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PAHO'S TECHNICAL COOPERATION IN HEALTH RESEARCH
Initial Assessment

Office of Research Coordination
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I. INTRODUCTION

The changes affecting the structure of the health sector are causing continuous modifications of the models and methods by which health is addressed. Over the years the technical cooperation provided by health agencies, particularly PAHO, have undergone changes and improvements, rendering necessary increasingly more assessments of how such cooperation is extended and the impact that it has. Various PAHO documents (1, 3, 6, 7) have repeatedly emphasized the need to promote evaluation of the Organization's technical cooperation in the area of health research, a basic component of that cooperation.

This document diagnoses the research component of PAHO's technical cooperation activities, based on information in the Organization's programming instruments and its programs to fund and support health research. In addition to describing this component, the paper seeks to provide an instrument to identify methodologies for follow-up and evaluation of this area of cooperation, and to answer questions raised about the direction it should take.

II. HEALTH RESEARCH

The production of scientific and technological knowledge in the broadest sense, is a fundamental part of the process of improving the well-being and living conditions of populations. This is also true of the area of health science and technology, to the degree that it offers solutions to health problems and considerably improves health and consequently the lives of populations. (1)

The field of health science and technology encompasses the entire process of production of knowledge carried out in research units. The end products, through the production and transfer of technology, are used to resolve the challenges posed by the health situation (reference no. 5 provides an in-depth description of this process).

The most visible challenges in the field of health arise in the identification of problems caused by the epidemiological changes experienced in the different countries, and the ability of the health services to handle these problems.

The epidemiological picture which is exhaustively depicted in such PAHO documents as "Health Conditions in the Americas 1985-1988" and "Strategic Orientations and Program Priorities for the Pan American Health Organization during the Quadrennium 1991-1994" (7, 8), reveal the changes being generated both within the structure and the dynamic of the population, and in the patterns of disease that affect the inhabitants of the Hemisphere.

In response to these challenges, the field of science and technology has shown a trend, which is not always linear or continuous, toward reorganizing and reorienting institutional and operative policy. The importance and status of health research depends of the level of development of the different countries, and in order for solutions to be found for the problems that arise, research must be organized nationally.

Starting in the 1950s, most of the countries established science and technology boards in charge of defining policy and coordinating sci-tech endeavors in their respective countries, in order to promote research in the various fields. As was said, this process is not linear. It faces different kinds of problems, related to each moment in the process of scientific production and the moment in social history being experienced by society. Among other things, what is noteworthy here are the difficulties in defining policies in the field, either due to a lack of precedents or determination, or because of the nature of the work of scientists who are often forced to work in isolation. On the other hand, the conditions in which human resources are trained and utilized, are often less than ideal and unattractive.

For several years PAHO has emphasized the essential role of management of knowledge within its technical cooperation activities. It is understood that "therefore, the cycle of the production, collection, critical analysis, and application of the knowledge necessary to support the needed transformation of the health systems and care to vulnerable population groups must be stimulated." (6)

In the course of its experience, different scenarios have arisen in PAHO's research component (1, 2, 4). Changes were observed in terms of priority disciplines, replacing biomedical sciences with epidemiology and health services, and cooperation activities have been incorporated into the area of sci-tech policy and administration. The first change was due to transformations in the sector, and the latter, the establishment of mechanisms to organize and manage the process of scientific and technological development in the countries.

III. SOURCES OF INFORMATION AND ANALYTICAL PROCEDURES

First, research activities carried out during the 1987-1990 quadrennium were put together and analyzed. The following sources of information were identified: APB/PAHO (Annual Program Budget); PTC/PAHO (Four-Month Program); RGP/PAHO-WHO (Research Grant Program); TDR/WHO (Tropical Diseases Research); and the rest of the research programs, such as those involving diarrheal diseases, acute respiratory diseases, and human reproduction.

Due to several limitations, the sources for this paper were finally reduced to three: APB/PAHO (Annual Program Budget), TDR/WHO (Tropical Diseases Research), and RGP/PAHO-WHO (Research Grant Program). No work was done with the PTCs because of the complexity of that data, its volume, and inaccessibility in the absence of compatible records for the different years. Instead, it was confirmed that the APB satisfactorily described the PTC activities, which made it possible to do without that source. Also, due to the incompatibility of records, it was not possible to work with the APB data for 1987.

For the first source, the APB, activities were selected that were somehow related to research. The procedure adopted was to draw up a list of activities selected by computational techniques, based on their use of key words (training, analysis, science, scientist, congress, survey, study, research, situation, technology, method, research, science, scientific, study, technology). This made it possible to find 2,560 activities, which were read over, leaving a total of 1,013 research-related activities in the country programs, centers, and technical programs at Headquarters (because of recording systems, it was not possible to work with the 1988 data for the technical programs and centers). Once the activities were chosen, attempts were made to identify the

main data for each one, to wit: year, country, technical program or center, source of funding (PAHO, WHO, regular or extrabudgetary), the planned elements, and the amount of funding estimated (excluding salaries of regular staff). It should be noted that the APB does not denote activities carried out, only those that are programmed for the respective year.

In the case of the TDR information used, after checking its files, all projects that were supported in 1988 and 1989 were selected. Data was not yet available for 1990. For the RGP research projects, all that were supported in 1988, 1989, and 1990 were selected. For various reasons, there was no access to research data on specific programs for respiratory diseases, diarrheal diseases, or human reproduction.

All of the activities were analyzed from the point of view of the classification established to identify the category of the activity (Annex 1). The statistical analyses were completed using the Statistical Analysis Systems program (SAS).

IV. ANNUAL PROGRAM BUDGET (APB)

1. Total Financial Resources

An analysis of APBs for 1998-1990 made it possible to examine how the use of financial resources at different activity levels in the Organization--technical programs, centers, and country representative offices--is planned. Each year has not been analyzed individually, given that the short time span does not make it possible to identify conclusive variations indicating trends. The description is provided as a cross section, pointing to how the resources are available.

The APBs for 1988, 1989, and 1990 have estimates of total resources in the order of US$278,644,485.00 (Table 1). The source of some of the funds (5.3%), that is whether regular or extrabudgetary, could not be determined. For purposes of analyzing the percentage distribution, it was deemed similar in the two groups and that any error would be small. This table shows that 30.6% of the funds were from the regular budget, 64.1% were extrabudgetary, and 5.3% were of unidentified origin.

Table 1. Distribution of 1988-1990 APB (*) funds according to source and activity level

Activity Level	Not Classifiable US$	Regular US$	Extra-budgetary US$	Total Total US$
Technical Programs	60,000	25,484,229	54,586,640	80,130,869
Centers	1,558,489	6,993,820	20,701,961	29,254,270
Countries	13,106,180	52,902,040	103,251,126	169,259,346
Total	14,724,669	85,380,089	178,539,727	278,644,485

(*) Regular staff salaries excluded.

2. Funds Related to Research

The distribution and amounts of funds related to the research components are shown in Table 2. As above, the funds are broken down into funding source, including the amount that is not classifiable. When these sums are compared to those of Table 1, it is confirmed that 10.1% of the funds scheduled for the period under study were estimated to go to research. The technical programs anticipated using 9.5% of their funds for research-related activities; at the Centers that estimate was 26.3%; and in the country offices the rate dropped to 7.6%.

Table 2. Distribution of funds related to research in the 1988-1990 APBs, according to source and activity level.

Activity Level	Not Classifiable US$	Regular US$	Extra-budgetary US$	Research % *
Technical	21,500	3,577,344	4,007,106	9.5
Programs				
Centers	60,000	1,602,502	6,022,513	26.3
Countries	1,558,070	4,390,847	6,837,480	7.6
Total	1,640,470	9,570,693	16,867,099	10.1

(*) Percentage of total APB funds.

Continuing the comparison of the two Tables, one sees the percentage distribution of regular and extrabudgetary funds. Table 3 presents some interesting data on that distribution.

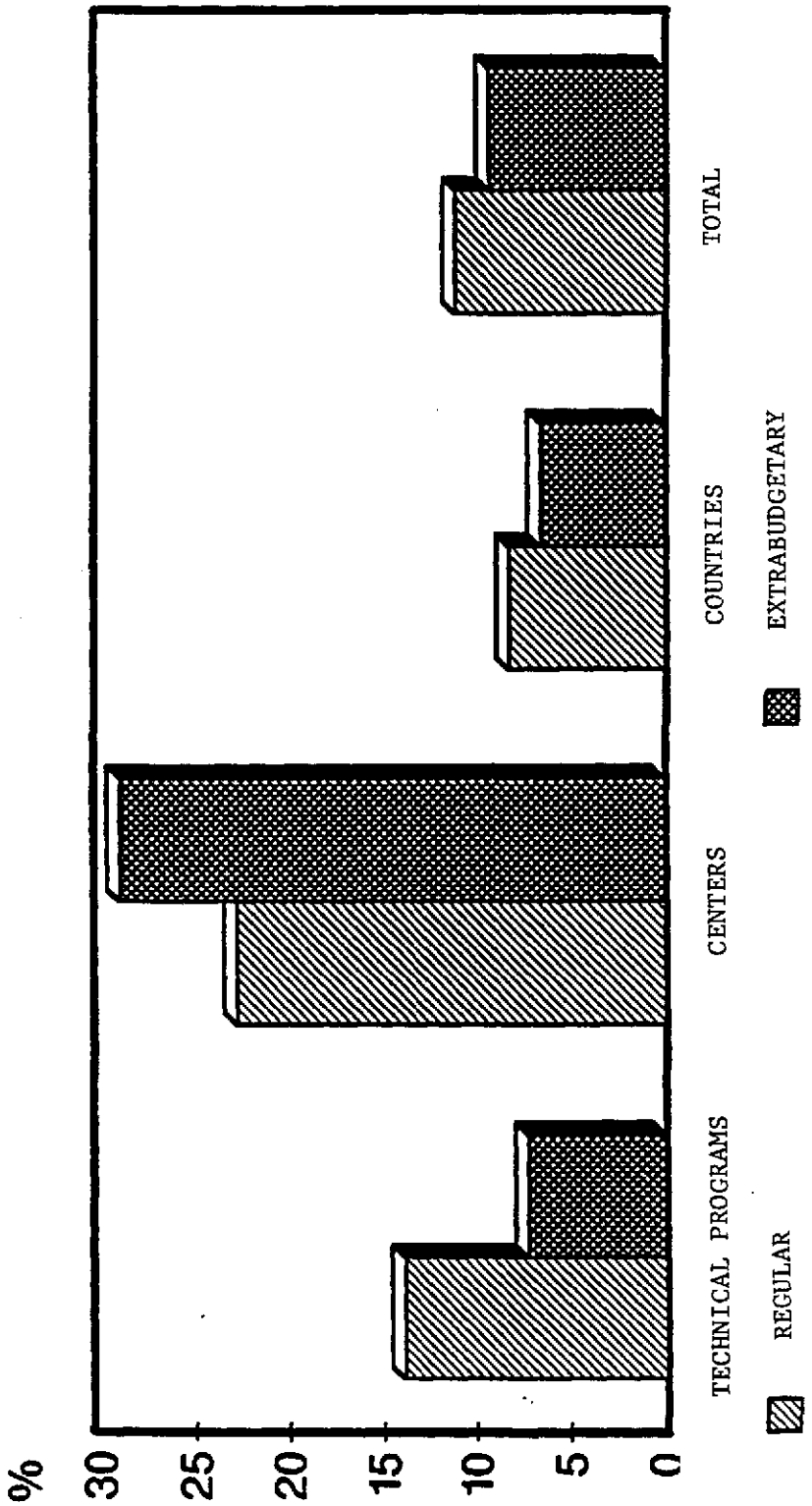
Table 3. Percentage distribution of 1988-1990 APB funds related to research according to activity level and source of funds.

Activity Level	Regular %	Extra-budgetary %	Total %
Technical Programs	14.0	7.3	9.5
Centers	22.9	29.1	26.3
Countries	8.3	6.6	7.6
Total	11.2	9.4	10.1

Thus it is noted that there funds are distributed differently according to where they come from. With the exception of the centers, both the technical and country programs use a higher percentage of their regular funds on research-related activities than they do with their extrabudgetary funds. As for the technical programs, research-related activities receive 14.0% of the regular funds, and the country programs, 8.3%. This allocation drops to 7.3% and 6.6%, respectively, under the heading of extrabudgetary funds. This can be seen in Figure 1.

FIGURE 1

Percentage Distribution of 1988-1990 APB Funds
Related to Research according to Source
and Activity Level



3. Use of Funds Related to Research

As was noted in the chapter on procedures, the activities can be analyzed according to a classification designed to assess their category, be it coordination support, support for infrastructure development, or direct support of research projects.

Table 4 shows the percentage distribution of funds according to that classification. An analysis of it reveals that these funds (65.6%) are predominantly allocated to direct support of research projects. Support for strengthening infrastructure accounts for 28.9%, while coordination support activities account for only 5.5% of these funds.

On the other hand, if this data is broken down into funding source, a marked difference is seen in the allocation of resources. It is observed that while 11.8% of the regular funds are channeled into research coordination support activities, the percentage of extrabudgetary funds channeled into that activity--0.7%--is minuscule. Both types of funding are primarily channeled into support for the conduct of research projects. There is still a marked difference in activities for the strengthening of infrastructure, as only one-fifth (20.9%) of the regular funds are used for this purpose, while one-third (35.4%) of extrabudgetary funds are earmarked for this.

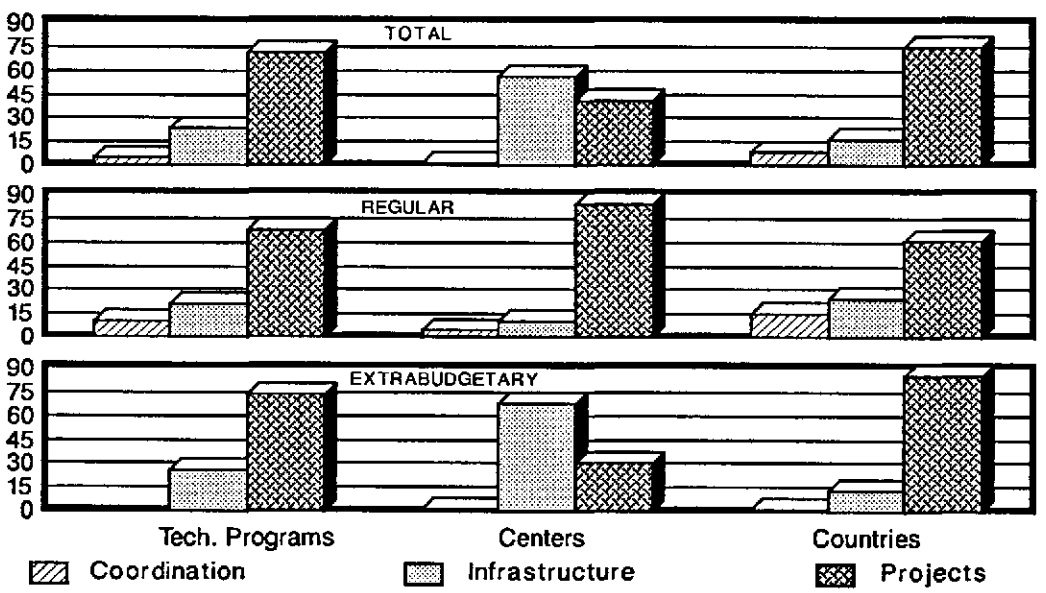
It is important to stress the nonexistence of coordination support in the extrabudgetary funds for the technical programs, although the technical programs use 10.6% of their regular funds for that purpose. Likewise, it is important to state that more than two-thirds (68.7%) of the extrabudgetary funds for the Centers and used for the strengthening of infrastructure.

TABLE 4: Percentage distribution of funds related to research according to classification category, source, and activity level

Level	Total			Regular			Extra-budgetary		
Category:*	1	2	3	1	2	3	1	2	3
Technical Programs	5.1	23.3	71.6	10.6	21.2	68.2	--	25.2	74.80
Centers	1.6	56.6	41.8	5.0	10.0	84.9	0.7	68.7	30.6
Countries	8.0	16.5	75.5	14.9	24.2	60.9	1.1	12.8	86.1
Total	5.5	28.9	65.6	11.8	20.9	67.4	0.7	35.4	63.9

*1 - Coordination 2 - Infrastructure 3 - Project Execution

Figure 2.
Percentage Distribution of Funds in Research Related Activities by Funding Source, Objectives, and Operational Level



In the case of the Centers, it is interesting to observe that while the regular funds have a strong component of support for project execution, the extrabudgetary funds assign priority to infrastructure. To sum things up so far, it can be stated that at the various levels of the Organization, research related activities generally assign priority to the execution of research projects; the strengthening of infrastructure is secondary; and cooperation for strengthening coordination of scientific activity in health is insignificant. This is accentuated when the use of extrabudgetary funds is compared to that of regular funds. Figure 2 serves as a complement to visualize this description.

When the components within each of the three classification categories, broken down into cooperation objective, are examined, it is noted that the three activity levels have different features. Table 5 details the percentage distribution of the activities to support research coordination which, as has been seen, accounts for 5.5% of the funds. All of the levels are primarily involved in strengthening mechanisms for the dissemination of information. Also, a balanced portion of the technical programs is for technical support for scientific and technical development policies, and incentives for the drawing up of national research plans and programs (27.3% and 25.1%), including, to a lesser degree, activities to support the development of sci-tech information systems. The Centers have not only focused much of their programming on information dissemination mechanisms, but 22.8% of their coordination activity is earmarked to stimulate the formulation of plans and programs. The countries, in addition to the above, also have a strong component of support for the definition of sci-tech policies.

Table 5. Percentage distribution of funds used to support research coordination activities according to activity level (1988-1990)

Levels Coordination*	Technical Programs	Centers	Countries
1	27.3	--	35.8
2	4.5	--	13.2
3	13.2	8.6	6.7
4	29.8	68.5	41.7
5	25.1	22.8	2.6
Total	100.0	100.0	100.0

* See Appendix 1 for identification of variables.

Support for the maintenance, strengthening, or improvement of the scientific and technical infrastructure, which accounts for 28.9% of the research-related funds, also provides a different profile of cooperation activities for the various activity levels of the Organization. Thus, what stands out in Table 6 is that the allocation of resources to the technical programs gave greater weight to the analysis and dissemination of technical and scientific information (56.1%), including support to strengthen the physical capacity of the institutions (23.6%). For their part, the Centers allocated resources within that category almost exclusively into the transfer and incorporation of technologies (88.5%); meanwhile, in the countries 44.3% was used to support the training of researchers, and 22.6% for technical advisory services to national research teams.

Table 6. Percentage distribution of funds used in infrastructure support activities, according to activity level (1988-1990)

	Levels		
Infrastructure*	Technical Programs	Centers	Countries
1	2.4	1.9	44.3
2	23.6	0.6	13.2
3	56.1	1.5	6.4
4	16.1	7.4	22.6
5	1.8	88.5	6.9
6	--	0.1	5.6
9	--	--	1.0
Total	100.0	100.0	100.0

* See Appendix 1 for identification of variables.

Table 7 shows how funds related to research are distributed when they are applied to support for the execution of research which, as has been seen, accounts for 65.6% of such funds. The main activity at the three levels was to finance studies and research projects along with advisory services for their execution: 95.6% for technical programs, 74.1% for the Centers, and 75.9% in the countries. An examination of APB activities showed that it was usually impossible to distinguish or clearly separate the advisory services component from direct financial support.

Table 7. Percentage distribution of funds used in support activities and/or execution of projects, according to activity level.

Projects *	Levels: Technical Programs	Centers	Countries
1	25.9	2.8	19.3
2	--	--	0.3
3	7.4	16.3	16.7
4	2.2	--	0.1
5	62.2	55.0	39.9
6	1.5	0.7	0.1
7	--	10.8	--
9	0.7	14.4	23.6
Total	100.0	100.0	100.0

* See Appendix 1 for identification of variables.

4. Application of Resources at the Technical Program, Center, and Country Level

Tables 8, 9, and 10 show in detail how regular and extrabudgetary funds are distributed for research in the different technical programs, Centers, and countries (the countries of the English-speaking Caribbean are brought together as a single group--the CARIBBEAN), according to how these resources are allocated to one or more category: coordination, infrastructure, and/or projects.

Although in certain situations the sums may be small, some observations should be made. In Table 8 it is reiterated that extrabudgetary funds are not applied to activities to support research coordination, and that most of the programs are geared toward support for project execution. Two units--HSP and HST--stand out for their support of coordination activities, given their activities to foster the development of national programs to strengthen research in their specific areas.

Table 9 shows variations among the different Centers. For example, PANAFTOSA distributes its regular funds almost uniformly among the three classified categories; however, its extrabudgetary resources are directed at infrastructure support. CEPANZO proposes using a large part of its funds for infrastructure, and so does CEPIS, as is seen upon examining its extrabudgetary resources. CAREC, ECO, and INCAP allocate resources into the carrying out of research projects.

The distribution of the sums by country (Table 10) shows a different situation for each one. A few countries do not contemplate coordination and/or infrastructure support activities; instead, they are geared towards support for the execution of projects (Belize, El Salvador, Guyana, Panama). Others are noted for a relative balance and the presence of the coordination component (Argentina, Brazil, Chile, Cuba, Nicaragua). But for the most part, they all show a prevalence of activities aimed at the execution of research projects. On the whole, extrabudgetary funds in all of the Member Countries of the Organization are geared toward execution of research projects.

At this point in the analysis, it should be pointed out that an important component has still not been analyzed: the role played by the professionals in the Organization. It is very difficult to quantify this factor, since there is no record in the APB of the hours they devote to each activity.

TABLE 8

Distribution of Funds Related to Research according to Technical Program and the Objectives of the Cooperation Activities

Technical Programs	Regular Funds Category						Extrabudgetary Funds Category					
	Coordination		Infrastructure		Projects		Coordination		Infrastructure		Projects	
	$	%	$	%	$	%	$	%	$	%	$	%
Unit:												
DAP	-	-	-	-	9,000	100.0	-	-	-	-	-	-
DRC	95,840	5.6	67,050	3.9	1,547,904	90.5	-	-	-	-	-	-
HBI	2,000	100.0	-	-	-	-	-	-	-	-	-	-
HPA	17,500	9.9	34,500	19.6	123,900	70.4	-	-	30,000	23.1	100,000	76.9
HPE	-	-	24,300	62.5	14,600	37.5	-	-	5,000	100.0	-	-
HPM	-	-	-	-	26,000	100.0	-	-	163,000	15.0	920,900	85.0
HPN	-	-	13,700	59.3	9,400	40.7	-	-	-	-	-	-
HPT	3,600	1.8	75,500	37.7	120,900	60.4	-	-	6,000	2.0	297,968	98.0
HPV	-	-	1,000	2.1	46,000	97.9	-	-	-	-	14,500	100.0
HSD	3,000	0.8	161,400	43.2	209,500	56.0	-	-	5,000	6.8	68,500	93.2
HSM	20,000	7.6	94,700	36.1	147,400	56.2	-	-	-	-	66,000	100.0
HSP	121,500	20.4	288,900	48.5	185,300	31.1	-	-	-	-	20,000	100.0
HST	130,300	49.7	30,000	11.4	101,800	38.8	-	-	810,183	34.6	1,532,755	65.4
MCP	-	-	-	-	-	-	-	-	-	-	-	-
PWD	3,500	28.0	1,500	12.0	7,500	60.0	-	-	-	-	-	-

NOTE:- Absolute values exceed actual resources because certain activities may be classifed in more than one category.

TABLE 9

Distribution of Funds Related to Research according to Center and Classification Category

Centers	Regular Funds Category						Extrabudgetary Funds Category					
	Coordination		Infrastructure		Execution		Coordination		Infrastructure		Execution	
	$	%	$	%	$	%	$	%	$	%	$	%
Unit:												
AFT	58900	32.4	42650	23.5	80010	44.1	36200	1.0	3739926	98.5	21000	0.6
CEC	-	-	-	-	4400	100.0	-	-	15003	4.9	290001	95.1
CEP	-	-	-	-	1600	100.0	-	-	50000	98.1	950	1.9
CFN	-	-	-	-	-	-	-	-	-	-	-	-
CLP	8000	1.6	36700	7.2	464700	91.2	-	-	11700	22.4	40600	77.6
CPZ	13500	11.1	84300	69.6	23400	19.3	3900	17.0	14500	63.3	4500	19.7
ECO	-	-	-	-	2600	100.0	-	-	-	-	1000	100.0
INC	-	-	-	-	799742	100.0	-	-	336343	18.3	1498890	81.7

TABLE 10

Distribution of Funds Related to Research according to Country and Cooperation Objectives

Country	Regular Funds Category						Extrabudgetary Funds Category					
	Coordination		Infrastructure		Project		Coordination		Infrastructure		Project	
	$	%	$	%	$	%	$	%	$	%	$	%
Unit:												
ARG	116200	23.8	56400	11.6	314800	64.6	-	-	-	-	786829	100.0
BLZ	-	-	-	-	21400	100.0	-	-	-	-	10300	100.0
BOL	16400	11.6	23800	16.8	101600	71.7	-	-	-	-	78860	100.0
BRA	157200	18.5	122900	14.5	567810	67.0	-	-	301202	13.9	1868814	86.1
CAR	5000	3.8	13000	9.8	114550	86.4	-	-	-	-	52202	100.0
CHI	61249	20.4	184349	61.3	55000	18.3	-	-	-	-	-	-
COL	-	-	50000	52.4	45400	47.6	64100	17.5	-	-	302600	82.5
COR	14100	9.8	20000	14.0	109102	76.2	-	-	126729	48.0	137100	52.0
CUB	226240	26.7	157220	18.5	465240	54.8	400	1.3	-	-	30200	98.7
DOR	43800	10.4	24100	5.7	352350	83.8	-	-	-	-	224380	100.0
ECU	1500	2.4	20100	32.7	39900	64.9	-	-	-	-	12000	100.0
ELS	-	-	-	-	2000	100.0	-	-	53000	12.4	374500	87.6
FEP	-	-	-	-	-	-	-	-	-	-	144700	100.0
FRG	-	-	-	-	5000	100.0	-	-	-	-	-	-
GUT	5000	2.1	98500	42.3	129350	55.6	-	-	38508	11.6	294203	88.4
GUY	-	-	-	-	5500	100.0	-	-	-	-	-	-
HAI	-	-	7900	100.0	-	-	-	-	-	-	80000	100.0
HON	3300	9.0	10300	28.1	23100	62.9	800	0.2	-	-	461572	99.8
MEX	-	-	55850	38.9	87575	61.1	-	-	-	-	-	-
NIC	49000	40.0	55000	44.9	18500	15.1	1550	0.2	308493	33.3	615162	66.5
PAN	-	-	-	-	12520	100.0	-	-	1500	2.1	68850	97.9
PAR	800	1.9	17216	41.5	23435	56.5	3000	3.6	1500	1.8	78056	94.5
PER	17000	8.9	21700	11.4	152000	79.7	3500	2.1	6700	4.0	157350	93.9
SUR	4000	8.5	12500	26.7	30300	64.7	3500	22.6	-	-	12000	77.4
URU	-	-	7700	15.6	41700	84.4	-	-	-	-	265900	100.0
USA	-	-	5000	100.0	-	-	-	-	-	-	-	-
VEN	9900	1.9	227200	44.4	274050	53.6	-	-	72720	55.3	58800	44.7

NOTE - Absolute values exeed actual resources because certain activities may be classified in more than one category.

5. Area of Knowledge and Type of Research

Tables 11 and 12 provide an opportunity to see what areas of knowledge and what type of research the funds are used on.

It can be observed that most of the activities are aimed at the areas of epidemiology and health systems. For record-keeping reasons, there are quite a few activities in which it was not possible to specify the area of knowledge. As for the type of research, in spite of the number of unspecified activities, the bulk of the research is applied. This accounts for an estimated almost 80% (assuming an identical distribution of unspecified projects).

Table 11. Percentage distribution of funds according to area of scientific knowledge and activity level

Area of Knowledge	Levels			
	Technical Programs	Centers	Countries	Total
Biomedical	6.4	4.8	3.2	4.5
Clinical	--	0.9	1.9	1.1
Epidemiological	52.7	19.4	36.0	38.5
Health Services	19.9	39.4	23.4	25.0
Epidemiology + Services	--	--	1.9	0.9
Biomedical + Clinical	--	--	0.4	0.2
Clinical + Epidemiological	--	0.7	0.2	0.2
Unspecified	21.1	34.9	33.0	29.5

Table 12. Percentage distribution of funds according to type of research and activity level

Type of Research	Levels			
	Technical Programs	Centers	Countries	Total
Basic	2.1	8.5	1.8	3.0
Applied	74.3	54.2	53.4	60.2
Operational	0.7	7.4	14.9	9.1
Technological Dev.	0.3	0.1	1.0	0.6
Unspecified	22.5	29.8	28.9	27.0

6. Additional Information

The distribution of resources according to the mechanisms of cooperation with which PAHO works, is expressed in Table 13. There are no marked differences between how the distribution is planned for overall APB funds, and for those that are channeled into research, except regarding the line item of grants which has greater weight in the funds earmarked for research cooperation.

In general, the amounts are directed more at consultation activities and the acquisition of equipment (57.3%). A comparison of regular and extrabudgetary funds reveals that the latter allocate more to the line item of equipment (25.5%).

Finally, in Table 13 one can compare each item of research-related activities to that item for the entire APB for the period. Grants is the item with the largest percentage, as 28.9% of the grants offered by PAHO are for research.

Table 13. Percentage distribution of funds according to source and element (1988-1990)

Elements	Research Funds			APB	Total % of APB
	Regular	Extrabudget.	Total	Total	devoted to research
Consultation	46.2	36.2	38.6	38.3	10.2
Equipment	9.6	25.5	18.7	20.3	9.3
Fellowships	7.8	1.3	3.6	4.6	7.9
Seminars	18.4	12.8	14.7	19.7	7.5
Grants	16.6	12.2	15.6	5.4	28.9
Unclassified	1.3	11.9	8.8	11.7	7.6
Total	100.0	100.0	100.0	100.0	

V. T D R

The UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases (TDR) was created to support research and development to obtain new and improved instruments for controlling the main tropical diseases and strengthening research capacity in endemic countries (9).

The program covers the largest endemics--schistosomiasis, malaria, Chagas' disease, filariasis, leishmaniasis, and leprosy--from the biomedical, socioeconomic, clinical, and epidemiological point of view, treating them as basic and/or applied sciences.

An assessment of TDR's training program through training grants, which began in 1975, revealed that as of March 1989, 21.3%

(68) of the 320 fellows were from Latin America. Among these Brazil had 6.6% (21) and Argentina and Chile each had 2.8% (9). The most significant fields of study were: immunology, epidemiology/statistics, parasitology, and biochemistry (10).

With regard to support for the projects, 72% of the resources used between 1975 and 1988 went into research, and 28% into infrastructure. Malaria received 20% of all the resources--twice as much as any other disease. The Region of the Americas received 34.5% of the resources during this period, and of this around 60% was used in only two countries: the United States of America and Canada.

An analysis of the data recorded for 1988 and 1989 yielded the following information regarding the classification drawn up in this document. Table 14 shows that the component of support for coordination activities is quite minimal, having been reduced to support for two conferences on clinical epidemiology.

The exclusive support for the establishment and/or enhancement of the research infrastructure, accounted for one quarter of the resources used by the program, of which around one-third was used for the training of human resources in research, and two-thirds for institutional strengthening, following the same trend observed throughout the program's history.

The 397 programs analyzed show that 67.0% of the resources were channeled into the biomedical field, 10.5% into medicine, 10.0% into epidemiology, and only 3.8% into health services. 7.5% of the projects could not be classified. The area of basic research received 30.2% of the funding, while applied research was allocated 58.4%.

In sum, it can be stated that the TDR is a program that seeks to support the conduct of research in tropical diseases through support for the training of researchers, strengthening of institutions, and, above all, direct support for projects. The latter area accounted for three-quarters of the funds expended.

The program plays no role in supporting or encouraging coordination of the process of scientific and technical development in the countries, although it does purport to foster linkage between institutions, projects, and national programs for disease control, and aims its activities exclusively at the major endemic tropical diseases.

TABLE 14

Distribution of TDR Support according to Classification Category
(1988 - 1989)

			%	Funds US$	%
Objectives					
	Coordination	2	0.5	50,000	0.3
	Infrastructure — Human Resources	65	16.4	1,452,564	8.3
	Infrastructure — Institutions	26	6.5	3,061,510	17.6
	Projects	331	83.4	15,960,232	91.6
Area of Knowledge					
	Biomédical	277	69.8	11,673,237	67.0
	Clínical	40	10.1	1,831,875	10.5
	Epidemiological	46	11.6	1,735,870	10.0
	Health Services	15	3.8	665,918	3.8
	Unspecified and Others	19	4.8	1,508,896	8.7
Type of Research					
	Basic	144	36.3	5,253,548	30.2
	Applied	225	56.7	10,163,185	58.4
	Experimental Development	11	2.8	692,407	4.0
	Unspecified and Others	17	4.3	1,306,656	7.5
TOTAL		397	100.0	17,615,796	100.0

* The totals under the heading of objectives do not represent real values because of the possibility that an activity may be classified in more than one category.

VI. RESEARCH GRANTS PROGRAM (RGP)

Among the PAHO/WHO mandates presented in the previous section, or more specifically, one of its programming priorities, is the management of knowledge. This serves as the basis for all of the other priorities and is a central part of the management strategy to make optimum use of PAHO/WHO resources. One of the instruments used by the Organization to manage knowledge is the Research Grants Program (RGP), whose purpose is to support the countries of the Region in conducting research on health.

No study was done in these terms of the support the Program provides to coordination or infrastructure activities, since there are no proposals to work in that field. This analysis will limit itself to verifying how resources are being distributed to the different areas, disciplines, and kinds of research.

An examination of the funding of projects in 1988, 1989, and 1990 (up to the first of four review meetings to be held this year), reveals a marked tendency to earmark funds for projects in the area of health systems and services, that is, 65.8%, while epidemiology was left with 27.7%. One cannot speak of a trend, however, because if the 1989 data is looked at in isolation it reveals a perfect balance between the areas of epidemiology and health systems. But this is not true for 1988, when the breakdown was 76.6% of funding for health systems and 23.3% for epidemiology (Table 15). The small number of projects and project years, makes it impossible to confirm trends in the same way as for the TDR or APB. For this program one must also bear in mind that the trend is greatly influenced by demand, whose organization and planning we know to be very weak at the country level.

TABLE 15

PROJECTS APPROVED - PAHO GRANTS PROGRAM 1988-1990

		YEAR															
		1988				1989				1990				Total			
		QUANTITY				QUANTITY				QUANTITY				QUANTITY			
			%	Funds	%		%	Funds	%		%	Funds	%		%	Funds	%
Area of know-ledge	Biomedical	-	-	-	-	2	11.8	38,840	12.5	-	-	-	-	2	4.4	38,840	4.6
	Clinical	-	-	-	-	1	5.9	15,800	5.1	-	-	-	-	1	2.2	15,800	1.9
	Epidemiology	5	21.7	101,985	23.3	7	41.2	130,347	41.9	-	-	-	-	12	26.7	232,332	27.7
	Health Systems	18	78.3	336,035	76.7	7	41.2	125,890	40.5	5	100.0	89,544	100.0	30	66.7	551,469	65.8
Type of Re-search	Applied	23	100.0	438,020	100.0	15	88.2	272,037	87.5	5	100.0	89,544	100.0	43	95.6	799,601	95.4
	Experimental Development	-	-	-	-	2	11.8	38,840	12.5	-	-	-	-	2	4.4	38,840	4.6
	TOTAL	23	100.0	438,020	100.0	17	100.0	310,877	100.0	5	100.0	89,544	100.0	45	100.0	838,441	100.0

VII. CONCLUSION

The APB data and records of information on research support, such as RGP, TDR, and others that unfortunately could not be accessed (programs to study diarrheal diseases, acute respiratory diseases, or human reproduction, for example), are the main sources of information to learn how the content, orientation, and trends of the Organization's cooperation activities are programmed, particularly those aimed at supporting health research.

Unfortunately, the way to describe the activities varies widely among Technical Programs, Centers, and countries, along with the degree of precision and objectivity with which their activities are presented, which often makes it difficult to understand what is actually being programmed.

Despite the difficulties impeding a more exact interpretation of the activities, study makes it possible to glean an idea of the thought, orientation, and determinations PAHO/WHO makes in carried out research-related activities. It also makes it possible to make recommendations for the necessary process of evaluating research and improving information systems.

The introduction to this paper pointed out the importance of the research component in the conduct of all of the Organization's other technical cooperation activities, which is specifically expressed in the fact that 10.1% of the funds identified in the APB are for research-related activities. As would be expected, the Centers have geared their activities and resources more into the carrying out of research (16.3%), while this is much less significant for the countries (7.6%). The PAHO budget is comprised of regular and extrabudgetary funds which tend to be used in different ways. Generally speaking, extrabudgetary funds are less tied into research, particularly when such funds are linked to the technical programs or the countries.

The most important finding and one deserving of more extensive consideration, is the orientation and objectives of PAHO's cooperation activities related to research projects. The orientation towards support for projects is quite dominant among research-related activities; support for the coordination of scientific activity in health is of minor importance; and infrastructure support plays a more important, though still small, role.

Note the tremendous lack of policy directives and strategic definitions to guide the development of health sci-tech in the Region. This deficiency, together with the recognized impediments to policy implementation and the weakness of the scientific-technical infrastructure, make it urgent to find solutions and improve technical cooperation activities in order to properly define and efficiently carry out policies in this field.

The data examined in this short paper call one to reflect on how the prevailing orientation of research-related activity at PAHO can be corrected, which primarily entails support for projects. It does not seek to call into question the need to support research. On the contrary, in addition to supporting it, it raises the need to establish solid mechanisms of coordination that also entail the definition of policies and directives in the field, and activities geared to strengthening infrastructure. It is understood that this would help overcome the disjointed nature of cooperation, which often provides support for isolated projects with little impact. This more integrated orientation would also help dispel the erroneous and widely held image of the Organization as a research funding agency, which creates some frustrations among scientists in this regard.

These observations are more pointed and pertinent if one analyzes the allocation of extrabudgetary funds, whose percentage distribution places an even greater emphasis on funding research projects. As was said, this support or financing should not be considered negative, since these extrabudgetary funds are often mobilized precisely to make that support viable. The author wishes to repeat that the role of support is understood as nothing but increasing the capacity of coordination and linkage in order to strengthen the mechanisms by which policies and priorities are strengthened on the one hand, and to allow full use of the data generated by these research projects on the other. The marked difference in the percentage distribution of regular and extrabudgetary funds in the country budgets and technical programs is remarkable, regarding support for coordination activities.

The limited allocations for an area of such strategic importance to the development of science and technology as the training of human resources, except in the case of the TDR, is striking.

The two programs for promoting the area of research development, TDR and RGP, are more or less good examples of involvement in PAHO/WHO's policies and program orientations in terms of priority areas and kinds of research. More specifically, the TDR/WHO, particularly given the volume of resources it mobilizes, has proven itself to be a powerful instrument for the conduct of research in the Region within its specific field, although it places little emphasis on the political and administrative coordination of science and technology.

Finally, the problems and limitations encountered in this preliminary study point to the need to improve the recording of PAHO technical cooperation activities for health research, in order to facilitate its identification, technical content, orientations, and trends.

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APPENDIX 1

CATEGORIES OF CLASSIFICATION OF ACTIVITIES

I. ACCORDING TO OBJECTIVE, support for:

I.1 Research Coordination

0. Not applicable.

1. Technical support for the formulation and implementation of policies and administration of scientific and technical development in the countries.

2. Support for manpower training at the coordination institutions (courses, seminars, workshops).

3. Technical and financial support for the development of sci-tech information systems.

4. Strengthening of mechanisms for the dissemination of knowledge (seminars, conventions, editorial programs).

5. Promotion for the preparation of national research plans and programs.

8. Other.

9. Unspecified.

I.2 Strengthening of Technical and Scientific Infrastructure

0. Not applicable.

1. Support for human resources development in research and technological development.

2. Technical and financial support for the establishment, maintenance, and/or improvement of the physical and material capacity of research institutions.

3. Collection, analysis, and dissemination of technical and scientific information/strengthening of libraries.

4. Technical advisory services for the formation and strengthening of national research groups.

5. Technology transfer and incorporation.

6. 2 + 5.

8. Other.

9. Unspecified.

I.3 Project Execution

0. Not applicable.

1. Funding for studies and investigations.

2. Donation of equipment and inputs for the execution of projects.

3. Technical advisory services for the preparation and execution of projects.

4. Support for the execution of multi-center projects.

5. 1 + 3.

6. Support for meetings of advisory committees to review research projects.

7. Execution of projects.

8. Other.

9. Unspecified.

II. ACCORDING TO AREA OF KNOWLEDGE

00 Not applicable.

01 Biomedical

02 Clinical

03 Epidemiology

04 Health services

05 3 + 4

06 1 + 2

07 2 + 3

88 Other

99 Unspecified

III ACCORDING TO TYPE OF RESEARCH

0. Not applicable.

1. Basic

2. Applied

3. Operative

4. Experimental development

9. Unspecified