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WORLD HEALTH ORGANIZATION

SPECIAL PROGRAMME OF RESEARCH, DEVELOPMENT AND RESEARCH TRAINING IN HUMAN REPRODUCTION

PROPOSED PROGRAMME BUDGET FOR THE 1988-1989 BIENNIUM

AND

ESTIMATES FOR 1990-1991

May 1987

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## 1. PREPARATION AND PRESENTATION OF THE PROPOSED PROGRAMME BUDGET

### 1.1 Preparation

The development of the Programme Budget for the Special Programme of Research, Development and Research Training in Human Reproduction (HRP) can be summarized as follows:

- a) In odd-numbered years, the Task Force Steering Committees and the Committee on Resources for Research develop scientific plans for the following two biennia, including time and cost estimates.
- b) Following review and consolidation by the Programme Director, a detailed draft Programme Budget for the two major Programme areas - Research and Development and Resources for Research - is prepared for submission to the Scientific and Technical Advisory Group (STAG).
- c) STAG reviews the draft Programme Budget and prepares a submission to the Policy and Coordination Advisory Committee (PCAC) with its recommendations, based on scientific and technical merits and priorities.
- d) The draft Programme Budget is consolidated and submitted by the Programme Director for approval to the PCAC.

### 1.2 Presentation

The tables in this document provide financial and budgetary summaries for three biennia as follows:

- 1986-1987: Budget as approved by PCAC in November 1985 and Revised Budget as scaled down to reflect the estimated available income;
- 1988-1989: Estimated obligations for the Proposed Programme Budget;
- 1990-1991: Preliminary Estimates.

The standard WHO term "obligations" is used throughout this document to denote:

- for past activities: funds disbursed or for which WHO is legally committed to make a disbursement (e.g. research contracts that have been signed by WHO but not yet disbursed);

- for future activities: amounts expected to be committed.

The budget includes overall summary tables by Programme Area (p. 3) and by Type of Expenditures (p. 5) followed by detailed tables with descriptive texts for each Programme Area:

- I. Advisory Bodies (pp. 8-9)
- II. Research and Development (pp. 10-29)
- III. Resources for Research (pp. 30-37)
- IV. Statistics and Data Processing (pp. 38-39)
- V. Programme Management (pp. 40-41)

No further breakdown is given of Programme Area VI, Collaborative Projects. The amounts included represent the estimates for the collaborative project on the Post-Marketing Surveillance of Norplant, which were reviewed in detail by PCAC in 1986.

The UNFPA country projects are shown as a separate Programme Area in the Summary since HRP, on behalf of WHO, acts as the Executing Agency, but no further breakdown table is given.

Financial tables, contained in Annexes 1, 2 and 3, show income for the period 1970 to 1986 and estimated funds available and pledged for 1987. Annex 4 shows the HRP Staffing Levels by Programme Area.

For 1988-89 and 1990-91 the budgets are broken down by "continuing" and "new" activities as follows:

For Research and Development, the funds budgeted under "continuing" include continuation of ongoing activities under current research lines. Funds under "new" include new activities under ongoing lines and/or completely new research lines. The latter are presented in the budget tables of each task force, in decreasing order of priority, as recommended by STAG.

For Resources for Research, the amounts included under "continuing" and "new" have been calculated so as to attain approximately PCAC's recommended 2:1 ratio between funds spent on R & D and Resources for Research. In other words, "continuing" and "new" refer to the budget level rather than projects.

## 2. SUMMARY 1986-1991

### 2.1 1986-1987

The Programme Budget for 1986-1987, which was approved by PCAC in November 1985, amounted to \$40.8 million. STAG, in September 1986, recommended a scaled-down budget for Research and Development and Resources for Research which was included by the Programme Director into a total revised budget to match the estimated income level of some \$37.1 million. This revised budget was presented to and approved by PCAC in November 1986.

This level will continue to be revised by the Programme Director according to actual income received and to the rate of implementation of the plans for each Programme component.

Since biennial income, as estimated in February 1987, matched the level of the revised budget, STAG recommended no further budgetary adjustments for the operational budget at its February meeting. However, the continued weakening of the US dollar in relation to the Swiss franc has led to increased provisions having to be made for staff salaries for the remainder of the current biennium. It is estimated that most of these cost increases can be met by savings under Programme components IV (Statistics and Data Processing) and V (Programme Management). These changes have been incorporated in the Revised Budget (as of March 1987).

Tables of income by financial contributor and year are shown in Annexes 1 to 3. As can be seen in the graph on p. 6, income to the Programme increased steadily until 1980, up to \$19.0 million. During the period 1981 to 1984, there was a drop in financial resources, reaching a low of \$12.5 million. As from 1985, the position has improved, reaching an estimated level of \$21.8 million for 1987 (as calculated at the beginning of April 1987).

### 2.2 1988-1989 Proposed Budget and 1990-91 Estimates by Programme Area

Based on STAG's recommended budgets for Programme Operations (i.e. contracts and grants, supplies for multi-centre studies and scientific data processing) for the two major Programme areas (Research and Development, Resources for Research) the Programme Director has consolidated these estimates into a draft Programme Budget for 1988-1989 of approximately \$47.0 million, as shown in the summary table on p. 3, and which is herewith submitted to PCAC for approval. Some \$39 million represent "continuing" activities and \$8 million "new" activities. The proposed level represents an increase of \$6.1 million, or 11.5% over the budget approved by PCAC for the 1986-1987 biennium. Should funds available for 1988-1989 fall below \$47.0 million, the Programme Director will have to present revised budgets to STAG and PCAC.

The proposed increase includes, as a major component, an amount of some \$2.0 million for the Task Force on Long-acting Methods, where several products will reach the stage of post-phase III clinical research in 1988-1989. Together with the corresponding increase in Resources for Research (according to the 2:1 ratio), this represents some \$3.0 million (or approximately 1/2 of the proposed increase).

The percentage breakdown by Programme Area is illustrated in a pie chart on p. 7, from which it can be seen that it is proposed to allocate 51.5% to Research and Development and 25.8% to Resources for Research (i.e. a 2:1 ratio) with 7.8% for Programme Management and 5.0% for Statistics and Data Processing.

2. SUMMARY: 1986-1991 BY PROGRAMME AREA

PROGRAMME AREAS	ESTIMATED OBLIGATIONS						(in US\$1,000s)		
	1986-1987 Budget		1988-1989 Proposed Budget			1990-1991 Estimates			
	PCAC- Approved (Nov 1985)	Revised (as of March 1987)	Continuing	New	Total	Continuing	New	Total	
I. Advisory Bodies	420	420	460	-	460	500	-	500	
II. Research and Development	21,085	18,322	18,890	5,317	24,207	17,500	9,252	26,752	
III. Resources for Research	10,407	9,160	9,447	2,656	12,103	8,752	4,621	13,373	
IV. Statistics and Data Processing	2,193	2,140	2,366	-	2,366	2,416	-	2,416	
V. Programme Management	3,310	3,020	3,648	-	3,648	3,748	-	3,748	
Sub-total	37,415	33,062	34,811	7,973	42,784	32,916	13,873	46,789	
VI. Collaborative Projects	-	325	1,200	-	1,200	1,200	-	1,200	
VII. UNFPA Country Projects	3,400	3,800	3,000	-	3,000	3,000	-	3,000	
GRAND TOTAL	40,815	37,187	39,011	7,973	46,984	37,116	13,873	50,989	

### 2.3 Estimated Obligations by Type of Expenditures

The budget may also be viewed by type of expenditures, which, for ease of presentation, have been grouped under four main headings:

#### 1. Programme Operations: Contracts and Grants, Data Processing and Supplies

The Programme's contracts and grants for Research and Development, Resources for Research and Research Training are included under this heading, as well as computer costs for data processing and supplies for multi-centre studies. For 1986-87 it is estimated that some 70% of the funds for Programme Operations will be awarded to scientists/institutions in developing countries and 30% to scientists/institutions in developed countries.

#### 2. Meetings, Consultants, Duty Travel and Publications

Meetings: travel and per diem of participants as well as related miscellaneous operating expenses.

Consultants: travel, honoraria and per diem costs for scientists assisting the Programme.

Duty Travel: travel costs and per diem for Programme staff.

Publications: costs of internal and external printing of all publications emanating from the Programme.

#### 3. Personnel Services

Staff salaries and other statutory costs including WHO's contributions to staff health insurance, the staff pension fund, etc.

#### 4. Programme Support Costs and Services

Charges for support services, common services and rental charges.

TABLE I: 1986-87 AS REVISED

For 1986-87 some 64% of the total obligations is expected to be used for Programme Operations, 11% for Meetings, Consultants, Duty Travel and Publications; 21% for Personnel Services and some 4% for Programme Support and Services.

TABLE II: 1988-89 PROPOSED BUDGET

There will be an increase in the percentage for Programme Operations (from 64.1% to 66.3%) with corresponding adjustments for the other types of expenditures. The proposed breakdown is shown in a pie chart on p. 7.

#### 2.4 Comments

In the case of programme operations, it was not possible to develop "standard costs" due to the wide variation in inflation and exchange rates in various countries. The Steering Committees have therefore used estimates based on their best judgement.

Meetings, consultants, duty travel and publications have been costed in accordance with the methodology used for the WHO Regular Budget.

For personnel services, standard costs as applied by WHO for the regular budget have been used for the purposes of costing.

Programme support costs and services have been costed in accordance with the estimated requirements.

The following chapters describe the budget in detail by Programme Area.

2. SUMMARY: 1986-1989 BY TYPE OF EXPENDITURES  
(In US\$1,000s and %)

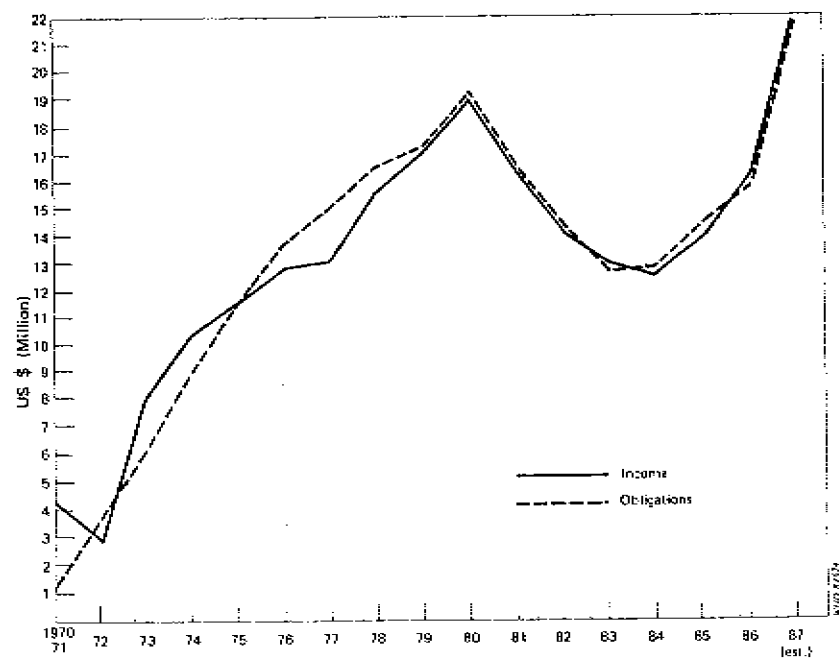
TABLE I. 1986-1987 BUDGET, REVISED (as of March 1987)

Type of Expenditures Programme Area	1 Programme Operations (Contracts & Grants, Data Processing, Supplies)	2 Meetings Consultants Duty Travel Publications	3 Personnel Services	4 Programme Support Costs & Services	T o t a l
I. Advisory Bodies	-	420	-	-	420
II. Research and Development	12,635	2,690	2,997	-	18,322
III. Resources for Research	6,867	775	1,518	-	9,160
IV. Statistics and Analysis	400	-	1,740	-	2,140
V. Programme Management	30	330	1,270	1,390	3,020
VI. Collaborative Projects	100	50	175	-	325
VII. UNFPA Country Projects	3,800	-	-	-	3,800
Grand Total	23,832	4,265	7,700	1,390	37,187
In %	64.1%	11.5%	20.7%	3.7%	100.0%

TABLE II. 1988-1989 PROPOSED BUDGET

Type of Expenditures Programme Area	1 Programme Operations (Contracts & Grants, Data Processing, Supplies)	2 Meetings Consultants Duty Travel Publications	3 Personnel Services	4 Programme Support Costs & Services	T o t a l
I. Advisory Bodies	-	460	-	-	460
II. Research and Development	17,425	2,910	3,872	-	24,207
III. Resources for Research	9,570	920	1,613	-	12,103
IV. Statistics and Analysis	450	-	1,916	-	2,366
V. Programme Management	100	590	1,558	1,400	3,648
VI. Collaborative Projects	602	-	598	-	1,200
VII. UNFPA Country Projects	3,000	-	-	-	3,000
Grand Total	31,147	4,880	9,557	1,400	46,984
In %	66.3%	10.4%	20.3%	3.0%	100.0%

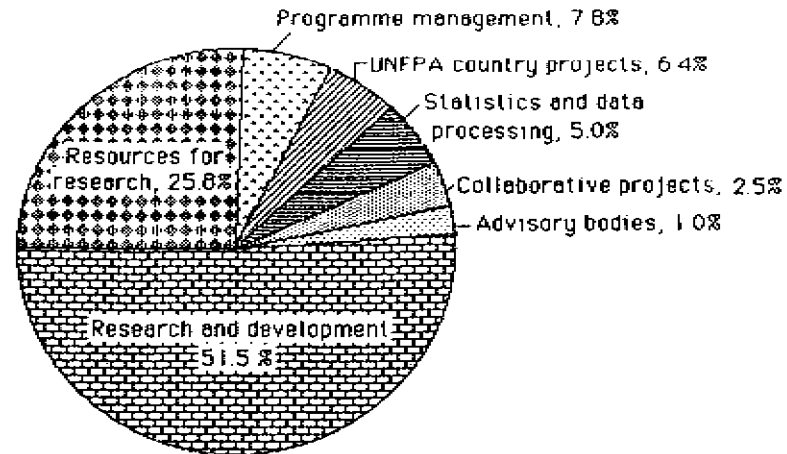
INCOME AND OBLIGATIONS FOR THE PERIOD 1970-1986  
AND PROJECTIONS FOR 1987



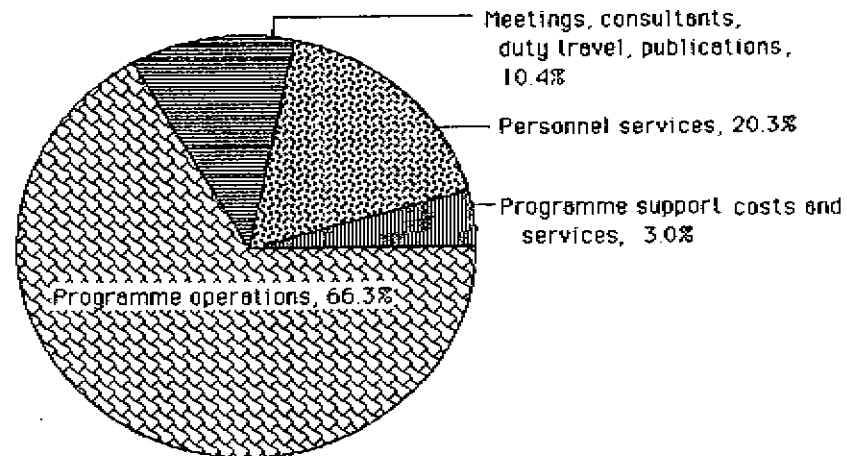


PROPOSED USE OF 1988-1989 BUDGET,  
IN PERCENTAGES

BY PROGRAMME AREA



BY TYPE OF EXPENDITURES



### 3. PROGRAMME AREA 1: ADVISORY BODIES

#### POLICY AND COORDINATION ADVISORY COMMITTEE (PCAC)

The Policy and Coordination Advisory Committee acts as an advisory body to the Director-General of WHO and makes recommendations on matters related to the policies, strategies, financing, overall organization, management and impact of the Special Programme.

Membership of the Committee is limited to thirty countries/agencies selected from financial contributors, developing countries, and interested governments and agencies according to membership rules detailed in PCAC's Terms of Reference. A balanced global distribution is maintained by having twelve members elected by the WHO Regional Committees taking into account the importance ascribed to fertility regulation in the different parts of the world.

#### SCIENTIFIC AND TECHNICAL ADVISORY GROUP (STAG)

The Scientific and Technical Advisory Group, which meets at least once each year, is the principal scientific body of the Programme and acts in an advisory capacity to the Policy and Coordination Advisory Committee (PCAC) and to the WHO Director-General. Based on policy recommendations made by PCAC, it proposes scientific and technical policies, strategies, plans and priorities as well as content, scope and dimension of the Programme. The Chairman of STAG presents the Group's report to the annual meeting of PCAC.

STAG is comprised of 15-18 members selected by the Director-General with the endorsement of PCAC. Members, who serve in a personal capacity, are appointed on the basis of their competence to serve for a period of three years (eligible for immediate reappointment only once), and represent the broad range of disciplines required for the operation of the Programme.

STAG members undertake in-depth reviews of each programme component; these reviews may involve site visits to selected projects and institutions.

3. PROGRAMME AREA I: ADVISORY BODIES

DESCRIPTION	ESTIMATED OBLIGATIONS (in US\$1,000s)			
	1986-1987 Budget		1988-1989 Proposed Budget	1990-1991 Estimates
	PCAC-Approved	As Revised		
PCAC	120	120	130	140
SIAG meetings and SIAG in-depth reviews	300	300	330	360
TOTAL	420	420	460	500

#### 4. PROGRAMME AREA II: RESEARCH AND DEVELOPMENT (SUMMARY)

The research and development activities of the Programme are currently organized into eight Task Forces within four research topics:

- A. Task Force on Safety and Efficacy of Fertility Regulating Methods
- B. Task Force on Behavioural and Social Determinants of Fertility Regulation
- C. Task Forces devoted to the development of new and improved methods of fertility regulation:
  - Task Force on Long-acting Methods of Fertility Regulation
  - Task Force on Post-ovulatory Methods of Fertility Regulation
  - Task Force on Vaccines for Fertility Regulation
  - Task Force on Male Methods of Fertility Regulation
  - Task Force on Natural Methods of Fertility Regulation
- D. Task Force on the Prevention and Management of Infertility

Research and development proposals considered for support by the Programme are subject to review for technical merit and ethical issues by the Steering Committees and the Review Group. Projects involving drugs are also reviewed by the Toxicology Group. Projects involving studies in humans are reviewed, in addition, by the WHO Secretariat Committee on Research Involving Human Subjects.

4. PROGRAMME AREA II: RESEARCH AND DEVELOPMENT (SUMMARY)

DESCRIPTION	ESTIMATED OBLIGATIONS (In US\$1,000s)							
	1986-1987 Budget		1988-1989 Proposed Budget			1990-1991 Estimates		
	PCAC-Approved	As Revised	Continuing	New	Total	Continuing	New	Total
4.1 General Activities	1,629	2,137	1,778	-	1,778	1,848	-	1,848
<u>Task Forces:</u>								
4.2 Safety and Efficacy	3,877	2,830	2,819	530	3,349	2,114	1,550	3,664
4.3 Behavioural and Social Determinants	2,197	2,090	2,611	-	2,611	2,851	-	2,851
4.4 Long-acting Methods	4,627	3,810	3,924	2,592	6,516	3,309	4,642	7,951
4.5 Post-ovulatory Methods	2,018	1,550	2,081	640	2,721	2,331	730	3,061
4.6 Vaccines	1,922	1,790	1,785	880	2,665	1,570	1,100	2,670
4.7 Male Methods	1,996	1,415	1,827	265	2,092	1,677	570	2,247
4.8 Infertility	1,230	910	1,164	250	1,414	1,114	260	1,374
4.9 Natural Methods <sup>1)</sup>	422	585	901	160	1,061	686	400	1,086
4.10 Plants	1,167	1,205	-	-	-	-	-	-
TOTAL	21,085	18,322	18,890	5,317	24,207	17,500	9,252	26,752

1) In November 1986, PCAC approved an increase in this budget line (to the level now authorized).

#### 4. PROGRAMME AREA II: RESEARCH AND DEVELOPMENT

##### 4.1 General Activities

Funds under this heading are devoted to the management of the eight Task Forces, including meetings of the Review Group and Toxicology Group. The Review and Toxicology Groups meet regularly twice a year.

These funds are also used to support the Programme's extensive collaboration with the pharmaceutical industry, and for legal activities, including patents and insurance, as well as for coordination meetings with other programmes. A provision has been made for the support of scientific meetings organized by the Programme to stimulate progress in the field.

The Director's Initiative Fund is used, as necessary, to expedite urgent new research and development and to support research initiatives not included in the research strategies of current Task Forces. Projects will be supported by the Fund on a one-time basis and, if continued, must be supported by the regular mechanisms.

4. PROGRAMME AREA II: RESEARCH AND DEVELOPMENT

4.1 General Activities

C O M P O N E N T S	ESTIMATED OBLIGATIONS (in US\$1,000s)			
	1986-1987 Budget		1988-1989 Proposed Budget	1990-1991 Estimates
	PCAC-Approved	As Revised		
Personnel Services	309	677	728	728
Consultants and Duty Travel	650	800	280 <sup>1)</sup>	310
Meetings:				
- Review Group, Toxicology Group and Coordination Meetings with other Programmes	270	300	240	265
- Scientific Meetings (Basic Science Symposia, etc.)	-	60	130	145
Director's Initiative Fund	400	300	400	400
T O T A L	1,629	2,137	1,778	1,848

1) As from 1988, consultants and duty travel (in addition to meetings) are charged to individual task forces when such activities relate directly to one task force.

4.2 Task Force: Safety and Efficacy of Fertility Regulating MethodsTHE STRATEGIC PLAN

The Task Force on Safety and Efficacy of Fertility Regulating Methods has two long-term objectives: to determine the efficacy of fertility-regulating methods in regular use or recently introduced in family planning programmes; and to identify their beneficial and adverse non-contraceptive effects, both short- and long-term.

CONTINUING ACTIVITIES1. Steroid Contraceptives(a) Cancer

The relationship between hormonal contraceptives - both oral contraceptives and injectables - and the risk of cancer is being evaluated in an ongoing multinational study. Accrual of cases from most centres, except for Thailand, was completed in 1986. Preliminary results regarding DMPA and cancer were published in 1986, as part of a WHO meeting report on DMPA and cancer. A draft manuscript on oral contraceptives and endometrial cancer was prepared in 1986 and data analysis of oral contraceptives and breast and liver cancer are underway.

The Task Force proposes to continue to support and initiate research related to possible associations between steroid hormonal contraception and neoplastic diseases; pending the results of the BRP study of oral contraceptives and neoplasia, the Task Force is exploring the need for a new study on steroid hormonal contraception and liver cancer in areas where B-hepatitis is prevalent.

(b) Cardiovascular disease

An increased risk of cardiovascular disease is the main adverse effect of oral contraceptives that has been identified in developed countries. A three-centred study on this topic was completed by the Task Force in 1985; however the few subjects recruited in this study substantially limited the validity of the conclusions. A larger multi-centred case-control study has been designed and its pilot phase will be launched in 1987. A multi-centred study on coagulation parameters and various oral contraceptives combinations was completed, and the first report is published. Two other studies examining changes in blood pressure and lipids and lipoprotein metabolism completed data collection and one report has been published.

(c) Effects on progeny/lactation

The Task Force is undertaking studies on hormonal contraceptive use during pregnancy and lactation and the effects, if any, on the children. These studies assess possible effects during the first few years of life, as well as later during puberty. A study aimed at determining any effect on growth and health of infants born to mothers who used progestogen-only contraceptives during lactation was developed and its pilot phase has begun.

(d) Interaction studies

Several studies on the interaction between contraceptives and diseases prevalent in developing countries, and drugs used to treat those diseases, are being supported by the Task Force. The diseases being studied include malaria, schistosomiasis, and iron deficiency anaemia. Plans are underway to study gallbladder disease and B-hepatitis as well.

The Task Force also plans to initiate new research aimed at evaluating if and how steroid hormonal contraceptives and other contraceptive methods modify the risk

of attracting or modifying the course of diseases prevalent in developing countries, such as B-hepatitis.

2. Intra-uterine Devices

Comparative trials of various types of IUDs continue to be conducted by the Programme, to assess both the efficacy as well as the side-effects and continuation rates, of newly-available IUDs.

3. Sterilization

A pilot study in the Dominican Republic for a sterilization morbidity and mortality surveillance scheme developed by the World Federation for Voluntary Sterilization is being supported by the Task Force. In China, short- and medium-term sequelae of female sterilization by phenolatabrine paste are being examined in a retrospective study.

4. Induced Abortion

Induced abortion continues to contribute to high rates of maternal mortality for women in many developing countries, and is an important cause of serious illness among women of reproductive age. The Task Force is engaged in a multicentre study which evaluates mortality and morbidity and cost on health services of induced abortion in countries where safe abortion is not widely available.

5. Post-marketing SurveillanceNorplant

The Task Force has, in collaboration with the Population Council and Family Health International, developed the protocol and forms for a long-term post-marketing surveillance of Norplant subdermal implants. The pilot phase of this study will start in 1987. This project will also serve as a model for the post-marketing surveillance of other new contraceptive methods.

NEW ACTIVITIES1. Post-marketing Surveillance

The Task Force proposes to continue to develop post-marketing research strategies for new contraceptive methods as they are incorporated into family planning programmes. Specifically, the Task Force, in collaboration with the Task Force on Long-Acting Agents, is preparing post-marketing research activities for the 1-month injectable and the vaginal ring, developed by the Programme.

2. HIV Infection(a) Barrier methods

The Task Force proposes to evaluate the need for further studies regarding efficacy of barrier methods and, in particular, the condom, in developing countries since it is foreseen that the prevalence of use of the condom will increase as a result of the HIV and AIDS pandemic.

(b) Interaction studies

The Task Force also proposes to evaluate the need for further studies regarding the interaction of contraceptive methods with HIV infection, disease or treatment.



4. PROGRAMME AREA II: RESEARCH AND DEVELOPMENT

4.2 Task Force: Safety and Efficacy of Fertility Regulating Methods

DESCRIPTION	ESTIMATED OBLIGATIONS						(in US\$1,000s)		
	1986-1987 Budget		1988-1989 Proposed Budget			1990-1991 Estimates			
	PCAC- Approved	As Revised	Continuing	New	Total	Continuing	New	Total	
1. Personnel Services	432	430	484	-	484	484	-	484	
2. Meetings, Consultants, Duty Travel <sup>1)</sup>	250	300	320	80	400	240	200	440	
3. Research Lines									
Steroid Contraceptives									
- Cancer	700	700	375	-	375	200	-	200	
- Cardiovascular disease	550	488	1,050	-	1,050	1,050	-	1,050	
- Effects on progeny/lactation	300	219	200	-	200	25	-	25	
- Interaction studies	520	50	150	-	150	20	-	20	
Intra-uterine Devices	150	110	140	-	140	95	-	95	
Sterilization	70	69	-	-	-	-	-	-	
Induced abortion	250	40	100	-	100	-	-	-	
Post-marketing surveillance									
- Norplant <sup>2)</sup>	300	300	-	-	-	-	-	-	
- Vaginal ring	-	-	-	150	150	-	600	600	
- 1-month injectable	-	-	-	150	150	-	600	600	
HIV infection									
- Barrier methods	-	-	-	50	50	-	50	50	
- Interaction studies	-	-	-	100	100	-	100	100	
Pelvic inflammatory disease	200	124	-	-	-	-	-	-	
DHPA efficacy	55	-	-	-	-	-	-	-	
Short-term safety	100	-	-	-	-	-	-	-	
Sub-total 3	3,195	2,100	2,015	450	2,465	1,390	1,350	2,740	
TOTAL	3,877	2,830	2,819	530	3,349	2,114	1,550	3,664	

1) Consultants and duty travel included as from 1988.

2) Budgeted for under "Collaborative Projects".

## 4. PROGRAMME AREA II: RESEARCH AND DEVELOPMENT

4.3 Task Force: Behavioural and Social Determinants of Fertility RegulationTHE STRATEGIC PLAN

The long-term objective of the Task Force on Behavioural and Social Determinants of Fertility Regulation is to generate policy relevant research to assist health planners and scientists in their efforts to increase access and use of fertility regulation in developing countries. The strategic plan gives priority to research on continuation and compliance, choice and decision in the use of methods, and on the introduction of new methods into programmes.

The Task Force is monitoring some fifty research projects in developing countries dealing with cultural, community, service and individual factors that affect the use of contraception. The growing demand for methods of fertility regulation makes it essential to understand the matrix of interactions that link the user, the service provider and the delivery system. Similarly the factors affecting continuation of method use, as well as other areas of relevance for programme and policy development, are being emphasized.

(a) Factors affecting contraceptive use

Among recently initiated projects in this area is a study of the factors that affect differential use of contraception among rural women in the People's Republic of China. Another project in an urban lower-income setting is being completed in Brazil. A major multi-country research project on the dynamics of contraceptive use designed to determine the factors that account for differentials in continuation of use of various methods started in 1987.

(b) Contraceptive choice

A project in Chile and another in Thailand started in 1986, plus three projects in Mexico, Tanzania and Zambia, started in 1985, aim at understanding the processes, particularly in rural settings, through which women and men accept or reject contraception.

(c) Field studies of new methods of contraception

Two projects, in Tunisia and Egypt, are nearly completed and a large one began in Indonesia to study the acceptability and side-effects of injectable contraceptives. Research guidelines for field studies of new methods will assist researchers with directions for a new generation of projects and will be applied to the vaginal ring and other methods. Acceptability issues, including psychosocial determinants, are stressed.

(d) Community dynamics and fertility regulation

An area of particular interest is the influence of community leaders, traditional medical practitioners, health institutions and other elements of community organization on contraceptive acceptability. Projects are ongoing in Cameroon, India, Kenya, Sri Lanka, Sudan and Thailand.

(e) Gender roles and reproductive behaviour

Increased understanding regarding the changing roles of women or men and how they facilitate or impede the adoption and use of particular contraceptive methods is needed.

(f) Costs and benefits of contraception

Studies on the economic, social and psychological costs as well as the benefits of contraception are planned after the development of the appropriate research approaches.

(g) Health services research

Projects dealing with the integration of MCH and family planning services are now being completed in India, Kenya, Malaysia and Peru.

4. PROGRAMME AREA II: RESEARCH AND DEVELOPMENT

4.3 Task Force: Behavioural and Social Determinants of Fertility Regulation

DESCRIPTION	ESTIMATED OBLIGATIONS						(in US\$1,000s)		
	1986-1987 Budget		1988-1989 Proposed Budget			1990-1991 Estimates			
	PCAC- Approved	As Revised	Continuing	New	Total	Continuing	New	Total	
1. Personnel Services	547	500	771	-	771	771	-	771	
2. Meetings, Consultants, Duty Travel <sup>1)</sup>	200	200	300	-	300	330	-	330	
3. <u>Research Lines</u>									
Factors affecting contraceptive use	410	453	480	-	480	500	-	500	
Contraceptive choice	280	275	250	-	250	200	-	200	
Field studies	210	132	250	-	250	380	-	380	
Community dynamics	180	257	270	-	270	300	-	300	
Gender roles	120	50	190	-	190	200	-	200	
Costs and benefits	65	-	60	-	60	170	-	170	
Health services research	185	223	40	-	40	-	-	-	
Sub-total 3	1,450	1,390	1,540	-	1,540	1,750	-	1,750	
TOTAL	2,197	2,090	2,611	-	2,611	2,851	-	2,851	

<sup>1)</sup> Consultants and duty travel included as from 1988.

## 4. PROGRAMME AREA II: RESEARCH AND DEVELOPMENT

4.4 Task Force: Long-acting Systemic Agents for Fertility RegulationTHE STRATEGIC PLAN

The overall objectives are to develop compounds and/or drug delivery systems which are superior to existing long-acting contraceptives and which can be readily administered in family planning programmes.

CONTINUING ACTIVITIES

The Task Force is pursuing six main lines of research to implement the following strategic plan:

(a) Injectable Contraceptive Preparations1. Once-a-month

A Phase III trial of two once-a-month injectable preparations (HRP102 and Cycloprovera) is ongoing in 16 centres with the goal of registering one or both in 1988. Pharmacokinetic/pharmacodynamic studies have indicated that these are the optimal preparations. Studies on new steroids for inclusion in subsequent formulations are ongoing.

2. Two-to-six monthly

Studies of existing injectable preparations (DMPA and NET-EN) are ongoing to assess their effects on metabolic parameters, particularly lipid metabolism. A pharmacokinetic study to ascertain if it is possible to improve the formulation of DMPA will be started shortly. New esters of levonorgestrel have undergone preliminary human trials and two selected for further study. A Phase II study will be undertaken to assess whether either of these compounds cause less disruption of endometrial bleeding than NET-EN. Physico-chemical studies to assist in optimizing their formulation are underway.

(b) Implants and Other Delivery Systems

A Phase II clinical trial of two Capronor biodegradable implants of different lengths which release low doses of levonorgestrel is ongoing in collaboration with NIH, as well as studies to provide an improved device. Exploratory studies on new biodegradable implants are planned.

(c) Vaginal Rings

Manufacturing equipment is almost complete to allow production of a vaginal ring releasing 20ug of levonorgestrel for 24 hours to be used continuously for three months. Information will be

produced for completion of a Product License Application in the United Kingdom. Meantime, a two-year Phase III clinical trial is ongoing, as well as studies on the effect of these drugs on follicular growth and development.

(d) Post-partum Contraception

Vaginal rings releasing progesterone for use in the post-partum period have been manufactured to allow comparison with another ring of a different dosage produced by the Population Council. This is a collaborative project with the Council. In addition, studies on the use of LHRH agonists are continuing.

(e) Effects of Progestogens on Endometrial Bleeding

Studies are continuing to investigate the effects of low doses of progestogens on the endometrium. These studies, together with another to evaluate treatment regimens for progestogen-induced endometrial bleeding, are expected to give insights into the mechanisms of action of progestogens on endometrial function and to facilitate development of compounds which do not give rise to unpredictable episodes of bleeding.

NEW ACTIVITIES

It is expected that a new contraceptive method will emanate from 5 of the 6 strategic lines above during the next two biennia. In late 1987 or early 1988, the vaginal ring releasing 20ug of levonorgestrel per 24h, and the two once-a-month injectable contraceptives, Cycloprovera and HRP102, will become available to certain national family planning programmes. In 1990/1991, three other methods are expected to reach this stage - a new two-to-three monthly injectable, the progesterone-releasing vaginal ring for use post-partum and possibly the Capronor implant.

The Task Force will work closely with governments in the introduction of these new methods, as well as with the Task Forces on Behavioural and Social Determinants of Fertility Regulation and on Safety and Efficacy of Fertility Regulating Methods. This will include: the conduct of introductory studies addressing clinical and acceptability aspects, programme requirements and evaluation of the impact of the introduction of the product; the development of user and provider materials and other educational and communication instruments; manufacture of the drug or device which will include the transfer of technology as appropriate; and the involvement in regulatory issues.

4. PROGRAMME AREA II: RESEARCH AND DEVELOPMENT

4.4 Task Force: Long-acting Systemic Agents

DESCRIPTION	ESTIMATED OBLIGATIONS (in US\$1,000s)							
	1986-1987 Budget		1988-1989 Proposed Budget			1990-1991 Estimates		
	PCAC-Approved	As Revised	Continuing	New	Total	Continuing	New	Total
1. Personnel Services	432	430	529	242	771	529	242	771
2. Meetings, Consultants, Duty Travel <sup>1)</sup>	250	250	320	200	520	270	300	570
3. <u>Research Lines</u>								
<u>Injectables</u>								
- Once-a-month	670	325	305	1,300	1,605	200	1,300	1,500
- 2 to 6-monthly	740	1,015	730	-	730	250	1,000	1,250
Implants and other delivery systems	920	210	350	-	350	600	300	900
Vaginal rings	965	915	940	850	1,790	1,060	800	1,860
Post-partum contraception	400	315	550	-	550	200	700	900
Endometrial bleeding	250	350	200	-	200	200	-	200
Sub-total 3	3,945	3,130	3,075	2,150	5,225	2,510	4,100	6,610
TOTAL	4,627	3,810	3,924	2,592	6,516	3,309	4,642	7,951

1) Consultants and duty travel included as from 1988.

## 4. PROGRAMME AREA II: RESEARCH AND DEVELOPMENT

4.5 Task Force: Post-ovulatory MethodsTHE STRATEGIC PLAN

The long-term objective of the Task Force on Post-ovulatory Methods for Fertility Regulation is the development of fertility-regulating agents with a post-ovulatory mode of action i.e. agents that interfere with one or more of the physiological events governing the reproductive process from the moment the oocyte resumes meiosis and is released from the ovary until pregnancy has been established.

CONTINUING ACTIVITIES

The Task Force's current research proceeds along four main lines, described below in order of priority.

(a) Antiprogestins

Work will be continued on the use of RU 486 in combination with uterotonic agents such as prostaglandins for menses induction and termination of early pregnancy. The aim of these studies is to establish one or more treatment regimens that in terms of safety, efficacy and ease of administration will provide developing countries with a cost-effective alternative to currently available surgical and medical methods. As in the past, Task Force research in this area will involve: (i) pilot-studies of intra-uterine pressure changes following administration of selected uterotonic agents to RU 486-treated, early pregnant women, and (ii) clinical efficacy trials of promising combination regimens.

Using improved methodology involving high pressure liquid chromatography (HPLC) work will be continued on the measurement of RU 486 and its metabolites in the peripheral circulation and in uterine tissues. Concentrations of intracellular steroid hormone receptors will also be determined in some of these studies. This research will provide further information on the pharmacokinetic behaviour and metabolism of the drug as well as giving an insight into its mechanism(s) of action. In addition, these data will serve as a benchmark against which future formulations of the compound for oral or parenteral use can be compared.

Further exploratory studies will be carried out to evaluate other potential applications of RU 486, including its use for pre-operative cervical ripening, for prevention of implantation and as a once-a-month agent.

Given the obvious potential of antiprogestins as a novel approach to fertility regulation the Task Force expects a significant expansion of its activities in this area which will include the assessment of additional antiprogestins that become available for clinical trials.

(b) Post-coital drugs

Most of the work conducted under this heading will continue to be focused on the clinical evaluation of gestagens for repeated postcoital use. Levonorgestrel will remain the agent of first choice but other gestagens - particularly those that are commonly used as visiting pills in the People's Republic of China and may be associated with less menstrual cycle disturbance and fewer side-effects - will also be further assessed.

(c) Anti-implantation agents

Task Force activities in this area are concerned primarily with the role of estrogen in primate implantation and include studies on endometrial estrogen receptor changes at the time of implantation and following anti-estrogen treatment, and investigations on the effect of anti-estrogens on luteal function and the establishment of pregnancy.

(d) Exploratory studies

In searching for new potential leads the Task Force will continue to fund exploratory studies of compounds that have been shown to possess effects on post-ovulatory reproductive events. Compounds that belong to this category include LHRH analogues - antagonists in particular - and inhibitors of ovum maturation and of steroid biosynthesis.

NEW ACTIVITIESAnti-implantation agents

A new line of research that seems worthy of investigation relates to the role of platelet activating factor (PAF) in primate implantation and the study of PAF antagonists as potential, fertility-regulating agents.

Exploratory studies

Additional funds that may be made available to the Task Force will be employed to continue the pre-clinical development of one or more promising compounds identified by the Task Force on Plants for Fertility Regulation. In the first instance this will involve synthesis/extraction of the active principle(s) in sufficient amounts to confirm efficacy in at least one non-human primate species.

4. PROGRAMME AREA II: RESEARCH AND DEVELOPMENT

4.5 Task Force: Post-ovulatory Methods

DESCRIPTION	ESTIMATED OBLIGATIONS (in US\$1,000s)							
	1986-1987 Budget		1988-1989 Proposed Budget			1990-1991 Estimates		
	PCAC-Approved	As Revised	Continuing	New	Total	Continuing	New	Total
1. Personnel Services	253	170	191	60	251	201	90	291
2. Meetings, Consultants, Duty Travel <sup>1)</sup>	180	130	180	80	260	200	90	290
3. <u>Research Lines</u>								
Antiprogestins	1,160	602	1,160	-	1,160	1,370	-	1,370
Post-coital drugs	175	115	200	-	200	140	-	140
Anti-implantation agents	105	320	220	150	370	240	150	390
Exploratory studies	145	213	130	350	480	180	400	580
Sub-total 3	1,585	1,250	1,710	500	2,210	1,930	550	2,480
TOTAL	2,018	1,550	2,081	640	2,721	2,331	730	3,061

1) Consultants and duty travel included as from 1988.

## 4. PROGRAMME AREA II: RESEARCH AND DEVELOPMENT

4.6 Task Force: Vaccines for Fertility RegulationTHE STRATEGIC PLAN

The principal objective of the Task Force on Vaccines for Fertility Regulation is to develop vaccines based on specific components of the gametes and the early conceptus whose elimination or neutralization by immunological means will result in safe, effective and acceptable antifertility methods.

CONTINUING ACTIVITIES

The Task Force's current research is focussed on the development of a vaccine based on human chorionic gonadotrophin (hCG). Studies in this area include the Phase I clinical evaluation of the hCG vaccine, comparative evaluations of alternative vaccine components and the development of a baboon chorionic gonadotrophin (bCG) vaccine.

(a) Phase I and Phase II clinical trials

This initial single-centre trial will be completed in 1987 with detailed follow-up examinations of all volunteers to determine the magnitude and duration of the anti-hCG immunity elicited as well as the nature of any side-effects detected. Depending on the outcome of this first study and of discussions with the appropriate regulatory authorities, further Phase I and/or Phase II trials in this and other centres may be initiated in 1987.

(b) Developments of a second-generation hCG vaccine

A large number of alternative components and formulations are currently under evaluation in an effort to develop an improved hCG vaccine with enhanced activity, greater ease of manufacture and delivery. These studies include work on improved immunogens, carriers, adjuvants and biocompatible delivery systems each of which is selected for evaluation on the basis of its ability to elicit the desired level and type of immunity with minimal side-effects.

(c) Baboon chorionic gonadotrophin vaccine development

Because of the species-specificity of the chorionic gonadotrophins, it is essential to develop a homologous animal model system if the safety and efficacy of this form of iso-immunization is to be meaningfully assessed. Studies on the

structure of bCG obtained from pregnancy urine and from the gene coding for the hormone are continuing in order to determine the amino acid sequence on which peptide synthesis for vaccine development will be based. Novel hormone isolation and characterization procedures and recombinant DNA technology are being used in these studies.

(d) Mechanism of action studies

These include in-vivo and in-vitro (primate embryo culture systems) studies.

NEW ACTIVITIES

As a result of a successful outcome of a pilot study to determine the feasibility of using monoclonal antibodies and molecular genetics techniques to identify tissue-specific and functionally-important trophoblast membrane antigens, a vaccine development programme in this area has been initiated.

A similar programme in the area of sperm membrane antigen based vaccines may also be initiated subject to the availability of additional funding through collaborative projects with other Programmes.

Recent studies on the elicitation of secretory immunity at mucosal surfaces have produced data to suggest that this approach might be used to develop immunity restricted to the lumen of the male or female genital tracts and would have theoretical advantages in terms of improved vaccine efficacy and safety. This approach could be pursued if additional funding was made available to the Programme.

A number of innovative studies on vaccine design, route, mode and frequency of administration are important for the development and application of effective fertility control vaccines. Work will be done in collaboration with other WHO programmes concerned with vaccine development.



4. PROGRAMME AREA 11: RESEARCH AND DEVELOPMENT

4.6 Task Force: Vaccines

DESCRIPTION	ESTIMATED OBLIGATIONS							
	1986-1987 Budget		1988-1989 Proposed Budget			1990-1991 Estimates		
	PCAC- Approved	As Revised	Continuing	New	Total	Continuing	New	Total
1. Personnel Services	122	150	310	-	310	310	-	310
2. Meetings, Consultants, Duty Travel <sup>1)</sup>	100	140	160	70	230	170	80	250
3. <u>Research Lines</u>								
Anti-hCG vaccine*								
- Phase I and Phase II clinical trials	405	375	350	-	350	175	-	175
- Second generation hCG vaccine	435	350	510	-	510	715	-	715
- Anti-baboon CG vaccine	705	635	275	-	275	-	-	-
- Mechanism of action studies	155	140	180	-	180	200	-	200
Anti-trophoblast vaccine	(500)	-	-	810	810	-	1,020	1,020
Sub-total 3	1,700	1,500	1,315	810	2,125	1,090	1,020	2,110
TOTAL	1,922	1,790	1,785	880	2,665	1,570	1,100	2,670

- 1) Consultants and duty travel included as from 1988.  
 \* does not include costs likely to be met by an industrial partner.  
 ( ) not included in total, subject to obtaining additional funding.

## 4. PROGRAMME AREA II: RESEARCH AND DEVELOPMENT

4.7 Task Force: Methods for the Regulation of Male FertilityTHE STRATEGIC PLAN

The objective of the Task Force is to develop new and improved methods for fertility regulation to be used by males.

CONTINUING ACTIVITIES

The current activities of the Task Force are:

Hormonal methods

- (a) Long-acting androgen esters: This includes the priority development of one ester (code name 20 Aet-1), into clinical studies and the testing of other esters and formulations for androgen supplementation.
- (b) Progestogen-androgen combinations: Studies with combination regimes of different progestagens and androgens to achieve better efficacy and acceptability will be carried out.
- (c) LHRH analogue-androgen combinations: The reversibility of long-term suppression of testicular function by LHRH agonist in monkeys and the improvement in the efficacy of slow release micro-encapsulation of LHRH agonists in men will be assessed.
- (d) Evaluation of functional capacity of residual sperm in azoospermia or severe oligospermia: This includes establishment of the protocol of a multi-centre field trial to determine if azoospermia is an absolute requirement in a male antifertility strategy; and two studies involving suppression of normal men to low oligospermia by the use of testosterone enanthate alone or in combination with DHPA to determine if the residual sperm show functional capacity in well controlled in vitro tests.

Drugs and plant products

- (a) Synthesis programme: This includes synthesis and screening of drugs with an action on sperm in the epididymis (joint programme with IODD); establishment of a programme of targeted research in this area; conduct of a Symposium on this subject (jointly with Family Health International).
- (b) Tripterigium wilfordii: This includes chemical isolation of active components; retrospective clinical follow-up of patients immediately after cessation of treatment; and mechanisms of action and reversibility studies in rats. This is a collaborative programme with the Jiangsu Family Planning Institute, Nanjing.

- (c) Gossypol: This includes development of immunoassays and of labelled gossypol to aid studies on the mechanism of action of (-) gossypol; screening the analogues synthesised by Task Force Scientists for spermicidal and anti-viral action (in collaboration with NIH); studies to understand gossypol-induced hypokalaemia including the search for an animal model and the follow-up of patients with renal damage after cessation of gossypol administration.

Vasectomy

Side effects: Studies on effects on prostatic size and function will be completed; and studies on the immune response to vasectomy and its influence on the success of reversibility will be continued.

NEW ACTIVITIESHormonal methods

Efficacy of oligospermia in an antifertility strategy: This is a fundamental question needing an answer in a carefully monitored field trial with major impact on male antifertility strategy. This activity is relatively high cost, medium-term and relevant to previous programme research.

LHRH analogue-androgen combinations: New non-toxic LHRH antagonists are becoming available with anticipated greater efficacy than LHRH agonists. This activity is medium cost and medium-term, and relevant to previous programme research.

Vasectomy

Percutaneous vas occlusion: This includes collaborative investigations with Chinese investigators on the immune response and its association with reversibility in the percutaneous vas occlusion method in which medical polyurethane elastomer has been used as the occluding agent; and prospective studies with imported toxicologically-approved materials. This is a relatively low cost activity with high impact in developing country programmes in which WHO can offer special experience and expertise.

Exploratory approaches

Testicular hyperthermia, as a simple, non-chemical means of sperm suppression, might find widespread acceptability in developing country settings because of its low cost and easy reversibility.

Research on the potential of inhibin as a lead for male contraception will also be pursued.

4. PROGRAMME AREA II: RESEARCH AND DEVELOPMENT

4.7 Task Force: Methods for the Regulation of Male Fertility

DESCRIPTION	ESTIMATED OBLIGATIONS						(in US\$1,000s)		
	1986-1987 Budget		1988-1989 Proposed Budget			1990-1991 Estimates			
	PCAC- Approved	As Revised	Continuing	New	Total	Continuing	New	Total	
1. Personnel Services	231	235	287	-	287	287	-	287	
2. Meetings, Consultants, Duty Travel <sup>1)</sup>	200	140	160	30	190	160	50	210	
3. <u>Research Lines</u>									
Hormonal methods									
- Long-acting androgen esters	330	110	175	-	175	250	-	250	
- Progestogen-androgen combinations	50	40	155	-	155	175	-	175	
- LMRH analogue-androgen combination	90	105	255	85	340	75	180	255	
- Assessment of residual sperm function	150	231	265	-	265	50	340	390	
Drugs and plant products									
- Sperm maturation and epididymal drugs	140	57	100	-	100	450	-	450	
- Tripterigium wilfordii	-	102	190	-	190	200	-	200	
- Gossypol	705	297	70	-	70	-	-	-	
Vasectomy									
- Safety	100	40	20	-	20	-	-	-	
- Percutaneous vas occlusion	-	30	150	-	150	30	-	30	
Exploratory approaches	-	28	-	150	150	-	-	-	
Sub-total 3	1,565	1,040	1,380	235	1,615	1,230	520	1,750	
TOTAL	1,996	1,415	1,827	265	2,092	1,677	570	2,247	

<sup>1)</sup> Consultants and duty travel included as from 1988.

## 4. PROGRAMME AREA II: RESEARCH AND DEVELOPMENT

4.8 Task Force: Prevention and Management of InfertilityTHE STRATEGIC PLAN

The long-term objectives of the Task Force are:

- (a) to determine the prevalence of infertility and the preventable factors in its causation;
- (b) to standardize and simplify the investigation and management of the infertile couple including the role of primary and secondary health care in infertility management;
- (c) to evaluate new, simple and effective methods for the diagnosis and treatment of infertility; and
- (d) to undertake research into the principal causes of unexplained infertility.

CONTINUING ACTIVITIES

The Task Force's current research proceeds along the first four of the above main lines.

(a) Epidemiology/prevention

Studies are being completed to determine the prevalence of infertility in different communities and to link these studies with the clinical investigation of the infertile couple. The prevalence of STD in fertile and infertile couples will be studied.

(b) Simplified investigation and management of the infertile couple

Experience gained from the study conducted in 33 centres on 8,500 infertile couples has permitted the development of a standardized and simplified approach to the investigation of the infertile couple. The definitive version of the instruction manual and forms will be introduced and incorporated into routine clinical management in the majority of participating centres.

Microcomputer software is being developed to enable the patient monitoring, recording of data from multiple sources, and the validation of the clinical diagnoses that are reached. This will be further refined and evaluated and treatment/follow-up algorithms developed.

(c) New methods for diagnosis and treatment

Simple diagnostic kits are being evaluated with the eventual objective of home use for the prediction and detection of ovulation as well as the monitoring of the hormonal profiles of the menstrual cycle. Kits will be developed for the detection of prior and current STD infection suitable for use in developing countries.

Studies of drug treatment of men with oligospermia, surgical treatment of varicocele and the drug treatment of immunological causes of infertility in the male are continuing.

(d) Etiology of unexplained infertility

This work will be focused at first upon the monitoring of follicular development and rupture in women with unexplained infertility.

NEW ACTIVITIESPrevention of sexually-transmitted diseases (including condom development)

The Task Force is planning to expand its work on the prevention of sexually-transmitted diseases, as a major cause of infertility, including the development of improved barrier methods such as condoms and spermicides.

4. PROGRAMME AREA II: RESEARCH AND DEVELOPMENT

4.8 Task Force: Prevention and Management of Infertility

DESCRIPTION	ESTIMATED OBLIGATIONS							(in US\$1,000s)
	1986-1987 Budget		1988-1989 Proposed Budget			1990-1991 Estimates		
	PCAC- Approved	As Revised	Continuing	New	Total	Continuing	New	Total
1. Personnel Services	130	140	144	-	144	144	-	144
2. Meetings, Consultants, Duty Travel <sup>1)</sup>	110	120	130	50	180	140	60	200
3. <u>Research Lines</u>								
Simplified investigation and management	480	190	250	-	250	155	-	155
New methods for diagnosis and treatment	230	200	275	-	275	265	-	265
Epidemiology/prevention	25	120	305	-	305	250	-	250
Etiology of unexplained infertility	255	140	60	-	60	160	-	160
Prevention of sexually-transmitted diseases (including condom development)	-	-	-	200	200	-	200	200
Sub-total 3	990	650	890	200	1,090	830	200	1,030
TOTAL	1,230	910	1,164	250	1,414	1,114	260	1,374

<sup>1)</sup> Consultants and duty travel included as from 1988.

## 4. PROGRAMME AREA II: RESEARCH AND DEVELOPMENT

4.9 Task Force: Natural MethodsTHE STRATEGIC PLAN

As recommended by the Scientific and Technical Advisory Group the Task Force conducts biomedical research along three main lines, namely lactation, indices of the fertile period and natural family planning (NFP) methods, with priority given to lactation.

(a) Lactation

Lactational research conducted by the Task Force is directed towards a better understanding of the determinants of lactational amenorrhoea and infertility, and the mechanisms involved. In the long term this increased knowledge should enable nursing mothers (i) to optimize and enhance the contraceptive effect of lactation through adoption of scientifically validated guidelines in respect of breastfeeding practice, and (ii) to determine, through the use of simple methodology, their fertility status throughout the period of lactation.

(b) Indices of the fertile period

Research conducted by the Task Force under this topic is directed at the identification of potential indicators of fertility status, in particular those indicators that hold promise for development into simple, inexpensive and easy-to-use technology. Potential users of such technology include: (i) nursing women; (ii) couples practising NFP or using barrier methods or coitus interruptus; and (iii) women wishing to conceive.

(c) Natural family planning

Task Force interest in this area is concerned primarily with the contraceptive value of currently employed methods of NFP. It should be noted that, in accordance with the STAG recommendation referred to above, only those activities that are considered of highest priority, are undertaken under this heading.

CONTINUING ACTIVITIES(a) Lactation

The Task Force's most important activity in this area is a multicentre, longitudinal study of the duration of lactational amenorrhoea in relation to breastfeeding practices. The need for this study was demonstrated by the findings of the Task Force-supported, secondary analysis that was done on data from some 830 mother-infant pairs who had participated in longitudinal studies in Australia, Chile and the United Kingdom. The pilot-phase of the prospective study was started in 1986 and the main study is expected to commence in late 1987 or early 1988.

The project is being co-sponsored by the Institute for International Studies in Natural Family Planning and will be conducted in at least one centre from each of the world's major geographical regions.

Other Task Force studies in this area are examining e.g. the diurnal secretion patterns of pituitary gonadotropins and prolactin under basal conditions and in response to suckling at different stages of lactation, and the effect of changing breastfeeding behaviour upon ovarian function in menstruating, lactating women. Support is also being provided to the assessment and further validation of a radioimmunoassay for prolactin which can be performed on capillary blood obtained by fingerprick and spotted onto filter paper. This development should greatly facilitate studies of the secretory dynamics of prolactin since it allows sample collection at frequent intervals by the mothers themselves.

Scientific knowledge about the role of breastfeeding, including its birth-spacing effect, has greatly increased during recent years, but the information has been slow to permeate down to grassroot level. In trying to narrow this gap the Task Force will continue to collaborate with Family Health International, the Institute for International Studies in Natural Family Planning and WHO's Maternal and Child Health Unit in providing up-dated information to the various categories of health care personnel.

(b) Indices of the fertile period

The volume of cervico-vaginal fluid has been shown to change in a characteristic and reproducible manner during the course of the normal menstrual cycle. Since aspiration of the fluid is easy to learn and can be done by women themselves, the volume changes might represent an additional marker of the fertile period. The Task Force will continue to explore this possibility.

(c) Natural family planning

Studies are on-going to assess the characteristics of cervical mucus, including its interaction with sperm, obtained from lactating mothers and to determine the relationship between ovarian hormone secretion and the sympto-thermal markers of fertility in premenopausal women.

NEW ACTIVITIES

Based on research previously supported by the Programme a non-isotopic method for the assay of urinary steroid glucuronides has been developed by private enterprise. The assay has the potential for development into a dipstick method for home-use and will be assessed by the Task Force to determine its reliability for prediction and detection of the fertile period.

4. PROGRAMME AREA II: RESEARCH AND DEVELOPMENT

4.9 Task Force: Natural Methods

DESCRIPTION	ESTIMATED OBLIGATIONS						(in US\$1,000s)		
	1986-1987 Budget		1988-1989 Proposed Budget			1990-1991 Estimates			
	PCAC- Approved	As Revised	Continuing	New	Total	Continuing	New	Total	
1. Personnel Services	92	115	96	30	126	86	-	86	
2. Meetings, Consultants, Duty Travel <sup>1)</sup>	40	100	150	30	180	120	80	200	
3. <u>Research Lines</u>									
Lactation	210	230	540	-	540	400	-	400	
Indices of the fertile period	80	25	80	-	80	80	-	80	
Urinary steroid glucuronide assays	-	35	-	100	100	-	220	220	
Natural Family Planning	-	80	35	-	35	-	100	100	
Sub-total 3	290	370	655	100	755	480	320	800	
TOTAL	422	585	901	160	1,061	686	400	1,086	

<sup>1)</sup> Consultants and duty travel included as from 1988.

#### 5. PROGRAMME AREA III: RESOURCES FOR RESEARCH (SUMMARY)

The activities of Programme Area III are twofold. They are focused first on strengthening the research capacities of developing countries and second, on maintaining a global network of institutions which collaborate with the research and research training activities of the Special Programme.

This Programme Area had a major review in 1985 by the newly constituted Committee on Resources for Research and a new strategic plan for the strengthening of the research capacities of developing countries was established.

The long-term goal of this plan is to facilitate the development of a global network of research institutions incorporating countries that have nationally supported family planning programmes.

The three main budget lines for Programme Area III (i.e. General Activities, Research Capability Strengthening and Network Support, and Standards and Quality Control) are further explained in the subsequent pages. The total budget being proposed is in accordance with the 2:1 ratio established by PCAC for Programme Areas II and III.



5. PROGRAMME AREA III: RESOURCES FOR RESEARCH (SUMMARY)

DESCRIPTION	ESTIMATED OBLIGATIONS						(in US\$1,000s)		
	1986-1987 Budget		1988-1989 Proposed Budget			1990-1991 Estimates			
	PCAC- Approved	As Revised	Continuing	New	Total	Continuing	New	Total	
5.1 General Activities	958	1,030	963	205	1,168	863	395	1,258	
5.2 Research Capability Strengthening and Network Support	7,686	6,819	7,234	2,451	9,685	6,639	4,226	10,865	
5.3 Standards and Quality Control	1,763	1,311	1,250	-	1,250	1,250	-	1,250	
TOTAL	10,407	9,160	9,447	2,656	12,103	8,752	4,621	13,373	

"Continuing": Expenditures at present level of funding

"New": Indicates capacities for absorbing additional funds, based on needs in developing countries, should the total proposed Programme Budget be reached.

## 5. PROGRAMME AREA III: RESOURCES FOR RESEARCH

### 5.1 General Activities

The Committee on Resources for Research, which is scheduled to meet twice during the next biennium, is the body responsible for making recommendations on the Programme's policies for improving the resources available for research in human reproduction in developing countries. In this context, it also makes recommendations on the annual funding to the individual institutions whose research capacities are being strengthened.

Managing the activities of this Programme Area requires the coordination of strengthening support provided to institutions principally in Africa, Asia, the Caribbean and Latin America. Such coordination is particularly important in the selection and assignment of consultants and in scheduling the duty travel of the Secretariat.

The strategic plan laid down by the Committee on Resources for Research calls for the formulation of new proposals for institution strengthening grants from developing countries which so far have not had the opportunities for collaborating with the Special Programme. This will require extensive negotiations on-site by Secretariat and consultants with the concerned countries and institutions. Such work will be carried out in collaboration with the Regional Offices and with other Programmes.

5. PROGRAMME AREA III: RESOURCES FOR RESEARCH

5.1 General Activities

DESCRIPTION	ESTIMATED OBLIGATIONS (in US\$1,000s)							
	1986-1987 Budget		1988-1989 Proposed Budget			1990-1991 Estimates		
	PCAC-Approved	As Revised	Continuing	New	Total	Continuing	New	Total
CRR Meetings	150	150	150	-	150	170	-	170
Personnel Services	208	305	253	45	298	253	45	298
Consultants	375	350	350	100	450	275	220	495
Duty Travel	225	225	210	60	270	165	130	295
TOTAL	958	1,030	963	205	1,168	863	395	1,258

"Continuing": Expenditures at present level of funding

"New": Indicates capacities for absorbing additional funds, based on needs in developing countries, should the total proposed Programme Budget be reached.

## 5. PROGRAMME AREA III: RESOURCES FOR RESEARCH

5.2 Research Capability Strengthening and Network Support

Institutions which previously received 'core support' and which were carrying out research for Task Forces now draw their research expenses directly from the respective Task Forces, commensurate with the work they carry out for them. The strengthening of research resources in developing countries is carried out through a system of institutional grants and training grants. In 1986, which was the first year of operation of these grants, a total of 40 institutions applied for major support, of which 33 were approved and a total of 22 institutions applied for minor support, of which 20 were approved.

Institutional grants

Four types of institutional grants are now available to institutions.

1. Long-term Institutional Development (LID) grants call for a realistic and nationally relevant five year plan of research and research training to be carried out by the staff of the institution. The grant is for five years and is subject to annual review of progress of the plan and also subject to an assurance from national authorities that recurrent expenditures, such as salaries which are initially provided through the grant, will be gradually taken over by the institution. The maximum duration of such support for any institution will be 10 years.
2. Capital (CAP) grants are a one-time grant to enable institutions which have relatively well developed research programmes to acquire a major piece of equipment required for their research.
3. Small (SMA) grants carry a maximum value of US\$5,000 for which mature institutions may apply in order to acquire journals, minor equipment or laboratory supplies.
4. Laboratory supplies (LAB) grants have replaced the ad hoc laboratory supplies scheme of the past and carry a maximum value of US\$1,500.

Training grants

Five types of grants are available for the promotion of research training activities:

1. Research Training Grants (RTGs) are normally awarded to staff of institutions which have an approved five year research development plan. The proposed training has to be justified in the context of the research plan of the institution.
2. Visiting Scientist Grants (VSGs) are awarded to senior researchers to enable them to exchange research experiences by visiting with the scientists of other institutions carrying out related research.
3. Re-entry grants (RET) are awarded to trainees returning to their home institutions to help them apply their newly acquired knowledge and research skills in their home contexts.
4. Grants for short group-learning activities, i.e. workshops, seminars, short courses, meetings, etc. (WOK). The grants are meant to meet the expenses of holding short-group learning activities of relevance to research in family planning and human reproduction.
5. Grants for developing MSc courses (MSC). Institutions wanting to develop Masters degree level courses for teaching young scientists disciplines required for research in family planning and human reproduction are eligible to apply for these grants. The proposed course should have a research component.

Network support

The improvement of research managerial practices is an important component of the strengthening of institutions. Regular meetings will be held to enable the directors of institutions to discuss and arrive at solutions to common problems they may face in managing research and training programmes in their institutions. Such meetings are also aimed at improving research collaboration among scientists at a regional level.

The demand for research capability strengthening support is expected to show a considerable rise over the next biennium, since only 22 of the developing countries are now receiving research capability strengthening support.

5. PROGRAMME AREA III: RESOURCES FOR RESEARCH

5.2 Research Capability Strengthening and Network Support

DESCRIPTION	ESTIMATED OBLIGATIONS (in US\$1,000s)							
	1986-1987 Budget		1988-1989 Proposed Budget			1990-1991 Estimates		
	PCAC-Approved	As Revised	Continuing	New	Total	Continuing	New	Total
Personnel Services	936	952	1,019	296	1,315	1,019	296	1,315
Institutional Grants <sup>1)</sup> (including Training Grants)	6,550	5,667	5,915	2,055	7,970	5,320	3,830	9,150
Network Support	200	200	300	100	400	300	100	400
<b>T O T A L</b>	<b>7,686</b>	<b>6,819</b>	<b>7,234</b>	<b>2,451</b>	<b>9,685</b>	<b>6,639</b>	<b>4,226</b>	<b>10,865</b>

1) Includes: Long-term support grants, capital grants, small grants, Research Training grants, Visiting Scientist grants, Re-entry grants, courses, workshops and symposia.

"Continuing": Expenditures at present level of funding

"New": Indicates capacities for absorbing additional funds, based on needs in developing countries, should the total proposed Programme Budget be reached.

## 5. PROGRAMME AREA III: RESOURCES FOR RESEARCH

### 5.3 Standards and Quality Control

The main objective of the programme of Standards and Quality Control is to ensure reliable, valid and comparable hormonal and biochemical assays in institutions carrying out research in human reproduction. For this purpose, matched reagents and appropriate external quality control services are provided for these assays. The programme also maintains a bank of key reagents; it promotes research for the development of non-isotopic assay procedures and assists in the establishment of national or sub-regional programmes to take over the supply of assay reagents; and it plans and conducts training workshops for scientists who in their own countries teach technical staff in the various assay procedures.

An in-depth review carried out by STAG in 1987 recommends that the Director of the Programme submit to STAG and PCAC in 1988 options for re-organizing the management of these activities.

5. PROGRAMME AREA III: RESOURCES FOR RESEARCH

5.3 Standards and Quality Control

DESCRIPTION	ESTIMATED OBLIGATIONS							
	1986-1987 Budget		1988-1989 Proposed Budget			1990-1991 Estimates		
	PCAC- Approved	As Revised	Continuing	New	Total	Continuing	New	Total
Personnel Services	244	261	1) -	-	-	-	-	-
Meetings	50	50	50	-	50	50	-	50
Operations	1,469	1,000	1,200	-	1,200	1,200	-	1,200
TOTAL	1,763	1,311	1,250	-	1,250	1,250	-	1,250

1) Pending the reorganization, it is expected that the management of this Programme component will be carried out by other staff members.

#### 6. PROGRAMME AREA IV: STATISTICS AND DATA PROCESSING

This Programme Area provides statistical and data processing support for all research projects undertaken by the eight Task Forces. Activities include the statistical design of projects, project organization, project data collection and processing, data monitoring and management, data analysis and dissemination of project results. At the end of March 1987, there were 66 multi-centre projects and eight single-centre studies at various stages of such statistical support. Activities have been carried out and further plans are being drawn up in conjunction with Programme Area III - Resources for Research - to strengthen biostatistical, epidemiological and data processing capabilities of some centres.

The long-term goal is that, while global multi-centre projects will continue to be managed statistically from Geneva, individual centres in developing countries should in time assume full statistical responsibilities for their own single-centre studies as well as coordinate their national multi-centre projects. Some centres will be strengthened to play a sub-regional role.

The two main budget lines for Programme Area IV are:

- Personnel Services: 3 statisticians  
4 programmer/analysts  
5 statistical assistants (of which one half-time post)  
1 secretary  
1 data entry operator  
1 data management assistant
- Computer Services: Costs for computer time, direct access storage, exclusive hardware, magnetic tape rental and computer stationery.



6. PROGRAMME AREA IV: STATISTICS AND DATA PROCESSING

DESCRIPTION	ESTIMATED OBLIGATIONS (in US\$1,000s)			
	1986-1987 Budget		1988-1989 Proposed Budget	1990-1991 Estimates
	PCAC-Approved	As Revised		
Personnel Services	1,809	1,740	1,916	1,916
Computer Services	384	400	450	500
TOTAL	2,193	2,140	2,366	2,416

## 7. PROGRAMME AREA V: PROGRAMME MANAGEMENT

This Programme Area provides managerial and administrative support to the Programme.

Personnel Services include, in addition to staff in the Director's office, administrative support staff. The posts of editor and technical officer responsible for management information systems, which were established in 1985, have been filled during the current biennium.

Provision has been made for Consultants to the Director to provide advice on matters relating to overall policy and strategy. Duty Travel includes estimated costs for travel to be undertaken in connection with fund raising and general coordination.

Following recommendations made by STAG to improve the Programme's management information system, it has been decided to implement a system based on a network of microcomputers. Provisions for the microcomputers have been made under Office Supplies and Equipment.

Computer Services are estimated costs for administrative data processing on the mainframe computer of the International Computing Centre.

Common Services includes the estimated costs of office equipment and stationery, telephone charges, postage, telexes, and charges for the offices allocated to the Special Programme. It is based on a fixed amount for each staff member.

Publications include, among others, the costs of HRP's Biennial Reports (in English and French) and the HRP Newsletter.

Programme Support Costs, calculated in proportion to funds actually disbursed, cover services provided by the Organization in the field of personnel, budget and finance, supplies, internal audit, and the Division of Research Promotion and Development (which administers HRP's research training grants). Heating, cleaning as well as other administrative support costs are also included.

## 7. PROGRAMME AREA V: PROGRAMME MANAGEMENT

DESCRIPTION	ESTIMATED OBLIGATIONS (in US\$1,000s)			
	1986-1987 Budget		1988-1989 Proposed Budget	1990-1991 Estimates
	PCAC-Approved	As Revised		
Personnel Services	1,265	1,270	1,558	1,558
Consultants to Director	50	30	80	90
Duty Travel	100	90	110	120
Office Supplies and Equipment	150	270	100	50
Computer Services	100	30	100	100
Common Services	475	470	500	500
Publications	370	210	400	450
Programme Support Costs	800	650	800	880
TOTAL	3,310	3,020	3,648	3,748



ANNEXES

Annex 1: INCOME FOR THE PERIOD 1970 TO 1986 (in US \$)

Annex 2: INCOME FOR THE PERIOD 1970 TO 1986 (in currency of pledge)

Annex 3: ESTIMATED FUNDS AVAILABLE AND PLEDGED FOR 1987 (as at 6 April 1987)

Annex 4: HRP STAFFING LEVELS

Annex I: INCOME FOR THE PERIOD 1970 TO 1986 (in US \$)

No. of donors	(10) 1970-77	(11) 1978-79	(15) 1980-81	(13) 1982-83	(15) 1984-85	(17) 1986	(22) Total
Australia		54,953	88,700	379,596	364,320	151,227	1,038,796
Canada	6,681,803	1,720,141					8,401,944
China			50,000	50,000	100,000	50,000	250,000
Cuba		2,193	3,889	4,000	4,500	2,000	16,582
Denmark	3,238,196	2,200,504	2,001,033	1,882,637	1,979,173	1,530,760	12,832,303
Fed. Rep. of Germany			1,302,083	505,102	1,005,905	753,183	3,566,273
Finland	315,664	147,728	175,000	172,222	151,411	133,333	1,095,358
Ford Foundation	1,000,000						1,000,000
France						6,536	6,536
India	10,989	12,500	120,000	70,000	70,000		283,489
Italy					259,813		259,813
Kenya					500		500
Malaysia						1,066	1,066
Mexico	50,000					7,000	57,000
Netherlands			264,151	439,590	291,987	304,348	1,300,076
Nigeria			36,304			13,016	49,320
Norway	7,246,021	4,855,778	4,876,109	3,794,697	3,638,366	1,973,684	26,384,655
Sweden	32,292,806	13,239,873	12,517,709	7,573,331	4,734,797	2,807,162	73,165,678
Thailand		4,886	9,600	12,124	9,991	5,000	41,601
UK	457,797	6,219,859	4,495,286	3,985,596	4,926,252	3,441,755	23,526,545
UNRPA	1,200,000	1,950,000	3,000,000	4,000,000	4,500,000	2,640,000	17,290,000
USA			3,000,000			165,050	3,165,050
WHO					75,000		75,000
Interest	2,832,238	1,254,500	1,341,470	959,840	989,010	461,640	7,838,698
Miscellaneous	421	125	743	300			1,589
Charge for reagents					190,338	137,296	327,634
Patents					53,910	14,993	68,903
<b>TOTAL</b>	<b>55,325,935</b>	<b>31,663,040</b>	<b>33,282,077</b>	<b>23,829,035</b>	<b>23,345,273</b>	<b>14,599,049</b>	<b>182,044,409</b>
WHO Regular Budget and Special Account	2,338,225	870,698	691,319	934,018	1,228,900	447,140	6,710,300
UNRPA Funds for inter-country and country projects	5,172,186	144,300	1,381,000	2,355,353	1,968,100	1,227,882	12,248,821
<b>GRAND TOTAL</b>	<b>63,036,346</b>	<b>32,678,038</b>	<b>35,354,396</b>	<b>27,118,406</b>	<b>26,542,273</b>	<b>16,274,071</b>	<b>201,005,530</b>

Annex 2: INCOME FOR THE PERIOD 1970 TO 1986 (in currency of pledge)

No. of donors: Currency of pledge		(10)	(11)	(15)	(13)	(15)	(17)
		1970-77	1978-79	1980-81	1982-83	1984-85	1986
AUS \$	Australia		50,000	75,000	365,000	450,000	217,000
CAN \$	Canada	5,702,000 1,000,000 <sup>a</sup>	1,850,000				
US \$	China			50,000	50,000	100,000	50,000
US \$	Cuba		2,193	3,889	4,000	4,500	2,000
DEN KR	Denmark	19,500,000	11,500,000	13,000,000	16,000,000	21,000,000	12,000,000
FRG DM	Fed. Rep. of Germany			2,500,000	1,250,000	2,700,000	1,650,000
FIN MK	Finland	1,200,000	600,000	700,000	850,000	950,000	700,000
US \$	Ford Foundation	1,000,000					50,000
FRA FR	France						
IND RS	India	100,000	100,000	120,000 <sup>a</sup>	70,000 <sup>a</sup>	70,000 <sup>a</sup>	
Lire	Italy					500,000,000	
US \$	Kenya					500	
MAL RF	Malaysia						2,590
US \$	Mexico	50,000					7,000
NL GLD	Netherlands			700,000	1,200,000	1,000,000	700,000
US \$	Nigeria			36,304			13,016
NOR KR	Norway	41,000,000	25,000,000	26,000,000	26,000,000	30,000,000	15,000,000
SWE KR	Sweden	85,000,000 12,050,000 <sup>a</sup>	60,000,000	55,000,000	50,000,000	40,000,000	20,000,000
THA BA	Thailand		100,000	200,000	250,000	9,991 <sup>a</sup>	5,000 <sup>a</sup>
UK PD	UK	240,000	3,100,000	2,100,000	2,500,000	3,800,000	2,400,000
US \$	UNFPA	1,200,000	1,950,000	3,000,000	4,000,000	4,500,000	2,640,000
US \$	USA			3,000,000			165,050
US \$	WHO					75,000	
US \$	Interest	2,832,238	1,254,500	1,341,470	959,840	989,010	461,640
US \$	Miscellaneous	421	125	743	300		
US \$	Charge for reagents					190,338	137,296
US \$	Patents					53,910	14,993
US \$	WHO Regular Budget and Special Account	2,538,225	870,698	691,319	934,018	1,228,900	447,140
US \$	UNFPA funds for inter-country and country projects	5,172,186	144,300	1,381,000	2,355,353	1,968,100	1,227,882

<sup>a</sup> US \$

Annex 3: ESTIMATED FUNDS AVAILABLE AND PLEDGED FOR 1987  
(As of 5 April 1987)

	<u>Local Currency</u>	<u>US\$<sup>1)</sup></u>	<u>US\$<sup>1)</sup></u>
1. Unobligated balance, 1 January 1987			465,400
2. Special account for medical research: Human reproduction			
Australia	200,000 Aus. \$	133,900	
China	-	50,000	
Cuba	-	2,500	
Denmark	13,500,000 Dan. Kr.	1,976,600	
Finland	1,000,000 Fin. Mk.	224,700	
Germany, Fed. Rep. of	1,200,000 FRG. DM.	659,300	
IDRC (Canada)	210,000 Can \$	161,500	
India	-	70,000	
	150,000 Ind. Rs.	11,500	
Mexico	-	7,000	
Netherlands	750,000 Nl. Gld.	364,100	
Nigeria	-	1,900	
Norway	17,000,000 Nor. Kr.	2,463,800	
Sweden	17,000,000 Swe. Kr.	2,677,200	
Thailand	-	7,500*	
United Kingdom	2,200,000 UK £	3,542,700 <sup>2)</sup>	
UMFPA	-	2,500,000	
World Bank	-	2,000,000*	
Estimated 1987 interest		400,000	17,254,200
3. Contributions in kind: USSR (estimated)			50,000
4. Estimated income from charge for HRP reagents			100,000
5. WHO Resources: Regular Budget		543,800	
Special Account for Servicing Costs		152,500	696,300
Sub-total			18,565,900
6. Collaborative projects (Rockefeller Foundation)			700,000
7. UMFPA (project activities)			2,572,000
Total funds available			21,837,900
Estimated total funds available for the 1986-1987 biennium			37,647,000

\* Tentative estimates, subject to confirmation.

1) Rounded off to nearest \$100 (WHO April 1987 exchange rates used for outstanding pledges).

2) Within the UK contribution, there is a designated amount to cover the cost of a staff member seconded to WHO.



## Annex 4: HRP STAFFING LEVELS

Programme Area	Grade	1986-1987		1988-1989 proposed	Increase (decrease) compared to PCAC- approved	1988-1989 Standard Costs <sup>1)</sup> (US \$1,000s)
		PCAC- approved	As Revised			
Research and Development	P	12	13	14	2	3,872
	G	10	10 1/2	12	2	
Resources for Research	P	6	5	5	(1)	1,613
	G	6	5 1/2	6	-	
Statistics and Data Processing	P	8	7	7	(1)	1,910
	G	9	7 1/2	7 1/2	(1 1/2)	
Programme Management <sup>2)</sup>	P	4	4	4	-	1,558
	G	10	9	9	(1)	
Collaborative Project*	P	1	1	1	-	598
	G	3	3	3	-	
Total	P	31	30	31	-	-
	G	38	35 1/2	37 1/2	(1/2)	
Grand Total		69	65 1/2	68 1/2	(1/2)	9,557

\* Not included in PCAC-approved budget for 1986-1987, but approved at PCAC meeting in 1986 as part of Collaborative Project.

1) WHO standard costs, based on an exchange rate of SFr1.65 to US\$1.

2) Including the Director's Office.