicals in IBT test review. Chemical Regulations Reporter, 0148-7973.
23. Health and Welfare Canada (1982). Current status of IBT Pesticides. News release 1982-47, May 6.
24. Anonymous (1986). Pesticide subsidies may be hurting Third World more than helping. Chemical & Engineering News 64: 11-12.
25. Haynes, Ian H. (1985). Problems of pesticide storage in developing countries. Chemistry and Industry, September 16, 1985.
26. Bhopal Working Group (1987). The public health implications of the Bhopal disaster - Report to the Program Development Board, American Public Health Association. Am. J. Pub. Health, 77: 230-236.
27. Goldberg, Karen A. (1985). Efforts to prevent misuse of pesticides exported to developing countries: Progressing beyond regulation and notification. Ecol Law Quart. 12: 1025-1051.
28. Anas, A.N., Jusoh, M.M., Heong, K.L. & Hb, N.K. (1987) A field observation of lever operated knapsack sprayers owned by the rice farmers in the Muda Irrigation scheme. International Conference on Pesticides in Tropical Agriculture, Kuala Lumpur, Sept. 1987.

29. Jusoh, M., Anas, A.M., Heong, K.L., Chan, C.W., Nik Mohd Nor, N.S., Ho, N.K., Zaiton, A.S. & Fauzi, A. (1987). Features of lever operated knapsack sprayer considered important by the Muda rice farmers in deciding which sprayer to buy. International Conference on Pesticides in Tropical Agriculture, Kuala Lumpur, Sept. 1987.
30. Zandstra, Ilse (1987). Lever-operated knapsack and hand-held sprayers used in agriculture in developing countries: A review of their safety and efficacy. International Development Research Centre Manuscript Report No. IDRC-MR169e.
31. Shih, Jia-huao, Wu, Shen-qia, Wang, Yi-lan, Zhang, Yi-xiou, Xue, Shou-zhen & Gu, Xue-qi. (1985) Prevention of acute parathion and demeton poisoning in farmers around Shanghai. Scand. J. Work. Environ. Health 11 (Supp.4): 49-54.
32. Koeman, J.H. (1987). Toxicologic screening of molluscicidal plant products. in: Plant Molluscicides, K.E. Moh (ed.), John Wiley & Sons Ltd., Toronto, pp. 245-249.
33. (1984) Calamity at Bhopal. Editorial, Lancet, No.8416, December 15, 1984, 1378-1379.
34. Jahn, Samia Al Azharia (1981). Traditional water purification in tropical developing countries. GTZ Publication No. 117.



ANNEX I - RESEARCH OPPORTUNITIES AT DIFFERENT POINTS OF CHEMICAL USE
IN LDCs.

**WOMEN, HEALTH AND DEVELOPMENT:
PERSPECTIVE FROM THE HEALTH SCIENCES DIVISION**

Ilse Zandstra

JUNE 1988

A discussion paper presented for the HSD IDUR

TABLE OF CONTENTS

Page

I.	SITUATION OF WOMEN IN DEVELOPING COUNTRIES	
A.	Introduction	1
B.	Health Situation of Women in Developing Countries.....	2
C.	Effect of the Development Process on Women.....	6
D.	Effect of the Women's Decade (1976-1985) on Women.....	7
II.	WOMEN'S ROLES IN HEALTH DEVELOPMENT	
A.	Women in the Informal Health Care System.....	9
B.	Women in the Formal Health Care System.....	10
C.	Women's Organizations as Providers of Health Services.....	10
III.	EXPERIENCE OF THE CENTRE	11
A.	Formation of the WID Unit	12
B.	Experience of the Health Sciences Division.....	12
1.	Water Supply and Sanitation	13
2.	Maternal and Child Health	14
3.	Other Initiatives	15
C.	Association with the WID Unit.....	16
IV.	HEALTH SCIENCES DIVISION APPROACH TO WOMEN AND HEALTH	17
A.	Research on the Special Health Risks and Health Needs of Women	17
B.	Research on Women's Roles as Providers of Health Care	19
V.	RECOMMENDATIONS.....	22

I. SITUATION OF WOMEN IN DEVELOPING COUNTRIES

A. Introduction

Today, many people in the third world find themselves in more difficult circumstances economically than they did a decade ago. In particular, the situation of many women has become critical, especially those women living in rural or peri-urban areas. Throughout the world, women are disproportionately over-represented among the poor, the illiterate, the unemployed and underemployed. They remain a very small minority at the centres of political power.

Within most societies around the world, women are denied their full potential and their social and economic contributions often go unrecognized. Within their communities and families, women are not considered equal to men, nor do they share equally in decision-making. Conditioned from birth to undervalue themselves and their work, they often accept their situation as inevitable, even while aspiring to improve their social and economic well-being. The feminist viewpoint states that it is the existing socio-economic systems that determine the differential work, leisure and life chances of women. Throughout life, these differences add up to the systematic inequality between the sexes and to the subordination of women by men.

Even though most countries have passed laws guaranteeing equal rights to men and women, in practice, women have not achieved equality. For example, although Zambian law does not discriminate against women, a married woman is regarded as a minor and cannot get a mortgage or a loan without the consent of her husband. Kenya exempted the inheritance of property from its constitutional provision on equality. In Paraguay, Bolivia and Peru, daughters

inherit a smaller portion of the father's land than do sons. In other countries women are seen as commodities, or walking capital and exploited by men, often to their detriment.

Women are generally exposed to the same health risks and suffer from the same ill-health problems as men (for example infectious diseases and work-related illnesses). However, in addition, they have special health needs which are a result of their reproductive roles, the domestic and other labour they perform and are often a result of their lower social status. Women also play a major role in providing health care for themselves, for family members as well as for others in their communities, often in difficult circumstances. They are valuable resources for the solution of health problems. This paper will discuss both of these aspects of women and health and will attempt to outline particular areas of emphasis and action for the Health Sciences Division.

B. Health Situation of Women in Developing Countries

Gender, class and kinship, all deeply influence women's lives and result in complex patterns of mutual support as well as dependency. It is within such a socio-cultural context that women's health development must be considered.

In developing countries women have primary responsibility for the social welfare of their families. Their social and economic situation will, to a great extent, determine the health and well-being of other family members, especially children. This makes it hard to understand that women's contribution to health development has, until recently, largely been unrecognized. In spite of their important contribution, and the relationship between women's status, education of the mother and health of offspring, women in many societies are accorded a lower social

status and do not have the same educational opportunities as do males. Girls are often kept at home to help with the never-ending domestic chores. It is a common opinion that girls don't require as much formal education as do boys and further, that they will marry and the investment will be lost to the family who made the economic sacrifice for their education. In many of the poorest nations, 80 % of the women over 25 have had no schooling at all. This results in substantially lower literacy and employment levels for women and can partially account for the fact that women are often found in the lower-paying jobs or working in the informal sector. In order that women may lead more fulfilling lives as well as to fulfill their important health and social roles, however, the health and social interests of women must be safeguarded and ensured and women's access to education and employment made a right.

Females are undervalued from birth. In many societies a preference for male children, coupled with the present availability of techniques for sex determination of the foetus may threaten the life chances of females even before birth. A higher female infant mortality rate (and even female infanticide in some countries and under certain conditions), a greater proportion of malnourished female children, and longer delays in seeking health care for ill female children puts female children at a disadvantage. Often, the males in the family (both children and adults) receive a better diet than the females, even though at certain times the nutritional needs of females might be greater, such as during pregnancy and lactation.

Women's reproductive role can adversely affect their health and this points to the need for appropriate health services. High parity, adolescent pregnancies, closely spaced pregnancies, lack of proper obstetrical care, nutritional deficiencies including

nutritional anemia, all contribute to perinatal morbidity and mortality as well as to unacceptably high levels of maternal morbidity and mortality in developing countries. The WHO estimates that 500,000 women in developing countries die every year from complications of pregnancy, abortion attempts and complicated childbirth. Nutritional anemia afflicts half of all women in their child-bearing years in developing countries compared with less than seven percent of women in developed countries.

A succession of unwanted pregnancies places a difficult burden, physical, emotional and economic on many women. Due to a variety of cultural, social and economic factors, women in developing countries often do not have the freedom to decide the number and timing of their pregnancies, even when fertility regulation through contraception is available. Without control over their fertility, however, it is not possible for women to take control of other aspects of their lives.

The generally discouraging contraceptive acceptance rates, especially in many African countries, is partly due to the failure of many programs to inform and educate the male partner in all aspects of family planning, including male contraception. In the third world, four of ten married women report that they don't want any more children. However, the great majority of these women are not adequately protected against unwanted pregnancy. This leads to women seeking both legal and illegal abortions, with an estimated 168,000 women dying every year as a result of illegal abortions.

The majority of people in developing countries still live in rural areas. However, there is increasing migration by both men and women to urban areas, partially due to the inability of families to obtain land or to sustain themselves on the land. In

particular, female rural-urban migration is seen as a problem by many. The inability of recently arrived women to find employment, leads to their supporting themselves and their children by working in the service or informal sector or by prostitution. Prostitution brings with it social and physical problems for women, including marginalization from society, sexually transmitted diseases (including AIDS), and physical abuse.

In certain societies which condone male promiscuity, women are more likely to be infected with sexually transmitted diseases. One unwelcome consequence of sexually transmitted diseases, especially if they go untreated, can be infertility. The inability of a woman to bear children can have unwelcome social sequelae, including further marginalization from society which places great value on children. Since many sexually transmitted diseases are more difficult to detect in women, or may be asymptomatic, women may be unknowingly involved in their further transmission.

Contrary to what is commonly believed, most women do not work just for extra luxuries for their families but out of economic necessity. Women are the sole bread-winners in one-fourth to one-third of the families in the world and the number of woman-headed families is rapidly increasing. Women frequently work long hours for low wages under conditions that may be damaging to their health. For the same work, women usually earn less than men. Difficult working conditions and possible exposure to noxious substances, combined with a "double workday" (paid and domestic work) have a negative effect on the quality of life of women in general and their health status in particular.

Women's traditional domestic tasks such as water contact behaviour (fetching water, doing laundry, etc.) and the carrying of heavy loads (water, children, firewood) as well as indoor cooking with biomass fuels serve to increase a woman's risk of ill-health. In many countries, women provide a considerable share of agricultural

labour, contributing to approximately 50% of food production worldwide. This may put women at risk of exposure to pesticides, under-nourishment, over-work and result in poor health.

Furthermore, women's contributions in the domestic sphere and their food production activities, because they tend to be unpaid, undervalued or paid in kind, have not been counted as economic activity.

Increasingly, adverse conditions of social treatment are being brought to public attention: women are frequently the victims of physical and psychological abuse, rape and incest. Such acts of violence against women are due to women's generally inferior physical condition, social position and powerlessness. Clearly such abuses affect mental and health status, and call for societal and legislative sanctions, as well as for appropriate services.

Another major health problem for women is cancer. Cancer of the cervix is the main form of cancer in the developing world with half a million new cases occurring annually. Breast cancer is one of the commonest causes of death in many developed countries and is becoming frequent in developing countries as well.

C. Effect of the Development Process on Women

By 1975, which was declared International Women's Year, it had become evident that women were being excluded from the development process and that, in fact, the development process itself had often had a negative effect on women's status and economic condition. This was in part due to the fact that the mostly male government planners and male development personnel failed to recognize women's economic contributions and needs with the result that development projects focussed on the more visible economic activities and stated needs of men. This led to development projects being implemented without a complete understanding of the social systems operating, the roles played by various family

members or the work performed by women. Projects directed at women were invariably of the "social welfare" type and did nothing to enhance women's economic well-being. As well, the projects that were implemented clearly reinforced values already in existence, values which limited women to home and family maintenance activities. Additionally, development projects often tended to superimpose traditional western values of appropriate roles and work for women onto existing value systems.

During the past decade, researchers have amassed significant evidence showing the extent to which women have failed to benefit from development efforts. Social scientists have found that gender, like class, plays a key role in determining how men and women participate in social, economic and political activities. Therefore, gender must be one of the variables to be considered when studying or planning projects affecting the community. The international donor community, and others, after largely ignoring the needs of women finally decided to make special efforts and special commitment to deliver and improve programs aimed at bettering the condition of women in developing countries. Not all of their approaches have been successful, partially due to the compartmentalizing of women's programs from other development efforts.

D. Effect of the United Nations Decade for Women (1976-1985) on Women

The United Nations Decade for Women (1976-1985) had as its major goals, equality, peace and development as well as three sub-themes - employment, health and education. In July 1985, at the end of the women's Decade, the World Conference met in Nairobi to review and assess the achievements of the Decade and to develop strategies for the advancement of women to the year 2000. The Conference adopted by consensus the major conference document, "The Nairobi Forward - Looking Strategies for the Advancement of

Women" which sets out concrete measures to overcome obstacles to the Decade's goals and objectives for the advancement of women, a number of which pertain to health and health-related issues.

The effect of the Women's Decade on the situation of women in developing countries still remains to be determined. Several organizations are looking into the positive health effects on women of the last ten years but so far these seem to have been few and far between. In many aspects, particularly economically and socially, women's situation has deteriorated and this has had a negative effect on their health and that of their families. The greatest flaw of the WID effort has been that it ignored almost completely the dynamics of the relationship between women and men in their families and communities. The differential power, status and privilege of men over women were not challenged.

Positive results from the decade include increased and better data collection on women's activities, gender disaggregated health indicators, a realization of the importance of integrating women into the development process, along with a better awareness of women's social and economic contribution as well as their special needs in all sectors, including health. However, with this increased awareness comes the realization that their health, economic, social and employment situation must be improved.

II. WOMEN'S ROLES IN HEALTH DEVELOPMENT

In addition to having their own special health needs, women carry extra responsibilities for health through their contribution to the health of their families and communities. Most societies are heavily dependent on women to provide health care both formally and informally but this contribution is often undervalued.

A. Women in the Informal Health Care System

The many roles and considerable contribution of women in providing health care services have not always been recognized by national governments or the donor community. Women have been providing a giant's share of primary health care - particularly as the majority of the eight essential elements fall almost exclusively in the woman's domain at the family level. It is the women who are expected to be health educators; to teach sound health practices to future generations; to create a home environment that is conducive to good health (from clean water to nutritious food); to limit family size; to ensure that children are immunized and taken to the health care providers when necessary; and to care for the elderly. It is the women, often serving without monetary compensation as traditional birth attendants, who still deliver most of the babies in the developing world; and who constitute the majority of volunteers in hospitals, self-help clinics, and other community organizations.

And yet ironically, women are expected to fulfill these multiple roles while being the least educated and informed and while receiving minimal support for their important contributions to the health of the family and the community. With the modernization of economies and the development of markets, there is often an erosion of women's roles as well as a need for new income-generating opportunities for women if they are to maintain family well-being. This obviously has implications for women's ability to implement primary health care programs as they are devised by WHO and Ministries of Health.

B. Women in the Formal Health Care System

The role women play in the health professions is also extensive and important. Available statistics suggest that in most countries, although the labour force in the formal health system is predominantly female, women tend to fill the lower paid, less prestigious jobs, rather than those with status, adequate remuneration and the power to make and implement decisions.

Often, community health workers, chosen from their respective villages, serve in a volunteer or near-volunteer capacity in primary health care programs. Many of those being trained for the lower grades of community health work are women. Their effectiveness will depend on conditions largely outside their immediate control, such as the training, support and feedback they receive as well as the extent to which their work is considered relevant to the larger health systems. Should women, who are already providing a major share of primary health care services to their families, also be saddled with the responsibility for maintaining the community's health, especially without adequate compensation? Further, little consideration has been given to the time and opportunity costs for women who provide health services on a volunteer or near-volunteer basis.

C. Women's Organizations as Providers of Health Services

Women's organizations in developing countries can be an important source of strength and solidarity for women. Village women's committees, village health committees, women's cooperatives and other women's organizations in developing countries can be important agents of social change and can have a considerable impact on the women involved as well as on community health. Indeed, grass-roots organizations are the main focus of WHO's strategy for involving women's organizations in primary health care since they serve the poor and the powerless and their goal is

usually to satisfy the immediate needs of their members. By setting and realizing achievable goals, women's groups can be a training ground for decision-making and for developing leadership skills. By giving women increased bargaining strength, and by helping women to pool savings and acquire credit, women's organizations can lead to the empowerment of women which then further allows them to participate in and to benefit from the development process.

III. EXPERIENCE OF THE CENTRE

With the clarification of the Centre's mission and objectives, PPR VII (1986/87-1989/90) laid the foundation for strategic planning within the Centre. By supporting research and research related activities to assist in promoting the indigenously determined social and economic advancement of the developing regions of the world, with particular focus on the poorest people of those regions, the Centre was stating its support for men, women and children. The poorest people are found to a large extent in rural areas and are often women, and as stated before, special efforts must be made to include women in development and research for development.

As well, in the Centre's view, three elements are essential in order for development to take place from the point of view of the beneficiaries. These are: equity, participation and sustainable growth. As has already been discussed as far as equity and participation are concerned, in general, women have not benefited from nor participated equally in the development process. Further, because of their lower status and poverty relative to men, they have not had equal access to health services. This led many people within the Centre to express concern that research supported by the Centre be seen to be relevant to women's needs as well as men's.

A. Formation of the WID Unit

The Centre's WID policy has not been formalized but the Centre showed its commitment to the integration of women in development by establishing, in April 1987, the Women in Development (WID) Unit.

Prior to the formation of the WID Unit, there existed in the Centre and in the Health Sciences Division, a considerable degree of both formal and informal support for research looking at the special problems of women and for the participation of women as researchers and program managers. This research support continues, but since the formation of the WID Unit, information sharing and collaboration have become more formalized.

The WID Unit's objective is to support research on the integration of women into development. The Unit is active in an advisory and project development capacity, with the overall function to enhance and coordinate the Centre's support for research related to women. However, the Unit is not intended to be the only mechanism within the Centre through which research on women is supported. Other programs are encouraged to continue to support research related to women with or without the financial and/or technical participation of the Unit.

B. Experience of the Health Sciences Division

The Health Sciences Division, by its program emphasis and by certain activities it has supported, has demonstrated a recognition of the importance of the participation of women, both in development and in research for development. In particular the programs of the former Water Supply and Sanitation and the Maternal and Child Health sectors, were evidence of this. The HSD's evolution to embrace a holistic approach to health with an

emphasis on the health of communities, underlines the need to find ways to ensure that the research that is funded is relevant also to the health needs of women in those communities.

1. Water Supply and Sanitation

The division has for many years recognized the crucial role played by women in the area of water supply and sanitation. This has been reflected in the high proportion of female project leaders, engineers and managers supported, and in the types of projects supported. Research has been funded that examines or encourages the role of village women in relationship to the introduction, installation, correct use and maintenance of water supply and sanitation facilities.

Over the last four years, the division has organized and supported three seminars that have discussed and examined women's roles in water supply and sanitation programs. The first, held in Manila, the Philippines was mainly for project development and for the establishment of informal research networks. Some of the research proposals generated at this meeting have since been supported by IDRC, some by other donor agencies.

The second, a one-half day seminar held in Ottawa highlighted the importance of the involvement of community members, especially women in water supply and sanitation activities. A third meeting was held in Manila in April 1988 to examine research issues and utilization of research results pertaining to women in development issues. Recommendations arising from that meeting stressed the importance of maintaining the community/women focus as projects are implemented on a larger scale.

2. Maternal and Child Health

Research aimed at improving the health of women has always been a priority of the Health Sciences Division. Fundamental to the rights and true equality of women are reproductive health and reproductive choice. Since 1971 the division has supported many research projects in the area of human reproduction and family planning (94 projects for a total of CAD 21 million). Much of this support was for the development of research capacity in human reproduction and for the establishment of fertility research networks. Other areas of research support included: delivery systems for family planning services and programs; the investigation of risk factors and possible adverse health effects associated with contraceptive use; the relationship between breastfeeding and amenorrhea; and the development of educational materials for the clinical introduction of contraceptive devices. Minimal support has been given to research on infertility and on adolescent fertility, which are likely areas of interest for future funding.

Research to improve obstetrical care during pregnancy and pregnancy outcome has also received much attention by the division. Projects supported recently include: Prevention of Pregnancy-Induced Hypertension (Argentina); Maternal Health in Tegucigalpa (Honduras); Traditional Birth Attendants (Zimbabwe) and the multi-country project, Psychosocial Behaviour in Pregnancy Outcome (Latin America) which studies the effect of psychosocial support during pregnancy on pregnancy outcome.

In the area of nutrition, the division has funded research projects on anemia in pregnancy and the promotion of breastfeeding; and in the area of diseases of women, a project on cervical cancer prevention has been supported.

3. Other Initiatives

The health of women workers in developing countries has been an area of some concern for the division. However, up until now only one project, which examines the occupational health risks of female factory workers in Korea, has been funded. It is hoped that in the future research on health risks to the agricultural labour force will be supported. In many developing countries, women and children, an important but often unrecognized part of the agricultural labour force, may suffer from occupational (and accidental) exposure to pesticides.

The division has also sponsored the participation of six female project leaders from developing countries to Forum '85 in Nairobi, a conference of non-governmental organization organized in conjunction with the end of the United Nations Decade for Women.

One significant activity for the division in 1986-87 was the joint sponsorship with the Rockefeller Foundation of an initiative whose purpose was to identify key research issues concerning gender, technology and development in the third world. This initiative stimulated much discussion in the Centre and a greater awareness of the need for further research.

As well, together with the WID Unit and the Fellowships and Awards Division, the Health Sciences Division will be sponsoring an intern to come to Ottawa to conduct research of interest to the Centre and to the intern herself, in the area of women, health and development.

C. Association with the WID Unit

The Health Sciences Division works closely with the Women in Development Unit to ensure timely exchange of information and ideas. This allows for the coordination of project activities and other activities relating to women in development. In FY 1987/88 and again in FY 88/89 the HSD provided \$250,000 to the WID Unit. Besides the financial support, a program officer from the HSD was appointed to act as a liaison between the division and the WID Unit and to coordinate activities pertaining to WID issues within the HSD.

Women, health and development is not envisaged as a separate program area within the Health Sciences Division. Instead, the division will further stress the importance of looking at women's health issues within the context of broader questions of women's roles in production and reproduction. It is critical that women's health be examined from a stand that takes into account not only the physiological aspects but also the environmental and social contexts. The WID Unit can provide support to the HSD in the development of projects in areas which have a health component but which do not fall directly into the regular program areas. Further, where appropriate, the WID Unit can help with integrating gender analysis into projects supported by the division. Gender analysis involves a careful consideration of the socioeconomic and cultural factors surrounding a particular health issue and

an examination of the extent to which the particular expectations of and demands placed on women in the society under study may lead to health problems.

IV HEALTH SCIENCES DIVISION APPROACH TO WOMEN AND HEALTH

The division will continue to fund research into women's health problems but will do so with the recognition that present health care systems exist in an unjust society. Radical change within society is needed for women to overcome their present oppressed situation. However, the division also recognizes that health is an important component of development and that women in developing countries have urgent health problems that must be met. The division further recognizes the importance of the social dimensions of health care and that women must be involved when solutions to their health problems are sought.

Therefore, the HSD support for research on women, health and development will take a two-pronged approach consisting of:

- a) support for research activities that attempt to uncover and understand the health risks facing women and to find appropriate, affordable solutions to meet their special health needs; and
- b) support for research activities that lead to an understanding of and facilitation of women's roles in providing health care to their families and communities.

A. Research on the Special Health Risks and Health Needs of Women

Further study of the health risks to women as they carry out their productive and reproductive roles is needed. Information is required from the micro (individual/community) level as well as from the macro level that includes a study of the social and legal structures that affect women's health. Studies at the community

level must be carried out in full recognition of the cultural, religious, social, economic and physical environment for the women concerned. Health beliefs, health practices, available health services, changing health needs of women over the course of their lives, decision-making with regards to seeking health care, etc. must be taken into consideration. Research is also needed in the area of occupational health, especially those situations which compromise the health of women workers and their (unborn) children. For example, an important question that needs answering is what has been the impact of technological change in agriculture on women's health and nutrition? This holistic approach recognizes that women and their health needs do make up a single homogeneous category but that their needs will vary from village to village, province to province and country to country.

With the recognition that knowledge is a source of power, research on women's health needs should be undertaken with the involvement and participation of the women themselves. This will ensure that any health interventions that result will take into account women's traditional knowledge regarding health and build from there.

A non-traditional form of research, or action research, can be appropriately used when studying women and health. This research involves the women themselves, is more closely linked to social change and has a number of consequences of interest to the Centre. Action research helps to close the gap between the Centre's clients (the researchers) and its beneficiaries (the people in developing countries) and helps to ensure the relevance of the research undertaken. Further, involving communities in all phases of research from initiation to the planning, conducting and evaluation, may help to ensure utilization of research results by the communities most concerned. A dilemma for the Centre, however, that should be addressed when support for action research

is contemplated, is the ethics of raising a community's expectations that something will be done to improve their situation. Once the research is completed, the community still must solve its problems, often in the absence of political will and the necessary resources.

The action or participatory research approach has become an important feature of women's research. It helps to uncover the "why" behind the health situation of women, going beyond a mere description of their situation. Health may not be a priority for communities engaged in participatory research where communities set their own research agendas and, in effect, control the research process. Communities rarely count health problems among their priority needs. Economic considerations are often more important with health needs of lower priority. Christine Obbo's 1980 study of women in East Africa found that women preferentially wanted power, status and wealth, the same as men. However, the men tended to regard any attempt by women to seek more opportunities for acquiring these goals as their "getting out of control"!

B. Research on Women's Roles as Providers of Health Care

It has already been shown that women provide a significant amount of primary health care to their families and communities, both in the formal health care systems and informally. However, this is not well understood in terms of time and cost requirements. As well, it is felt that the potential exists for a wider, more effective role for women.

However, when considering this wider, more effective role for women, researchers should not consider women (or men) as readily available unpaid workers to bring health services to rural areas. For the rural poor, survival and security are of prime importance. It has been found that when projects that offer women new opportunities enter a rural community, families have to evaluate the new risks and advantages compared to traditional strategies that exist for their women.

Not enough thought has been given by health planners and administrators to the nature of the burden which the primary health care strategies and technologies impose on women. Their other traditional duties (eg. cooking, cleaning, child care, food production, etc.) remain unchanged so that new responsibilities (eg. taking children to the nearest facility for a series of immunizations, growth monitoring) are additive. Research should seek to understand the time, care costs and the opportunity costs to women as both providers and recipients of primary health care. The effect on women of the introduction of cost recovery primary health care programs is needed. Selective primary health care strategies are almost exclusively targetted for implementation by women. As well, research should seek ways to encourage and support men's involvement in family health care so that the burden is shared more equally by men and women.

It is further hoped that the women themselves will benefit from a greater understanding and recognition of their contribution to primary health care. Ministries, planners and policy makers need to be aware of what women are doing so that they will be properly considered for technical training, and receive timely and appropriate inputs and compensation. This in turn could be a stimulus for improving the status of the women health worker.

The feminist viewpoint which calls for a transformation of society to a more just one with equal access for women and men to available resources, just pay for work performed and a restructuring of relations between men and women, has relevance for women and their health needs. Researchers have up to now been concerned with efficiency of health services rather than equity in health services. A greater concern for equity means that researchers and planners must take women into proper consideration when devising systems of health care.

Within the two broad categories for research outlined above, priority areas for research still remain to be identified. These will be determined within each of the three HSD programs, together with appropriate regional input. Women's studies in developing countries, which have been undertaken by local women researchers and activists can provide the contextual framework within which women's health concerns can be addressed. What follows are general recommendations for the HSD when considering support for research projects and other research-related activities.

V RECOMMENDATIONS

The recommendations below are basically of two types: those relating to substantive issues (health risks, women's roles in health, etc.) and those relating to efforts by the HSD to encourage women researchers, research methodology, etc.

A. Recommendations related to substantive issues

1. Women's roles in health development - Women in developing countries provide a large share of primary health care services to their families and their communities. This may be as female traditional healers and birth attendants or as community health workers, often without the necessary support and referral facilities. It is therefore recommended that:
 - the division support research that examines the involvement and enhancement of women's roles in health services delivery at the community level. Women should be involved in all aspects of primary health care including the identification of the community's health needs, the development of plans to meet these needs and implementation of these plans.
2. Women's special health needs - Women have special health and nutritional needs related to pregnancy, childbirth and lactation that are not being met by existing health and social services in developing countries. It is therefore recommended that:
 - the division support research that, with the participation of women at the community level, identifies those health and nutritional needs and seeks ways to solve them.

3. Risk factors related to women's health - Women's productive and reproductive activities can at times and under certain circumstances pose special health risks to women. As well, a woman's economic and social condition will determine if she is able to use existing health services. It is therefore recommended that:
 - the division support research in order to identify and reduce risks to women's health as well as to seek out ways to preserve and promote the health of women.
- B. Recommendations related to research support
 4. Human resources development - In many developing countries, women have not had the same opportunities for education, training and employment as have men. Women researchers may be less experienced and have less seniority. It is therefore recommended that:
 - the division support, when appropriate, female researchers, principal investigators and managers, providing training and other support when necessary. It is also recommended that the division make a special effort to select and support women researchers to attend international conferences and seminars, where men most often predominate.
 5. Research methodology - It has been found that standard surveys and some traditional information-gathering techniques do not always elicit the opinions of or information relating to poor women. It is therefore recommended that:

- the division support regional workshops to train researchers in appropriate research methodologies for collecting data regarding women - including participatory research methodologies, anthropological and social sciences techniques, training in gender analysis, rapid rural appraisal, etc.
6. Data base on women researchers - In order that the division monitor and evaluate the support provided to female researchers and the training opportunities provided for women researchers, managers and others, it is recommended that:
- the division establish and maintain a data base that allows identification by gender of its principal investigators and other researchers.
7. Support for women's groups - In many instances, women's organizations and women's action groups are in a position to determine and to respond to a community's health needs. It is therefore recommended that:
- the division support research undertaken by non-governmental organizations, including women's groups. These projects will be considered more "risky" since they will often be conducted by persons with little formal research training and experience. This research should therefore be conducted in a way that allows for training and for collaboration between the NGO, the health system, and university researchers.

REFERENCES

Blair, P.W. ed. 1981. Health Needs of the World's Poor Women. Equity Policy Centre, Washington, D.C. 204 pp.

Conable, Barber B. 1987. Safe motherhood. World Health Forum 8(2): 155-160.

D'Souza, S., A. Bhuiya, S. Zimicki and K. Sheikh, 1988. Mortality and morbidity: the Matlab Experience. IDRC Technical Study 56e.

Ellis, P. September 1986. "Methodologies for doing research on women and development. In: Women in development: perspectives from the Nairobi Conference. IDRC-MR 1373. 244 pp.

IDRC. 1985. Women's issues in water and sanitation. Attempts to address an age-old challenge. 104 pp. IDRC-236e.

IDRC. June 1987. Seminar on the participation of women in water supply and sanitation programs. 72 pp. IDRC-MR150e.

Key, Penelope. 1987. Women, health and development, with special reference to Indian women. Health Policy and Planning 2(1): 58-69.

Lopez, Alan D. 1984. Sex differentials in mortality. WHO Chronicle 38(5): 217-224.

Maguire, P. 1984. Women in development: an alternative analysis. Center for International Education. Amherst MA. 66 pp.

Maine, Deborah. 1985. Mothers in peril: the heavy toll of needless deaths. People 12(2): 6-8.

Obbo, C 1980. African Women. Zed Press, London, U.K. 166 pp.

Pizurki, H. et al. 1987. Women as providers of health care. WHO, Geneva. 163 pp.

Rathgeber, E., January 1987. Women in development: Some thoughts on IDRC support. Unpubl. 38 pp.

Royston. E. 1978. Morbidity of women: The prevalence of nutritional anemias in developing countries. WHO. Geneva

Sivard, Leger R. 1985. Women ... a world survey. World Priorities publ. Washington, D.C. 44 pp.

Thorborg, M. ed. 1986. Identification of priority research issues on women in Asia and the Pacific: A report on research and research organizations with bibliography. SAREC. 2 vols, 166 pp and 139 pp.

United Nations, July 1985. "The Nairobi forward - looking strategies for the advancement of women", Nairobi, Kenya. United Nations Decade for Women 1976-1985.

White, Pelzer and K. Young, eds. 1984. Research on rural women: feminist methodological questions. IDS Bulletin 15(1). 68 pp.

WHO, 1984. Women in health and development: the view from the Americas. WHO Chronicle 38(6):249-255.

WHO, 1985. The United Nations Decade for Women: an end and a beginning. WHO Chronicle 39(5):167-170, Geneva.

WHO, 1985. Women, health and development. A report by the Director-General, Geneva.

WHO, 1986. Maternal mortality: helping women off the road to death. WHO Chronicle 40(5): 175-183.

World Federation of Public Health Associations. March 1986. Women and Health. Information for action issue paper. Geneva. 80 pp.

Zandstra, I. April 1986. Women's roles in health development. Unpubl. 39 pp.

Draft

(30/06/1988)

REGIONAL STRATEGIES

With Particular Reference to the Health Sector

A POSITION PAPER

Presented to

The Division of Health Sciences

International Development Research Centre (IDRC)

by

KARL A. SMITH

CONTENTS

	Page
Introduction.....	1
Canada's Position on International Development Assistance.....	2
Centralization and Decentralization.....	5
IDRC'S Regional Strategies - Past and Present	13
Regional Strategies of the Centre's Different Divisions.....	22
HSD's Regional Staffing.....	28
The HSD's Policy and Regional Strategies.....	32
Next Steps.....	37
Evaluation.....	41
Summary.....	43
Bibliography.....	44

REGIONAL STRATEGIES

Introduction

This paper is presented as an extension of Section E of the Strategic Plan Part II, prepared by the Health Sciences Division; and is intended to provide more detail than given there on thinking regarding regional perspectives as well as to spell out the activities of other divisions of IDRC at the regional level. Reference is made to various other documents which have been prepared by the division as well as by others.

There is a range of issues examined, including the government of Canada's recent pronouncements on international development assistance and some implications for IDRC-CIDA collaboration; centralization vs decentralization in development activities; the role of IDRC's regional offices and staff, as well as implications for the preparation and deployment of such staff; and finally how all of these considerations could determine and modify the division's global as well as regional strategies.

Canada's Position on International Development Assistance

Canada's generosity in overseas aid is widely acknowledged and very welcome. Despite shortcomings regarding its organization and delivery and even in the face of perceived need at home, Canadians still think it worthwhile and good to support ODA and to deliver it well. The motivation is partly humanitarian (recent events, including the African droughts, have highlighted this); but also, ultimately, enlightened self interest in terms of long term mutual benefit, through the promotion of goodwill and trade.

In delivering development aid, not only is stability at the recipient end seen as a sine qua non; but considerations of equity, dignity and the development of self-reliance are stressed.

The Standing Committee (of the House of Commons) on External Affairs and International Trade, after an exhaustive examination of Canada's Official Development Assistance Policies and Programs, submitted a Report to Parliament (The Winegard Report "For Whose Benefit") in May 1987. In September 1987 the government responded to a number of recommendations made in that document, accepting most of them ("To Benefit a Better World"). Parts of these documents are of particular relevance to IDRC and its operations, especially at regional levels; and a few issues are now highlighted.

Foremost, it is stressed that ODA is designed to meet the needs of the poorest countries and people; and within this context human resource development is paramount. The major emphases are placed on women, primary health care and education.

The policy underpinnings in terms of Canada's national interest are:

- humanitarian, to alleviate human suffering and promote social justice;
- political, to increase stability and improve the climate for peace; and
- economic, to promote growth, stimulate international trade and Canada's own long term economic prospects.

The three thrusts are seen as complementary.

It is emphasized that in strategic terms the aim is to break the (poverty) web of ill-health, poor nutrition, lack of education and high fertility. The implication is for an integrated, multisectoral approach to development.

Other elements worth noting include the need for improvements in planning and management skills at the recipient level; the necessity for consistent, long term, sustained aid; and the desirability of aid being delivered in an atmosphere of partnership between the ODA operatives and the recipients, elaborating projects and programs with local participation in such a way as to ensure that the beneficiaries are indeed the poor.

In order to rationalize the elements of Canada's development assistance program, a Development Assistance Charter is recommended as part of a legislative mandate. This has been accepted with modifications by government, without the legislative component.

Canada's ODA reaches its recipients through many channels, the Canadian International Development Agency (CIDA) being the major direct one. CIDA provides aid through multilateral agencies; to a major extent through bilateral agreements; but also through Canadian third parties (national academic, business and other organizations), as well as Canadian and third world non-governmental organizations. While CIDA does from time to time support research, it is mostly engaged in technical assistance. It is IDRC which, by Act of Parliament, was set up specifically to provide aid for development through the research mode. Enough has been written in others of the Health Sciences Division's position papers on IDRC's mission and objectives as not to necessitate repetition here.

In the operations of CIDA and IDRC it has been an ideal that the two should closely collaborate - IDRC sometimes providing the research results as the basis for CIDA's technical assistance programs. However, for a variety of reasons, this ideal has not been met in the past.

In discussing IDRC, the Winegard Report, while being on the whole complimentary, did have some criticisms to make. On the negative side, there was a perception of much bureaucratic growth, and a slowing down of the Centre's responsiveness to requests for research support. In addition, despite a degree of decentralization to our regional offices, it was felt that decision-making is still concentrated too much in Ottawa. On the positive side the fact of attempts at decentralization was praised.

One of the major criticisms of CIDA was the highly centralized nature of its operations; and recommendations were made for decentralization and delegation of decision-making. They were accepted in principle or fully. Some action is already being taken towards their implementation.

The Winegard report calls for a link between IDRC and CIDA: more practical ways for IDRC research to be built into CIDA projects, especially in human resource development. Staff exchange programs and joint projects were suggested as two modalities.

So far as IDRC itself is concerned, one specific area of need was seen as agricultural research for sub-Saharan Africa.

Centralization and Decentralization

In this section the relative merits and disadvantages of centralization and decentralization of planning, management and decision-making are examined on a

theoretical basis; as seen in practice in some development programs in developing countries; as perceived for CIDA through the eyes of Canada's parliament and government; and as seen by IDRC for its operations.

Centralization

Much of modern experience in centralization/decentralization has accumulated in developing countries since World War II, following decolonization; and the literature is replete with reports of various attempts by these countries to decentralize, as a consequence of disenchantment with the results of a centralized approach to the solution of development problems. It is in the developing (as distinct from the developed) countries, where governments play dominant roles in guiding development, that these changes are seen most dramatically.

The major theories of economic development that were propounded in the 1940s were compatible with central control. Capital intensive industrialization policies, if they were to maximize gains in GNP, required strong intervention by national governments in investments and processes for production, with centrally conceived, comprehensive plans for national development. This intervention would provide rational and coherent policies for the effective use of scarce resources and the promotion of rapid growth. Central planning was presented and insisted upon by international aid agencies for promoting modernization, accelerating socio-political change, mobilizing capital and generating employment. National plans would direct public as well as private investment.

The benefits of investment, concentrated in metropolitan centres, would "trickle down" to the periphery, alleviate poverty and generate capital which would be reinvested, go through the cycle again, leading to self-sustaining economic growth. It was thought that regional disparities would slowly disappear, with benefits for all. Finally, for countries just emerging from long periods of colonial rule, there was an integrative function seen in central planning.

Within about a decade disillusionment had set in. Economic growth was sluggish in most countries; where growth was reasonable, it tended to favour a small elite; regional disparities often widened; the poor became poorer and relatively more numerous. Above all, it was difficult to follow the external prescriptions for comprehensive and long term plans for reasons of national internal dissension, as well as lack of the real ability, skills and knowledge to formulate and implement them. Models for macro-economic analysis imported from developed countries were often inappropriate, in the absence of relevant data. It was soon realized that a major missing element was "people" involvement, with the enabling structural transformations necessary in political, social and economic terms.

It seemed, in fact, that through central planning an elite of politicians, economists, technicians and administrators were foisting their own values and priorities on governmental and private organizations and communities rather than promoting participation and equitable distribution of benefits. These perceptions gave rise to a strong movement for decentralization.

Decentralization

A working definition of decentralization is the transfer of planning, decision-making or administrative authority from the central (government) body to its field offices, local administrative units, semi-autonomous public authorities or corporations of non-governmental organizations. There are several forms of decentralization, described in essence as:

Deconcentration - consisting essentially of redistribution of administrative responsibilities. It may involve merely shifting the workload from central ministry or agency headquarters to field staff, without decision-making authority; or true field administration, with some decision-making geared to local conditions, within set guidelines. In some instances there is supervision and coordination locally of various employees of different ministries/agencies by a chief executive.

Delegation - the transfer of decision-making and management authority for specific functions to organizations such as public corporations, regional authorities, special project implementers which are not under direct government control. Implicit is the authority to plan and implement within given bounds.

Devolution - in which central government relinquishes certain functions to independent levels or units of government, outside of its direct control. Implicit is the power to seek and secure resources to perform their functions.

Transfer of functions - usually consists of planning and administrative responsibilities going from government to private, voluntary or non-governmental institutions, in some cases "parallel" organizations such as trade unions, church groups, professional organizations, cooperatives. "Privatization" is one of the means of transferring such functions (2).

The theoretical models and practical experiences discussed above have relevance and application to any proposal for decentralization of agencies such as CIDA and IDRC.

In discussing decentralization for CIDA, the Winegard Report stresses delegation of decision-making, seemingly in line with the more liberal application of the form of decentralization described immediately above as deconcentration. In making the case for decentralization, it is stated that thereby the effectiveness of aid programs will be enhanced, defined as the likelihood of achieving the central objectives in an economical way. This by improving the quality of project selection and management, including quicker adjustment when shortcomings are identified. A call is therefore made for

increasing the number of field staff as well as their decision-making authority. Field staff should include qualified specialists. On the recipient side, the arrangement is seen as allowing for recipient involvement in all stages of decision-making.

Other mechanisms are suggested, including a greater percentage of funds to be spent at the discretion of mission staff, and the setting up of field support units for monitoring, evaluation, administrative and logistical services.

To a major extent these suggestions have been accepted by government.

Some of the disadvantages of centralization that were used as arguments included:

- too long a time taken to make decisions, sometimes years;
- the existing situation lent itself to frequent misunderstandings between headquarters and the recipient;
- there was too much rigidity, too little flexibility in CIDA's operations.

There are costs envisaged for the exercise of decentralization, however.

These include:

-financially, more would need to be spent on administration;

-administratively, there would be some loss of central control;

-politically, there are risks; but the aid program would in reality be more closely tied to, and responsive to, the needs of the developing country partners.

Decentralization in IDRC

Historically the different program divisions of IDRC have practised decentralization to differing degrees.

Since early in the nineteen-eighties the Division of Agriculture, Food and Nutrition Sciences decided that the greater part of its staff, including some associate directors, would be based regionally; and that trend has continued with some 75 % of staff now in field positions, among them about one third in the two main African offices. The rationale has been responsiveness, within general policy guidelines, "to outside initiatives, rather than controlling its own direction" (AFNS In Depth Review, September 1985). So increasingly program officers with specific skills are placed in regions where the subject matters as related to their skills are considered as priorities. However, at the same time these specialists, while placed in regional offices, have responsibilities globally, in terms of the use of their skills and knowledge.

Budgeting, in these circumstances, tends to be problematic. Allocations are made to a sub-program or region based on the estimated number of new projects in the succeeding financial year. The degree of responsiveness is therefore somewhat compromised, it seems. However there does appear to be a real transfer of decision-making, within these constraints, to officers who happen to be mostly located in the regions (liberal deconcentration, above).

The Social Sciences Division has tended in the past to be more centralized, with policy and decision-making residing in Ottawa. However in keeping with the general trend in the Centre these days, additional senior staff are being placed in the field. A decision has been made recently to increase the number of regional staff, and to delegate signing authority to regional directors for some types of collaborative research.

Similarly the Information Sciences Division seems to a major degree to have been centralized, with policy formulation and decision making residing in Ottawa. However there is evidence that there is a move towards a degree of decentralization, with regional program officers being asked to an increasingly greater extent to give their opinions regarding needs and priorities and to make suggestions for discussion at general staff meetings.

The Health Sciences Division has in the past been very markedly centralized. Over time it has become less rigidly so, with regional staff making inputs into the division's plans and policies. This has been particularly the case

over the past couple of years, with the opportunity offered by the arrival of a new director and with discussions leading to the development of a new strategic plan.

Among the non-program divisions, the Fellowships and Awards Division has gone a long way to decentralization in that it has officers in the regions who do play a cardinal and somewhat independent (of head office of FAD) role in decision-making within their budget allocations. Advice is sought from other divisions as appropriate, both at regional and at headquarters levels.

Whatever has been happening at divisional levels, Centre Management has been consistent in promoting decentralization though, in the opinion of some, not always providing the necessary resources. From the outset it was decided that a major part of IDRC's operations would be the establishment of regional offices, close to the arenas for action, through which its research supporting activities would not only to some extent be formulated; but also would be channelled and monitored. In recent times management has been quite insistent on further decentralization and the Board has given impetus to this direction.

IDRC'S REGIONAL STRATEGIES - PAST AND PRESENT

As indicated above, it was decided at the outset that IDRC would operate through regional offices, these being sited in the geographic areas where existed the problems to be solved through research.

The Regional Director, the President's appointee, has had the responsibility for managing the affairs of the office (with necessary support), for making and maintaining contact with relevant government and other institutions and agencies, for assessing the general research environment and potential, and for discharging the Centre's "diplomatic" work - discussing, preparing and signing country agreements to enable and facilitate the work of program staff, for the most part.

Program staff, the majority at program officer level, have been administratively subject to the Regional Director's control; but technically and ultimately have reported to divisional directors in Ottawa who, within the broad policy guidelines of the Centre, have decided on their own policies and priorities. In some instances one could hazard a guess that regional priorities, as decided by headquarters staff, have borne less than desired relevance to priority local needs, and have often been "globally" decided. It has been shown in the previous section, however, that some divisions have considered that their regional strategies for staffing and development helped to ensure relevance.

Some eight years ago senior management, cognizant of the sizes of the regions existing, the diversity of situations and needs within them, and the increasing volume and complexity of needs, proposed an increased number of regional offices, mainly as small, subregional ones. This initiative had to be shelved, however, due mainly to financial constraints. There appeared also

to be questions concerning the existence or otherwise of critical masses of staff; and relating to difficulties in coordination and communication, among others.

In the Policy and Management Seminar held in the Centre in the spring of 1986, the issue of Centre-initiated research was one discussed. Among other things looked at was the appropriateness of using the regional directors in filling out the "assessment" of local situations, in order to help make IDRC funding most relevant and ultimately most useful. It was also felt that concentration along different lines (institution, country, region, sectors) fits in well with the ISRI mode in research strengthening. (See paper on Integrated Strengthening of Research Institution - ISRI). However, the need for widely accepted criteria in such analyses was stressed. The notion of development thrusts was also introduced: the "approach to resolution of problems common to a geographic region and/or a particular aspect of development."

In more recent times the Board and the Centre's senior management have been pre-occupied with the necessity to bring more coherence to all of the Centre's activities, not only to optimize the use of limited human and material resources, but also to focus the energies of staff in addressing priority problems of developing countries in a more holistic, multidisciplinary fashion, with a re-iteration of our aim as development for the alleviation of poverty problems. It is stressed, though, that this is not an attempt at imposing uniformity to the extent of stifling initiative at the divisional level.

The Interim Report of the Working Group on Regional Offices in addressing the desire of both (the then) President's Committee and of the Board to enhance a regional perspective in the Centre's planning; and in stressing the need to study the implications of further resource allocation to the regional offices and to identify ways for further delegating decision-making, examined possible regional office models around three concepts:

- (a) decentralization
- (b) the nature of the program officer: generalist or specialist?
- (c) the level of staffing, by Division

Decentralization is seen to exist in varying degrees among the divisions, in terms of the regional P.O.'s authority in decision-making as related to project development and especially budgetary autonomy.

Concerning decentralization (a), the HSD is ready to extend this further, with more autonomy being given to regional staff in terms of DAP activities and interdivisional collaboration and in some of the ways recommended immediately below by the Working Group, so long as they have Centre agreement and the mechanisms are worked out.

Great attention is paid by the Working Group to (b) above, the nature and function of the P.O. Three types of P.O. are described:

- (i) the specialist (in nature) who functions as a specialist
- (ii) the specialist who functions as a generalist
- (iii) the generalist who functions as a generalist.

It is pointed out that different divisions have adopted differing approaches: AFNS and FAD have gone for (i); SSD and HSD for a mixture of (ii) and (iii); (the then) COOP for (iii), but moving towards (ii); and COMM and IS who have operated along the lines of (iii).

In relation to the nature and functioning of HSD regional staff, it can be stated that the Division will certainly be moving more towards a mixture of types (i) and (ii) above, with the RR being type (ii), the RPO being type (i). (See Regional Staffing, below, page 29).

The paper also echoes the Wineyard Report in many respects, stressing increased knowledge of and association with the local situation and enhanced speed in responding to requests as desirable aspects of decentralization. This has implications in the level of staffing, (c) above.

Specific suggestions from the Working Group which are also germane include the following:

- a regional role in the approval process, through a regional project review committee including the Regional Director, regarding projects of less than 100,000 CAD;

- regional project budgets, for project activities not falling into divisional programs;
- extension of "envelope projects"; a larger amount of divisional funds for a specified program area, to be disbursed by the regional office. (See page 20, below).

In keeping with this newest thinking there are many implications and action for regional strategies:

- Ways are being sought for regional directors to make greater inputs into Centre planning. Their opinions are being heard at Board meetings; and it is suggested that ways be found for their involvement with the (new) Program Committee. They are asked to submit plans, elaborated through discussion with regional staff, on possible regional thrusts (sets of activities appropriate to meeting needs seen as common in the regions, or subregions); they have been asked to submit lists of possible candidate institutions in their regions for the proposed, formal integrated support for research institutions (ISRI, institution strengthening/capacity building).

In a general way, it is proposed that they assess regional development priorities and attempt to help identify relevant contributions which IDRC can make. They are also being asked to promote cohesion among programs in the region, particularly by encouraging and leading interaction among (regional) divisional program officers.

Mechanisms and refinements have still to be worked out, having regard to considerations of technical as against administrative niceties.

- At the Program Officer level, interdivisional collaboration is encouraged in terms of project development, funding and monitoring.
- Regional program officers are also encouraged to work closely with regional directors in advising on regional initiatives, priorities, thrusts.
- An increasing degree of deconcentration is being allowed program officers through the allocation of increasing amounts of DAP funds for use, at their discretion, for demonstration or exploratory studies in their regions, in keeping with broad divisional policy.

In addition, the Centre has over the past several years made available increasingly larger amounts of funds to the regional offices, to be used at the discretion of the regional directors for activities which while related to the interests and programs of IDRC, are not covered by regular program funds.

From the Office of Planning and Evaluation, in a recent memo to the Program Committee, are some suggestions regarding the roles of regional officers and regional directors. Though not necessarily completely acceptable to some Centre staff, they have some relevance to the question of the strategic deployment of skills.

In discussing the role of the Regional Director, the same memo recommends that this include the collection of planning information, with data on:

- development needs and opportunities;
- research needs and priorities;
- the availability of resources, material and human, from all sources.

On many of these modalities and particularly the newly suggested ones, the need has been expressed for further discussion and study, particularly with respect to implications for resource allocations. There is also a call for identifying ways of further delegating decision-making to regional offices (? likely to remain at deconcentration).

Some regional offices have already been looking at specific means by which to further decentralize. In ASRO, for example, it is pointed out that a certain measure of administrative decentralization already exists, particularly within the context of the so-called Phase C operations (applying to ASRO and LARO). Furthermore, all offices already have the PODA and ROF mechanisms, which amount to a degree of program decentralization. In furthering the latter, it is suggested that there be a Regional Envelope Scheme, the essence of which is that provision be made for interdivisional regional collaborative projects being authorized at regional level, to a ceiling of 75,000 CAD, with each division allocating 50,000 CAD per year. A regional project review committee

would be formed to oversee these envelope activities, to meet four times a year. There would be a one-year trial period.

In addition it is suggested that regional offices prepare annual Programs of Work and Budget (PWB).

At the WARO staff meeting in April 1988, in keeping with the wishes of Centre management, there will be discussion of regional planning on the agenda. The declared emphasis is to be on interdisciplinary, cross sectoral activities.

In a recent report to The Board, one regional director suggested that decentralization itself is a relevant area for research in his particular region, in order to help governments democratize the political systems at grass-roots levels. The SSD interest in this area is increasing.

Board members have stressed that though problems do seem to be similar in general terms, there are regional differences, needing different approaches for finding solutions.

Of some relevance to a discussion of regional strategies, Board members themselves also often question whether some of the things we are proposing to do (for example, training), should not be done by CIDA!

REGIONAL STRATEGIES OF THE CENTRE'S DIFFERENT DIVISIONS

On the background of the discussions above, related to Canada's position on ODA; to the issue of decentralization; and to the evolution of regional strategies at Centre level, there will now be a review of elements of the different divisional strategies which may be of relevance to, and have implications for, the HSD's own regional strategies, as well as of the HSD's general policy.

In examining the documents prepared by the different divisions during the past few years, the following emerge as their regional strategies.

Division of Agriculture, Food and Nutrition Sciences

In general the AFNS intentions seem to be based on existing systems:

- Agricultural Economics
- Crop and Animal Production Systems
- Fisheries
- Forestry
- Post-Production Systems

The generic regional strategy seems to be to work within these systems, while looking at specific needs, priorities, the environment (research, political,

etc.); and to give support where there are receptive institutions and where AFNS is well established.

According to documents reviewed, it appears that the AFNS Division, having decentralized to a reasonable extent (see above) depends more on responsiveness to requests, and in responding gives priority to those countries, within regions, where the capacity has existed to achieve results. Thus one finds projects with several phases in the same institution; and the results are supposed to be of relevance and importance to the region. Beyond that, regional strategies seem to consist mainly of shifting resources, within existing (sub) programs, to areas where the needs seem to be greatest. An example is food deficiency, with a relative shift of effort from Asia to Africa in recent years.

Other concerns entering into such regional strategies seem to include:

- the presence or absence of a supportive political climate;
- where it is easier to generate "worthwhile" projects.

Certain dilemmas are acknowledged in this way of operating, especially with the Centre's increasing emphasis on capacity building and in concentrating on areas with greatest need (region and country); and options are being examined for changing strategies.

Areas in which there has been collaboration with HSD, and which have the potential for increasing collaboration, include nutrition and toxic environments (incorporating pesticides in agriculture and toxins in food).

Division of Social Sciences

This is the division with which there is the potential for greatest HSD collaboration. The present restructuring of the division is expected to enhance the potential for such collaboration.

1. Africa:

This continent will be an area for concentration of the division's human and financial resources.

a) West and Central Africa

Encouragement will be given to increased contacts and exchanges between institutions and researchers (EARO and WARO), networking, and developing research capacity. Relevant research emphases will lie in infant and maternal mortality, adolescent fertility, sterility.

b) Eastern and Southern Africa

Of interest to HSD will be proposed research on child survival, community health needs, health-seeking behaviour, behavioural aspects of endemic tropical diseases, health education, family planning and the impact of population growth. Institutional capacity building is also proposed.

c) Middle East

In this region research of interest is to be on fertility reduction. Mention is also made of training for population research.

2. South Asia:

Priorities are seen in child survival and development, education and health, fertility and family planning, the design and implementation of health systems, the effectiveness of traditional health care practices.

3. Southeast Asia:

Relevant areas of research are to be in education in relation to community health and fertility; and, specifically in collaboration with HSD, on population-health interactions, including infant and child mortality and morbidity and ultimately tropical diseases.

4. Latin America:

In this region there are to be several research areas of interest to the HSD: child morbidity, malnutrition, and psycho-social development; adolescent fertility; (non-biological) determinants of tropical diseases; education for health.

Major emphases in the different regions are envisaged as follows:

Latin America - economics and policy analysis.

Africa - training, infra-structure building.

Asia - training, networking.

(Middle East - as yet undifferentiated)

In more global terms, regional strategies include such elements as information exchange, networking, south-south collaboration, interdivisional collaboration, research capacity building, coordination of efforts with those of other agencies and methodology development.

It is clear that there are some research areas that are common to all regions. Presumably there will be greater focusing of regional strategies as the plans evolve and are further developed.

Division of Information Sciences

As in the case of the AFNS, there does not as yet seem to be a differentiated set of regional strategies set out in a plan. There has undoubtedly been responsiveness to specific regional needs in the context of global program priorities and directions.

However, as mentioned in the discussion previously on decentralization, regional staff are now being encouraged to bring forward for discussion areas of specific need that they see as priorities in their regions. It is apparently the intention to modify programs in the future in order to be even more relevant and responsive to specific regional needs.

A broad topic area in which there is increasing potential for HSD/ISD collaboration is health information systems, for better planning and management of health services/systems, especially in francophone West Africa. Activity here will cover such disciplines as tropical diseases, occupational health and safety, public health, traditional medicine, nutrition and mother and child health, including family planning.

Communications Division

We have had, and intend to continue to have, good working relation with COMM in publishing reports and manuscripts from selected workshops and projects.

An area in which a new kind of collaboration is proposed is that of dissemination of research results. This is of course of great importance at the regional and local levels; and we will pursue this initiative cautiously.

The Fellowships and Awards Division

The HSD has had a good working relationship with FAD in terms of helping to select candidates for training in the health sciences, and collaboration on workshops on methodology of research. There is every indication that this close and constructive relationship will continue. The two divisions are now collaborating on an in-depth, post hoc evaluation of the training workshops that we have supported over a period of several years.

The Engineering and Earth Sciences Division

This new division, the successor to the Cooperative Programs Division, has so recently been established as not to yet have, so far as is known, a definitive program and regional strategies. In the past the HSD has had good working relationships with COOP, with an increasing number of joint projects.

HSD'S REGIONAL STAFFING

The position of the HSD is that there should be a "critical mass" of personnel in Ottawa, specialized/experienced and multidisciplinary, leading the efforts

at shaping the division's global policy and directions, with inputs from regional staff, and based on information exchange with other health-related agencies, donors and players.

The Regional Representative of the Division of Health Sciences has been and will continue to be what we describe as a specialist generalist*. The individual should ideally have a medical degree and/or training to the doctoral level, with post-graduate training in an appropriate discipline, and with experience, including a major part of the research experience, in the developing world. Individuals will be chosen to best fit the demands of the particular posting (a generic post description is available from the Division).

Regional Program Officers (RPOs) would not necessarily be medically qualified, but would have knowledge, skills and experience in health-related areas, complementary to those of the RR and reflecting regional needs. Indeed recruitment and deployment of regional office staff should be on the basis not only of perceived HSD needs but, in terms of regional thrusts and Centre coherence, also on the basis of Centre (all sectors) need.

The HSD sees, in addition to the RRs and the RPOs a need for Program Assistants (PAs), especially in non-Phase C offices, for administering projects.

* The type (ii) in the Regional Office Working Group Report (see p. 16 above).

The person-year needs of HSD in these terms are shown in Table I of Part II of the HSD strategic plan.

The Role of the Regional Representatives

The duties of the regional representatives, as seen by the HSD, are in brief as follows:

In collaboration with the Director and divisional officers to help develop regional divisional programs and plans as well as divisional policy and program directions; to make contact with researchers and their institutions; to encourage and assist researchers to develop research proposals; to review such proposals; to monitor active projects; to help develop contacts and information sharing among researchers with similar interests (networking); to organize project development meetings as deemed necessary and to organize relevant seminars and workshops. The representative is also expected to make contact with representatives of other agencies with whom we are likely to collaborate, and to develop joint activities with them. In addition the regional representative represents the division at regional and international meetings.

The duties, as now envisaged, will further include working with the Regional Director on regional plans, making relevant health-related inputs; and working with colleagues from the other program divisions on joint activities.

In the near future, hopefully as more person years become available to the division, additional staff will be recruited for the regional offices. Such staff will be at program officer and program assistant levels, complementing the qualifications and experience of the regional representative, as relevant to regional needs. (See also pp. 73, 74 of Strategic Plan, Part II). The regional representative will technically and administratively supervise other HSD staff in the regional office.

It is also proposed that the Regional Representative will screen projects, have peer reviews done locally as judged appropriate, and will participate in the setting up and/or operations of a local (regional) ethical review committee.

The Regional Representative will, on a discretionary basis, keep a portfolio of regional projects reflecting personal interests and expertise. Travel and contacts of headquarters staff with regional researchers will be arranged through the good offices of the regional representatives and regional directors.

A profile of the HSD's present regional representatives is attached.

THE HSD'S POLICY AND REGIONAL STRATEGIES

An overview will now be given of the HSD's suggested regional strategies, based on all the above relevant information and plans.

As stated in the Strategic Plan (Section E, page 67), the HSD's regional strategies are to evolve in step with global strategies, and through an interactive process, each feeding into the other.

The Strategic Plan of the Division clearly gives the global view of how health problems will be approached, in a holistic fashion, with emphasis on the community and on people, and using the skills and talents of various disciplines both within the division and across divisions. The vehicles for the implementation of this strategic plan are the three research programs described, "interdependent and interactive" in nature and scope (Health and the Community, Health and the Environment, Health Systems). The elements and dimensions of the programs have also been clearly detailed.

At the regional level, regional plans are being or are to be evolved, having regard to the special needs of the regions, gaps which are seen to exist, and opportunities which may present themselves particularly in the context of IDRC's comparative advantage.

In drawing up these regional plans ideally institutions, researchers, the users of research results, development agencies and other relevant and interested groups, including community organizations, will be consulted.

Existing health, socio-economic and other development-related data will be collected, collated and analysed as well. There may even be a need for special research to be undertaken to generate data for these planning purposes.

All of these data, taken in conjunction with the other divisional strategic intentions as related to health (see pp. 22-28 above) should then be collated and reconciled and form the basis for the modification or the refinement of the global strategies. This will be done every 2 years or so. The modified global strategies will likewise be fed back into the formulation of the regional plans, certainly with respect to health or health-related, intersectoral, facets of them. This iterative process will continue indefinitely.

To the extent that regional plans have already been developed, the regional representatives of HSD, together with Ottawa staff, must begin to shape the regional strategies, having regard to the other division's regional intentions as stated above. The elements already exist for regional plans for East and Southern Africa and for West and Central Africa (see paper on Building Research Capacity in Developing Countries); as well as for Latin America.

For the former two they include, in summary, relevant training (including epidemiology, systems research, management) and research support for confronting the major regional problems (AIDS, sleeping sickness, drought, famine); institution building; and dissemination and use of research results.

For the last, the major elements have to do with integrated (multidisciplinary) approaches to research on the welfare of the inhabitants of the high Andes; and on the artisanal fishermen of the Caribbean and Pacific coasts.

So far as health is concerned, the L.A. regional representative, in collaboration with head office staff, has already indicated some tentative elements of a regional strategy, apart from involvement in the above. These include:

- identifying priority health (as distinct from medical) issues, and supporting research around them, working with the appropriate institutions;
- using health education/health promotion as an entry point in several situations, in different countries, in collaboration with the Pan American Health Organization (PAHO/WHO);

- in being somewhat proactive, identifying, strengthening and working with specific institutions, strategically situated:
 - . geographically, within countries
 - . regionally
 - . related to deprived communities (e.g. in specific countries, in regions of countries)
 - . having an orientation towards community health/primary health care/health education.
- networking, using project identification/development meetings;
- cultivating particular roles of institutions in the emerging countries of the region, especially with respect to development and testing of methodologies likely applicable in other countries, at least in the region; and in coordinating network research activities;
- using specific institutions (and researchers) in Latin America as resources in consulting for appropriate African countries (e.g. Brazil - Mozambique);
- being more selective about projects supported, more deliberate and less all-embracing, in keeping with the attempt of the division to focus more on the beneficiaries of our support.

Much of this is certainly consonant with the new directions of the Division. Specificity must now be given to these elements, matching global and regional imperatives, and with due attention to the intentions of the other divisions.

NEXT STEPS

1. The HSD will as quickly as possible to fill the one existing vacant regional post. Further needs in terms of regional human resources will be carefully assessed, discussed with Centre management and, to the extent permitted, provided as soon as is practicable.
2. In filling further posts, consideration will be given to complementarity with existing regional staff; to unique regional needs; intersectoral (interdivisional) intentions and intersectoral opportunities at the recipient end. This will necessitate working closely with the regional directors and regional staff of all divisions.
3. Staff will be fully (re)oriented to Centre and Divisional policy and to HSD regional intentions. Those being recruited and deployed for the first time will be given special attention, with exposure both at headquarters and in the field.
4. Divisional and regional office staff, including the HSD's regional representatives and the regional directors, will be brought together to work out mutually supportive strategies and plans for regional offices,

4. (cont...)

having regard to specific regional needs and opportunities. Priorities will be agreed on, and plans made to pursue them. As indicated previously, some research may need to be undertaken in order to obtain some of the necessary data.

5. Lines of communication and reporting will be examined and clarified; as will levels of authority and decision-making.
6. In all of these efforts due regard will be paid to the intentions of the other research divisions.
7. The Division will continue to collaborate with FAD, especially its regional representatives, in human resource development; and with COMM in efforts to improve the dissemination and use of research results.
8. Given the new injunctions to CIDA arising from the Winegard Report; and given the "concerns" of Board members about IDRC's training role (see above), we will make similar efforts to be involved with CIDA in human resource development.

9. Efforts will be made, in the same light, to collaborate with CIDA in joint efforts in the regions. Attempts will be made to mount projects in which there is common interest based on perceived need; the research phase (mainly IDRC-supported) providing CIDA with data as the basis for decision-making as related to their technical assistance/aid.

There is evidence that some regional CIDA staff is ready for such collaboration, as for example, in Indonesia with respect to water and to environment.

10. In collaboration with headquarters and regional staff of all relevant divisions, efforts will be made to identify institutions for the application of integrated support (ISRI) both from the multisectoral as well as from the more unisectoral (health) perspectives, as discussed in the Division's paper on Building Research Capacity. Africa will be given priority consideration.
11. Greater efforts will be made to collaborate with non-governmental organizations (NGOs), both Canadian - such as the Canadian Public Health Association (CPHA) and local ones, in their programs (e.g. the immunization program supported by the government of Canada through CIDA). The specific role of IDRC is seen as providing know-how and

11. (cont...)

support for the operational research which may be necessary for effective programs. The emphasis will be on local and regional concerns, especially as related to primary health care.

12. Efforts will continue, especially at regional level, to collaborate with other health-related agencies in joint programmes, with IDRC's main interest remaining the research aspects. Agencies are WHO, UNICEF, the Population Council, PATH, the Rockefeller Foundation, the Ford Foundation, to mention a few. Such collaboration will also be fostered with groups such as the Independent Commission for International Health Research, from whom valuable and useful information can be obtained, relevant to regional needs.

The exact mechanisms, which will include information exchange, will be the subject of further discussion and communication with potential collaborators.

13. We will be consciously seeking opportunities for the promotion and support of south-south collaboration, through such means as consultancies, joint projects and networking.

14. We will also constantly look for opportunities for the use of appropriate and available Canadian knowledge and skills which will be brought to bear, in a consultative or collaborative way, on the solution of problems at the regional level. This will simultaneously be strengthening the international involvement and growth of Canadian institutions.
15. The HSD will examine carefully, with regional staff, measures for strengthening the local peer review process, following screening of projects by the HSD regional representative and including appropriate other regional staff.
16. The HSD will also examine the feasibility of being involved with the setting up and the operation of regionally based ethical review committees, in collaboration with OSGC.

EVALUATION

On this matter another HSD position paper has been prepared, to which reference should be made. However, it is necessary to stress that, in association with OPE, any new initiatives, such as experiments with "regional envelopes" should have appropriate evaluation built in. HSD will naturally wish to be involved.

The HSD, in the context of the discussions above, will critically and urgently examine with regional staff and Centre management ways in which further decentralization can be implemented, especially once evaluative data are available.

CONCLUSION

In order for all of these strategic intentions to be rationally translated into action, the necessary and appropriate regional staff must be in place as soon as possible.

Such staff must have the appropriate preparation, knowledge and skills, the experience and the demonstrated ability to be not only analytic but flexible, at the same time sensitive to the nuances of local cultures and sensibilities. These considerations will be paramount in recruiting personnel, who will be properly oriented both at head office and in the field before taking up regional positions. The period of orientation would be variable, depending on previous experience.

SUMMARY

This paper has reviewed relevant Canadian government positions on overseas development aid, for what ends and in what fashion, that relate to IDRC's regional strategies. There has also been a review of the statements and intentions from IDRC management, the different program divisions and regional staff which have similar relevance. Issues of decentralization are examined, as vital to regional strategies.

The paper then looks at the HSD's policy, both global and regional and, while stressing the iterative process which must go on continuously between global and regional strategic planning, indicates some of the Division's intentions, hopefully in collaboration with the other divisions of the Centre, with CIDA and with other organizations and agencies, in the various regions served by the Centre, with major implications for regional staffing.

Specific actions to be taken are suggested.

BIBLIOGRAPHY

1. Decentralization and Development, Policy Implementation in Developing Countries; Cheema, G. Shabbin and Dennis A. Rondinelli (Eds). Sage Publications, 1983.
2. Decentralization in Developing Countries, A Review of Recent Experiences. World Bank Staff Working Papers No. 581; Rondinelli, Dennis A., J.R. Nelles and G.S. Cheema. The World Bank, Washington, D.C. 1984.
3. For Whose Benefit? Report of the Standing Committee on External Affairs and International Trade on Canada's Official Development Assistance Policies and Programs. House of Commons, Canada, May 1987.
4. Canadian International Development Assistance, To Benefit a Better World. Reponse of the Government of Canada to the Report by the Standing Committee on External Affairs and International Trade. Minister of Supplies and Services Canada, September 1987.

5. Report on Policy and Management Seminar, IDRC, 17 June, 1986.
6. Reports on Board Meetings, October 1986, October 1987.
7. Report (Mid term) of Regional Office Working Group, 8 June 1987 (MC 87/35).
8. Strategic Plan, 1988-1992, Social Sciences Division, IDRC, December 1987.
9. In-Depth Review of the Agriculture, Food and Nutrition Sciences Division, September 1985.
10. Role of Regional Directors in Planning (Memo of March 11, 1988 from V.P. Programs to President).

11. Development Information Chain: Information Sciences Division In-Depth Review, 1985.
12. Regional Preoccupations: Reports from Regional Directors to IDRC President, July 1987.
13. Minutes of ASRO Annual Meeting, 9-10 November, 1987.
14. Regional Offices and Centre Planning: Memo of 8 February 1988 from J. Hardie to V.P. Programs (PRO File 4571.4.5).