The Onchocerciasis Control Programme in West Africa

An example of effective public health management

Ebrahim M. Samba
Director, Onchocerciasis Control Programme in West Africa
World Health Organization

World Health Organization
Geneva
1994
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The Onchocerciasis Control Programme in West Africa (OCP) is a convincing demonstration of how international collaboration sustained by well managed field operations can overcome what at the outset may seem insurmountable obstacles, and ultimately succeed in achieving its objectives. The fact that the Programme has been in existence now for two decades and has kept the unwavering support of all its partners — participating countries, donors and sponsoring agencies alike — testifies to its considerable achievements. Moreover, what has been accomplished has, in no small measure, resulted from the labours of a devoted and capable team of scientists and technicians performing their diverse duties within a flexible and efficient management system.

It is therefore with great satisfaction that I welcome the publication of this book, in which Dr E. M. Samba, the Director of the Programme for more than ten years, describes OCP, lists its achievements, and shares his personal experiences of managing this large, complex and longstanding enterprise. The account of the history, structure, operations and accomplishments of OCP contained in Part 1 will be of interest to a wide audience, not only to public health specialists. It also serves as the background for Part 2 of the book, which deals more specifically with the management of the Programme. In this part, Dr Samba analyses the issues faced in conducting a large-scale field operation, examines the human factors involved and describes the structural and operational elements of the Programme, an analysis that will no doubt attract the particular attention of those concerned with the management of major public health programmes.

It has been repeatedly stated that the ultimate success of the Programme depends on the extent to which its achievements will be maintained by the participating countries once its operations come to an end. The effective implementation of the devolution process is therefore of crucial importance and I am confident that this account of the OCP and its experience in public health management can help West African countries to that end.

The success of the Programme leads also to another challenge: millions of acres of good land are once again available for settlement and cultivation. Rural development programmes are required. This is beyond the mandate of the OCP, but I have no doubt that the African
governments concerned will face this challenge with the support of the international community.

Henri-Philippe Cart
Deputy Director, Swiss Development Cooperation
Chairman of the thirteenth session of the Joint Programme Committee, Onchoerciasis Control Programme in West Africa
“Nearness to large rivers eats the eye” – Mossi saying
Preface

There are two sides to a major undertaking like the Onchocerciasis Control Programme in West Africa: its scientific, technological aspect and the management of its operations. As regards the former, the list of publications and reports describing this area is already impressive. But when it comes to the management of the Programme, there has so far been little analysis of this important aspect of an intensive field activity spanning eleven countries, and now in its twentieth year of existence.

It is not surprising, therefore, that members of the OCP Joint Programme Committee and its Expert Advisory Committee have requested and encouraged the Director of the Programme to reflect on his experience as manager of this large-scale operation with a view to drawing conclusions of potential interest to those involved in similar undertakings in the future. This book in an attempt to respond to those requests and I can only hope that the expectations inherent in them have been met.

I wish to thank Dr Hiroshi Nakajima, Director-General of the World Health Organization for his encouragement to publish this book and Dr Ralph H. Henderson, Assistant Director-General, for his constructive comments on the first draft of the manuscript.

E. M. Samba
Introduction

The Onchocerciasis Control Programme in West Africa (OCP) is in many ways unique. While public health activities are implicitly understood to promote socioeconomic development, this understanding is rarely spelled out in explicit terms. However, in the case of OCP, the importance of controlling river blindness for the sake of removing a serious obstacle to agricultural production is on a par with the intent to rid the afflicted populations of an age-old scourge. The objective of the Programme thus calls for the elimination, within the OCP area, of onchocerciasis as a disease of public health importance and "as an obstacle to socioeconomic development".

The time frame of the Programme is also exceptional. Given that an extended period of control is required to bring the human reservoir of the parasite to an insignificant level, it was understood by all parties — participating countries and donors alike — that operations would need to continue without interruption for 20 years. This time perspective has rarely, if ever, been matched by other operational programmes conducted within the framework of the United Nations system.

The Onchocerciasis Control Programme is one of the largest intercountry undertakings implemented by the World Health Organization. The Programme spans eleven countries with a highly mobile staff attached to operational centres strategically located wherever control activities are going on. Aerial operations are conducted along a river network that totals 50,000 km and OCP staff throughout the Programme area carry out continuing entomological surveillance, monitoring of river flows and of the aquatic environment, epidemiological evaluation and community-wide distribution of ivermectin (Mectizan, Merck).

In view of the success of this large-scale programme, there must be lessons that could be of use in planning and implementing public health activities in general and, more specifically, in ensuring that the problem of onchocerciasis in West Africa remains at a negligible level after the Onchocerciasis Control Programme comes to an end.

This publication is concerned with such lessons as can be derived from the conduct of OCP operations at the various levels where decision-making takes place. The scientific achievements and other findings of the Programme have been, and will continue to be,
published elsewhere and are therefore only mentioned to the extent that they bear on the main theme of the book: the management of OCP.

However, the story of OCP would not be complete and comprehensible without some knowledge of the background and the circumstances that made it. Part 1 therefore first presents a brief summary of the disease called onchocerciasis and its socioeconomic impact, before describing the genesis of the Programme, its management structure and its operations. This is followed by a chapter dealing with planning, programming and evaluation within OCP and another setting out the achievements of the Programme.

Part 2 contains an analysis of the managerial aspects of OCP ranging from planning and programming to implementation, and from continuous evaluation to ad hoc review exercises, and drawing conclusions from this analysis in terms of the reasons for OCP’s success. These conclusions are worthy of consideration by those responsible for drawing up plans for, and implementing, the surveillance and control operations that the OCP participating countries will need to conduct after Programme operations cease, in order to ensure that onchocerciasis does not reappear as a public health and socioeconomic problem.
PART 1

Operations of the Onchocerciasis Control Programme in West Africa
CHAPTER 1

Onchocerciasis and its impact

The itchy disease, known as *craw-craw* in the then Gold Coast, was in 1875 associated with onchocercal microfilariae found in the skin of patients by O’Neil, and in 1893, skin nodules from patients were found by Leuckart to contain adult worms. Sir Albert Cook reported the occurrence of onchocerciasis in Uganda in 1899. Robles became interested in its manifestation as a serious eye disease in Guatemala in 1915 while Pacheco Luna established its association with blindness in 1918.

The agent and clinical manifestations of onchocerciasis

Onchocerciasis is a parasitic disease caused by a filarial (threadlike) worm, *Onchocerca volvulus*. The adult female worms (macrofilariae), which are 40–45 cm long, lodge in nodules under the skin of infected humans, although they can also be found free in subcutaneous tissue. In patients in Africa the nodules are commonly distributed around the pelvis, particularly over the iliac crest, femoral trochanter, coccyx, sacrum and the lateral chest wall.

When fertilized by the smaller male worm, the females, which live for 12 years on average, can produce millions of embryos (microfilariae) about 0.3 mm in length. The microfilariae live for around two years and give rise to the clinical manifestations of the disease.

The microfilariae are found in the intercellular fluid, including that of the eye, and their death and subsequent disintegration result in inflammatory reactions. If the microfilarial load is high following a prolonged period of exposure to massive infection, this may lead to serious visual impairment, including blindness. Mortality among the blind may be four times as high as among non-blind persons of the same age in the same community.

In addition, the microfilariae give rise to intensely itching rashes, to wrinkling, thickening and depigmentation of the skin, to lymphadenitis resulting in hanging groins and elephantiasis of the genitals, and to general debilitation, including loss of weight.
The vector

The microfilariae are transmitted from one person to another by blackflies; in Africa these belong to the *Simulium damnosum* species complex. The female fly lays its eggs (several hundreds per batch) at, or below, the water surface in fast-flowing rivers; the eggs hatch after 36–48 hours. The larval stage lasts for 5–10 days, depending on the water temperature, and is followed by pupation and the emergence of adult flies after a further 2 or 3 days. The blackfly lives for up to four weeks and can cover several hundred kilometres in flight.

The female blackfly mates only once, on the day following emergence. She then seeks a blood meal, which is necessary for the maturation of her eggs, and is ready for oviposition 4 or 5 days after the meal. If the blood meal is taken from a person infected with onchocerciasis, microfilariae may be ingested with the blood. These do not multiply in the blackfly and only one or two of them develop into infective larvae (*L₃*) capable of becoming sexually mature worms in the human host. This development is completed only by the time of the third blood meal and, consequently, for the blackfly to function as a vector it must survive the laying of two batches of eggs.

Once infective larvae are injected into a human host during a blood meal, they may develop into adults producing microfilariae which may in turn be ingested by blackflies thus completing the life cycle of the parasite (see Fig. 1). The time between the entry of larvae (*L₃*) and the appearance of onchocercal symptoms — the incubation period — varies from one to three years.
Control of transmission and of onchocercal manifestations

Application of larvicide to the breeding sites of the blackfly is currently the only means of interrupting transmission sufficiently to allow the human reservoir of *O. volvulus* eventually to die out, and will remain so until elimination of the adult worm can be achieved by community-wide application of drugs.

Until recently, only two anti-onchocerciasis compounds had been used for treatment. Diethylcarbamazine (DEC), developed in 1947, is a microfilaricide (it kills microfilariae) and must therefore be given repeatedly as long as the patient harbours fertile female worms. It provokes severe and sometimes dangerous systemic (Mazzotti) reactions and can aggravate existing ocular lesions, or precipitate new ones, as a result of the sudden, massive death of the microfilariae.
Suramin, available as from 1920 for the treatment of sleeping sickness, was shown in the late 1940s also to be effective as a macrofilaricide (it kills the adult onchocercal worm). It must be given once a week for up to two months but is of limited usefulness since it can give rise to serious adverse reactions, such as anaphylactic shock and kidney, liver and gastrointestinal complications. Neither DEC nor suramin can therefore be given on a sufficiently large scale to reduce significantly the parasite reservoir in the populations concerned. Their use is limited to the treatment of individual cases under strict medical supervision.

Since 1987, ivermectin tablets, which have microfilaricidal effect, have become available for large-scale distribution in human populations. The drug has proved to be a valuable therapeutic agent; it considerably reduces the risk of blindness and is easily dispensed under field conditions. Ivermectin does not, however, have a decisive impact on transmission, as had originally been hoped.

The impact of onchocerciasis on health and socioeconomic conditions

Wherever onchocerciasis exists at a high intensity and endemicity, as was the case in the savanna belt of West Africa, it is a serious threat to the health of the populations concerned and an impediment to socioeconomic development.

The vector tends to remain relatively close to rivers that offer potential breeding sites for its larvae, so the people exposed to onchocercal infections are those living alongside the rivers. The colloquial name of the disease — river blindness — is therefore particularly apt.

In riverine communities with a high intensity of onchocercal transmission and infection, 60–70% or more of the population may harbour the parasite, as
 Many villages near the rivers were abandoned as their populations sought to escape from the devastating effects of onchocerciasis.

demonstrated by the presence of microfilariae in skin-snips. At that level of prevalence, up to 10% of people may be blind as a result of the disease and 20–30% may suffer from severe visual handicap.

Given this scale of serious ocular manifestations including blindness, onchocerciasis is obviously an important health problem. But the effect of the disease extends beyond the sphere of health into the field of economics. Many exposed populations seek relief from onchocercal infection and disease and from the painful bites of the blackfly by moving away from the fertile riverside zones to the less fertile, upland country. In addition, many young men migrate to urban areas, reducing the productivity of the community and disrupting family life.
CHAPTER 2
The genesis of the Onchocerciasis Control Programme

Early attempts to control onchocerciasis
Although the life cycle of *O. volvulus* was demonstrated in 1926 by Blacklock, it was not until the early 1950s that comprehensive entomological and epidemiological studies were undertaken with a view to investigating the possibility of using vector control to interrupt disease transmission. Following the eradication of *Simulium neavei* from the Kodera Valley in Kenya by the application of DDT, French entomologists undertook large-scale trials in West Africa on larviciding of *S. damnosum*. The conclusion of these field studies and pilot projects was that ground control was quite successful in reducing the biting blackfly population as long as control activities were maintained, but the impact on transmission was limited by the regular influx of flies from surrounding untreated areas. Much larger areas would need to be treated to obtain a lasting effect. Following experiments carried out by ORSTOM\(^1\) entomologists assigned to OCGCE,\(^2\) a control programme was started in 1962 in an area covering parts of Côte d’Ivoire, Burkina Faso (then Upper Volta) and Mali, with financial support from the European Development Fund (EDF) and the French Aid and Cooperation Fund.

Events leading to the establishment of OCP
*The Tunis meeting (1968)*
In view of the serious health and socioeconomic repercussions of onchocerciasis and the emerging indications that control was possible, health authorities in the countries most affected invited the scientific community to study the feasibility and operational aspects of a large-scale control programme. This led to the convening of a joint USAID\(^3\)/OCGCE/WHO Technical Meeting on the Feasibility of Onchocerciasis Control, in Tunis in July 1968. The participants included experts in

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\(^1\) Institut français de Recherche scientifique pour le Développement en Coopération (previously Office de Recherche scientifique et technique Ouro-Mer).

\(^2\) Organisation de Coopération et de Coopération pour la Lutte contre les Grandes Épidémies.

\(^3\) Agency for International Development, United States of America.
public health, parasitology, epidemiology, entomology, ophthalmology, economics, sociology and medical geography.

Although the report of the Joint Meeting states that "a mass campaign against onchocerciasis should aim at the eradication of this endemic disease", the general feeling of the participants seems to have been that large-scale control should be attempted and that such control could be achieved through larviciding, essentially by means of aerial spraying. The Joint Meeting also emphasized that larviciding would need to be done continuously for a period of 10-15 years to permit virtual elimination of *O. volvulus* from the human population "meanwhile integrating operations within the health services of the countries concerned", in anticipation of devolution at a very early date.

The Joint Meeting went beyond general principles applicable to future large-scale onchocerciasis control; it actually made recommendations for a programme and suggested West Africa for its implementation. It was recommended that, initially, a large-scale control programme should commence in the Volta river system area and in the area of the "tributaries of neighbouring river systems from which reinvasion of *S. damnosum* [might] be expected". The hope was also expressed that "control operations would later be extended both to the east and to the west of the recommended zone". Such extensions would include foci in Senegal, in western Mali and in the north of Guinea.

The report of the Tunis Meeting also emphasized the socioeconomic benefits of onchocerciasis control and the need for international organizations "mainly concerned with agricultural development in tropical countries" to be consulted and encouraged to participate in programmes "associated with the control of onchocerciasis". Finally, it suggested that an "international study mission" should be established at an early date: (1) to present "an information dossier on the area recommended as the one to receive priority in an inter-country onchocerciasis control programme, on the understanding that this programme may be later extended, by successive stages, to embrace neighbouring onchocerciasis foci in the African savanna zone"; and (2) "to undertake, subsequently, a study on the socioeconomic aspects of onchocerciasis control in relation to regional development."

**The PAG Mission**

The report of the Joint Meeting was examined at a preliminary meeting in the WHO Regional Office in Brazzaville from 30 April to 2 May 1969, at which representatives of USAID, OCCGE, the Government of Ghana and WHO considered the "programme and calendar of actions" for securing assistance to implement an "efficient control programme for onchocerciasis in the Volta Basin". In 1969 and 1970, several of the West African countries concerned approached bilateral and multi-
lateral organizations, including EDF, the Food and Agriculture Organization of the United Nations (FAO), the World Bank, WHO, the United Nations Development Programme (UNDP) and USAID, for support to launch and implement this important programme. As a first step in that direction, UNDP and WHO, at the suggestion of the World Bank, convened an interagency planning meeting in Geneva on 6–7 July 1970 attended by representatives of the Conseil de l'Entente, the Government of Ghana, OCCGE, EDF, USAID, FAO, the World Bank, UNDP and WHO. This meeting completed the terms of reference prepared by WHO for the international study mission proposed in Tunis to undertake the preparatory work required for launching the intercountry control programme. The study mission came to be known as the Preparatory Assistance Mission to the Governments of Dahomey (now Benin), Ghana, Côte d'Ivoire, Mali, Niger, Togo and Upper Volta (now Burkina Faso): the PAG Mission.

The terms of reference for the PAG Mission called for the collection and assessment of all available epidemiological, entomological and other data required for the preparation of a regional onchocerciasis control programme; the preparation of a plan of work for onchocerciasis control in the area, taking into account the economic development of reclaimed areas, and computation of the costs involved; the identification and analysis of the possible resources available; and the provision of assistance to governments in their preparation of requests for financial and other support from the donor community for the implementation phases of the programme on the basis of the plan of work drawn up by the PAG Mission. The Mission was later required to identify zones within the programme area which offered development possibilities, and requested to draft preliminary terms of reference for feasibility studies in such zones.

During its first session in July 1972, the Steering Committee, composed of representatives of the executive heads of UNDP, FAO, the World Bank and WHO, recommended that the preparatory work be extended through 1973 as a UNDP-funded interim project. The final report of the PAG Mission was issued on 20 August 1973.

The control programme developed by the PAG Mission centred on aerial larviciding over an area then believed to be sufficiently large to avoid reinvasión of infective blackflies. The larviciding was to be

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1 The Conseil de l'Entente, a consultative body, acted on behalf of its member countries: Côte d'Ivoire, Dahomey, Niger, Togo and Upper Volta. In addition, individual requests were received from the Presidents of Côte d'Ivoire, Mali, Niger, Togo and Upper Volta as well as from the Minister of Foreign Affairs of Dahomey. Ghana expressed its interest to WHO during discussions in that country.

2 The flight range of blackflies was then estimated at 100–150 km only. Later, experience in OCP demonstrated that they can cover several hundred kilometres in flight.
conducted continuously for 20 years, the period considered necessary for the adult worm reservoir in the human population to die out in the absence of renewed infection. It was estimated that the cumulative life-span of adult *O. volvulus* filarics and of the last microfilariae produced by these adults [was] in the region of 16 to 18 years. The control area defined by the PAG Mission was confined to the savanna zones where the blinding form of onchocerciasis was prevalent, and excluded the forest zones characterized by the milder form of the disease. The area delineated for control corresponded largely to that identified at the 1968 Tunis meeting (see Fig. 2).

![Figure 2. The area covered by OCP operations](image)

The report of the Mission paid special attention to the potential impact of operations on the economic and social situation within the control zones. A separate chapter of the report summarized the anticipated socioeconomic benefits of control, including proposals for each of the participating countries regarding economic development of the areas freed from the threat of onchocerciasis.

In the final chapter, a blueprint for the structure and management of the control programme was presented, specifying the composition and tasks of various committees and panels. These structures were put in place from the start of operations and remained in force, without major modifications, during the early years of OCP.

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1 Fifteen years of OCP-conducted vector control has shown that 14 years of uninterrupted larviciding suffices to virtually eliminate the reservoir of the parasite in humans.
The total cost of operations for 1974–79 was estimated by the PAG Mission at US$ 41 million, an annual average expenditure of US$ 6.82 million. This was expected to fall to US$ 5.65 million per year during the following 14-year period (1980–93), bringing the total for the planned 20 years of operation to US$ 120 million. The estimates were all expressed at the exchange rate and costs as of 15 June 1973.

**Follow-up to the PAG report**

Following a planning meeting in Accra, on 11–12 October 1972 (attended by UNDP, FAO, the World Bank, WHO and the PAG Mission), and a Meeting on Control of Onchocerciasis in Western Africa in Paris, on 26–27 June 1973, an Intergovernmental Meeting on Onchocerciasis Control in the Volta River Basin Area was held in Accra from 30 October to 1 November 1973. It was attended by ministerial-level representatives of the seven participating governments and by members of the Steering Committee. The meeting discussed the report of the PAG Mission and, on 1 November 1973, the representatives of the governments of the seven participating countries signed the "Agreement governing the operations of the Onchocerciasis Control Programme in the Volta River Basin area". The Agreement was also signed by the Director of the WHO Regional Office for Africa on behalf of the World Health Organization as the executing agency of the Programme.

The Operational Agreement contained a summary of the Programme's operational objectives and of its institutional structure. This was followed by an outline of future OCP operations, the legal arrangements pertaining to Programme execution, and the obligations of the participating countries in such matters as customs and tax exemptions; provision of operational and technical information; overhaul and landing rights; assistance from aviation services; telecommunications; provision for sites for construction; water, electricity and postal services; and disposition of equipment and supplies. This Agreement was later annexed to the Onchocerciasis 1974 Fund Agreement, signed by the donors in February–March 1974.

The 1974 Fund Agreement constituted the legal basis for initiating OCP operations and specified the contributions to which a number of donors had committed themselves for the funding of operations during 1974. It was signed by Canada, France, the Netherlands, the United Kingdom, USA, the World Bank, the International Development Association, UNDP and WHO. The Fund Agreement specified the

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provisions for the opening of an Onchocerciasis Special Account established and administered by the World Bank; the contributions to, and disbursements from, the Special Account; the contribution of UNDP earmarked for training and chemotherapy research; and the obligations of WHO as the executing agency in relation to its use of disbursements from the Special Account.

On 23–27 June 1974, the World Bank, with the support of WHO, organized a meeting of donors and participating countries in Paris, jointly sponsored by the four UN agencies represented on the Steering Committee,¹ to review the progress of the Programme and consider its proposed management structure. The meeting agreed to establish a Joint Coordinating Committee (JCC) with membership of the participating countries, the donors and the four sponsoring agencies of the Steering Committee. JCC was to determine the overall policy of the Programme and exercise authority over its strategic development and budget.

¹ Attendance as at the meeting in June 1973 (see p. 14, footnote 1), with the addition of Belgium, Iraq, Ivory Coast (now Côte d'Ivoire), Japan, Netherlands and Togo.
CHAPTER 3

Structure, functional organization and operations of OCP

The current OCP structure is not very different from what it was when the Programme came into existence. It is true that the names of committees, functional units, etc. have undergone some changes over the years but, in essence, the organization of the Programme has remained stable, serving its one and overriding purpose: to provide the scientific, technological and managerial support necessary for OCP to reach its objective, without encumbering operations with an over-elaborate infrastructure and complex administrative procedures.

Applying systems analysis to the Onchocerciasis Control Programme, a four-tier structure emerges. The uppermost level is that of “directives”, personified in the Joint Coordinating Committee (JCC), later the Joint Programme Committee (JPC), which since the inception of OCP has exercised full directional powers as regards overall Programme policy, strategy development and budgetary matters. Next comes the “advisory level”, represented by the Scientific and Technical Advisory Committee (STAC), later renamed the Expert Advisory Committee (EAC). The third level is that of “support and collaboration”, consisting of the former Steering Committee, now the Committee of Sponsoring Agencies (CSA), the procurement and administration of financial resources and the administrative support provided by WHO at headquarters and in the Regional Office for Africa. This level also includes collaboration with the participating countries and donors. Finally, “operations” concerns OCP in the strictest sense as the organ responsible for planning, programming and implementing field operations in conformity with the directives and recommendations emanating from the higher levels. The components of this four-tier structure are illustrated in Tables 1 and 2.

The following review of the Programme structure describes the composition, terms of reference, functions and development over time of each of the components. Although the Steering Committee/CSA is in the third tier, it is the first to be analysed since it has a central place within the Programme, exercising a kind of “umbrella” function over practically all aspects of OCP.
Table 1. The four-tier structure of OCP

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<td>Determination of Programme policy, overall directives concerning Programme Implementation, and decision on budget level/s</td>
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<td>Recommendations on scientific, technical and operational matters</td>
<td>Expert Advisory Committee</td>
</tr>
</tbody>
</table>
| 3     | Support and collaboration:  
- monitoring, scrutiny of documents, preparation for JPC sessions, support to management of OCP budget and to socioeconomic development  
- mobilization of funds and Trust Fund administration  
- administrative support  
- collaboration with donors  
- collaboration with participating countries | Committee of Sponsoring Agencies  
World Bank  
WHO headquarters and Regional Office for Africa  
Donors' meetings  
National Onchocerciasis Committees |
| 4     | Planning, programming, implementation of, and reporting on, field operations developed on the basis of FAC recommendations and approved by JPC. Budget preparation. | OCP staff |

Table 2. Components of OCP

<table>
<thead>
<tr>
<th>Component</th>
<th>Composition/support</th>
</tr>
</thead>
</table>
| Joint Programme Committee | Representatives of:  
- participating countries  
- donors  
- sponsoring agencies  
Meets once a year |
| Committee of Sponsoring Agencies | Representatives of UNDP, FAO, World Bank and WHO; meets several times a year |
| Programme Headquarters in Ouagadougou | Programme Director, supported by units of:  
- Vector Control  
- Epidemiological Evaluation  
- Biostatistics and Information Systems  
- Devolution  
- Administration and Management |
| Export Advisory Committee | 12 members; meets once a year |
| Ecological Group | 5 members; subgroup of EAC |
| National Onchocerciasis Committees | One in each participating country |

The Steering Committee/Committee of Sponsoring Agencies

The Steering Committee, the first of the OCP statutory bodies to be established, was set up on 7 April 1972 by UNDP, FAO, the World Bank and WHO. Members of the Steering Committee were designated by the executive heads of the four organizations.
The terms of reference and functions of the Steering Committee were set out in a memorandum of understanding annexed to the Onchocerciasis Fund Agreement dated 7 May 1975, which covered the period 1975–79. The Committee was to “continue to act as the organ for coordination among the Sponsoring Agencies” and would, inter alia, have the following functions: to take cognizance of the reports submitted to WHO by the Technical Advisory Committee, the Economic Development Advisory Panel and the Ecological Panel, make observations thereon and transmit them with comments as appropriate to the JCC; to study particular aspects of the Programme referred to it by JCC or any of the sponsoring agencies; and to determine the membership of the Ecological Panel. It was further stipulated in the memorandum of understanding that the Steering Committee would meet at least three times a year, that it would take its decisions by consensus, and that each sponsoring agency would bear the expenses incurred by its representative’s attendance at meetings of the Committee.

In the preparation of the Onchocerciasis Fund Agreement dated 19 September 1979, covering 1980–85, a number of modifications to the Programme structure were proposed by the Steering Committee for consideration by the Joint Coordinating Committee at its sixth session in Geneva in December 1979. The principal changes were the replacement of the Joint Coordinating Committee by a Joint Programme Committee (JPC) with an elected, instead of independent, chairman; the substitution of a Committee of Sponsoring Agencies (CSA) for the Steering Committee; and the amalgamation of the Scientific Advisory Panel (Scientific and Technical Advisory Committee), the Economic Development Advisory Panel and the Ecological Panel into an Expert Advisory Committee (EAC) of which the last-named panel became a subcommittee, the Ecological Group.

In the Memorandum of Agreement on the Onchocerciasis Control Programme signed by the participating countries and WHO during the latter half of 1979 and attached to the Onchocerciasis Fund Agreement, 1979, the functions of the Committee of Sponsoring Agencies differed somewhat from those stipulated for the Steering Committee in the memorandum of understanding dated 11 February 1975. CSA became “an organ of preparation and execution” instead of “the organ for coordination among the Sponsoring Agencies”, was given the added responsibility of reviewing the work plans and budgets prepared by the executing agency, and was to meet at least twice a year.

Well before the formal establishment of OCP, the Steering Committee, then the only body formally constituted to operate within the framework of the future Onchocerciasis Control Programme, assumed an essentially executive role. The Committee designed the OCP management structure and drew up the various agreements which were later endorsed in Accra (30 October–1 November 1973) and in
Paris on 26–27 June 1974 when the future structure of OCP was agreed upon. The Steering Committee, and later the Committee of Sponsoring Agencies, continued to keep the OCP structure under review and, with support from the World Bank, was responsible for preparing the Onchocerciasis 1974 Fund Agreement and the follow-up agreements signed in 1975, 1979, 1986 and 1992.

One important task of the Steering Committee/CSA is the preparation for the annual session of the Joint Coordinating Committee and, as from 1980, the Joint Programme Committee.

Both the Steering Committee and the Committee of Sponsoring Agencies have been directly associated with long-term planning and review/evaluation exercises. The Steering Committee decided on the necessity of, and made arrangements for, the 1978 evaluation of the Programme. CSA has over the years been mandated by the Joint Programme Committee to prepare terms of reference and make arrangements for such exercises as the preparation of the long-term strategy, the 1987 review of the onchocerciasis chemotherapy proposal and the external review carried out during 1990. CSA has also participated, with WHO as the author, in the development of the plans of operations for the third (1986–91) and fourth (1992–97) financial phases.

The Steering Committee/CSA was mandated by JCC/JPC to nominate members of the various supportive committees and panels belonging to the OCP system, such as the Ecological Panel, the Economic Development Advisory Panel, and the Scientific and Technical Advisory Committee. All these bodies were amalgamated in 1980 to become the Expert Advisory Committee, whose members are appointed by the Director-General of WHO on the recommendation of the Committee of Sponsoring Agencies.

On the financial side, CSA is empowered by the Joint Programme Committee to give interim approval for expenditures over and above the total given in the Plan of Action and Budget (PAB), pending final acceptance by JPC. Furthermore, in order to ensure flexibility of OCP operations, JPC decided in 1989 that any impending transfer of more than 10% for any one Programme activity authorized in the Plan of Action and Budget would be referred to the Programme Director to CSA for approval.

The Steering Committee held 28 sessions in all between July 1972 and December 1979, while CSA has met 59 times so far (to end 1993). This Committee has over time proved its value as a monitoring and steering group, fully living up to what was expected of it, namely identifying and presenting operational and administrative issues facing OCP; assessing the capacity of the Programme to resolve such issues; and making recommendations to assist JPC in decision-making. The members of CSA are competent and experienced people, ready and willing to take up any matter to ensure the success of OCP and to help
the Programme to meet its targets and to reach its final objective. From all points of view, CSA — and before it the Steering Committee — have proved to be a management tool of considerable importance for the Programme.

**The Joint Coordinating Committee/ Joint Programme Committee**

In the memorandum of understanding annexed to the Onchocerciasis Fund Agreement of 7 May 1975, the Joint Coordinating Committee was placed at the top of the organizational chart of the Programme, and the following functions were attributed to it: “to exercise general supervision over the policies to be adopted in the planning of the Programme and over its execution ... and consider reports submitted to it by the Steering Committee; to review the proposed plan of action and the budget for the coming year of the Programme prepared by WHO and the estimate prepared by the Bank of contributions and disbursements to be made to, and from, the Fund in that year; and to consider such other matters relating to the carrying out and the financing of the Programme as may be referred to the Chairman of the JCC by any members thereof”. The independent chairman was employed full-time under a contract with WHO for a period of three years, renewable.

Following the adoption by the Joint Coordinating Committee in December 1979 of a series of modifications to the OCP structure, the functions and arrangements for sessions of JCC, now the Joint Programme Committee, were altered. In addition to the functions of the Joint Coordinating Committee, JPC would “approve” rather than merely “review” the proposed Plan of Action and Budget for the coming financial period of the Programme, and would approve any modification of the programme area. Furthermore, JPC would be presided over “by a chairman selected from the Committee at the beginning of its annual session” instead of by an independent chairman. Also, WHO — and no longer the World Bank and WHO — would provide the secretariat of JPC.

In the Memorandum of Agreement attached to the Onchocerciasis Fund Agreement of 1986, the functions of the Joint Programme Committee were further expanded to “exercise general supervision ... over the activities undertaken by the Participating Governments to ensure that there is no recrudescence of the disease ...”. No further changes were made in the Memorandum of Agreement attached to the Onchocerciasis Fund Agreement of 1992 as regards the functions of JPC.

The Joint Coordinating Committee met on six occasions while the Joint Programme Committee has held 14 sessions so far. From the beginning, the venue of JCC/JPC sessions has alternated between participating countries and donor countries.
The membership of JCC/JPC includes representatives of the participating governments, the donors and the sponsoring agencies. *Ex officio* participants are representatives of the Expert Advisory Committee (formerly the Scientific and Technical Advisory Committee), the Ecological Group (formerly the Ecological Panel), the WHO External Audit Office and any JPC-appointed committee or body functional during a given session. JCC/JPC sessions have also been regularly attended (as observers) by representatives of ORSTOM and of governments of West African countries and donors potentially interested in joining the Programme. Sessions usually last 4–5 days and the working languages are English and French. At sessions of the Joint Programme Committee, the chairman and vice-chairman are elected by the participants, the former from the host country, the latter in most cases a national of the country that has offered to host the next JPC session.

Sessions of the JCC/JPC, apart from providing the OCP management with guidance in the conduct of, and directives for, Programme operations and securing the necessary funds, are propitious occasions for dialogue between all the interested parties. The deliberations at the formal meetings are conducted in a friendly and constructive spirit with the sole aim of steering the Programme towards attaining its objective in the most efficient manner. What might have been feared — namely a dichotomy between the participating countries and the donor community — has never occurred. The two parties have always worked closely together on an equal footing without any connotation of “receiver” and “giver”. To quote the late Dr Comlan A. A. Quenum, WHO Regional Director for Africa, at the closure of the first session of the Joint Coordinating Committee (11–12 February 1975): “One cannot but admire today the modesty and humility of the representatives of the contributing parties, for without their generosity, which might well have tempted them to some feeling of superiority, the best-conceived strategy would never have achieved the objective of the Programme.”

But JCC/JPC sessions give more than mere guidance and directives. Through personal contact with delegates, OCP staff, and in particular the Programme Director, keep abreast of the evolving attitude towards OCP of the participating countries and the donor community, their confidence and their worries, all of which are important in the development of proposals to be considered in the open forum of Committee deliberations.
Expert advice

The Scientific and Technical Advisory Committee/
Expert Advisory Committee

Since its inception, the Programme has been guided scientifically, technically and operationally by a number of independent advisory bodies whose far-sighted recommendations have been instrumental in determining strategy and setting the operational course. Originally, OCP had the benefit of advice from one committee and two panels: the Technical Advisory Committee (TAC), the Ecological Panel and the Economic Development Advisory Panel (EDAP), the two last-named functioning as committees. To this should be added the Scientific Advisory Panel from which TAC drew its membership. The Technical Advisory Committee, at its first session in December 1974, recommended that its name be changed to Scientific and Technical Advisory Committee (STAC), a proposal which was endorsed by the Joint Coordinating Committee in February 1975.

The purpose and functions of STAC were “to review the latest knowledge and scientific information in all fields related to the Onchocerciasis Control Programme and to make it available to WHO; to analyze and comment on the technical and scientific reports of the Programme and plans of action; and to make recommendations designed to improve the planning of the Programme and the implementation of its activities.” The Committee was not to advise WHO on questions of administrative policy and it was emphasized that its conclusions and recommendations should not commit WHO.

Following the restructuring of OCP in 1980, the Scientific Advisory Panel was abolished and the Scientific and Technical Advisory Committee became the Expert Advisory Committee (EAC) with not more than twelve members. Furthermore, the Ecological Panel was transformed into a “permanent ecological group” attached to EAC. The Memorandum of Agreement between the seven participating countries and WHO, attached to the Onchocerciasis Fund Agreement of 1979, set out the functions of EAC and its administrative arrangements on much the same lines as those that had pertained to STAC. The Ecological Group was to have not more than five members, one of whom would be a member of EAC. Instead of its reports being submitted to the Steering Committee, the Ecological Group reports would be annexed to the EAC reports. Finally, the Expert Advisory Committee could recommend the creation of ad hoc working groups “to deal with such specific subjects as itself, the JPC, or any of the Sponsoring Agencies [might] suggest”. This replaced the system of setting up Scientific Advisory Panel working groups. In the 1985 Memorandum of Agreement attached to the Onchocerciasis Fund Agreement of 1986, the functions of EAC no longer included review of “economic development aspects of the Programme”, while the
Committee was given the additional responsibility of reviewing and evaluating “the transfer to the Participating Countries of activities to be undertaken by them to ensure that there is no recrudescence of the disease”. This was replaced in the 1992 Agreement by “Programme activities in the context of devolution”.

During the period of the Scientific and Technical Advisory Committee and the early days of EAC, most of the annual sessions were held outside the Programme area. Since 1983, with one exception, all sessions have been held within the OCP area, in most cases at Programme Headquarters in Ouagadougou. This has helped EAC members to achieve a better understanding of the conditions under which the Programme functions and, more particularly, to have in-depth discussion with OCP staff and observe them in their work. Field visits by EAC members also enhance their grasp of the Programme and its activities.

For several years, EAC sessions were managed with emphasis on contributions by OCP staff, and little time was left for debate among members of the Committee. This has now changed so that briefing by various units is provided during the weekend immediately preceding the EAC session, after which proceedings are entirely in the hands of the Chairman and Committee members. Further contribution of OCP staff is limited to responses to questions and requests for additional information. Furthermore, agenda items are assigned to particular members of the Committee, who are then responsible for the debate and reporting of the item.

During its six years of existence, STAC met, in all, eight times, while EAC has so far held fourteen sessions.

The importance for the Programme of an independent advisory committee is indisputable. Not only does the Committee provide the Programme management with scientifically and technically viable advice on the conduct of OCP operations, but the Joint Programme Committee is constantly reassured by an outside body of experts that the Programme is on the right course and that the methodology applied is sound and cost-effective. The careful screening of potential candidates for EAC membership by the Committee of Sponsoring Agencies, the undisputed scientific quality and extensive experience of candidates, and the continuing efforts to achieve an equitable balance between the various disciplines represented in EAC contribute to making the Committee one of the key elements in the OCP structure. In addition, several of the experts have been members for a number of years, and are thoroughly familiar with the various aspects of the Programme; this familiarity is strengthened by visits to various parts of the OCP area of benefit both to the visitor and to the staff concerned. The Advisory Committee has always been highly supportive of the Programme and its staff, with whom EAC members enjoy friendly relations.
The Ecological Panel/Ecological Group

The issue of the possible impact of insecticides on non-target organisms within the Programme area received early attention by the Steering Committee which brought up this question at its first session in July 1972. It noted that provision had been made in the Interim Project budget for the financing of an Ecological Panel, including the cost of consultant hydrobiologists to collect baseline data for future assessment of the effect of vector control operations. The Panel would be an advisory body to the Steering Committee and its members appointed by individual agencies represented in the Steering Committee and by UNEP.

In the Agreement governing the operations of OCP, mention was made of the Ecological Panel which would comprise a small group of experts who would “study the ecological problems connected with the Programme and with the associated economic development projects” and propose to the Steering Committee measures “to ensure effective protection of the environment”. With the reorganization of the OCP structure in 1980, the Ecological Panel became the Ecological Group, with up to five members, of whom one is a member of the Expert Advisory Committee. The functions assigned to the Ecological Panel/Ecological Group have remained largely unchanged with the exception that since 1980, the task of the Group has been specified as studying “the ecological impact on the environment of the use of insecticides in the Programme”.

The Ecological Panel met a total of nine times, while the Ecological Group held its fourteenth session in 1993.

The contribution of the Ecological Panel/Ecological Group to the Programme has always been of great importance. Not only are the recommendations technically of the highest order and indispensable for the Programme in its efforts to avoid ecological damage, but equally important is the assurance given by an independent expert group to the participating countries and to the donors that OCP operations are ecologically safe and will remain so until the Programme comes to an end. Another important facet of Ecological Group sessions is the close contact established between members of the Group and the staff of National Hydrobiological Monitoring Teams and the support and encouragement they offer.

The Economic Development Advisory Panel

The Onchocerciasis Control Programme has since its inception been concerned not only with the removal of onchocerciasis as a disease of public health importance within the area under control but also, and equally importantly, with eliminating onchocerciasis as an obstacle to socioeconomic development. It was therefore essential to establish, in the early days of the Programme, an independent group of people with
expertise in matters relevant to development in order to ensure that maximum economic and social benefits were derived from the control of this public health problem.

In advising on the economic and social aspects of development in the areas affected by the Programme, the Economic Development Advisory Panel (EDAP) gave emphasis to “studying plans for resettlement of cleared areas both ex-ante and ex-post; ensuring that the most cost-effective methods of conducting the Programme [were] being followed; advising on the establishment of suitable appraisal and evaluation studies to monitor the impact of the Programme; and helping to identify the needs for further external assistance towards the development of the cleared areas.”

The final arrangements for the Economic Development Advisory Panel, set out in the memorandum of understanding dated 11 February 1975, stipulated that the Panel would be “composed of a number of economists and specialists in agriculture and rural development” with special experience in development in West Africa. The World Bank, “after taking into account the views of the Joint Coordinating Committee and in connection with the other Sponsoring Agencies, [would] select the members of the Panel”.

EDAP held five sessions in all. It made some headway and laid the ground for future work in the field of socioeconomic development which, as far as OCP is concerned, has been increasingly taken over by the Committee of Sponsoring Agencies. EDAP was disestablished in the reorganization of the Programme structure in 1980.

Support and collaboration

The Onchocerciasis Fund and its administration

The Onchocerciasis Fund Agreement of 7 May 1975, covering the first stage (1974–79) of the Programme, established the Onchocerciasis Fund to replace the 1974 Onchocerciasis Special Account, from which any undisbursed amounts were transferred to the Fund. The Fund Agreement set forth the amounts pledged by individual donors for the entire period or, in some instances, for 1975 with an indication of the likely contributions for the following years. The Agreement stipulated that the World Bank and each contributing party would reach an understanding during the annual session of the Joint Coordinating Committee on the amount to be contributed during the following year. This system of annual pledging has continued into the sessions of the Joint Programme Committee. The Bank was also empowered “to establish and maintain a reasonable reserve against an excess of actual expenditures over the estimates of such expenditures”.

The 1979, 1986 and 1992 Onchocerciasis Fund Agreements, each covering a six-year period (second, third and fourth phases of the Programme) differed from the 1975 Agreement in that the UNDP
contribution no longer appeared separately as earmarked for support to training and chemotherapy research. A list of donors to the Programme, as of 1993, is given in Annex 1.

The efforts of the World Bank to raise the funds required to keep OCP on its set course are of critical importance. The Bank has appointed one of its officers to handle OCP matters on a full-time basis. One of this officer’s main tasks is to maintain contact with existing and potential donors with a view to soliciting contributions. This is particularly important during the period — once every six years — when a new Fund Agreement is being prepared and when the contributing parties need to be sounded out as to their reaction to the activities planned for the next financial phase and their budgetary implications, as well as to their likely contributions during the period in question.

Collaboration with the participating countries

The collaboration between the Programme and the participating countries has been altogether satisfactory. The Governments have amply fulfilled their obligations and in several instances have gone beyond their contractual commitments by, for instance, constructing an airport for use by OCP aircraft and making available hospital beds for clinical studies connected with chemotherapy research. In addition, the governments in the western extension area have placed at the disposal of the Programme nationally employed and remunerated staff for entomological surveillance and epidemiological evaluation, an example now being followed by governments in the original programme area and in the southern extension area. Equally important has been the constructive spirit with which participating governments have worked together with OCP. Contacts between the two parties, both at the managerial and at the technical/operational level, are friendly and productive. The doors are open at the highest levels whenever necessary and constructive solutions are invariably arrived at. As an example of the preferential treatment accorded to the Programme, OCP helicopters are normally allowed to overfly areas where disturbances have led to a ban on other civil aircraft.

Part of OCP’s collaboration with participating countries is channelled through National Onchocerciasis Committees (NOCs). Following discussions with the participating countries, a statement regarding “National Committees for Onchocerciasis” appeared in the Onchocerciasis 1974 Fund Agreement to the effect that each Committee, comprising qualified representatives of the main national services concerned, would be invested with authority to act at the highest level and to command appropriate resources for: coordination (national OCP-connected activities and subsequent development projects); liaison (government/OCP, other NOCs); information;
legislation (programme operations, settlements, development projects); studies (development); and assurance that OCP results were maintained. The Programme Director would be closely associated with the work of NOCs with which local representatives of the sponsoring agencies might also be associated. This statement has remained unchanged in subsequent memoranda of agreement, except that the role of national committees in support of devolution was specifically emphasized in the 1992 agreement.

National Onchocerciasis Committees were established in all seven countries of the original programme area at the start of OCP operations in 1974 and have been active since then at varying degrees and in different disciplines, in support of the Programme and its activities.

**Collaboration with industry and with institutions and bodies external to the Programme structure**

The Onchocerciasis Control Programme is not a self-contained entity operating in isolation. The Programme has always made the best use of facilities and services offered by a number of commercial laboratories, research institutes and training courses. OCP has instituted a programme of collaboration with national and international organizations involved in activities of direct relevance to the concerns of the Programme, whether in the field of control operations or connected with the preparation for, and implementation of, devolution.

A few examples will demonstrate the importance of such external collaboration. Joint efforts with industry have been intensive and have contributed to a large extent to the smooth running of the Programme and to the solution of operational problems. In view of the importance of larviciding in the OCP control strategy, the Programme maintains close contact with the chemical industry through the competent services at WHO headquarters and by means of visits to manufacturing firms, with a view to encouraging the development of new larvicides and improvement of existing ones. Part of the development process is carried out by OCP which offers excellent field screening facilities. As a result of this collaboration, the Programme has been able to overcome the problem of development of resistance to organophosphorus compounds by employing replacement larvicides in rotation and to ensure that aerial spraying causes no ecological damage. Another example of a close working relationship with industry is the search for chemotherapeutic agents, in which the OCP/TDR-funded Macrofil project (formerly the Onchocerciasis Chemotherapy Project (OCT)) plays a coordinating and supporting role, relying on pharmaceutical firms to carry through the testing and screening process up to the

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1 WHO/UNDP/World Bank Special Programme for Research and Training in Tropical Diseases.
clinical stage, for which Macrofil assumes responsibility using its clinical research facilities in the Programme area.

The setting up of hydrological stations to measure water levels and discharge rates in rivers under treatment with larvicides is a result of collaborative efforts. Stations have been established, and existing ones put in working condition, with the help of ORSTOM in many of the participating countries, while in others they were set up under contract with national hydrological institutes. Recently, hydrological measurements have been recorded continuously using automatic devices in the rivers linked to satellite radio transmitters; this equipment has been installed, and is being maintained, under contract with ORSTOM. It is worth noting that these measurements, besides being indispensable for determining the dose of larvicides needed, are also of use to national administrations for their own purposes.

In regard to the training of OCP staff in vector control, the Programme has worked out with the Pierre Richet Onchocerciasis Centre in Bouaké, Côte d’Ivoire, a programme tailored to the needs of OCP. Similarly, in the context of preparations for devolution-oriented multi-disease surveillance, training in schistosomiasis control is being offered at the OCGGE/ORSTOM Centre in Niamey, Niger. Plans are also being made for training in the control of guinea worm in conjunction with the Carter Foundation.

An especially close relationship has been established during the last few years with some nongovernmental organizations (NGOs) and private voluntary organizations (PVOs) particularly active in the field of prevention of diminished sight and blindness. The collaboration with these organizations centres on large-scale application of ivermectin and could eventually extend to the support of national efforts in the field of devolution. OCP assumes a coordinating and technical advisory role in its collaboration with these organizations, the staff of which meet regularly with Programme staff to report on progress, exchange views on future actions, and work out common strategies and coordinated plans.

Involvement of well-known personalities

Throughout its history, the Onchocerciasis Control Programme has benefited from the support of people in the forefront internationally. A visit in 1972 by the then President of the World Bank, Mr Robert McNamara, to West Africa made him realize the glaring need to control river blindness, not only on humanitarian grounds but also as an investment in socioeconomic development. His conviction of the necessity of bringing about an intercountry effort to control the disease was a driving force in the preparations for, and launching of, the Programme.
A good illustration of the active involvement of internationally known personalities in OCP operations was the appointment of Dr M.G. Candau, a former Director-General of WHO, as the Independent Chairman of the Joint Coordinating Committee from 1975 to 1980. Dr Candau, with his twenty years' experience as executive head of one of the largest specialized agencies within the United Nations system, brought with him to OCP a highly developed political flair, vast experience in the field of management, and a good understanding of and pragmatic approach to technical and operational issues. These were qualities that stood the Programme in good stead during its initial phase when the orientation and divergent outlook of the various interested parties had to be brought together within a common operational strategy.

Another example of close association with the Programme by an internationally known figure was the chairmanship of the Economic Development Advisory Panel (EDAP), at its two sessions during 1976, in the person of Paul-Marc Henry, Director of the OECD Development Centre. Mr Henry had held top posts in the UNDP secretariat and later joined his country's diplomatic service at the highest level. He was replaced as chairman of EDAP by Guy Camus, at that time Director-General of ORSTOM, who was a member of EAC from 1980 to 1982 and its chairman in 1980 and 1981. The membership of other OCP committees, such as the Scientific and Technical Advisory Panel (later the Expert Advisory Committee) and the Ecological Group, included many scientists and experts of worldwide renown and this has, to a large extent, been a determining factor in establishing the sound technical basis for the Programme's control strategy and in building up OCP's credibility among the participating countries and within the donor community.

OCP functional entities, their mode of action and their operations

Relations between OCP, WHO headquarters and WHO Regional Office for Africa

Even before the report of the PAG Mission was published on 20 August 1973, the Steering Committee agreed that the World Health Organization would become the executing agency for "the future onchocerciasis control campaign". Like any WHO-supported inter-country project operating within the confines of one of the Organization's regions, OCP came administratively under the regional office concerned (Regional Office for Africa in the case of OCP); however, it was felt that the Programme should have a special relationship with WHO headquarters in Geneva. This was deemed necessary in view of the strong research component inherent in the planned control operations and the need for continuing scientific, technical and administrative support, including communication with
the scientific community throughout the world, for which WHO headquarters offered unique opportunities.

It was therefore decided to establish a support unit in Geneva as the executive organ of the Programme at the central level. The unit collected, analysed and distributed information on OCP and its operations; carried out, or coordinated, technical and administrative studies that could not be undertaken at the field level; coordinated the planning, implementation and evaluation of OCP operations in liaison, as necessary, with the Programme Director, the WHO Regional Office in Brazzaville, WHO units at headquarters, the Steering Committee and other interested institutions; and undertook administrative actions necessary for rapid and efficient interventions, including the preparation of technical service agreements, contracts with research and training institutions, and long-term fellowships.

During the first three years of OCP's existence, when efforts at the field level were concentrated on building up the Programme's administrative and operational infrastructure and on launching control activities in the field, the contribution of the headquarters support unit to the development and consolidation of the Programme was of crucial importance. Without its direct involvement in Programme implementation and the operational assistance provided by WHO headquarters staff, OCP would have been in difficulty during its formative period.

The support to, and involvement in, the Programme by the WHO Regional Office for Africa were marginal during the first three years of OCP's existence. Then, in November 1976, the central WHO responsibility for the Programme was shifted from Geneva to Brazzaville, and, following a plan of action worked out with the Director-General of WHO, the Regional Director took over some of the tasks previously administered at headquarters.

As a consequence of the partial decentralization of the management of the Programme, the headquarters support unit was disestablished and some of its staff assigned to other OCP duties. As from 1978, a small OCP liaison office was set up at headquarters. The main functions of this office, apart from facilitating postal and other communications, were: liaison between OCP and the various technical and administrative divisions in WHO headquarters; secretarial and administrative support to the preparation for, and holding of, sessions of OCP statutory bodies; assistance with contacts with the donor community; and promotion of public relations including information on the Programme, its operations and its achievements. In addition, the Programme pays for a small number of posts at WHO headquarters for the handling of certain centralized aspects of OCP personnel, supply and financial matters. Furthermore, with the implementation of the November 1976 plan of action calling for the direct involvement of the Regional Office for Africa in OCP affairs, Programme funds were made available as
from 1977 for the post of a liaison officer in the Regional Office; this arrangement came to an end in 1985.

The infrastructure of the Programme is today quite similar to what it was in 1974, which is not surprising in so far as the nature of the control operations has undergone only slight modifications since then. The objective has remained largely unchanged and the control strategy has been pursued without any major alterations.

The Office of the Programme Director

The Programme Director has overall responsibility for the implementation of the general policy and approved programmes of OCP by organizing, coordinating and supervising all OCP activities. He ensures continuing contact with the donors and the participating countries and participates in sessions of the Programme’s statutory and advisory bodies. More specifically, his office is responsible, *inter alia*, for preparing and distributing OCP information material, organizing visits to the Programme area and arranging for documents to be considered at the various OCP meetings; coordinating research contracts (previously handled by the headquarters support unit); assessing socioeconomic development and ensuring appropriate liaisons in that connection; and, since the early 1980s, preparing for, and implementing the devolution process. This activity, which is of ever-increasing importance, is now the responsibility of a newly created Devolution Unit, which also administers the OCP training and fellowship programme. Since 1985, a Documentation Centre, reporting to the Director’s office, collects data on onchocerciasis and on the activities of the Programme. The Centre is open to the public.

The Vector Control Unit

Since the start of the Programme, the basic operational strategy has been directed towards control of the vector. The PAG Mission stated in no uncertain terms that, to meet its objective, “the proposed programme should be based mainly on the destruction of the vector and on the subsequent interruption of disease transmission”. Vector control, by means of aerial larviciding of breeding sites of the blackfly, has therefore remained the mainstay of OCP control operations.

The Vector Control Unit (VCU) has four main functions: to carry out entomological surveillance with a view to guiding aerial operations according to the observed presence or absence of *Simulium* larvae at breeding sites and of infective blackflies; to conduct aerial larviciding for the purpose of interrupting transmission of infection resulting eventually in virtual elimination of the reservoir of the parasite in humans; to monitor the environmental effect, if any, of OCP operations and, if required, to adjust operations to avoid damage to the non-target
fauna; and to conduct research on the disease vector aimed at increasing the effectiveness of control measures, and on insecticide compounds and their formulations with a view to maximizing cost-effectiveness of larviciding and to improving the Programme's ability to deal with development of resistance to insecticides.

Entomological surveillance is based on a Programme-wide system of sectors and subsectors, the latter being grouped around, and supervised by staff of, the former. The sectors and subsectors are responsible, at different levels of competence, for checking the absence or determining the presence of blackfly larvae in rivers under treatment; for capturing blackflies for identification and dissection to ascertain their infectivity according to the presence or absence of larval stages of *Onchocerca volvulus*; for reading water gauges to decide on the frequency and periodicity (usually weekly) of larviciding; and for evaluating the impact of larviciding. This provides the data necessary for conducting aerial operations. The Programme is increasingly making use of automatic devices in the rivers linked to satellite radio transmitters for the continuous recording of water levels and discharge rates. Each sector headquarters has a complement of 15–25 posts comprising entomologists, laboratory assistants, vector collectors, radio operators, clerks, drivers/mechanics and guards, while each subsector is staffed by 10–20 people. Sectors and subsectors are equipped with radio-telephones that allow direct communication with OCP headquarters in Ouagadougou. They also have motor transport at their disposal.

The entomological network expanded rapidly, so that by the end of the 1970s there were 6 sectors and 22 subsectors in the original
programme area plus the southern extension area, where an
entomological surveillance network was set up in 1978. In all, almost
400 river points were being monitored for the presence of blackfly
larvae and more than 650 capture points were regularly visited by fly
catchers. With the reduction of vector control in the original OCP area,
the number of sectors and subsectors (including those located in the
southern extension area) had declined to 4 and 14 respectively by 1994,
while the entomological network in the western extension area had
grown to 2 sectors and 13 operational bases (subsectors) since the start
of Programme operations in that area in 1986. For operational
purposes, the OCP area has been divided into an Eastern Operational
Zone with headquarters in Kara, Togo, and a Western Operational
Zone with overall operational headquarters in Bamako, Mali.

As lowered susceptibility to temephos, the larvicide in exclusive use
for several years, became an operational problem around 1980, OCP
became heavily involved in the screening of new larvicidal compounds
in close collaboration with the programme dealing with vector biology
and control at WHO headquarters. An OCP insecticide screening unit,
with three professional staff and supporting personnel, was set up in
1981–82 in Lomé, Togo, and moved during 1986 to Bouaké, Côte
d’Ivoire, where it has remained since. This unit performs laboratory
and river trials of candidate compounds provided by chemical
industries, after analysis and screening by staff at WHO headquarters.

The aircraft fleet was originally stationed at Bobo-Dioulasso airport,
Burkina Faso, and Tamale, Ghana, but since 1985 has been based in
Kara, Togo, and in Odienné, Côte d’Ivoire. It consists of up to eleven
helicopters, the actual number depending on the season and, until
1992, two fixed-wing and one liaison aircraft. The fleet, its pilots and
mechanics are provided under a three-year commercial contract with
an aerial spraying company after call for tenders.

Aerial operations are centrally coordinated from OCP headquarters
in Ouagadougou, Burkina Faso, by means of the radio-telephone
system connecting the entomological surveillance network with the
vector control unit (VCU). On the basis of the results of the surveillance
and river gauge readings at the end of the previous week, the VCU staff
at headquarters contact the zone, sector and subsector chiefs every
Monday morning for consultation and decision on vector control
operations for the coming days, in terms of river stretches to be covered
and the larvicides to be used. Aerial operations officers then calculate
the quantities of insecticide to be applied at each release point in
relation to the discharge of the rivers, and detailed flight plans are
drawn up accordingly. Recently, much of the detailed computation, as
well as the drawing up of flight plans, has been computerized.

The possibility of widespread aerial application of insecticides
producing an adverse effect on the environment, in particular on non-
target organisms, has been of continuing concern to the Programme.
Until 1981 when a hydrobiologist was assigned to the Vector Control Unit, monitoring was carried out through contracts with scientific and technological institutes located inside and outside the Programme area. Since then, an environmental monitoring team based in Ouagadougou, composed of one hydrobiologist and four technicians, has been responsible for the coordination of OCP activities in this field and, directly, for the monitoring of invertebrates (at 12 points in 1993) while National Hydrobiological Monitoring Teams survey fish populations (at 12 stations in 1993).

Once a year the Independent Ecological Group meets to review and evaluate the reports of the national and OCP environment reports, and advise on the use of larvicides and the need for further research.

In each area, the start of vector control operations was preceded by an inventory and mapping of all breeding sites of *Simulium damnosum* in the dry and high-water seasons. This task was greatly facilitated by reconnaissance from helicopters, which also allowed access to river stretches that could not be reached by land.

Aerial larviciding was gradually introduced throughout the Programme area. The first aerial base was established in Bobo-Dioulasso, Burkina Faso, in October 1974 by the aerial spraying contractor. Operations were started in February 1975 in the phase I area, comprising the western part of Burkina Faso, the northern part of Côte d'Ivoire, the eastern fringe of Mali and the north-western corner of Ghana. Larviciding was subsequently extended to phase II in March 1976 to include the White and Red Volta basins in Burkina Faso and northern Ghana. In 1977 aerial operations expanded to phase III (west), i.e. eastern Mali as far as the river Niger and the north-western part of Côte d'Ivoire, as well as to phase III (east) comprising the
endemic areas in Niger, northern Togo and northern Benin. The total area under treatment in this, the original programme area, was 654 000 km², to which would be added 110 000 km² in the southern part of Côte d’Ivoire where larviciding started in phase IV in 1978–79. By that time 18 000 km of river was under vector control protecting a population of 16.5 million.

*The amount of larvicide to be applied at each release point is carefully calculated in relation to the discharge rate of the river.*

Initially, larviciding was conducted on the basis of systematic weekly treatment of all known breeding sites, but with increased knowledge and understanding of the various blackfly species, their vectorial role, flight behaviour, and geographical and seasonal distribution, the intensity and frequency of larviciding became increasingly selective with extended periods of suspension. The restriction of larviciding to vectors carrying parasites that gave rise to the blinding form of onchocerciasis (thus excluding control of the forest species associated with the non-blinding form of the disease) has been consistently adhered to, although recent findings indicate that in some areas blindness, even though at a low level, is found in the forest and that the term “mildly blinding” is more appropriate than “non-blinding”.

While vector control in OCP has now been carried out continuously, and on the whole successfully, for some 20 years, operations have not been without problems. Lowered susceptibility of *Simulium* to the larvicides employed by the Programme was seen soon after the inception of operations. The first recorded instance occurred in the south of Côte d’Ivoire (where operations began in 1978) after one year of regular treatment with temephos, when increased tolerance of *S. sanctipauli*, a species found in forest areas, was detected. The substitution of chlorphoxim for temephos brought the situation back to
normal in that area. In 1983, *S. squamosum* became resistant to temephos in the same area and had to be controlled by aerial spraying of *Bacillus thuringiensis* (B.t. H-14).

The problem of resistance remained stable and of limited importance until 1985, when low susceptibility of *S. soubrense*/*S. sanctipauli* to temephos was detected in the southern and western extension areas, before the application of the compound there by the Programme. The susceptibility of savanna species to temephos was also found to be rather low at the border between Gambia and Senegal where no larviciding by OCP had taken place. During 1986, the first year of the third financial phase, resistance of savanna vector species to organophosphorus compounds spread to Ghana, eastern Mali and within the extension areas, necessitating the use of replacement larvicides. The resistance of savanna species remained confined to temephos and chlorphoxim (both organophosphates) and did not extend to permethrin (a pyrethroid), carbosulfan (a carbamate) or *B.t. H-14* (a biological control agent). Since 1987 the Vector Control Unit has implemented a scheme of rotational use of the available larvicides (including pyraclofos as from 1990 and substituting phoxim for chlorphoxim), taking into consideration the efficacy of each compound, the risk of untoward effects on non-target fauna, the level of water discharge and the cost of the insecticide. Temephos is included in the rotational scheme. In applying this scheme, OCP has overcome problems of potential and real resistance which no longer hamper the progress of vector control anywhere within the Programme area.

Another serious adverse development, which threatened the successful outcome of OCP operations, was the phenomenon of invasion of infected savanna blackflies emanating from sources outside the boundaries of the Programme area. The re-invaded zones were spaced out inside the western, southern and eastern borders of the original programme area, and the sources were thought to be located in Guinea, southern Côte d’Ivoire, Togo and, to a much lesser degree, Nigeria. In 1976, focal experimental larviciding in southern Côte d’Ivoire resulted in greatly reduced fly catches within the Programme area where the reinvasion from these sources was suspected to take place. Once vector control expanded into geographical phase IV (southern Côte d’Ivoire) the problem of reinvansion into the corresponding part of the original OCP area was greatly reduced. From 1978, similar experimental larviciding was conducted of suspected sources of reinvasion to the south-west of the OCP area, resulting in a considerable reduction of fly catches in the arrival zones within the Programme area. However, complete and lasting control of reinvasion in the west and in the south-east was obtained only after systematic larviciding was expanded into the extension areas.

The plan of operations for the third financial phase (1986–91), which was approved by JPC in December 1985, provided a programme
for the phased expansion of vector control into the southern and western extension areas, bringing the total OCP area to 1,255,000 km² with a population of 30 million, and increasing the length of rivers under control to 50,000 km. This schedule could not be adhered to entirely for a variety of reasons, including the unforeseen concentration of efforts to combat the above-mentioned resistance in the savanna species of the blackfly, which occurred at the beginning of the third financial phase.

Epidemiological evaluation

During the Joint USAID/OCCGE/WHO Technical Meeting on the Feasibility of Onchocerciasis Control, held in Tunis in July 1968, the principles and modalities of epidemiological evaluation were laid down in some detail. The first task would be to undertake “initial prevalence surveys” in order to map the geographical distribution and evaluate the endemicity and severity of onchocerciasis, thus establishing a baseline for future evaluations. The trend of the disease in relation to control should be monitored by means of periodic examinations, at 2–3 year intervals, of populations in “indicator areas” close to the entomological assessment sites at which *S. damnosum* were to be captured. In this way, the effects of the scheme on the amount of transmission could be related to its effects on the disease in the human population. The indicator villages should be selected within areas with high, moderate and low incidence of blindness. The methodology would comprise microscopic examination of skin biopsies, taken with a Holth-type corneoscleral biopsy punch, to look for microfilariae, and visual acuity tests complemented by an ophthalmological slit lamp examination.
Once the Programme became operational, an Epidemiology and Public Health Unit was set up at OCP headquarters in Ouagadougou, staffed by an epidemiologist and a sociologist. They were supported by two epidemiological evaluation teams, each comprising one parasitologist and one technical officer, as well as by an ophthalmological evaluation team with two professional staff. This arrangement has remained in force since then with only minor structural modifications, including a change in the unit title to Epidemiological Evaluation in 1977 and the removal of the post of sociologist in 1978. Since the mid-1980s, most of the field activities have been undertaken by national epidemiological evaluation and surveillance teams in each of the participating countries. The national teams receive logistic and financial support from the Epidemiological Evaluation Unit (EPI), which also provides technical guidance and coordination.

Until 1988, the activities of the EPI were essentially oriented to assessing the impact of vector control, by means of repeated examination of indicator villages using “simple evaluations” (search for microfilariae in skin-snips and visual testing) and “detailed evaluations” (simple evaluation plus ophthalmological examination). The data obtained from these evaluations allow prevalence, community load of infection and incidence to be calculated, all indices that are important in the determination of whether onchocerciasis has reached a sufficiently low level to permit larviciding to cease.

Repeated examinations of indicator villages allow the community load of infection to be calculated.

With time, the EPI unit has added to its original tasks such activities as the study of the longevity of the adult O. volvulus; investigation of forest onchocerciasis; the search for immunodiagnostic tests applicable
in the field and DNA differentiation of parasite strains; field testing of ivermectin and its application on a community-wide scale; and, more recently, participation in decision-making regarding cessation of larviciding and support to epidemiological surveillance to detect recrudescence.

Since 1990, EPI, with substantial help from national epidemiological teams, has completed a comprehensive programme of epidemiological mapping in the extension areas, to establish baselines for assessment of future control operations, estimate the number of people infected and blinded by onchocerciasis, and identify communities in need of large-scale treatment with ivermectin. In addition to skin-snip examination, EPI has undertaken special ophthalmological surveys to determine the seriousness of the infections transmitted, and to evaluate the effect of ivermectin treatment. In this connection, OCP has been instrumental in initiating and supporting community-wide distribution of the drug in villages with populations at risk of onchocerical blindness, carried out by national teams often with the assistance of nongovernmental and private voluntary organizations. Ivermectin is supplied free of cost by the manufacturer to the national control programmes and OCP has assumed the responsibility of procurement on behalf of the eleven participating countries.

More recently, because of the fear of transmission of viral diseases such as hepatitis and AIDS through mass diagnostic methods involving cutaneous perforations, OCP has reduced skin-snipping to an absolute minimum. Whenever its use is indispensable, WHO recommendations designed to prevent disease transmission are strictly adhered to. To wholly or partly replace the use of skin-snips in epidemiological evaluation, efforts are being made under the leadership of the WHO/UNDP/World Bank Special Programme for Research and Training in Tropical Diseases to develop other diagnostic procedures for rapid community assessment.

Statistics and information support

During the early years of OCP operations, data analysis was handled by the staff of the units responsible for collecting the data in conjunction with their respective field operations. In the Plan of Action and Budget for 1978, allowance was made for a post of statistician in the Director's Office. The post was transferred to the unit of applied research in 1980 and the incumbent, assisted by a programmer/analyst, was assigned the task of "monitoring and evaluating entomological, hydrobiological and epidemiological data". However, most of the data processing and analysis remained centralized at WHO headquarters in the hands of a small OCP-funded team supported by consultants. With the decentralization early in the 1980s, the increasing emphasis on correlation of entomological and epidemiological data in the analysis of operational
results as a basis for planning and programming, and the need to
develop a computer link between the various entities of the
Programme, statistical analysis moved to a new unit established in
1988 under the title of Biostatistics and Information Systems (BIS).

Biostatistics is an essential component of epidemiological investiga-
tions and evaluations. The use of statistics during the early period was
based on the classical exploitation of data designed to provide such
quantified indicators as prevalence and incidence and their trends over
time. The indicators reflected the epidemiological changes caused by
operations of the Programme and pinpointed areas where operations
had failed to produce the anticipated results. Later, as OCP adopted an
increasingly forward-looking approach in determining strategy and in
operational planning, the unit of Biostatistics and Information Support
developed more sophisticated tools such as computerized predictive
epidemiological models.

The application of the BIS model to real situations, using field data
collected and analysed over a number of years, has been of critical
importance for preparing OCP's long-term and medium-term plans.
One of the main conclusions of model simulations was that 14 years of
larviciding was required to virtually eliminate the reservoir of the adult
onchocercal worm in humans, a prediction on which the time frame for
future operations is based. At the same time model predictions,
confirmed by field trials, have demonstrated that community-wide
application of ivermectin does not reduce transmission sufficiently to
eliminate the parasite reservoir in humans, even if done regularly at a
high level of coverage for a prolonged period. Furthermore,
simulations have shown that ivermectin distribution can cope with
recrudescence, provided that it is instituted soon after the appearance
of recrudescent infection. Other uses of the epidemiological model are
in determining the epidemiological level at which larviciding can cease
and in predicting the effect of annual ivermectin treatment on
onchocercal manifestations in the eye.

On the information-support side, BIS has been instrumental in
setting up a Programme-wide computer and word-processing network
as well as training the staff concerned at OCP headquarters and in the
Programme's operational centres.

**Socioeconomic development**

Given that the removal of onchocerciasis as an impediment to
economic development constitutes the second part of the Programme
objective, activities in this field have been given prominence in OCP
ever since it became operational. The PAG Mission considered the
socioeconomic aspects of the disease in detail and recommended the
setting-up of an Economic Development Unit within OCP to "identify
economic development projects within the Programme area and, at the
request of participating Governments, assist in drawing up terms of reference for preinvestment studies, and draft project documents for submission to bilateral and multilateral donor sources.

The contribution of OCP to socioeconomic development came under scrutiny during the early 1980s and it was eventually decided to transfer that responsibility to the Committee of Sponsoring Agencies and to reduce the number of posts in the unit at Programme headquarters to the minimum necessary to maintain liaison, information and coordination functions. In 1991 the only professional post left was transferred to the Devolution Unit.

As a first step, CSA sponsored a regional study to (1) identify, within areas under OCP control, the zones with potential for development and (2) prepare follow-up action (the Hunting study). This was followed by the Land Settlement Review (LSR), which examined settlement activities in the eleven participating countries and developed policy recommendations to facilitate effective and environmentally sound settlement. The findings of this latter study were discussed at a seminar held in Ouagadougou in 1990, which was attended by mid-level officials from OCP countries who were involved with settlement. These studies identified the most promising geographical areas for agro-pastoral production and brought attention to land settlement issues and policy options favourable to cost-effective, environmentally sustainable production systems. CSA is well placed to, for example, initiate the preparation of strategy documents and plans of action for such regional programmes as river system management, taking account of both the possibility of enhanced productivity and protection of the environment.

Research

Although OCP operations from the very beginning were designed and implemented on the basis of a sound knowledge of the various entomological, epidemiological and operational factors of importance for large-scale vector control, stress was laid on the need for continuing research as an integral part of the activities undertaken by the Programme. OCP has consistently conducted and supported research with direct application to field operations, with a view to enhancing the effectiveness of activities, supplementing the available means of surveillance and control, anticipating future needs resulting from planned Programme developments and overcoming operational obstacles. Without such research and application of its findings, OCP would have faced serious difficulties in programme implementation.

During the early years, a great deal of the research was carried out by scientists and academic institutions under contract to the Programme, which provided facilities in the field, whenever required. With time, however, OCP staff have become increasingly involved in applied and operations research of immediate relevance to control operations as
part of their day-to-day work. As regards the longer-term and more theoretical basic research of potential importance to the Programme, OCP maintains close contact with the WHO/UNDP/World Bank Special Programme for Research and Training in Tropical Diseases (TDR), with other interested programmes at WHO headquarters, with universities and with industry. The annual expenditure on research amounts to 12% of the total OCP budget.

A special effort has been made by the Programme to look for an anti-onchocercal drug suitable for large-scale field application. In 1982, OCP established the Onchocerciasis Chemotherapy Project (OCT) on the recommendation of a working group set up to consider the future course of the Programme in this field. The objective of OCT was defined as developing “an effective, low-cost and safe drug for treatment of onchocerciasis which would permanently sterilize or kill adult female *Onchocerca volvulus*, without at the same time causing severe allergic reactions in recipients from microfilaricidal action”. A Steering Committee for the project was established, composed of experts in parasitology, biochemistry, pharmacology, pharmacokinetics, toxicology, ophthalmology and other relevant disciplines. OCT has obtained the participation of chemical and pharmaceutical companies in drug development, has solicited candidate compounds from academic and scientific institutions, and has funded research on the synthesis of analogues of active substances, based on biochemical targets.

Following the encouraging experience of OCT collaboration with TDR in the setting up and management of a preclinical drug development team, steps were taken in 1990 to establish a joint programme “dealing with all work related to the discovery and development of macrofilaricidal drugs, for both onchocerciasis and lymphatic filariasis”. This programme, named Macrofil, was formally initiated in 1992, and combines OCT and TDR resources for research and development of macrofilaricides.

**Training**

Considerable efforts have gone into the OCP-supported training programme which was instituted in 1974 with the following objectives: to improve the skills of Programme staff so as to equip them to fill more senior posts; to prepare new personnel for the Programme; and to train personnel from outside the Programme area in the entomological and epidemiological field procedures used by OCP, in order to standardize methodologies thus allowing comparison of data from different countries and projects. Training was provided through OCP fellowships for attendance at courses run by institutions located outside and inside the Programme area. Initially, formal training was given to national entomologists prior to their appointment as staff.
members of the Programme, while later, in-service and refresher training became regular OCP activities. With time, the selection of teaching institutions has increasingly centred on those located in Africa so that today, practically all fellowships granted by the Programme are directed to African teaching centres at a cost 4–5 times lower than that of sending fellows to Europe or North America. Training in a familiar environment keeps the “brain-drain” to a minimum, ensures the appropriateness of the curriculum to local conditions and gives students realistic expectations on their return to their home station. Furthermore, by placing fellows in African centres, OCP is supporting institution-strengthening on the continent.

While OCP training was, by necessity, initially oriented towards preparing national and OCP staff to work on onchocerciasis control, the emphasis has recently shifted to training nationals in the key disciplines of devolution. The trend over the years has thus been a move away from fellowships in subjects related to vector control, towards training grants in such fields as epidemiology, biostatistics, management and public health administration.

**Devolution**

The concept of devolution was first put forward in 1981 by the Independent Commission (see page 47) which recommended devolution of epidemiological evaluation as soon as possible. It considered that, once a maintenance phase had been established, vector surveillance and any necessary vector control activities should be devolved. This would apply in particular to the original programme area, where it was expected vector control would virtually have come to an end by 1991. It was recognized that there would still be areas in the west and the south where large-scale vector control would be required, conducted by OCP. This scenario has to a large extent been followed by the Programme, with devolution in the major part of the original OCP area commencing even before 1991.

Although the subject of devolution has been extensively debated in all the statutory bodies of the Programme since the early 1980s, a great deal of uncertainty as to the definition, content and implications of devolution persisted until ivermectin appeared on the scene in 1987. Much of the indecision was caused by the problem of how the participating countries would cope with recrudescence of transmission after the cessation of OCP operations. At that time the only means of coping with recrudescence was by aerial larviciding, which the countries would not be able to undertake. The picture changed completely when ivermectin was approved for treatment of onchocerciasis in humans, and model predictions confirmed that it would control recrudescence, provided it was given early after detection of recrudescent cases to all persons infected or potentially infected at the source.
Conceptually, therefore, devolution should be seen as national maintenance of OCP achievements through active epidemiological surveillance aimed at early detection of foci of recrudescent infection, and the control of such recrudescence with ivermectin. The participating countries have prepared devolution plans and programmes, which have been submitted to, and endorsed by, the Joint Programme Committee.

The role of OCP in devolution is one of training, support and coordination. More specifically, the Programme assists in drawing up devolution plans; provides technical guidance on epidemiological surveillance and control of recrudescence; trains national staff in multidisease surveillance, drug distribution and management; and conducts operational research on devolution activities including the long-term impact of ivermectin distribution. To deal with these tasks, in 1991 OCP established a Devolution Unit at its headquarters in Ouagadougou. Furthermore, the Director of the WHO Regional Office for Africa has appointed an intercountry coordinator for devolution, stationed in the WHO Representative’s office in Ouagadougou, and has set up a devolution task force including the coordinator, OCCGE, and staff of OCP and the Regional Office for Africa.

Administration and support services

The structure of the Administration and Support Services Unit has undergone few changes since the Programme was established in 1974. In addition to the office of its chief, the unit comprises separate entities dealing with budget and finance matters, personnel, supplies and equipment, and transport.

Apart from providing administrative and other services in support of OCP operations at all levels, the unit, in conjunction with the Director’s Office, maintains a continuous watch on expenditures in relation to the achievements of the Programme and makes adjustments as required to ensure efficient use of resources. In this connection, the Programme has instituted annual management seminars for senior headquarters and field staff, to invite their suggestions for improving the cost-effectiveness of Programme operations and to inculcate the notion of cost-consciousness in them.

OCP management and administration have been unrelenting in their efforts to implement operations at the lowest possible cost compatible with attaining set targets and obtaining desired results. In this way, it has been possible to maintain the budget at a reasonably low level in spite of a considerable expansion of field activities into the extension areas, increases in staff pay, increases in the cost of equipment, supplies and services, and, not infrequently, an appreciable downturn in the value of the US dollar against the other currencies in which OCP expenditures are incurred.
Administrative support in Geneva

During its first year of operations, OCP administrative posts were filled by staff temporarily detached from WHO headquarters and regional offices and several administrative functions were undertaken as part of the activities of the headquarters support unit. Apart from routine administrative chores, the Geneva unit dealt with such matters as the organization of international bidding for the first aerial spraying contract, the establishment of a radiophonic network for the Programme and the preparation of country protocols.

Since 1975, however, the administrative infrastructure at OCP headquarters in Ouagadougou has been fully operational, and the Geneva-based support confined to the following sectors: personnel, finance (payroll and insurance), central supply services, medical services, and internal audit. The Programme finances four posts to compensate WHO headquarters for its support in these fields which cannot be covered in Ouagadougou.

The assistance given to the Programme by WHO headquarters in the field of management is worth mentioning. The Administrative Management Unit carried out a general survey in 1975 and looked into the OCP logistic support system in March 1977; on both occasions it made a series of recommendations for the improvement of Programme operations. Also, the chief of the unit actively participated in the preparation and conduct of OCP senior staff seminars held in Ouagadougou in 1987 and 1988.

Table 3. Distribution of OCP expenditure by principal activities, 1974–93

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<tr>
<td><strong>Vector control</strong></td>
<td>36.1 (64.4%)</td>
<td>69.6 (53.3%)</td>
<td>126.1 (71.1%)</td>
<td>232.0 (68.2%)</td>
<td>21.8 (68.1%)</td>
<td>18.2 (61.3%)</td>
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<tr>
<td>Epidemiological evaluation</td>
<td>2.6 (4.6%)</td>
<td>3.5 (3.3%)</td>
<td>6.9 (3.3%)</td>
<td>13.0 (3.8%)</td>
<td>1.6 (5.0%)</td>
<td>1.7 (5.7%)</td>
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<tr>
<td>Biostatistics and information systems</td>
<td>1.3 (3.6%)</td>
<td>1.0 (0.3%)</td>
<td>0.2 (0.6%)</td>
<td>0.3 (1.0%)</td>
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<tr>
<td>Devolution</td>
<td>1.2 (3.8%)</td>
<td></td>
<td>1.4 (4.7%)</td>
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<tr>
<td>Management/ support</td>
<td>8.6 (15.2%)</td>
<td>14.4 (13.5%)</td>
<td>21.6 (13.2%)</td>
<td>33.3 (10.4%)</td>
<td>2.0 (8.8%)</td>
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<tr>
<td>OCT</td>
<td>7.1 (6.6%)</td>
<td>12.5 (7.0%)</td>
<td></td>
<td>2.2 (6.9%)</td>
<td>3.7 (12.5%)</td>
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<tr>
<td><strong>Total</strong></td>
<td>56.1</td>
<td>106.9</td>
<td>177.4</td>
<td>340.4</td>
<td>31.7</td>
<td>29.7</td>
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Table 3 summarizes the cost of operations and proportional share by principal activities since 1974, while Annex 2 contains data on the distribution of staff and budgets among OCP units in 1994.
CHAPTER 4
Planning, programming, reporting
and evaluation within OCP

Long-term planning

The PAG Mission

The 1973 report of the PAG Mission can be considered the basic long-
term plan for OCP. After a full description of the scientific and
technical aspects of onchocerciasis control, it laid down the control
strategy for the Programme, which has since remained unchanged. In
addition, the PAG report provided an elaborate description of the
proposed control operations in the Volta River Basin area, ranging
from detailed larviciding circuits to the infrastructure of the
entomological surveillance network, and from training and research
to cost estimates by calendar year from 1974 to 1979 and by annual
averages for the period 1980–93. More details of the PAG Mission
report are given elsewhere in this publication (p. 11); suffice it to say
here that without the in-depth analysis of the onchocerciasis situation in
the future Programme area and the scientifically based strategy and
technically sound control operations proposed by the Mission, the
Programme would not have seen the light of day.

The WHO Independent Commission

In 1978, the Director-General of WHO set up an Independent Com-
mission on the long-term prospects of the Onchocerciasis Control
Programme, with the following terms of reference: to review and make
recommendations on alternative technologies; to consider the role of
chemotherapy; to evaluate the impact of extending vector control
beyond the existing OCP boundaries; to determine to what extent the
control of other vector-borne diseases could be incorporated into
OCP operations; to recommend research priorities; and to identify
requirements for carrying on the Programme’s activities and the type
and extent of training required. The Commission considered these
issues in the context of “whether and how the OCP could be brought
to a successful conclusion in the long term”.

In its report dated August 1981, the Commission concluded that,
despite the serious problems of reinvasion and resistance, OCP was
proceeding satisfactorily and on schedule. It also considered that the
long-term success of the Programme would depend on expansion to
the west, to deal with the principal source of reinvasion. The Commission made a number of suggestions concerning both technical and operational aspects and the infrastructure of the Programme. The Commission specifically recommended that national staff should become more involved and be given increasing responsibility, beginning with epidemiological evaluation, and that devolution should gradually become operational as from the early 1990s; in research, priority should be given to the search for chemotherapeutic agents and new larvicides; and a mathematical model of epidemiology and transmission should be developed.

Looking towards the post-OCP era, the Commission suggested that the Programme might develop into an “inter-country disease surveillance, training and advisory centre”, responsible among other things for the detection and control of recrudescence of onchocerciasis once devolution became operational throughout the OCP area. This idea has subsequently been taken up by various committees and assessment teams, most recently by the 1990 external review team.

The long-term strategy

The long-term strategy, prepared by the Programme management in close collaboration with operational staff and approved by the Joint Programme Committee at its 1984 session, was, in fact, a long-term plan incorporating the operational strategy to be applied until the Programme came to an end, barring the emergence of new means of control superior to larviciding. The long-term strategy did not foresee any substantial modification to the strategy spelled out in the PAG report, relying on larviciding as the exclusive means of transmission control expanded into the extension areas.

The long-term strategy forecast that OCP would stop larviciding by 1997, after which the entire Programme area would be in a maintenance phase, and the participating countries would thereafter ensure that onchocerciasis remained at an epidemiologically insignificant level. This projected date of cessation of OCP operations may need to be delayed by a few years, as the projections were based on the need for 11 years of vector control to eliminate the reservoir of *O. volvulus* in humans, whereas it is now known that 14 years are required.

Medium-term planning

Plans of operations

The consideration by the participating countries and the donors of proposals for OCP Fund Agreements covering subsequent financial phases has, since the Programme came into being, been supported by a document setting out in detail the operations planned for the six-year
phase in question. The first financial phase (1974–79) was covered by the PAG Mission report, the second phase (1980–85) by the 1978 WHO evaluation report (see page 50), while the planned operations, their expected impact and budgetary implications during the third (1986–91) and fourth (1992–97) phases were described in plans of operations.

The two plans of operations for 1986–91 and 1992–97 adhere strictly to the operational principles laid down in the long-term strategy. Both documents acknowledge aerial larviciding as the sole means of transmission control within the OCP area, although the 1985 document hints at the possibility of ivermectin, then in its initial stage of clinical testing, becoming “an important means of control, as a complement to larviciding”. The plan of operations for 1992–97, however, taking cognizance of the experience accumulated in the meantime, excluded the use of ivermectin for transmission control, but made provision for the continued application of the drug “for the treatment of infected cases with a view to controlling morbidity and preventing ocular manifestations leading to blindness”. Both plans stressed the importance of strengthening the search for a macrofilaricide that could be applied in the field, and which “could radically alter the approach to control and prove an invaluable tool in instances of recrudescence during and after devolution”.

Annual programming

Plan of action and budget

At its annual session, the Joint Programme Committee examines and approves the operational budget for the following year on the basis of the proposed Plan of Action and Budget (PAB) submitted by the Programme Director. The PAB document sets out in great detail a schedule of operations for each of the component parts of OCP, with an overview of the accomplishments expected from these operations. The human and material resource requirements, and their cost, are detailed for each activity, thus allowing computation of the total operational budget required to implement the proposed programme of operations during the year in question.

Reporting

In so far as sound management decisions rely on up-to-date, objective information, considerable efforts have gone into setting up and maintaining an effective reporting system within OCP. In addition to supporting managerial and administrative decision-making, the system provides information about OCP operations, progress, problems encountered and impact, of interest to concerned parties (participating countries, donors, members of EAC and CSA, the public and the scientific community). OCP issues one consolidated progress report a
year through the World Health Organization which is submitted to the annual session of the Joint Programme Committee for information and comments.

In addition, OCP prepares reports on meetings of its statutory and non-statutory bodies. The production of meeting reports, which was previously largely the responsibility of the Liaison Office in Geneva, is now centred in Ouagadougou.

**Evaluation**

One of the stronger points in the management of the Onchocerciasis Control Programme has been its exposure to constant scrutiny and evaluation. One reason why a good deal of attention has been given to evaluation in OCP is that the participating countries and, even more so, the donors have a legitimate interest in periodically assessing the progress of the Programme and in making sure that their investment is having the desired impact at a reasonable cost. Within the international donor community, which is exposed to a multitude of competing claims for financial assistance to worthy project proposals, solid proof of success is of the essence in securing continued support, in particular in the case of a programme like OCP, which has to continue over a prolonged period at a comparatively high budget level.

Evaluation in its larger sense has two components within the Programme: continuing scrutiny of OCP operations and progress, and ad hoc external evaluation exercises concerned in particular with the results and impact of the activities of the Programme as well as with analysis of the reasons for success and failure. The former includes the technical and scientific scrutiny of the Programme and its operations by the Expert Advisory Committee during its annual sessions; the regular assessment of OCP management by the Committee of Sponsoring Agencies as part of its function to oversee Programme operations; the internal and external budget and financial audit; and the examination of the annual Progress Report of the World Health Organization by the Joint Programme Committee.

The role and method of work of these bodies have been described elsewhere in this publication. Suffice it to stress here that they all play an essential role in bringing to light not only the results and successes of OCP but also any technical and managerial shortcomings impeding its progress, all of essence in the continuing adjustment of operations to ensure that the Programme moves in the right direction. The ad hoc evaluations and their findings are summarized below.

**External evaluation, 1978**

The first external evaluation was conducted in 1978 at the behest of the Steering Committee, which in September 1977 decided that the
sponsoring agencies “should field a mission to carry out a comprehensive review of the program in order to lay a proper basis for its next six-year phase which will start in 1980”. This evaluation was only partly external, since WHO actually conducted the first part dealing essentially with vector control, while the World Bank assumed responsibility for the second part, an assessment of the economic development aspects of the programme, carried out by a mission composed of consultants and staff designated by the sponsoring agencies.

The WHO evaluation exercise recommended that transmission control by means of aerial larviciding should be continued and research in the field of chemotherapy strengthened with a view to supplementing vector control activities. It was estimated that the budgetary requirements for the second financial phase (1980–85), including an extension into southern Côte d’Ivoire, would total US$ 133 million with operations conducted at the 1978–79 level.

**USAID impact assessment, 1985**

Before deciding whether to continue to support the Onchocerciasis Control Programme during its third financial phase (1986–91), the Agency for International Development of the United States of America (USAID) carried out an assessment of the Programme in 1985 “to portray the impact of the program to-date both in terms of disease control and welfare benefits” and to “contribute to the understanding of vertical health interventions as well as the usefulness of multi-donor approaches in combating disease”.

The overall conclusion of the assessment team was that OCP appeared to be “one of the more successful multi-donor programs in the short history of development assistance” and that if the Programme could “sustain its performance during the third phase as well as its devolution period the program effort should yield solid returns—both in terms of reduced human misery and new development opportunities”.

The team further pointed out that, undertaking the OCP initiative within a multilateral framework, “the donors greatly enhanced the program’s chances of success by guaranteeing a longer-term commitment, protecting against funding cutbacks, and insulating the program from sudden policy shifts as well as political pressure”.

On the operational side, the assessment team summarized the achievements and impact of Programme operations and concluded that OCP had improved the well-being of millions of people in the neglected regions of West Africa and that the economic consequences of effective control were potentially large and could extend for generations. The team emphasized the need for “additional development investment ... to exploit the liberated areas” and for policies “to
rationalize land acquisition and tenure practice”. The team also noted with satisfaction that “throughout its areas of operations in West Africa, OCP appeared to have created a ‘can do’ spirit — a sorely missed ingredient nowadays in many development initiatives. OCP operations [tended] to be well organized, its staff efficient and its accomplishments readily discernible.”

External review, 1990

At its 1988 session held in Dakar, the Joint Programme Committee agreed that an external review of OCP and its achievements should be carried out in connection with the preparation of the plan of operations for the fourth financial phase.

In its report submitted to the 1990 session of JPC, held in Conakry, the external review team concluded that OCP had been successful in so far as it had “virtually eliminated transmission in the core area ... [and had] made significant achievements in improving larviciding technology, in ecological monitoring ..., in entomological research ..., in epidemiological surveillance and assessment and in treatment of the disease”.

The external review attributed the success of OCP to: a clearly defined objective; a realistic time frame; choice of the best available technology; contracting out of specialized services; priority given to operational research; a high degree of autonomy of the Programme; delegation of authority within the governing structure; long-term commitments from donors, participating countries and sponsoring agencies; specified medium-term targets in six-year plans of operations; an effective system of checks and balances; transparency; a free flow of information; strong vertical management; and high quality staff.

As regards devolution, the team underlined that the effective implementation of epidemiological surveillance and ivermectin distribution for disease treatment and recurrence control required “appropriate institutional strengthening in the Participating Countries with special attention to training and management”.

In connection with the Programme’s support to devolution the review team recommended that research should be pursued in such fields as the impact of ivermectin on transmission in recrudescence situations; the safety of the drug when given more frequently than once or twice a year; the potential resistance to ivermectin and its detection; general health systems research in participating countries; and the development of an immunodiagnostic test for detection of low-level infection. The team also stressed the importance of continuing the search for a macrofilaricidal.

As regards socioeconomic development, the review team considered that CSA, interested donors and participating countries should jointly support development planning and programmes for the areas freed
from onchocerciasis and ensure the integration of such planning into the broader national development strategy of each of the participating countries.

Looking beyond the cessation of OCP operations, the review team envisaged the establishment of an intercountry facility to “monitor epidemiological trends throughout the Programme area; coordinate the efforts of regional institutes involved in onchocerciasis research; assist in data processing and provide a long-term memory for analysis of trends; help countries determine needs and priorities; and undertake training, review research and disseminate information.”
CHAPTER 5

Achievements and impact of the Programme

The Onchocerciasis Control Programme can take pride in its achievements to date. The results of control operations have accumulated in the field of public health as well as in the sphere of socioeconomic development. But the impact goes beyond health and production. OCP has contributed in no small measure to training and research and, by its example, demonstrated the applicability and use of sound management principles. And in an even wider sense, the Programme has illustrated how different goups of people can work harmoniously and constructively together: participating countries, donors, experts and UN agencies, not forgetting the staff representing a multitude of nationalities, cultures and professional backgrounds.

Examples of operational achievements

The annual transmission potential (ATP) dropped from 800 to below the acceptable level of 100\(^2\) in two-thirds of the area under larviciding as early as 1978. A similar situation rapidly extended to the entire seven-country original area, except the reinvaded zones in the west and the south-east and a few circumscribed zones where vector control had met with operational difficulties. Thus, in 1987 — the last year of larviciding in the whole of the original OCP area — more than 90% of the insect capture points reported ATPs of less than 100 and in many cases zero.

The situation in the reinvaded zones in the original programme area has greatly improved since larviciding was extended to sources of reinvasion beyond the boundaries of that area. For example, after treatment of the Upper Sassandra basin in south-eastern Guinea, biting rates and transmission potentials in northern Côte d'Ivoire and south-western Burkina Faso were reduced by over 90%. The reinvasion of Mali has finally come under control, but this entailed treatment of sources up to 600 km upwind in Guinea and Sierra Leone.

Another important achievement in vector control has been the Programme's successful handling of lowered susceptibility of the

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1 The theoretical number of onchocercal larvae (L₂) received by a person stationed at an insect capture point during one year.

2 The tolerable upper limit that allows people to occupy the river valleys without risk of developing serious onchocercal ocular lesions.
Simulium larvae to organophosphorus insecticides. Also, it is worth recording that the system of strict monitoring and surveillance of vector control, conducted by OCP over more than 15 years, has shown no adverse impact of larviciding; no disappearance of fish or invertebrate species has been recorded.

As a result of larviciding, the prevalence of onchocerciasis is now insignificant in the major part of the original programme area where the CMFL\(^1\) has come close to zero; exceptions to this are the reinvaded zones and the few circumscribed foci where larviciding met with operational problems. Furthermore, no onchocercal infections have occurred among children born in the original Programme area since the start of vector control, except in the reinvaded zones and in the few areas where transmission temporarily relapsed. In those areas, the number of infections was 10–20\% of what would have been expected in the absence of larviciding.

Impact on health

Since the Programme expanded control operations to the southern and western extension areas early during the third phase, 30 million people have been protected from onchocercal disease — 10 million in the original Programme area, where the threat has been virtually eliminated with the disappearance of the parasite reservoir in humans after 14 years of vector control, and 20 million in the extension areas where transmission has been halted by aerial larviciding and where the reservoir will disappear by the turn of the century.

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\(^1\) Community microfilarial load: the geometric mean number of microfilariae per skin-snip among persons aged 20 years and over, including those with a zero count.
It is estimated that 9 million children have been born within the OCP area since operations began; none of them has ever run the risk of contracting onchocercal blindness, and will never do so within the OCP area. By the year 2000, or even before, the number of children thus protected will have grown to 15 million.

Of those seriously infected with onchocerciasis when the Programme started, and therefore in grave danger of developing ocular manifestations, 1.25 million are no longer so; this figure is expected to increase to 2 million around, or before, the year 2000. So far, more than 100,000 cases of blindness have been averted by OCP control operations, a figure that will rise to 150,000 before the end of the century.

More than half a million people in the OCP area receive regular doses of ivermectin.

The use of large-scale distribution of ivermectin as a means of morbidity control has been pioneered by the Programme. Although the drug has not lived up to the early expectation that it could effectively interrupt transmission, it has proved to be a powerful agent with a pronounced clinical effect. The discomforts of onchocerciasis, such as itching, disappear rapidly and the risk of ocular manifestations, including blindness, is significantly reduced. Ivermectin distribution, alone or in conjunction with aerial larviciding, is therefore highly beneficial to the communities under treatment, which currently comprise more than half a million people within the OCP area.

**Impact on socioeconomic development**

If the results of OCP in terms of eliminating the devastating effects of river blindness in West Africa have been quite remarkable, the achievements in the field of socioeconomic development have been
no less outstanding. Since the start of control operations, the Programme area has witnessed an impressive influx of settlers into riverside zones previously deserted because people feared onchocerciasis and its clinical manifestations. In 1973, the PAG Mission estimated the total area of the deserted valleys to be 65,000 km² and the potential output as US$ 80 million per annum.

Even though this estimate did not take account of the 1978–79 southward extension into Côte d’Ivoire, it erred considerably on the low side according to more recent publications. According to the World Bank, the tillable “new lands” that have been, or are expected to be, made available as a result of onchocerciasis control cover approximately 150,000 km² within the original programme area, 50,000 km² in the southern extension area and another 50,000 km² in the western extension area, a total of 250,000 km² (25 million hectares) for the entire Programme area.

The 150,000 km² made ready for resettlement and cultivation, in part as a result of OCP operations, should suffice to feed 10 million people, and the 100,000 km² of fertile land in the extension areas that will become available before the end of the century should be enough to feed another 7 million people if cultivated using traditional technological and agricultural practices.

An example of the impact of OCP operations on the economy is an area of 2500 km² in Burkina Faso, where 400,000 people have settled since OCP vector control made the area inhabitable. The resettlement was supported by the Volta River Valley Authority (AVV), which is responsible for the development of riverside zones in areas where onchocerciasis has been brought under control.

More and more people are now settling in areas that were previously uninhabitable because of the danger of onchocerciasis.
Under the auspices of AVV, close to 100 new villages have been constructed and about 230 existing traditional villages have had their internal structure strengthened. Some 8000 new farms have been created and more than 5600 traditional farm holdings have had the benefit of improvements in agricultural practices. Also, more than 1000 km of country roads have been constructed and almost 700 wells and bore-holes have been drilled allowing for the supply of 400 litres of water per family per day. As regards infrastructure, 41 schools, 22 outpatient clinics and 11 village stores have been constructed. The total cost of these constructions came to around US$ 30 million.

By 1990, the overall annual production within the area had reached 7000 tonnes of cotton, 110 000 tonnes of cereals, 1000 tonnes of rice, 650 tonnes of French beans, 300 tonnes of potatoes, 800 tonnes of onions, 500 tonnes of other vegetables, and 2163 tonnes of meat. The total value of the agricultural products was in the order of US$ 37 million, or US$ 2700 per farm per year.

**Impact of OCP training**

Training conducted by OCP operates on two fronts: fellowships granted to nationals of the participating countries, and in-service training and refresher courses for staff employed by the Programme. As regards the former, Annex 3 presents the distribution of OCP fellowships during the period 1974-91, by subject of study and by nationality of fellows.

Apart from being trained and learning on the job, OCP staff in all categories and levels attend formal courses organized by the various units of the Programme, both on the technical/operational side and in the administrative field. The annual senior staff seminar and internal technical review are also occasions for dissemination of up-to-date knowledge relevant to different aspects of OCP operations.

Not only must staff members learn, and demonstrate ability, to cope effectively with the tasks assigned to them, they are also called upon to apply good management practices in their various fields of activity. Mastering technologies is learned in school, but ability to exercise efficient management can only be acquired by experience in a programme where full attention is paid to achieving results at minimal cost and with a high level of job satisfaction. This calls for good work ethics and a fair amount of discipline among the staff. It would seem that the work climate and organization of OCP help the staff to attain an understanding of efficient management and its application in practice.

All in all, the Programme, when it comes to an end, should have made a considerable contribution, quantitatively and qualitatively, to the human resources situation in West Africa. The gradual release of up to 800 OCP staff members, with good technical and managerial expertise, to national administrations, and the return of several
hundred candidates from OCP-funded fellowships, must contribute to
the strengthening of health and other services in the participating
countries. In addition, the increasing use of nationals as consultants to
the Programme allows them to become familiar with universally
accepted technologies and management procedures and helps to
strengthen intercountry collaboration.

Achievements in the field of research

Research, in particular operations-oriented field investigations, supports the Programme in terms of seeking solutions to operational
problems as well as looking for ways to improve OCP’s cost/benefit
ratio.

Without the search for, and discovery of, replacement larvicides to
overcome lowered susceptibility to temephos, Programme-wide trans-
mision control would not have been achieved and OCP would probably have come to an ignominious end during the second half of
the 1980s, with the entire Programme area reverting to the situation
prevailing before the start of aerial larviciding. Much of the credit for
successfully combating resistance is due to OCP’s close collaboration
with both the vector control programme at WHO headquarters and the
chemical industry.

The identification, vectorial role and susceptibility to larvicides of
the various forms and species of the blackfly, as well as their
geographical and seasonal distribution, have been subjects of intense
investigation throughout the existence of the Programme. The entomological map of the Simulium damnosum complex is now firmly
drawn for the entire OCP area, and the steady increase in the
knowledge and understanding of the different vector species has
allowed control activities to be rationalized, leading to considerable
economies in their implementation. Progress has recently been made
in developing a field-applicable DNA probe capable of distinguishing
human from animal parasites.

The introduction of ivermectin for large-scale use in humans within
a very short period was also a result of the Programme’s research efforts. When it came to investigating the nature, seriousness and frequency of
side-effects of the drug, as well as its impact on onchocercal
transmission, the OCP structure and its human and material resources
turned out to be of crucial importance. The OCP-conducted studies on
the field applicability of the drug have had a determining effect on its
increasing use against human onchocerciasis. The OCT/Macrofil
project is intensifying its efforts to identify and test candidate
compounds for their macrofilaricidal effect, and there are good
prospects of a drug becoming available within the foreseeable future.
An immunodiagnostic test for detecting onchocerciasis in humans
might also soon be added to the investigative tools of the Programme.
One of the more visible results of research is the scientific publications that derive from it. In the first ten years of OCP operations, close to 50 papers prepared by staff members or consultants had found their way into scientific journals, and more than 100 internal reports had been issued by OCP or by institutions collaborating with the Programme. More recently, in 1990–91, 32 articles prepared by OCP staff were published. The experiences, findings and data of the Programme have also been studied and analysed as the basis for several doctoral theses.

Use of OCP expertise outside the Programme area

The expertise accumulated by OCP during its 20 years of existence can be roughly compartmentalized into the following categories: vector control; epidemiological surveillance and large-scale drug distribution — the two essential elements of devolution; onchocercal ophthalmology; the construction and use of epidemiological models; and management.

As mentioned previously, the operational experience of OCP and the findings derived from research have been published widely, contributing markedly to onchocerciasis control outside the Programme area. This is particularly so for the application of the OCP methodology for epidemiological investigation and, more recently, for the use of ivermectin to control morbidity. In this connection it is worth stressing that the attendance of OCP staff at scientific meetings and congresses is often solicited and that the Programme recognizes the importance of direct contact with the scientific community and the mutual benefit to be derived therefrom.

The Onchocerciasis Control Programme in West Africa is increasingly viewed by those responsible for onchocerciasis control in other parts of the world as a resource facility or reference centre, which can be called upon to provide expert advice. Staff members have been invited by authorities in non-OCP countries to assist in epidemiological and ophthalmological surveys and to recommend follow-up actions. Also, the OCP epidemiological model is being considered for adaptation for use in the control of other public health problems.

Other achievements

Devolution is a national process integrated within the sections of the national public health systems dealing with active epidemiological surveillance on the one hand, and large-scale drug distribution on the other. Instituting and operating measures to detect and control onchocerciasis recrudescence as a separate functional entity would make poor sense from all points of view. West African countries that have embarked on devolution have therefore done so by combining
surveillance and control of onchocerciasis with similar measures for a
number of other diseases of public health importance. Obviously, the
effective implementation of these activities requires strengthening of
the national public health system, a process that is already well under
way with the active support of WHO, OCP and the donor community.
The Onchocerciasis Control Programme could be taken as a
demonstration of how a vertical, single-disease control programme
can become the driving force in developing integrated multi-disease
control as part of reinforced health care systems.

OCP has demonstrated that major intercountry activities on the
African continent can succeed. One of the most impressive accom-
plishments of the Programme is the extent to which a true sense of
collaboration has been established among the various partners within
the OCP structure.

The move by the United Nations system towards creating an
understanding and collaboration between the "haves" and the "have-
nots", the so-called "North–South dialogue", has had its ups and
downs. Nevertheless, the collaboration between the participating
countries and the OCP donor community is a shining example of
how this dialogue can develop in practice. The notion of "givers" as
distinct from "receivers", elsewhere so common, is absent in OCP
forums where the two parties meet. The debate in the Joint Programme
Committee is constructive and centred on the common aim of making
the Programme succeed.

If a constructive North–South dialogue has been one of the pillars of
the Programme, the close collaboration among the participating
countries — a kind of "South–South dialogue" — has been no less
important. The beneficiary countries have fully realized the need to
consult among themselves on OCP matters and to jointly support the
Programme, both on issues of policy and in relation to activities in the
field. This collaboration will become even more important in the future
when the participating countries assume responsibility for the detection
and control of recrudescence. At that time, the failure of one country
will hurt the others. The South–South dialogue therefore needs to
continue in the form of information exchange and coordination of
control efforts.

Collaboration between organizations and agencies within the UN
system has often been decried by Member States as leaving a lot to be
desired. This, however, has not been the OCP experience. The four
sponsoring agencies — UNDP, FAO, the World Bank and WHO — work
closely together in support of the Programme. OCP has proved that
different components of the UN system can work together harmoni-
ously and productively when faced with a worthwhile programme with a
clear objective, effective means of control, and efficient management.
PART 2

Management of OCP
CHAPTER 6

Managerial aspects of the Programme

Basic considerations

In this chapter, an analysis is made of the management aspects of OCP, and lessons drawn that could be applied to other large-scale public health programmes. Such lessons should be of particular interest to the participating countries, which will assume responsibility for onchocerciasis surveillance and recrudescence control within the framework of multi-disease public health operations, when OCP comes to an end.

It is not intended to provide a textbook list of management principles for instant application. Rather, an attempt will be made to highlight the aspects of the operational structure and the management of OCP that have allowed the Programme to reach its targets and to move towards its objective.

Before embarking on the description and analysis of the management of OCP, a few key concepts are considered. What, actually, is meant by "managing"? For the purpose of this publication, the following definition is suggested: the marshalling of all human and material resources involved in the planning, conduct and assessment of an activity, or group of activities, organized to meet preset targets and objectives. Good management would thus mean marshalling resources at the lowest cost compatible with reaching targets and attaining objectives in a timely fashion.

In operational terms, management could be said to encompass the following tasks: (1) ensuring coordinated action by staff; (2) analysing data pertaining to the implementation of a programme, including the use of resources and activities of operational staff; (3) drawing conclusions, based on this analysis, as to the extent to which operations are being conducted as planned; (4) determining the results of control activities and assessing their impact; and (5) making any necessary corrections in programme procedures to reach the final objective in the most cost-effective manner.

Tasks 2 and 3, i.e. analysis of operational data and drawing of conclusions regarding progress, can be thought of as aspects of programme monitoring. The fourth task, assessing impact, is more a question of evaluation, while the fifth is one of adjustment.

Monitoring may be performed consciously or unwittingly, systematically or irregularly. It is the concern of managers responsible for
keeping the programme on the right course. Evaluation, on the other hand, could be equated with an examination of whether what the programme is doing will eventually lead to achievement of the ultimate objective.

The analysis of the management of OCP will centre on the following stages of its development and operational activities: definition of the objective; planning and programming; implementation (including monitoring); evaluation; and adjustment. In a separate section, an attempt is made to identify the managerial elements that have been important in bringing OCP to where it is today. Finally, a few suggestions are made concerning management of devolution, based on the OCP experience.

To begin with, however, an account will be given of the conditions that helped the Programme to a successful start and, later, facilitated its implementation. The OCP experience in this respect might be worthy of consideration when other field operations, planned to last over an extended period, are being contemplated.

**Conditions for launching OCP**

No internationally assisted development programme will succeed unless the countries themselves are keenly aware of the need for the planned activities and are ready to collaborate fully in their implementation. Too many well-intentioned, technically sound, multi-lateral projects have failed because the government authorities did not consider that they met a priority concern, resulting in, at best, half-hearted national involvement. In addition, even with the best will and intentions on the part of governments to make field programmes succeed, they will fail if the populations concerned have different priorities and, consequently, extend less than enthusiastic collaboration to the project staff operating in the field.

The Onchocerciasis Control Programme has had the good fortune of being seen by the participating governments, their populations and the donors as tackling a health and socioeconomic problem ranking high on the list of priorities. Specifically, OCP was set up to deal with a health problem conceived by the beneficiary populations as compromising their well-being, disabling young people in the prime of their productive years, and compelling entire communities to move away from the fertile riverside land to the barren highlands. The people exposed to river blindness and to its ruinous economic consequences welcomed efforts to combat the disease. Furthermore, the achievements of the Programme, in terms of interruption of transmission and a drastically lowered onchocercal morbidity, have ensured whole-hearted collaboration, not only from the national authorities and donors but also, importantly, from the people in the villages.
The Onchocerciasis Control Programme was launched on a sound basis as regards prior knowledge of epidemiology, parasite vector, transmission, and distribution of the disease, as well as of transmission control by means of aerial larviciding, although this knowledge has been greatly improved with the accumulation of operational experience and of the findings resulting from OCP research.

Another condition for a successful programme is to define exactly what it is ultimately expected to achieve considering the effectiveness of the technology to be applied, the time allotted and the level of resources expected to become available. The objective of OCP, to eliminate onchocerciasis as a public health problem and an obstacle to socioeconomic development, has remained virtually unchanged throughout the life of the Programme.

As stressed previously, the time frame is an important consideration when launching a control operation. Here again, the Programme was fortunate in that its founding fathers realized that vector control needed to be continued for a sufficient time to virtually eliminate the reservoir of the adult worm in humans.

Lastly, if realistic objectives and targets are to be attained, sufficient human and material resources must be available to ensure smooth and effective implementation of the planned activities. From the beginning, thanks to the understanding and generosity of the donor community, OCP operations were never hampered by shortage of funds, even in the few cases when expenditure exceeded approved allocations.

Launching a control programme: lessons from OCP’s experience

- No control activity should start unless the national authorities are convinced that there is a need for it. However, there can be different degrees of conviction before final acceptance; the more convinced the national authorities, the stronger their commitment and participation.

- Easily recognizable, salutary effects of control measures help to secure the acceptance of the programme by the target populations, as well as their collaboration when needed.

- The epidemiological nature of the problem should be well researched, as should the methods of control.

- Sufficient time and resources should be guaranteed in advance.

Programme management and the objective of OCP

As mentioned above, the objective of eliminating onchocerciasis as a public health problem and an obstacle to socioeconomic development
has been in force since the inception of OCP. In 1983, the concept of maintaining the achievements of the Programme after its cessation was incorporated in the objective, which now reads: "to eliminate onchocerciasis as a disease of public health importance and as an obstacle to socioeconomic development throughout the Programme area and for the Participating Countries to maintain this achievement".

By its very nature, the objective determines the orientation of operations and their management. Thus, the expansion to aim at maintaining OCP achievements after the Programme comes to an end led to OCP taking the lead in launching the devolution process as a priority concern.

Referring to the objective has helped OCP management to clarify such issues as the limitations of the Programme (not to eradicate onchocerciasis from the eleven participating countries but to reduce the disease to a "no-problem" level), the socioeconomic impact of the disease (OCP was to a great extent conceived on socioeconomic grounds) and the accepted role of the Programme as a prime mover in the field of devolution.

Obviously, the structure of OCP and its operations have been determined with a view to meeting the Programme objective. For this purpose, OCP has found it useful to subdivide the overall objective into supporting objectives and their corresponding operational approaches. The supporting objectives comprise virtual elimination of transmission until an epidemiologically insignificant level of onchocerciasis is reached; safeguarding against reinvasion; controlling morbidity; and maintaining OCP achievements.

The corresponding operational approaches are: 14 years of aerial larviciding (virtual elimination of transmission); extension of control operations (safeguarding against reinvasion); community-wide and health centre-based ivermectin distribution (morbidity control); and support for the devolution process (maintenance of OCP achievements). As might be expected, the Programme structure reflects closely the managerial exigencies of the various operational approaches, and comprises units of Vector Control, Epidemiological Evaluation, Devolution, and Programme Support.

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**Definition of the programme objective: lessons from OCP's experience**

- A well thought out and clear objective sets the course of the programme and determines the range and limits of its operations.

- The division of the overall objective into subobjectives allows operational approaches to be identified and an appropriate managerial structure to be determined.
Managerial aspects of planning and programming

From a managerial point of view, the distinction between planning and programming is of interest. In the case of OCP, planning is concerned with long-term and medium-term forecasts regarding the Programme and its activities, while programming deals with detailed quantification of anticipated operations during a defined period of short duration, including their cost implications. Whereas planning determines the strategy and provides overall operational guidelines, programming converts the strategy into tactical deployment of resources, aiming at reaching quantified targets.

As suggested above, the OCP global objective provided the Programme with its overall terms of reference, while the long-term strategy set the course of action to be followed to meet the objective and outlined the operational strategy implied in such a course of action. The plans of operations translate the strategy into programme approaches for the medium term, without going into operational details, while the plans of action convert such programme approaches into operational activities for a one-year period.

Long-term and medium-term plans as well as short-term programmes are the bases for decisions made by the Joint Programme Committee regarding the future course and funding of OCP operations. They are studied by technicians and decision-makers within the administrations in the donor community and in the participating countries, who decide on the continuation of support, and on the level of contribution, to the Programme. Although certain aspects of OCP are highly technical in concept and operation, the documentation needs to be in a language that is easily understood by the non-specialist.

In order to secure and maintain the confidence of donors and participating countries, it is important that plans and programmes reflect realistic operational opportunities and reliable budgetary forecasts and that the implementation is close to what was foreseen. However, it is unavoidable in a programme like OCP — at the mercy of weather variations, cost increases and monetary instabilities — that operations and costs occasionally differ from those predicted.

Allowing for flexibility is therefore a prerequisite for efficient and effective management. This applies to operations as well as to the deployment of resources. Planned field activities may have to be adjusted, in many cases resulting in resource requirements exceeding those originally allocated. It is then the responsibility of the central management to seek economies elsewhere to balance the overall budget or, if this cannot be done, to obtain additional funds to cover the excess expenditures.

The implementation of the long-term strategy and, more particularly, of the plan of operations for the third financial phase (1986–91)
are good examples of flexibility. It was initially expected that the entire western extension area would be under vector control by 1988; in fact, there was a delay of a couple of years caused by unpredictable operational problems, such as the occurrence of widespread resistance to organophosphorus larvicides. However, adjustments made to the implementation schedule (e.g. excluding the northern half of the western extension area from vector control) allowed the Programme to make up some of the delay.

Continuity is an important aspect of the process of planning and programming. Modifications to the originally approved strategy and operational approach give rise to uneasiness among those providing political and financial support and insecurity at the level of execution. The fact that the Programme was conceived and launched on a sound scientific and technological basis has allowed a consistent strategic and operational policy to be maintained, with little modification to control operations: larviciding has remained the mainstay of Programme activities from the beginning, while the structure of OCP has undergone only minor changes.

**Preparation of plans and programmes**

The first major long-range plan prepared by OCP itself was the long-term strategy which was commissioned by the Joint Programme Committee at its December 1982 session. At that time OCP was at a crucial stage in its development, since extensions of the Programme area were generally accepted as a *sine qua non* for its ultimate success, while at the same time other competing priorities had come to the fore (e.g. the search for a drug suitable for field use). Also, the financial implications of expanding west and south were still to be determined, as were the budgetary forecasts for overall OCP operations.

JPC therefore called for a proposal for the conduct of Programme operations, designed to bring the Programme to a successful end, and an analysis of the corresponding financial implications. The proposal, if approved by the Joint Programme Committee, would constitute the framework within which future shorter-term plans and programmes (six-yearly plans of operation and annual plans of action and budget) would be developed.

The process of preparing the long-term strategy proposal was in itself a significant event in the management of the Programme. It compelled all concerned to contemplate the future of OCP and brought together staff at all levels (directing, operational and administrative) to identify reasonable aims, feasible strategies and cost-effective operations.

While the proposal was drafted by OCP itself, other bodies within the management structure of the Programme made significant contributions. The Committee of Sponsoring Agencies oversaw and
followed closely the entire process on behalf of JPC; it drew up the terms of reference of the exercise, reviewed the various drafts and, generally speaking, guided OCP in the preparation and presentation of the proposal.

The Expert Advisory Committee also played a determining role. The Committee scrutinized successive drafts, providing technical comments on the options presented, thereby facilitating the final selection of the proposed strategy. The technical support of EAC to the long-term strategy reassured JPC about its operational soundness and feasibility of implementation.

The draft proposal was examined by groups of donors and representatives of participating countries before being considered and approved by the Joint Programme Committee. Thus, the proposal was scrutinized and rectified, as required, by the various bodies of the OCP management structure, before being finally approved by JPC in December 1984.

The interaction between, and mutual support of, the various components of the OCP machinery in developing the long-term strategy proposal also applies to the preparation of the six-year plans of operations for a specified financial phase. Such plans are the expression in programme terms of the application of the long-term strategy, and constitute the documentary basis upon which the donors commit themselves and, in some cases, pledge their contributions for the period in question.

The preparation of the annual Plan of Action and Budget is a much more “internal” affair, involving all senior staff under the coordinating leadership of Chief, Administration and Support Services. A draft is sent to WHO headquarters, CSA members and the World Bank for comments, and the final version is distributed during October to participants in the JPC session normally held early in December. The adoption by JPC of six-year plans of operations to some extent imposes constraints on the elaboration of plans of action and budget for each of the years, in so far as the PAB predictions are expected to conform with those outlined in the plan of operations, both as regards operational activities and, in particular, with respect to the budgetary forecasts. The task of the central management is therefore one of continuing dialogue with chiefs of units to balance their budgetary requirements and to ensure that the total budget remains at or below that presented in the plan of operations.

Only once did the budgetary forecast in a plan of operations present difficulties at the time of implementation. Because donors were expected to be reluctant to exceed the expenditures incurred during the preceding six years, the total budget estimate in the plan of operations for the third financial phase (1986–91) was well below that deemed adequate by the Programme Director and his senior staff. The pressure to remain at the proposed level was intense and the OCP
management reluctantly acceded. The actual expenditures for the phase exceeded the approved level and considerable efforts went into securing the funds necessary to close the gap.

**Significance of planning and programming in OCP management**

The importance of the process of preparing plans and programmes has been alluded to above. Because of the participation and contribution of managerial and operational staff at all levels, the end-products reflect years of field experience and the best available expertise in matters concerning OCP activities. Equally importantly the staff feel involved and committed to the plans and programmes and their implementation.

To what extent can the plan of operations for the fourth financial phase (1992–97) be considered an important management tool? The plan lays down specific targets and operational parameters as regards, for example, the extent of larviciding, which help to determine the nature and extent of control activities. As such, it is a document that is referred to over and over again by the Programme Director and his close collaborators.

Also, as stressed above, the plan of operations specifies for each year the dollar amounts required to implement the planned activities. These amounts are considered as the upper limit of the annual budget proposals submitted to JPC and, therefore, constitute an important restricting element in the preparation of the PAB.

Plans and programmes are also referred to by representatives of the donor community and of the participating countries in support of statements encouraging the Programme to move in a particular direction, to intensify certain operations, or to give less attention to activities suggested by OCP itself. Thus, there are repeated allusions to the importance of devolution and to support to socioeconomic development in areas where onchocerciasis has been controlled; similarly, members of JPC have discouraged the Programme from embarking upon activities for which there was no clear mandate in approved long-term or medium-term programmes, such as deep involvement in surveillance and control of other diseases.
Management aspects of planning and programming: lessons from OCP's experience

- Plans and programmes should be formulated in a language that is easily understood by the intended readership; they should allow for flexibility in implementation, show continuity of operations over time, and be consistent in presentation.

- The active participation of programme staff in the preparation of plans and programmes strengthens realism, feasibility and commitment to implementation.

- Plans and programmes are frequently referred to for managerial decision-making, both at the policy level and by the programme direction.

Management and implementation

In OCP, implementation means carrying out field operations in conformity with approved medium-term plans and short-term programmes. Any consideration of the managerial aspects of implementation must therefore focus on the direction of, and operational elements involved in, the control activities. An analysis of the management of OCP field operations needs to consider three aspects in particular: central support, operational components and operation per se (Fig. 3). A fourth consideration is the actual achievements and how they were brought about.

Management relations with statutory bodies, participating countries and donors

The Onchocerciasis Control Programme belongs to those who directly benefit from its operations and to those who pay for them, i.e. the participating African countries and the OCP donor community. The Programme is not the property of its managerial and operational staff, who have simply entered into a contractual agreement with the executing agency to implement the directives of the governing body, i.e. the Joint Programme Committee.

The relationship between the “owner” of OCP (JPC) and its operational arm (Programme staff) is, as in most other large-scale undertakings, characterized by a process of give and take. JPC is the supreme decision-making body, at the top of the OCP pyramid, but to arrive at decisions the Committee depends to a large extent on the information, proposals and advice submitted to it by the direction of the Programme, either directly or through the Expert Advisory Committee and the Committee of Sponsoring Agencies. Thus OCP
staff, and in particular the top management, are often able to inspire and affect decisions by the Joint Programme Committee.

The recognition by everyone of his or her role has over the years established a climate of confidence and mutual trust: openness and transparency are powerful managerial tools for maintaining and reinforcing confidence within the Programme.

Honesty is another important feature of management. No major operation is faultless and the temptation for the direction to try to hide shortcomings and mistakes from the owners of the programme would be understandable. However, mistakes are inclined to become known and, in any case, honest admission tends to reinforce rather than diminish confidence. The Joint Programme Committee has thus been kept fully informed about the setbacks suffered by the Programme and their operational and budgetary implications, e.g. reinvocation, resistance and budgetary shortfalls. In the end, openness has paid off as donors and participating countries have rallied round to help the Programme to overcome difficulties.

The close relationship that exists between the Joint Programme Committee and the leadership of OCP is demonstrated in the way that JPC meetings are conducted. The main documents presented to JPC sessions — the annual progress report and the plan of action and budget for the following year — generally give rise to little debate before being approved unanimously. The questions raised are practically all to seek
clarification and a productive dialogue takes place between JPC members and the OCP staff. Another indicator of mutual trust is the fact that, for the past several years, the Committee has approved without query the annual report of the external auditor, who has therefore not deemed it necessary to present the document himself.

As regards management of committee sessions, OCP has found the following to be important. Key staff members are expected to agree on common approaches with respect to critical issues that are likely to be raised; to report honestly on developments in their respective fields; and to respond competently and courteously to any queries that may arise. The responses from staff must be factual; it is preferable therefore to “beg for time” rather than give unsubstantiated answers on the spur of the moment.

It is important to catch the mood of the session early to allow OCP staff to adapt their interventions and contacts with committee members to the prevailing attitudes and views, while remaining firm on the technical aspects. Experience has shown that leader figures tend to emerge early during the sessions, and it is with these people that the senior management of the Programme seeks to establish a particularly close relationship. Although the Director must act first and foremost in the interest of the Programme, he is also alert to respond to concerns and problems of individual delegates.

From the point of view of securing good working relations with officials of national governments and others involved in Programme matters, it is important to remember that attitudes and behaviour can vary considerably from one country to another. When the Director pays a visit to a high-ranking official or when Programme staff work with national teams in the field, their attitudes and human contact patterns need to take into account local dispositions and customs. There is, for instance, a significant variation in the attitudes, culture and behavioural patterns between populations in the coastal and sahelian countries. Their economy base and general outlook differ substantially. Furthermore, apart from the cultural differences between regions, the colonial past has tended to leave an imprint dependent on the former ruling power. Thus, the structure and procedures of national administrations continue to reflect to some extent the style and manner of operating in France, Portugal and the United Kingdom; these differences need to be kept in mind when dealing with country representatives within their own national structures or at OCP meetings.

The World Bank and OCP officials need to be adaptable to varying conditions during their visits to different donors. Apart from a good understanding of local customs and attitudes the team must be prepared to consider and accommodate the special concerns of individual donors, such as protection of the environment; increasing the role of women; continuous attention to management issues and
cost-effectiveness of Programme activities; sustainability of operations; and the interest of individual donors in seeing a proportion of their contributions channelled back into their national economies through purchase of supplies and equipment, contractual services, etc.

Three factors are of particular importance for the successful outcome of such visits: presentation of convincing plans and programmes, objective assessment of achievements, and ready adaptation to the prevailing climate. It is important that the World Bank/OCP team senses the attitude of its interlocutors and adapts accordingly. If the donor concerned is already convinced about the need to continue to support the Programme and the funds are available, the visit tends to be essentially for bringing officials up to date on the latest developments within OCP. In some cases, however, officials who are willing and able to contribute may express doubts about particular aspects of the intended operations; it is then up to the team to explain and reconvince. Finally, some officials, while not openly negative, may indirectly convey their unwillingness to support, or continue to support, the Programme. In this case, the team will try to identify the officials’ specific concerns and to respond to them, so as to convince them about the soundness of the proposed programme.

A particular problem is how to cope with success. The facts that the Programme is on, on ahead of, schedule and that devolution is well under way, with the participating countries increasingly sharing the burden, might tempt donors to back out. It is then the task of the World Bank/OCP team to convince them that without their continued support the ultimate success of the Programme cannot be ensured and that the investment made so far will be lost as the epidemiological situation reverts to that existing before OCP started.

Establishing and maintaining donor confidence have been a managerial preoccupation since the early days of the Programme. With that in mind, strict adherence to the financial rules and regulations has characterized all OCP’s financial operations, thus ensuring proper use of funds. In addition, whenever Programme activities during a given year are implemented at a cost lower than the approved budget for the year, the balance is returned to the donors (deposited in the Onchocerciasis Fund).
Dealing with statutory bodies, participating countries and donors: lessons from OCP’s experience

- Any programme belongs to the countries involved in its operations and to the donors; a constructive interplay, appropriate balance in decision-making, and mutual trust between the "owners" and their operational arm are crucial for the smooth operation of the programme.

- Well prepared committee sessions, with staff agreement on the relative importance of the issues likely to be brought up and coherence in response, are conducive to a successful outcome.

- Due attention should be paid to the cultural background, attitudes and special interests of individual countries and donors, and the approach during visits and other contacts adapted accordingly.

- Strict adherence to financial rules and regulations is essential for maintaining donor confidence.

Direction

The Onchocerciasis Control Programme was conceived and brought into existence during a period when the thinking and general strategy within the World Health Organization was moving towards the concept of primary health care. The main features of primary health care being integration, community participation and the use of appropriate technology, it is not surprising that there was no immediate universal acceptance of an emerging programme that dealt with the control of one disease only, using a highly sophisticated technology, with — at that stage — little or no opportunity for involvement of the populations concerned. However, once designated as the executive agency of OCP, WHO assumed full responsibility and carried out the connected tasks in a spirit of complete identification with the Programme.

The Onchocerciasis Control Programme is a complex machine functioning at different operational levels and carrying out a wide range of activities within an eleven-country area. Given the vast area over which OCP operates (1.3 million km²), the central management has, of necessity and for the sake of expediency, allowed for a high degree of decentralization in operational decision-making.

Effective decentralization within OCP is facilitated by its structure, which comprises two operational area headquarters and a programme-wide sector/subsector network, as well as by speedy communications through the OCP radio system connecting Ouagadougou and all Programme units in the eleven countries. Operational and adminis-
tative messages are thus easily transmitted between the central direction and even the most outlying places.

The decentralized operational freedom is a cornerstone of OCP's control strategy. Sector and subsector chiefs prepare their own work schedules without reference to the operational area headquarters, and can travel within their designated areas without prior authorization. The relationship between staff and supervisors at all levels is built on trust and confidence in the technical and administrative capabilities of the staff concerned.

Decentralization devoid of personal contact between staff at different levels and geographical postings might very well result in feelings of isolation and frustration. It is therefore important that visits are made to the field by those responsible for the management of the Programme — the Director himself, his representatives in operational centres, or officials of administration and support services. Such visits, often to remote areas, remind the visitor of the often adverse conditions under which field work is being carried out and the considerable efforts being made by the staff; in addition, the interest shown and encouragement given to the field staff can help to sustain their morale and commitment to the Programme. The annual meetings of operational vector control staff, held in the zone offices and attended by the chief of the Vector Control unit, are good examples of the interaction between, and mutual support of, OCP staff at all stations.

The managerial role of the Programme Director in carrying out decisions of the Joint Programme Committee and in implementing approved plans and programmes is first and foremost one of coordination. On most issues, whether technical, operational or administrative, he will elicit, formally or informally, the opinion and advice of unit chiefs and other collaborators so as to arrive at conclusions and decisions that are generally acceptable. On purely technical matters the heads of operations and administration are entrusted with the necessary operational authority.

While coordination is essential in itself, true collaboration is required to produce results. This was demonstrated in OCP, where for many years the two main operational units — Vector Control (VCU) and Epidemiological Evaluation (EPI) — although structurally coordinated, had only limited contact at headquarters and in the field. More recently, however, close collaboration between the two units became imperative for the purposes of deciding when larviciding could cease in each area. This process was made considerably easier by the establishment of a unit of Biostatistics and Information Systems (BIS), which brought VCU and EPI together in a close working relationship, guided and supported by BIS.

In addition to ensuring coordination, the Programme Director's role in the field of management is one of persuasion. To arrive at a collegiate agreement on a given issue and to translate the agreement
into operational terms, it is preferable to convince rather than dictate. This is achieved within OCP through informal contacts between the Director and individual members of his staff during which viewpoints are put forward without constraints.

OCP staff are not the only parties involved in the central decision-making process. Not infrequently, the Director has to take into consideration the attitudes, requirements, political exigencies and wishes of the participating governments, donors and sponsoring agencies, made known to him during personal contacts. Examples of the effect of such external influences are the adjustment of the plan of operations for the third financial phase in line with a reduced budget conforming with donor attitudes (see page 71); the priority attention given to devolution; and the role accorded to the Committee of Sponsoring Agencies in the field of support to socioeconomic development in areas freed from the threat of onchocerciasis.

The Director and his senior staff have recourse to the statutory bodies in connection with managerial and operational issues. A few examples will demonstrate the importance of OCP committees in this context. Whenever new larvicides, or new formulations of existing ones, are required, the feasibility of employing the products in question is considered by EAC, through its Ecological Group. Likewise, EAC has over the years given particular attention to devolution and has carefully considered the Director’s proposals for OCP’s role and activities in this field as a basis for its recommendations to JPC. The Director may also seek the support of CSA, which oversees the Programme in all its aspects, on any operational or managerial issue that will be considered by JPC. This was the case for instance on several occasions when an increase in the budget and transfer between budget sections were required.

A critical test for management is the handling of crisis situations, in terms of both their prevention and their solution. The more effort spent on preparing operational programmes and the more foresight that goes into such preparation, the less likely it is that critical situations will arise. The success of crisis prevention therefore depends on safeguarding planned operations by foreseeing what could significantly hamper progress, and making allowance for timely corrective action. Nevertheless, in spite of all precautionary measures, the development of crisis situations cannot be ruled out entirely. When a crisis is developing, efficient monitoring should alert management to the impending danger, at which point corrective measures can be taken at a lower cost than that of dealing with a full-blown emergency. The leadership and example of senior management will determine whether the crisis will be overcome at the least cost to the programme. What is required is a calm analysis of the events that led up to the crisis; consultation with staff and, possibly, external experts to identify and
introduce the measures most likely to rectify the situation; and reassure of the staff that the measures will resolve the crisis.

The Programme has faced a number of emergencies. As described in Part I, early 1987 saw a rapid spread of resistance to the commonly used and low-cost larvicide, temephos, throughout practically the entire OCP area including the extensions to the south and west. The situation was so alarming that senior staff expressed doubts as to the ultimate success of vector control, particularly in the western extension area. Added to this, the Programme faced serious budgetary problems caused by the considerably higher cost of replacement larvicides, a decline in the US dollar exchange rates, and increased cost of services and salaries.

To deal with the problem of resistance to temephos, the experience and scientific know-how of the staff of the Vector Control unit were mobilized and an accelerated operational research programme led to the elaboration of a scheme of rotation of several larvicides, the use of which prevented, and continues to prevent, development of resistance. The Programme's staff, by living through the crisis and contributing to its solution, became closely identified with and committed to the future operations of the Programme. The technical support and guidance received from the Expert Advisory Committee contributed in no small measure to overcoming the problem of resistance.

The budgetary and financial shortfall occurred at a time when the international funding situation was tight and the approach to the donors therefore required careful preparation. First, a high level "council of war" identified the problems and defined steps to resolve them. Next, a meeting of all interested OCP staff identified possibilities for cost-saving (staff, travel, meetings, etc.), and decided on measures to improve efficiency and strengthen financial management. This was followed by negotiations with suppliers of larvicides and other commodities, during which considerable reductions in costs were obtained. Once these steps were completed, a meeting of all donors was called during which they were reminded of the objective and targets of the Programme as well as of the operations necessary to reach them. The achievements of OCP were enumerated as were the steps taken to reduce costs and improve efficiency. But even with these economies there was a financial shortfall and an appeal was made for additional funds. The donors reacted sympathetically and a supplementary budget was approved at the next session of the Joint Programme Committee.
Central management of programme operations: lessons from OCP’s experience

- The role of the director is essentially one of coordination, ensuring that the wishes of the governing body are put into practice by the relevant units and entities of the programme.

- The director also ensures that interested units collaborate, rather than working in isolation, in fields of common interest.

- Once the operational staff are trained and fully experienced, decentralized management — implying delegation of authority with freedom of action, accountability and minimum interference from the centre — makes for cost-effective operations and job satisfaction.

- Collegiate directorship, involving a wide circle of consultations, facilitates ready acceptance of decisions and enhances staff involvement in the implementation of jointly agreed plans and programmes.

- Guidance from statutory bodies, such as an advisory committee, is a valuable contribution to the direction of an operation of the size of OCP; it helps to clarify issues and contributes to problem-solving.

- Even with the most careful planning and elaborate preparations, unforeseeable operational or other developments can lead to crisis situations; the leadership then needs to ensure that the confidence of the staff remains high, to make an unemotional assessment of the situation, and to seek remedial action together with the senior staff directly involved.

Interpersonal relations

The quality of human relationships within an operation like OCP can be an important determinant of its success or failure. Considering the vast area over which the Programme operates, the often remote places of work, the adverse weather conditions, and the arduous work involved in many of the field activities, it is altogether an achievement to maintain a spirit of genuine involvement in up to 800 people.

First, a few words about salary. From the start of operations and until recently, all OCP personnel, professionals and general service staff alike, were employed by WHO and remunerated according to the prevailing pay scales of the UN system. It is conceivable that these conditions, being considerably better than those offered at the national level, could in themselves explain why staff remain with the Programme. However, since 1986 when control was expanded to the western extension area, the operational staff in that area are employed by their national administrations on the local pay scale; in spite of a
considerably lower level of remuneration, they perform as well as the personnel employed by WHO. It therefore seems that employment conditions and financial considerations do not play a decisive role in securing identification with the Programme and a consequent high level of performance.

What then is the essence of personnel management in OCP? It boils down to the application of common sense to relations with, and among, staff members, with due regard to the aspirations and human reactions of individuals and groups from many different countries and with divergent cultural backgrounds, bound together in a vast and complex undertaking.

Fairness, openness and involvement are essential in management/staff relations. Fairness in all dealings with personnel, from recruitment through appraisals to the end of service, is necessary for any worker, irrespective of his or her position, to feel comfortable. Openness towards the staff and transparency in decision-making facilitate understanding of why and how the Programme operates as it does and create an atmosphere of mutual trust. And, lastly, without involvement there can be no real job satisfaction; the staff must have a genuine feeling of actively contributing, as members of a team, towards clear and readily understood goals.

In addition to the routine recruitment procedures (matching the requirements in the vacancy notice with written applications), importance is given to interviews to permit assessment of a candidate’s personality, attitudes and behaviour. At the interview, candidates obtain additional information about the Programme, their expected contribution and the conditions of employment. Equally the interviewer has an opportunity to inquire about family matters that could have a bearing on the candidate’s association with the Programme, pointing out that work conditions in the field are often severe, necessitating absence from the home base for prolonged periods which may put a strain on family ties.

The process of preparing and reviewing appraisal reports affords an opportunity for the staff members and their supervisors to reflect together on what was accomplished during the period under review and, more importantly, on the future in terms of how they can collaborate more closely and overcome any operational or psychological obstacles that may arise.

The concept of fairness is difficult to define, but it is a decisive factor in creating and maintaining mutual confidence in management/staff relations. One aspect is the need for management to present its plans, programmes and operations clearly so that those who will implement the planned activities understand why they are to be carried out. However, fairness is a two-way street. Programme staff are therefore encouraged to express openly any misgivings they may have, whether personal or professional, or any operational difficulties they have
encountered, so that the management can take whatever corrective action is required instead of being kept in ignorance while the efficiency of the activities deteriorates.

Another important element of fairness is for management to apply the same rules to all. This is particularly necessary in an undertaking such as OCP, whose staff come from more than twenty countries and may have different ideas about what constitutes injustice or discrimination.

Loyalty is closely connected with fairness. Staff may disagree among themselves on certain aspects of the strategy, operations and management of their programme; in many ways, this is healthy as long as such disagreements lead to constructive discussion and explanation, resulting eventually in a common understanding and agreement. However, when a programme is presented to the "outside world", e.g. to national administrations and donors, the entire staff must speak with one voice and support the leadership on the lines previously agreed upon. Nothing can be more detrimental to a programme than for members of its governing bodies to be given differing opinions on its past and future operations by members of the programme staff. Here again, if the staff have confidence in the management, their loyalty can be counted on. One aspect of confidence-building is the readiness of the senior management to defend the staff whenever they are unjustly criticized or attacked from within or outside the programme. The more the staff feel that they can count on the management for protection in such situations, the more they will be prepared to give their loyalty to the programme.

Openness facilitates the Programme’s relations with its donor community, with the participating countries and, not least, with its own personnel. OCP staff, irrespective of their position on the hierarchical ladder, have free access to all levels of management. The Programme Director makes a point of meeting personally with all staff members who visit OCP Headquarters in order to be briefed on the latest developments in their fields, to brief them on recent advances by the Programme, and to allow them to bring up any personal matters they wish to discuss with him.

Openness pays off when disagreeable news has to be communicated. During the past few years, Programme developments have led to a reduction in vector control operations in the original OCP area, with a subsequent cut in posts; this trend is likely to accelerate over the years to come. Informing incumbents that their service with the Programme, often long-lasting, has to cease has not been an easy task, but it has in most instances been facilitated by the mutual trust built up over the years.

The Onchocerciasis Control Programme has had the good fortune to attract and retain competent and dedicated staff both in the field and at the various operational and administrative headquarters. Field personnel and others far away from Ouagadougou have been involved
in the process of planning and programming as well as in decision-making concerning operational issues. Much of the staff contribution to management decisions is indirect and follows informal discussions during visits to Programme Headquarters. A more formal participation is achieved through the wide-ranging representation of OCP personnel at regular meetings such as the annual internal technical review and management seminars. To this should be added sessions of the Expert Advisory Committee and of the Joint Programme Committee, which offer opportunities for staff to make known their ideas on the future operations of the Programme from the scientific, technological and managerial point of view.

The annual management seminar, instituted by the Programme Director in 1985, is one example of direct staff participation. All levels of OCP are widely represented and the issues raised are of direct relevance to effective and efficient conduct of Programme operations. All participants contribute ideas and proposals, many of which have subsequently been put into effect resulting in economies in the conduct of the Programme. At the same time, the exercise has helped to make the staff cost-conscious in their day-to-day activities. Above all, participation has helped to raise the self-confidence of the staff. With the sharp increase in the proportion of nationally employed staff, seminars — instead of being held centrally once a year — are now conducted in two or three field stations each year, and are attended by staff from more than one country.

As regards discipline, special emphasis is given to punctuality. In an operation as complex as OCP, it is important that everyone respects the set time for any activity, whether at operational headquarters or in the field, so as to ensure smooth progress without delays or interruptions. The Programme management is therefore particularly vigilant when it comes to ensuring the observance of punctuality, an attitude that has gone down well with the staff.

Several of OCP’s activities require staff to work together in groups. All teams need leaders, for example to determine work schedules, apportion tasks and manage transport, equipment and supplies. This role may be assumed on a *primum inter pares* basis or assigned to one of the members of the team. What is important is that the leader is thoroughly familiar with the tasks assigned to the team, can adapt to changing situations, is prepared to delegate authority, and knows how to create and maintain confidence and a friendly team spirit. But there is one quality that is essential for good teamwork, and that is tolerance; this is particularly so in an operation of the size and nature of OCP, whose staff constitute a small universe representing different nationalities, cultures and languages, each member with his or her particular family background, personality and attitude.

Problems encountered by the management in its relations with the staff have tended to be related to a successful routine becoming an
obstacle to the adoption of new, more cost-effective, control strategies. More serious has been the occasional occurrence of outright malpractice for personal gain. In these very few cases, swift action was taken by the administration so as to leave no doubt as to the risk incurred in "bending the rules" for personal profit.

A special problem has been in adapting to "leaner times". OCP has been fortunate in having at its disposal the resources required to carry out the job, although recently the need to economize wherever possible has made itself increasingly felt. As explained, staff have responded positively to the challenge of reduction in resources, first and foremost because they have themselves been involved in seeking economies.

In respect to personalities, attitudes and response to challenge, three groups emerge. There are those who are natural "doers", optimists who are invariably ready to go ahead when the road is clearly charted; others, more pessimistic, fear failure and invent explanations and excuses for overcautiousness or no action at all. And then there are those — opportunists — who avoid taking decisions but will readily take advantage of promising situations created by others. Each group has its strengths and weaknesses. It is for the Director to make the most of the positive aspects.

All in all, OCP staff are committed to their work with the Programme, in some cases to the extent that they work excess hours and eventually develop mental and physical fatigue. Also, as mentioned previously, frequent and prolonged absences from home stations on duty travel risk disrupting family life. The administration is fully aware of these problems and supervisors are encouraged to ensure that the workload of individual staff members is reasonable and that conditions of work are tolerable. There have been cases when a reduction in working hours was strictly imposed.

To round up this section, a reflection on optimism and enthusiasm. The gift to be able to give prominence to the brighter side of the issues involved in conducting operations, and to show faith in ability to reach objectives, is invaluable to anybody charged with leadership. Optimism and leadership, apart from being driving forces of an operation, tend to be contagious and to instil a feeling of confidence supportive of steady progress both in co-workers and in others not directly involved in the running of the programme. To these could be added the need for a sense of humour which, although not often recognized as a management tool, can help to overcome awkward situations and pave the way for the acceptance of disagreeable news or directives. In day-to-day communications and managerial decision-making also, humour can help to smooth potentially conflictual situations. In brief, the gift to inspire ranks high among the prerequisites for successful leadership, provided that inspiration is translated into action.
Interpersonal relations: lessons from OCP’s experience

- Personal interviews of candidates for advertised posts tend to disclose attitudes and personal traits that cannot be gleaned from application forms.
- Observation of staff performance in the field is an important part of appraisal; contact with headquarters staff also reassures staff in the field of the support and concern of the centre.
- Good management/staff relations and staff morale are built on fairness, openness and involvement.
- Team leaders need to be adaptable and tolerant, to set a good example, to be ready to delegate and to have a good knowledge and understanding of the technicalities, organization and management of tasks undertaken by the team.
- In case of malpractice, corrective action should be taken without delay.
- Supervisors should be alert to staff members who are taking on excessive workloads.
- A positive approach and optimism in looking for solutions — rather than mainly seeking problems — are important for successful leadership.

Information

The flow of information in OCP can be said to serve four purposes: it allows operational and administrative decision-making; it keeps the statutory bodies informed about Programme developments; it provides operational and other data required for public relations; and it brings the results of research and field operations to the attention of the scientific community.

Written reports constitute the formal part of information flow. While not so important to day-to-day operations, these form the basis for management decisions of a fundamental and long-term nature. In aggregate, they provide the information required by the OCP statutory bodies to make the recommendations and decisions necessary to guide and govern the Programme.

The principal report on the activities of OCP is the annual progress report of the World Health Organization. This is prepared by the chiefs of the technical and administrative units at Programme headquarters, in collaboration with senior staff in Ouagadougou and in the various operational centres. The overall coordination of the preparation is the responsibility of the Director’s Office, which issues guidelines to the
units concerned, sets deadlines for receipt of contributions, and edits the final product. After scrutiny by the Committee of Sponsoring Agencies, the report is submitted to the Joint Programme Committee for its information and comments.

The importance of the progress report from the managerial point of view is twofold. The preparation itself serves a purpose, in so far as all those contributing are compelled to review critically the progress made in their particular field, identify facilitating factors and obstacles to progress, and adjust future activities accordingly. Much of that is, obviously, part of the routine of field operations, but this once-yearly occasion to review the overall situation obliges the staff concerned to consolidate experiences and impressions and to relate them to operational approaches. In addition, as contributors to the report in most cases need to consult and compare notes with their colleagues, both inside and outside their units, this annual exercise tends to strengthen the cohesion of the Programme and the ability of the staff to work together as a team.

The second aspect of importance for management is the comments made and questions asked during consideration of the annual progress report by the JPC. These provide the direction of OCP with valuable indications — explicit or implicit — as to the feeling of JPC members concerning the conduct of the Programme, their particular concerns and the extent to which they remain committed to its continuation.

OCP depends on voluntary contributions for the financing of its operations; it is therefore essential that the donor countries and donor organizations receive regular information about the Programme’s activities and achievements so as to create and sustain an understanding of, and positive attitude towards, the Programme and its operations. Similarly, good public relations with the people living in the Programme area are of essence for securing their constant collaboration in such fields as epidemiological evaluation and community-wide drug distribution. OCP staff play an important role in this through their continuing contact with the populations concerned. Public relations are further strengthened by large-scale distribution of brochures, pamphlets and a periodic news bulletin, *Oncho News*, as well as by films showing Programme operations.

In addition to the formal progress report, OCP staff prepare briefing papers on Programme developments, findings and achievements for the attention of members of the Expert Advisory Committee. These papers are technical in nature and informal in presentation, and are intended to provide the basis for the Committee’s deliberations.

Consistency in document presentation is important in a long-term control programme. Thus, each medium-term programme conforms individually not only with the overall strategy laid down initially but also with the previous programme so as to demonstrate the continuity of Programme operations. The importance of consistency also applies to
terminology. Once technical, operational and administrative terms have been introduced and used in documents, they must retain their significance. It is for that purpose that the Programme has developed a glossary of terms which has helped to ensure uniformity in presentation. Likewise, attention is paid to consistency among papers presented to the same session of a governing body, to ensure that there are no contradictions between statements on the same subject treated in two or more papers. This is taken care of in OCP through careful scrutiny of all documents by the Director or a senior staff member.

A few general principles regarding reporting as a management tool, based on OCP experience, can be outlined. First of all, the reporting system should be designed to allow essential information to be collected with the least effort on the part of the provider. What must be avoided is for field staff to spend an inordinate part of their working hours on preparing reports and filling out forms, which then gather dust in a central office. Designers of reporting systems should clearly identify the information and data that are indispensable for decision-making and general information purposes; instruct report-writers accordingly; establish routine procedures for the central compilation and analysis of the contributions from the field; and prepare standard formats for the presentation of the consolidated report. Feedback is another essential feature of reporting. There is nothing more frustrating for contributors, particularly in isolated field stations, than to submit regular progress reports without ever hearing whether their material is being used and, if so, how. Field staff should receive copies of the consolidated reports or otherwise be informed of how their contributions were utilized. Such two-way traffic helps to enhance the feeling of involvement and encourages staff to improve their contributions.

Oral communication is the second pillar of information flow. A good illustration of its use for instant operational decision-making is the “Monday morning briefing”, when VCU staff at all levels (OCP headquarters, operational zone headquarters, sectors, subsectors and aerial operations bases) throughout the Programme area are in direct contact by means of the OCP radio network. Add to this the use of the network for instantaneous transmission of other operational and administrative information, and the critical role of the radio system as an indispensable management tool is readily seen. Lately, facsimile transmission of messages has been added to the communication system. In principle, queries from within or outside the Programme area are responded to within 24 hours.

Personal communication of information, whenever feasible, is preferred to the time-consuming process of writing and responding to memoranda, which may well delay operations. At OCP headquarters and in the zone offices, the heads of units and other staff, supported by the Programme Director, pursue an “open-door” policy which allows decisions to be taken, and acted upon, without undue paperwork.
The contribution of the Programme to scientific and technological progress worldwide is of considerable importance. Research, essentially oriented towards the solution of operational problems or clarification of connected issues, has been an integral part of OCP’s activities since its inception. Because of its extensive field operations, its unique surveillance network and uniform record system, the Programme offers a rare opportunity for the investigation of scientific, operational and managerial issues connected with vector control, epidemiological evaluation, large-scale drug distribution and, lately, devolution.

While some of the results of operational research have led directly to improvement of OCP control operations and managerial processes without being published, many of the fundamental findings of wider interest have been documented in scientific articles, written mostly by the Programme staff who have collected the data, or conducted field research, in conjunction with their routine activities. OCP has thus been a major contributor to dissemination of information not only within its own circles but also within the wider scientific community, thereby contributing to the control of onchocerciasis outside the confines of the Programme area.

**Information flow: lessons from OCP’s experience**

- Information flow permits managerial, operational and administrative decision-making, keeps governing bodies informed about programme development, provides material for public relations, and informs the scientific community about results of research carried out by the programme.

- Informal communication of information can be as important for decision-making as written reports which, in general, should be kept to a minimum so as not to make undue demands on staff time; verbal communications should be used in preference to inter-office memoranda where possible.

- Progress reports serve two managerial purposes: the staff involved in their preparation must review their own activities and, possibly, adjust them as a result of the review; and the comments on progress reports by members of governing bodies provide the direction of the programme with guidance as to its future course.

- Feedback to staff about the reaction to the reports to which they have contributed is essential: nothing is more frustrating than spending time and energy on writing part of a report without ever learning what came of it.
Organization of field activities

Several elements of the conduct of OCP field activities have been referred to in preceding sections. This section, therefore, deals only with a few general aspects of the manner in which field operations are organized and carried out.

Being a programme extending over a vast geographical area, OCP could be seen as an agglomeration of functionally independent operational units (sectors and subsectors), bound together in a coherent system, and applying throughout control methods and techniques which are themselves under constant review and adaptation so as to achieve the best results at the least cost.

As any other organization, the Programme operates through a pyramidal structure, extending from its central direction through its operational zone headquarters to the sectors and subsectors. The functions of the former are essentially norm-setting, leaving the tasks of implementation of the established procedures to the field staff without undue interference from the centre.

The sector and subsector chiefs have complete control over the resources put at their disposal (offices, laboratories, supplies, vehicles, etc.) and the use made of them. In drawing up their weekly work plans, they are guided by the comments and suggestions made by VCU staff in Ouagadougou and in the zone offices during the Monday morning briefing session.

To achieve uniformity in operations, great efforts go into making field staff aware of the latest developments in control methodologies and their application. This is done during annual meetings of VCU field personnel with staff from headquarters and zone offices, through participation in EAC sessions, during field visits by centrally posted staff, and during ad hoc training courses. Special mention should be made of the annual internal technical review meeting when staff from OCP headquarters, zone offices and operational centres, supported by staff from WHO headquarters, review OCP operations and make recommendations for future Programme activities, including research. The meeting has taken on particular importance with regard to decision-making on area-wide cessation of larviciding and to prevention and control of recrudescence. Its report is a key document at EAC sessions.

Administrative chores at the field level are kept to the minimum compatible with operational efficiency. Personnel matters, purchasing, vehicle maintenance, handling of travel claims, etc. are handled in zone offices and at headquarters so as to leave chiefs of sectors and subsectors free to concentrate on their operational duties.

Although the OCP sector and subsector infrastructure was initially set up for the sole purpose of vector control, the staff and facilities are now increasingly also involved in large-scale ivermectin distribution and in support to devolution activities. This can be seen as a first step in the
direction of a potential use of OCP human and material resources for wider public health activities — a move towards strengthening multidisease surveillance and control. National onchocerciasis epidemiological evaluation teams are also potentially well equipped to become involved in more comprehensive national surveillance and control programmes.

A particular issue worth bringing up in this connection is the fact that international ‘experts’ are occasionally reluctant to hand over the responsibility of their particular spheres of activity and competence to national counterparts. Even though this unwillingness might stem from the best of intentions, it is detrimental to the natural development of the programme and could, eventually, lead to its collapse. The sooner national staff, trained by the programme, become fully operational in replacement of their international counterparts, the better will be the prospects of the programme for moving successfully from its “international phase” to becoming an integral part of the national system.

Management of field activities: lessons from OCP’s experience

- Field operations, geared to the implementation of centrally determined strategies and procedures, are best performed with a minimum of central interference.

- There is a need for continuing contact between the centre and field staff throughout the programme area to ensure uniformity in operations.

- Field staff should be spared administrative chores as far as possible.

- When possible, highly specialized field workers should be given tasks of wider public health impact, thus making them eligible for employment in multidisease surveillance and control activities, once the programme to which they were originally assigned comes to an end.

- Expatriate staff should be replaced by nationals as soon as this can be done without harm to the programme, so as to ensure its full integration within the national system.

Cost-effectiveness

Looking for ways and means to produce results at the lowest possible cost is a major concern of the management of any operational undertaking, particularly in such long-lasting programmes as OCP which depends on donor goodwill for its survival.
In the early days of Programme operations, the emphasis was on building up the infrastructure, training staff and commencing field activities without the benefit of previous experience in a similar undertaking as a basis for introducing strict cost-effectiveness criteria. However, with time, increasing attention has been given to this aspect of OCP operations both at the administrative level and in the field.

In Part 1, examples were given of measures introduced to reduce costs without impairing Programme performance. Here special mention is made of OCP operational research, which has been instrumental in bringing about savings. One result, for instance, was the introduction of continuous recording of water levels and discharge rates by automatic devices linked to satellite radio transmitters. Last-minute data are communicated to pilots in flight allowing for precise dosage of larvicides and avoiding dispersal of excessive amounts. Also, recent research has resulted in economies as regards flying hours, through computerization of flight plans based on a series of operational criteria.

During the first several years of Programme operations, aerial larviciding was carried out systematically at all breeding sites for extended periods each year. As a result of research carried out by the Programme on the identification, behaviour and vector capacity of blackflies, larviciding has become increasingly selective and seasonal, thus raising the cost-effectiveness of the control activities.

On the administrative side, efficiency has been improved over years through economies with no detrimental effect on Programme operations. Between 1987 and 1993, the number of OCP staff was reduced by 30%; this reduction was compensated for by the assignment to the Programme of nationally employed and remunerated personnel in the extension areas. Similarly, instead of employing its own staff to carry out certain activities, OCP has found it more cost-effective to enter into contracts with specialized private enterprises. This applies to aerial larviciding, transport of supplies from ports of entry in West Africa, and security arrangements at headquarters. Also, significant economies have been made by converting salaries for a considerable number of staff in the original programme area from the UN/WHO scale to national rates.

Strict control is maintained over travel of staff both within and outside the OCP area. Supervisors are expected to examine requests for travel authorization in the light of the potential importance for, and priorities of, the Programme. Attendance by OCP staff at meetings and the number of OCP-organized meetings have been reduced to the minimum compatible with efficient operational and administrative management. In another attempt to reduce costs, OCP succeeded a few years ago in negotiating considerable reductions in the price of larvicides.
Of the management seminars held so far, the one in 1987 was particularly interesting from the point of view of cost containment. The Programme was faced with a serious problem of resistance to larvicides, engendering increases in the cost of aerial larviciding, a deterioration in the CFA/US dollar exchange rate and a consequential cost overrun of some magnitude. Forty staff members participated in workshop discussions from which suggestions for increased cost-effectiveness were drawn. Some 150 concrete proposals were made, many of which were considered by an internal management group and eventually put into operation. The suggestions ranged from renegotiation of the aerial contract, redeployment of the aerial fleet, staff reductions in VCU and the administration, and the use of subcontracting to reduce costs of entomological surveillance and epidemiological evaluation.

**Improving cost-effectiveness: lessons from OCP’s experience**

- Operational research oriented to key aspects of field activities can contribute substantially to making best use of available resources.
- The views of, and suggestions made by, experienced operational and administrative staff can contribute significantly to identifying potential economies for improved operational cost-effectiveness.

**Monitoring**

For monitoring to be efficient and effective, the management must have at its disposal a reliable and speedy system of collection, transmission and analysis of operational and administrative data, as well as a set of easily measurable, time-situated targets laid down in medium-term plans and in short-term operational programmes.

The density and detail needed in elements of monitoring vary from the periphery to the centre. In field operations, monitoring requires considerable quantities of detailed data, while the central management is interested only in a selection of those elements, i.e. excluding information of interest only to field operations. It should be stressed that monitoring should include both operational and administrative data.

Monitoring of progress is a comparatively straightforward undertaking. The marking of the planned road of implementation with quantified targets to be reached at given points in time not only facilitates the task of steering the programme towards its objective, it also compels the planner, who sets the targets, to draw up realistic schedules for execution by considering carefully operational aims in relation to the desired impact and to the expected availability of resources. In the Onchocerciasis Control Programme, operational
targets were specified in the long-term strategy, and further elaborated in plans of operation in terms of areas to be covered by aerial larviciding, the number of persons to receive ivermectin treatment and, more recently, areas from where vector control will be withdrawn at given dates.

Since its inception, OCP has made use of a series of indicators to measure the progress and results of field operations: these include the annual biting rate (ABR), the annual transmission potential (ATP) and the community microfilarial load (CMFL).

As regards monitoring of the use of resources, the obvious indicators in the field of vector control are the amounts of larvicide and the number of flying hours expended over a given period. Constant surveillance allows the Programme management to follow the trend in consumption, predict future requirements and make budgetary adjustments when required.

The results of following closely, and analysing, the use of material and human resources are continuously translated into monetary terms. This allows expenditure to be monitored in relation to the budgetary provision. In this way, the management is immediately alerted to potential financial shortfalls and can take steps to redress the situation.

While day-to-day monitoring is of direct concern to the central management, the Committee of Sponsoring Agencies monitors the Programme at the aggregate level. During its sessions, held three or four times a year, the Committee examines the resources spent, the progress made and the results obtained with a view to advising the Director of the Programme on adjustments that seem necessary.

When it comes to considering the results and impact of programme operations, the dividing line between monitoring and evaluation is somewhat blurred. Perhaps a reasonable distinction is that monitoring is concerned with the immediate analysis of routinely reported data on the implementation of control operations, while evaluation tends to address broader issues, such as the effect of operations, on which it offers a value judgement. In other words, monitoring is essentially concerned with instant examination of operational data as part of programme management — a forward-looking process — whereas evaluation attempts to draw lessons from past successes and failures with a view to improving subsequent programming and implementation.

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1 The number of blackfly bites a person would receive if he or she were to sit at the river bank for eleven hours a day, 365 days a year.
2 The number of infective larvae that would have been transmitted to the person described in footnote 1.
3 The geometric mean number of microfilariae per skin-snip among persons aged 20 years and over.
MANAGERIAL ASPECTS

Monitoring: lessons from OCP’s experience

- Monitoring keeps a constant watch over the use of resources, the performance of staff and the progress made.
- The definition of time-situated measurable targets and the identification of quantifiable indicators before the start of programme operations are essential for effective monitoring of progress and of the use of resources.

Managerial aspects of evaluation

Regular evaluation of Programme operations, their progress, results and problems encountered, is the principal task of the Expert Advisory Committee, which is a statutory body, part of the Programme structure, but independent of OCP management. EAC evaluations can therefore be considered as internal, but their importance lies in the fact that they are taken by JPC as an expression of opinion by a group of independent experts.

The evaluation carried out by EAC covers all aspects of OCP operations, including the ecological impact of larviciding investigated by the Ecological Group, but not administrative, budgetary and financial matters. The statements and responses of the Chairman of EAC at JPC sessions have a direct impact on the decisions of the Committee. Examples are EAC’s evaluation of the effect of ivermectin on transmission, concluding in the recommendation to continue vector control operations; the assessment of the situation brought about by reinvasion that could be remedied only by expanding Programme operations into the extension areas; and the review of the OCP objective, stressing effective devolution as a prerequisite for the ultimate success of the Programme.

In addition to these regular internal evaluations, external ad hoc evaluations are occasionally conducted by investigative teams constituted specifically for each exercise. Such evaluations are particularly useful for programmes funded by voluntary contributions. The findings and conclusions of independent evaluation teams are often seen by donors as additional reassurance that their investment is sound and worthy of continuation. Furthermore, the expert teams involved usually present a list of specific recommendations for the improvement of operational and administrative procedures. While in some cases similar conclusions may already have been arrived at by the staff and experts connected with the programme, those of the external experts tend to be given added emphasis by the governing body.

All in all, therefore, external evaluation exercises requested by the governing body of a programme should receive the necessary support
from its management and staff. The time, effort and collaboration given to the external evaluation teams help to create understanding of, and generate goodwill towards, the programme and are, as such, a worthwhile investment. Also, the management is well advised to ensure that the recommendations, once approved, are actually implemented, given the importance attached to them by the governing body.

A few examples will illustrate the importance of external evaluation exercises conducted within the framework of OCP. Both the USAID impact assessment of 1985 and the external review of 1990 played an important role in ensuring the continuation of donor support in the two directly following six-year financial phases, as they both vouched for the soundness of Programme operations and the expectation that OCP would reach its objective within the allocated time frame. Of particular interest was the stress laid by the two teams on devolution and the insistence of the external review, backed by EAC, that the Programme establish a devolution unit which, since then, has become one of the cornerstones of OCP operations.

Although the WHO Independent Commission was not strictly speaking an evaluation exercise, its recommendations, submitted to JPC in 1981, contained several evaluative elements which provided the basis for a series of recommendations, most of which have since been implemented after scrutiny and further elaboration by EAC. This included Programme extensions to the south and the west, the move towards devolution, and the search for chemotherapeutic agents.

In addition to the formal internal and external evaluations, OCP is under constant scrutiny by the participating countries, the donor community and the Committee of Sponsoring Agencies. Such informal evaluation takes place either through statements made during sessions of the Joint Programme Committee, or when representatives convey their opinion on OCP's progress and performance to the Programme Director and his staff. It is then the task of the central management to interpret the opinions expressed, and if necessary to make appropriate adjustments in the conduct of the Programme.

Evaluation can never be entirely independent in the sense that the evaluator carries out the investigation completely alone; he or she must rely to some extent on information, data, and even impressions gathered from the management and the operational staff of the programme. This, at least, has been the case in OCP. The temptation on the part of the staff, consciously or unconsciously, to present data that puts the programme in the best light and to gloss over shortcomings cannot be excluded. Consequently, for evaluation exercises to be successful, a partnership built on mutual trust is needed between the evaluator and the staff concerned. It is in the interest of the management and the staff to provide evaluation teams with objective and unbiased data so as to receive in return valid
recommendations which can only reinforce the effectiveness of the programme.

**Evaluation: lessons from OCP's experience**

- Evaluation, dealing with the measurement of results and impact, can be continuous, carried out within the programme structure, or carried out by external, independent teams constituted on an ad hoc basis.

- Irrespective of whether the evaluation is internal or external, the experts involved rely heavily, if not exclusively, on data and information provided by programme staff; confidence is therefore indispensable.

- The management of any programme is well advised to give serious consideration to the findings and recommendations of evaluation exercises, partly because they can make constructive contributions to the future conduct of the programme, and partly because the governing body tends to make such recommendations its own.

**Adjustment**

There is a need for flexibility in the conduct and management of operations in any large-scale and long-lasting undertaking. Because of the freedom of action accorded to OCP by its governing body and its executing agency, the direction of the Programme has been able to respond rapidly to findings resulting from the monitoring process and to recommendations emanating from evaluation exercises. A few examples will illustrate OCP's readiness and ability to adjust its operations.

As has been mentioned earlier, in 1987 the Programme faced a major crisis when entomological monitoring detected widespread resistance, throughout the OCP area, to temephos. Although at first the crisis seemed insurmountable, the technical staff rallied and worked out a scheme of rotation of a number of larvicides belonging to different chemical groups, which, it was hoped, would overcome the resistance; this proved to be the case. However, the use of several larvicides, instead of one, required a great deal of adjustment and adaptation of vector control operations. Apart from the preparation of rotation schedules, taking account of water flow, dispersal of larvicides, their ecological impact and their cost, the application of rotation schemes has increased the workload of the aerial operations people and of the pilots. Also, procurement procedures were complicated and costs increased considerably. In spite of all the difficulties, the staff concerned adjusted to the new situation, and the increased expendi-
ture has to a great extent been balanced by savings elsewhere within OCP.

In the field of epidemiological evaluation, progress for many years was monitored in terms of changes in prevalence, which, by its nature was slow to reflect the effect of operations. It was therefore decided to use a new epidemiological index, the CMFL (the average number of microfilariae per skin-snip). The CMFL has proved to be a highly sensitive indicator of progress in reducing the human reservoir of the parasite. However, for the purpose of deciding on cessation of larviciding, the prevalence remains one of the determining criteria.

Recently, a major adjustment was made to the administrative management of OCP. Until 1986, all OCP staff, irrespective of level and position, were employed under UN/WHO conditions. However, with the expansion of operations, the participating countries in the western extension area agreed to make nationally employed staff available to the Programme, which would pay a supplement to the national salaries and a daily allowance for staff on travel. As experience accrued in the western extension area showing a more than satisfactory performance of the national staff, and as the need for economies became pressing, it was decided to harmonize employment conditions throughout the Programme area on the western extension pattern. This adjustment is expected to be completed early during the fourth financial phase (1992–97). Adjustment to reduced employment benefits is painful for the staff concerned, but has so far been done with a great deal of understanding on their part.

Another example of adjustment is seen in the OCP operations in the extension areas. The plan of operations for 1986–91 allowed for vector control throughout the western extension area. Aerial larviciding was consequently introduced gradually in that area, including in 1988–89 its northern part, i.e., western Mali and Senegal. However, doubts persisted as to the justification of applying vector control to that area, where, in any case, there were certain operational difficulties. The Expert Advisory Committee, therefore, undertook an evaluation of the situation at its 1989 session and concluded that larviciding in the northern half of the western extension area was not necessary, given that the onchocercal larvae were largely animal filariae, that serious hyperendemic foci were limited to a few circumscribed zones amid a sparse population, and that the endemic foci did not constitute sources of reinvasion. Furthermore, continued aerial operations in the area in question would be inordinately costly. Consequently, EAC recommended that vector control in western Mali and Senegal be discontinued and that an intensive ivermectin distribution programme be carried out instead. OCP operations were adjusted accordingly.

Since the WHO Independent Commission in 1981 suggested that devolution should begin during the early 1990s, this issue has been on the minds of the donors, the participating countries, the experts and
the management of the Programme. As from 1988, the availability of ivermectin for morbidity control in humans and its projected use to suppress recrudescence converted the hitherto rather academic discussion on devolution into a thorough analysis of its potential content, organization, operations and requirements. EAC and other OCP bodies considered the subject at their annual sessions, and the external review team paid particular attention to devolution in its report to the Joint Programme Committee at its eleventh session held in December 1990 in Conakry, Guinea. As mentioned previously, one of the team’s recommendations was for OCP to set up, within its headquarters, a devolution unit geared to supporting participating countries in preparing and initiating their programmes, including the provision of technical expertise as and when required. In implementing this recommendation, the Director adjusted the Programme structure to establish the new unit by internal transfer, so as to avoid incurring additional staff costs.

**Adjustment: lessons from OCP’s experience**

- For any large-scale programme to succeed, its management should be afforded a certain amount of flexibility in the implementation of operational plans. Various external factors and operational conditions will change as the programme develops and it is therefore indispensable to allow for adjustments, whether determined by management or suggested by evaluation exercises.

**Summary**

In the early part of this chapter, conditions of managerial importance at the start of OCP operations were outlined: the Programme would tackle a priority health and socioeconomic problem perceived as such by the populations and governments concerned; understanding of the epidemiology of the problem and its control was adequate and justified the planned activities; a realistic objective, setting the overall strategy, was drawn up; the time frame agreed upon allowed operations to be continued until the objective could be met; and sufficient resources were expected to be available.

The 1990 external review team confirmed the above characteristics as “factors that have allowed the Programme to achieve what has been achieved to date ... the near eradication of a serious public health problem from a large and often inaccessible area”. In addition, the team listed the Programme’s conscientious pursuit of the best technology available and the prominence given to operational research, as contributing to its success.
Other characteristics highlighted in the external review report were: the medium-term programmes; the relative autonomy of OCP; the support of CSA and EAC; the unrestricted flow of information within the Programme structure; the transparency of operations; strong management; and a high quality staff with "an overriding sense of the importance of discipline and order" and "a sense of honor and pride".

To the factors listed by the external review team could perhaps be added decentralization of authority for conduct of control operations; flexibility in the implementation of plans and programmes; standardization of, and continuing training in, analytical and control methodologies; and the never-ending search for improved cost-effectiveness.

The success of OCP has been, and will continue to be, dependent on the "owners" — the participating countries and the donors — remaining willing to support the Programme. Their attitude is conditioned by the extent to which their expectations are met and, in more general terms, the image inspired by OCP.
The essence of devolution is stated succinctly in the objective of the Programme which, after expressing the final aim of OCP as the elimination of onchocerciasis as a disease of public health importance and as an obstacle to socioeconomic development, makes it incumbent on the participating countries “to maintain this achievement”.

To do this, countries need to be prepared and able to detect and control localized instances of recrudescence of onchocerciasis. For that purpose they need effective and reliable epidemiological surveillance and the infrastructure and resources to tackle outbreaks of disease through administration of ivermectin.

There is overall agreement that activities connected with devolution must become an integral part of the national epidemiological surveillance and disease control systems. In practice, the West African countries have worked out devolution plans that combine detection and control of recrudescence with other diseases considered priority problems. The implementation of these plans is therefore a move towards fortifying the public health systems of the countries concerned — instituting or reinforcing multidisease surveillance and control.

Epidemiological surveillance of a disease that has been practically eliminated, and is therefore likely to reappear only exceptionally, tends to slacken with time as members of surveillance teams become less alert to its reappearance. The analogy with late or failed diagnosis in Europe of cases of, say, malaria is appropriate. Once detection of onchocercal recrudescence has become part of the national public health surveillance system, the staff directly concerned need to be constantly reminded of the possible re-emergence of the disease and to receive continued training in its detection and control.

Usually, national health plans place emphasis on epidemiological surveillance as a key activity of the public health sector. However, whenever resources are scarce — as, regrettably, they practically always are — health planners and their political masters tend to give priority to services oriented to curative care of individuals, relegating support to the public health sector to a position of secondary importance. Understandable as this may be, the tendency can be counteracted if decision-makers are convinced that investment in public health programmes can produce greater returns than investment at the same
level in curative medicine. In general, well conceived and effectively implemented surveillance programmes, constantly adapted to the changing epidemiological situation, speak for themselves. They allow health administrations to take early corrective action at minimum cost and they provide data indispensable for the preparation of meaningful health plans and operational programmes.

It is incumbent upon national health administrations to draw up detailed programmes for their epidemiological surveillance and disease control teams based on the history, incidence, prevalence and overall health impact of the diseases in question. As far as onchocerciasis is concerned, efforts should be concentrated on areas with the highest risk of recrudescence, as determined by OCP before its withdrawal from control measures; areas at lower risk should also be included for polyvalent epidemiological surveillance, although with a lower frequency of examination.

For the former participating countries to maintain the achievements of OCP, the respective health authorities must attach adequate importance to the avoidance of unmanageable recrudescence of onchocerciasis and must allocate sufficient resources for that purpose. Without effective vigilance in each of the eleven participating countries, the responsibility to protect each other against the spread of recrudescence cannot be fulfilled. However, if a field-applicable macrofilaricide were to be developed, this would to some extent alter the situation, although the need for continued surveillance would in all likelihood remain unchanged, unless onchocerciasis could actually be eradicated in West Africa.

If the health and socioeconomic benefits brought about by OCP are to be maintained, the participating countries must take over responsibility for surveillance and management of recrudescence.
So far, stress has been laid on epidemiological surveillance in the context of active vigilance, i.e. a public health operation conducted for the sole purpose of observing morbidity trends or, in the case of onchocerciasis, providing reassurance that the infection has died out or, if recrudescence occurs, ensuring its early detection and control. Another approach, although more incidental and therefore less reliable, is passive epidemiological surveillance; this relies on people with symptoms of the disease in question reporting to health centres. Should recrudescence of onchocerciasis be detected in this manner, it is important that the central health authorities are informed without delay so that corrective action (epidemiological investigation and large-scale distribution of ivermectin) can be instituted before the situation becomes serious.

Whether epidemiological surveillance and disease control are conducted actively or passively, the staff involved must adhere strictly to standardized surveillance methodologies. Considerable attention will therefore need to be given to this question at the time of devolution, so that uniform procedures are applied in the eleven countries concerned.

In this connection, it would seem highly desirable for the participating countries to adopt a common recording and reporting system for onchocerciasis surveillance and control during the post-OCP era. If each of the eleven countries introduces its own system, with little or no attention to developments in the other countries, the data obtained are unlikely to be comparable. OCP will design a functional recording and reporting system for use by the eleven health administrations after the cessation of Programme operations.

Before handing over responsibility for onchocerciasis control, OCP will update all its relevant manuals, ensuring that they are presented in a manner that is “user-friendly” to nationals who will carry out the devolved activities. Apart from providing detailed guidelines concerning the organization of, preparation for, and conduct of field operations, such manuals will deal extensively with the recording of findings, their analysis and the response in terms of corrective action, if and when required. As mentioned above, it is of crucial importance that all eleven countries apply the same techniques uniformly and in such a manner that the findings and results are comparable from one country to another. To bring this about, OCP will, during its last years of existence, undertake intensive training courses for national epidemiological surveillance staff and other health personnel.

Community-wide administration of ivermectin for morbidity control and interruption of recrudescence will be an important activity in the context of devolution. Again, it is essential that distribution of the drug is undertaken on firm epidemiological grounds and in accordance with the agreed criteria and operational guidelines determined by OCP and approved by its statutory bodies.
Once reliable field data have been recorded and reported in a uniform manner, the next step is analysis. The OCP standard techniques will be adjusted to the needs of the participating countries and detailed guidelines drawn up before the Programme comes to an end. The decision as to where the analysis should take place will depend on the hierarchical set-up in each country. Using the OCP experience as a guide, it is suggested that the analysis is done as close as possible to the operational field level.

Speedy communication is vital. Delay in instituting, say, large-scale ivermectin distribution to eliminate a localized instance of onchocercal recrudescence will seriously reduce the prospects of success and increase the risk of an unmanageable spread of transmission. Consequently, any indication emanating from epidemiological surveillance teams, or other sources, that recrudescence has occurred must reach those responsible for instituting ivermectin distribution without delay. The Programme-wide radio network has provided OCP with an instant communication system which, with appropriate modifications, could usefully serve the eleven participating countries after the closure of the Programme. This would constitute an important operational link between the countries, help to consolidate communication between them and strengthen their collaboration, which is so essential for the success of devolution.

It would, no doubt, be useful if the governments of the former participating countries entered into a formal agreement concerning their future collaboration in respect of surveillance and control of onchocerciasis within national multidisease surveillance and control programmes. The occasion of signature could well be the final session of the Joint Programme Committee, around the year 2000. The other partners in OCP would thus withdraw from the Programme with the assurance that devolution was firmly anchored in the national health systems and that the governments concerned had solemnly committed themselves to carrying out the tasks involved and to collaborating with each other.

The Onchocerciasis Control Programme will cease operations by the end of the decade. This does not mean, however, that the former participating countries will face the task of detecting and controlling onchocercal recrudescence without outside support. It is expected that, once the Programme comes to an end, an intercountry facility, possibly under the auspices of the WHO Regional Office for Africa, will continue to ensure collaboration among the countries concerned and provide technical support when required in the wider field of multidisease surveillance and control, including onchocerciasis as one of the targets.
ANNEX 1

Donors to OCP

African Development Bank
Belgium
Calouste Gulbenkian Foundation
Denmark
European Economic Communities
France
Germany
Italy
Japan
Kuwait
Luxembourg

Netherlands
OPEC Fund for International Development
Portugal
Republic of Korea
Saudi Arabia
Switzerland
UNDP
United Kingdom
USA
WHO
World Bank
### ANNEX 2

#### Number of staff and budget by unit within OCP, 1994

<table>
<thead>
<tr>
<th>Unit</th>
<th>Staff employed by WHO/OCP</th>
<th>Nationally employed staff</th>
<th>Budget (thousand US$)</th>
<th>Percentage of total budget</th>
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<tbody>
<tr>
<td></td>
<td>Professional</td>
<td>General service</td>
<td>Full-time</td>
<td>Part-time</td>
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<tr>
<td>Vector control</td>
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<td>110</td>
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<td>Devolution</td>
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<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biostatistics and information systems</td>
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<td>1</td>
<td></td>
</tr>
<tr>
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<td>1</td>
<td></td>
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<td>Administration and support services</td>
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<td>Total</td>
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Administrative support, Geneva, meetings, capital costs: 1280 4.5

Grand total: 30 182 605 89 11-12 29336.5
ANNEX 3

Number of OCP fellowships, by country and field of study, 1974–93

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<tr>
<th>Country</th>
<th>Entomology</th>
<th>Hydrobiology</th>
<th>Public health (including epidemiology and health education)</th>
<th>Parasitology</th>
<th>Ophthalmology</th>
<th>Health economics</th>
<th>Administration</th>
<th>Languages</th>
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<td>2</td>
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<td>1</td>
<td>–</td>
<td>2</td>
<td>2</td>
<td>15</td>
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<tr>
<td>Total</td>
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<td>32</td>
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<td>45</td>
<td>37</td>
<td>12</td>
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