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ONCHOCERCIASIS CONTROL PROGRAMME
IN THE VOLTA RIVER BASIN AREA

NATIONAL ONCHOCERCIASIS COMMITTEES

Seventh meeting

Lomé, 7-9 June 1983

PROGRESS REPORT

By

THE PROGRAMME DIRECTOR

Mr Chairman

Your Excellencies,

Distinguished delegates,

Ladies and Gentlemen,

I intend presenting to you the recent activities of the Programme, but before then I would like to thank our brothers of Togo for all the efforts they have made to receive us with traditional Togolese hospitality and kindness. I would also like to express our gratitude to the Government of Togo for having kindly invited us to hold the meeting of the National Onchocerciasis Committees here this year and for sparing no effort to make us feel at home. I have pleasure also in welcoming all those who are taking part in our meeting for the first time.

You would recall that during our last meeting we agreed that there was the need to have a fresh look at the role of the NOC in the light of two major imposing problems, namely devolution of activities and socio-economic development. Since then the Committees have been very active with the preparatory works for the Programme entrusted to them, and on this basis we can proceed towards further development.

The response from the Participating Countries on the socio-economic reports has been most encouraging but as the ultimate transfer of the responsibilities of the Programme to the Participating Countries is now one of the priorities of OCP and as the NOCs develop their supporting activities it is clear that the reinforcement of their structures is becoming of paramount importance.

In my report to you on the activities of the Programme since the beginning of 1983, I will treat successively the following subjects: Vector Control, Epidemiological Evaluation, Socio-Economic Development, Long-term Strategy, Devolution, other activities and Information.

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VECTOR CONTROL

Entomological evaluation

The first semester of 1983 has been remarkably dry. Only at the end of April and the beginning of May were sporadic rains recorded mainly in the South but also in the Sudan and Sahelian regions. This differs from 1982 when there were heavy rains in February, March and April in almost the whole Programme area, which influenced the levels of the watercourses very early and were equally responsible for a very early reinvasion.

These 1983 dry season rains have had little influence on the levels of the watercourses which are far below the average. Certain perennial watercourses have been ceased to flow. Overall the river flow has been greatly decreased compared with previous years and this situation has influenced the control strategy adopted during this dry period.

This strategy was marked by a series of suspensions of aerial treatments, much more frequent and extensive than in previous years; an intensive study of the recolonization of savanna breeding sites by the forest vectors of onchocerciasis and much more recourse to ground treatments, wherever necessary.

Every year during the same season, ground treatments have been carried out by the entomological evaluation teams. This year's treatments were, however, more important both in time and space because of the voluntary suspensions of treatments. All the accessible breeding sites with premaginal stages of S. damnosum s.l. were so treated. These included important low-water breeding sites in savanna rivers in Phase III-West in Mali, those of the Oti in Togo and Ghana, some of the Sota in Benin and of the White Volta in Ghana.

The voluntary suspensions of aerial treatments although facilitated by the hydrological conditions resulted principally from the excellent entomological situation at the end of the 1982 rainy season. During this period the fly densities were extremely low. However, treatments were also deliberately suspended in order to complement information on chlorphoxim susceptibility in the Sassandra and certain other river basins.

Advantage was taken of these treatment suspensions to study the recolonization of the breeding sites in the savanna by the resistant forest species: S. soubrense/sanctipauli. This study was carried out on the White Bandama in Ivory Coast and on the Black Volta in Ghana through weekly monitoring of the key breeding sites from where samples of larvae or pupae of the vectors

were taken for cytotaxonomic or morphological identification. The results have shown that S. soubrense not only disappeared by itself from the breeding sites of the Black Volta in the 1983 dry season, confirming 1982 observations, but also that the treatments with Teknar have eliminated it temporarily from the White Bandama basin during the same period. Also the breeding sites of Tienfala on the Niger, close to the zones of agricultural projects near Bamako were treated regularly by boat during almost the whole dry season with excellent results. While these ground treatments have demonstrated the possibility of controlling fly populations on important stretches of watercourses during this time of the year it must be pointed out that in 1983 the hydrological conditions have been particularly conducive to this action.

An operation termed "wipe-out" started during the 12th week of the year, towards the end of March. Its aim was to reduce to a minimum before the rainy season the fly densities on the lower courses of the big Atlantic flowing rivers considered as source rivers. The objective of this strategy has been to delay as much possible the contamination of the northern rivers, especially those capable of being colonized by S. soubrense. Teknar was the insecticide utilized for this operation "wipe-out" during which excellent results were obtained. At times because of the complexity of certain breeding sites to be treated and also because Teknar^R is only semi-operational in its currently available formulation, it was necessary to use double concentrations of this larvicide for this operation 3.2 ppm/10 mm instead of 1.6 ppm. considering that B.t. H-14 has no adverse effect at all on non-target fauna.

Entomological monitoring through fly catches per man continued as usual and involved some 200 catching points in the Programme area and 55 in the Southern Extension zone.

From January to March 1983 only 870 S. damnosum s.l. females were captured in 769 catching days in the original Programme area covering 654 000 km².

No increase in fly populations was observed in this area, despite the fact that in certain cases the suspension of treatments exceeded four months. The entomological situation was satisfactory and the transmission of the disease completely interrupted in all the basins concerned up till end May 1983.

The only productive foci were in the Southern river basins of the Programme, where selective treatments with Abate isolated forest fly populations. These foci were on the lower Bandama, the Sassandra basin and that of the lower Comoe. However, with "operation wipe-out" even these populations were disappearing from these watercourses.

In the Southern extension zone, only the non-treated Asukawkaw basin in Ghana and Togo was still colonized by the vector by the end of the dry season. The fly populations on the Oueme and the Mono diminished progressively reaching nil January/February when the rivers stopped flowing.

The 1983 reinvasion is different from that of the previous years. Whereas in 1982 it appeared at the beginning of April there was still no evidence of it by the end of April 1983 and it really started end May.

In April-May, trials in the use of traps in the entomological evaluation network were undertaken in southern part of the Bobo sub-sector and will be extended to the sub-sectors of Ouagadougou, Bolgatanga and Dapaon in July and August. The use of traps is not intended to replace the catches on man which will remain, for OCP, the only means of evaluating the campaign quantitatively. However it could be a support to the present basic entomological evaluation network and for wider use as sentinelles during the reduction of the entomological evaluation network and reinvasion study.

After a four-week experiment, the first simuliid were caught on the plaques at Pont Leraba during the last week of April. At the same time larval stages of the vector were found at the breeding site at Pont Leraba and a week later simulium were captured on man.

These first results suggest that the plaques can be used as indicators of vector populations in specific areas and as such could probably help in supporting the entomological evaluation network.

It may also be mentioned that in the Niamey sub-sector entomological activities had been suspended for two months, i.e. February-March, as rivers dried up.

Aerial operations

In March and April as a result of the good hydrological and entomological situation it became possible to suspend aerial treatment in a number of areas of the Programme area. During four consecutive weeks, from 24 March to 12 April inclusive, aerial treatments were limited to only 600 km of water-course, all in Ivory Coast as against 6 000 formally covered in this season of low river flow. The resumption of aerial treatments was done progressively as the water levels started rising and as dictated by the entomological situation.

In the East, all aerial treatments stopped for an 8-week period. Similarly, in the West, temephos treatment in Phases I and III(W) was suspended for five weeks. During this period the aircraft fleet was used solely for Bt.H-14 application in appropriate areas. Consequently, flight hours were reduced to nearly half the figure shown for the same period for 1982 and quantities of insecticide used were also considerably lower than the same period in previous years.

On the 1st of May the aircraft fleet was increased in readiness for the wet season. Two extra Hughes 500 helicopters joined the fleet of 6 and of the present fleet of 8, two have been fitted with a Bt. H-14 application system. The release system has given good results in the short period of operation. On the 1st of May also, a larger helicopter, a Bell 204 joined the fleet and will be on contract for an 8-month period. An appropriate B.t. H-14 application system for this helicopter has been constructed and has been used operationally in its first two weeks of operation.

On the 1st of June, the fixed wing part of the fleet was increased to 2 aircraft - a Turbo Thrush and Pilatus Porter. Both aircraft will be used for treating the big rivers of the Programme area once the discharges are large enough.

Aerial spraying statistics for most of Phases I and III west zones from the period 1978 to present have been analysed and recorded on forms which will eventually be used for the computer storage of data.

Aquatic monitoring

Routine monitoring of selected river systems continues more or less regularly in the five countries concerned (Ivory Coast, Ghana, Upper Volta, Togo and Benin).

A new contractual agreement has been signed with the Office of Animal Production in Lomé which will undertake the monitoring of fish populations in Togo.

Research

The main research activity has been in the development of alternative larvicides. Five new products have been tested to determine their short-term effect on non-target benthic fauna: OMS 3002 (pyrethroid), methiocarb (carbamate), azametiphos (organophosphate). Apart from the two organophosphates, the three other formulations tested proved a priori to be quite toxic to the non-target fauna. In certain cases a traumatism of fishes (cypothrin at 0.18 ppm/10 mn) and shrimps (cypothrin at 0.18 ppm/10 mn) and OMS 3002 at 0.2 ppm/10 mn was even observed. Azametiphos seems the least toxic at the concentration tested (0.18 ppm/10 mn). The new formulation of chlorphoxim (206 C) seems, in the short term, to have the same effect on the non-target organisms as that utilized so far in control activities and its utilization has no preference over the old formulation. However, it has now been agreed that no pesticide will be rejected after only the first trials carried out in the short term except if the product is toxic to fishes and macrocrustaceans. A protocol will be established to undertake a parallel test of any new insecticide with temephos.

Teletransmission of hydrological data

A new system based on the teletransmission of data has been considered and field trials will be conducted in OCP in 1984. This system should enable a pilot to treat a breeding site with a more accurate quantity of larvicide calculated on data recorded earlier the same day.

Adulticiding programme

Work has started on adulticiding trials. The objective is, first, to develop effective means of combatting reinvasion where this phenomenon has serious epidemiological consequences and, second, to develop an alternative control technique against savanna species of S. damnosum. The areas La Faya, the R. Baoule near Madina Diassa and the River Kankelaba near Kankela located in Mali have been selected for these small scale trials.

Discussions have been held regarding the screening of different compounds and formulations, the analysis of vegetation deposits of adulticides to determine their persistence under wet season conditions, the procurement of other candidate compounds and the procedures for conducting the first series of trials which will be carried out using ground spraying techniques.

The aerial spraying contractor has also been contacted with a view to identifying appropriate helicopter-mounted equipment for later application of adulticides to gallery forest vegetation.

EPIDEMIOLOGICAL EVALUATION

From October 1982 to March 1983, the Epidemiological Evaluation Unit examined a total of 9,685 individuals in 45 villages of which 10 were in Mali, 16 in Upper Volta, 13 in Ghana and 6 in Togo.

Five villages, including Samondji farm, were also examined for the second time in the southern extension zone in Benin.

Based on the overall analysis of the data collected in the 45 longitudinal evaluation villages, the river basins can be divided into four main groups: (a) river basins where onchocerciasis has almost disappeared, only occasional cases being found: this is essentially, the situation in the Lotio basin which benefitted from the EDF-OCCGE campaign; (b) river basins where the disease is not found under the age of 15: these are the Banifing IV, the Koni-Fawara and the Koulpeologo; (c) river basins where the prevalence is nil under the age of 10, i.e. the Black Volta and its main tributary, the Bougouriba, the White Volta and its tributaries like the Sissili and the Biankouri, the Red Volta, the Oti-Pendjari, and some of its tributaries like the Koumongou; (d) specific points where it was detected children of less than 5 years had onchocerciasis and its epidemiological significance has yet to be determined.

They are as follows: Landa-Pozanda on the Kara (one case), Kemin on the Mo (one case), Pendié on the Black Volta (one case).

The ocular situation is remarkably good. The prevalence of ocular onchocerciasis in the hyperendemic villages has fallen from 74.5% in 1975 to 29.5% as at now. In the mesoendemic villages, ocular onchocerciasis has fallen from 31.3% in 1975 to 8.9%.

Other evaluations are presently going on in Ivory Coast, Upper Volta, Niger and Ghana.

SOCIO-ECONOMIC DEVELOPMENT

The Economic Development Unit has had several contacts with the national officers in order to help in the preparation of the socio-economic report - this consisted mainly in sending the report model to the services concerned - and in the definition of the priority fields of cooperation for the development of the oncho-freed areas.

The Unit is now working on the establishment of an information and socio-economic documentation service and the execution of specific socio-economic studies which would make it possible to evaluate the evolution of resettlement and the utilization of the oncho-controlled territories.

LONG TERM STRATEGY

As you are all aware the Programme is in its tenth year and almost half way through its originally previewed life-span of twenty years. The Independent Commission which looked into the long-term prospects of the Programme came up with some very clear recommendations on what path should be followed if the success already registered would be maintained in future. Approaching the third financial phase, with the need for the Programme to have additional insecticides, the request to extend into surrounding areas and incorporate other countries, the desirability to develop suitable macrofilaricidal drugs and the ultimate transfer of responsibility to the Participating Countries, it is obligatory, as called for at the third session of the Joint Programme Committee, that a long-term strategy be prepared so that all concerned with the Programme are fully aware of their future commitment, financial, technical and political.

This long-term strategy must be ready for presentation to the fifth JPC in December 1984 and because of this tight time-constraint the Programme has had to take immediate steps this year to proceed with its preparation. The terms of reference have been drawn up in consultation with the Committee of Sponsoring Agencies. Action has been taken towards preparing a detailed scientific report on the present situation in the Programme. A strategy Coordinator has been appointed and a plan of action prepared. Everything is so far on course and a first progress report will be presented to the next session of the JPC in Paris in December.

DEVOLUTION

Devolution is a concept introduced by the Independent Commission which recognized it as being the ultimate objective of the Programme, i.e. the assumption of responsibility for maintenance of the onchocerciasis control by the countries concerned. This must be seen as the end point of the long-term strategy and, so, perhaps something for the future. You will recall that it was decided at the last meeting of the National Onchocerciasis Committees in Accra that, because of its future importance, devolution should feature prominently in the discussions of subsequent NOCs. Accordingly it is in the agenda of the present session so as to enable us to define more clearly the steps to be taken to ensure an effective take-over of some OCP activities by the National Governments at the appropriate time.

Already the Programme has received full support from both WHO Headquarters and the WHO Regional Office for Africa in helping the Participating Countries improve their health structures, especially through the primary health care programmes. In turn each of the Participating Countries has been requested to designate two national officers charged with the follow-up of all devolution matters and to participate, at the appropriate time, in the implementation of activities to be transferred. This will be dealt with in greater detail during our meeting.

OTHER ACTIVITIES

Training

The training programme is continuing at approximately the same level as in previous years. OCP remains ready either to provide training within the Programme or to award fellowships enabling candidates to go elsewhere for training in specific disciplines. Training will become even more important to the Participating Countries in relation to the eventual assumption of responsibility for Programme activities.

Western Extension

The Western Extension having been approved in principle by the JPC, the plan of work for 1983 is being implemented and attention is being focused on collection of entomological data in Senegal and Western Mali. Some insecticide susceptibility testing has been undertaken in Guinea and a survey of hydrological stations carried out throughout the Western Extension area.

An aquatic monitoring programme will be established based on the recommendation of the Ecological Group.

INFORMATION

The use of information must be emphasized and fully explored in order to develop a meaningful dialogue among all sectors involved in OCP. This information should be two way and should permit also a feedback process which is very necessary at this stage of the Programme.

The Programme has participated in information sessions at all levels to teachers, mainly in primary schools, at Bobo; to students in the "Rural Health Training" school at Kintampo; to two Ambassadors of Donor Countries in Ouagadougou; to members of the Ecological Group and to visitors from relevant institutions. There have also been journalists and reporters from Canada, France, Britain, Germany and other parts of the world who have come to be informed specifically about the Programme. These have produced articles on Radio and in the press providing good publicity for OCP. Information on the Programme in the Participating Countries, which for our purposes may be better termed as a public Education Campaign, is a subject which will be addressed by this meeting en bloc.

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Health Education is an important component of Information and especially of the Primary Health Care system. Informed opinion and active cooperation on the part of the public are of the utmost importance in the improvement of the health of the people.

Community participation is essential for lasting success in any health programme. Health Education must involve specialized staff and the mass media and all aspects of health must be covered. In this respect, Onchocerciasis will be recognized as one of the health problems in the Programme area and should be incorporated in the national structures already established for multi-disease control and for Health Education. Accordingly OCP must collaborate with those services in Participating States in promoting Health Education.

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This is my report on the Onchocerciasis Control Programme to date, Mr Chairman. My colleagues and I are available now to answer any questions you may wish to put.