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CURRENT SITUATION OF ONCHOCERCIASIS CONTROL IN THE AFRICAN REGION

Information document

EXECUTIVE SUMMARY

1. Due to the psychosocial importance and the devastating effects of onchocerciasis skin and eye disease, in 1974, the international community established the Onchocerciasis Control Programme covering 11 affected countries in west Africa. In 1987, ivermectin was registered for human use and Merck & Co., Inc. donated it free-of-charge as long as needed for onchocerciasis treatment. In 1989, the Onchocerciasis Control Programme (OCP) adopted mass treatment with ivermectin as its second strategy; because the programme achieved its objective, it was closed at the end of 2002.
2. The primary strategy of the subsequent African Programme on Onchocerciasis is community-directed treatment with ivermectin which enables communities to take charge of drug distribution and, ultimately, their own health. Community directorship resulted in a rapid increase in treatment coverage from 1.4 million people in 1997 to over 40 million people in more than 95 000 communities.
3. The African Programme on Onchocerciasis has made significant progress towards achieving its mandate as evidenced by the results of ivermectin treatment, progress towards eradication of blackflies in selected foci, capacity built in affected countries for programme implementation, and integration of other public health interventions into community-directed treatment. However, due to the movement of human populations, sociopolitical upheavals in the Region and the migration of *Simulium* blackflies (vectors of the disease-causing parasite), there is a high risk of transmission recurring and a recrudescence of disease through the re-introduction of river blindness from less effective programmes into neighbouring countries. There is therefore the grave risk that the impact of the funds already invested by countries and their development partners, together with the drug donation programme (more than US\$ 1 billion), will be lost.
4. Former OCP countries and their development partners need to find effective mechanisms for collaborating among themselves and with the Multi-Disease Surveillance Centre for effective surveillance and evaluation to avoid any recrudescence of the disease. All 29 countries need to strengthen their financial contributions to ivermectin distribution projects and ensure effective integration of onchocerciasis control and surveillance into their health systems to maintain the unprecedented achievements of river blindness control programmes.
5. This document is submitted for the information of the Regional Committee.

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BACKGROUND

1. Onchocerciasis, also known as river blindness is a dreaded, disfiguring disease caused by parasitic worms which enter the body via the bite of a small blood-sucking fly, *Simulium damnosum* or blackfly. Onchocerciasis occurs in 30 countries in Africa, 29 of which belong to the WHO African Region. It was estimated that 142 629 613 people were at risk of the disease in the Region as of 2004.
2. Blindness is by far the most serious manifestation of onchocerciasis, afflicting up to one third of individuals living in communities hit by the disease. It is reported in the literature that onchocerciasis causes 46 000 new cases of blindness annually and that about 37 million people are heavily infected and at risk of developing skin disease. Because of the threat of river blindness, entire communities are forced to abandon their fertile lands for less productive ones. River blindness therefore affects the socioeconomic well-being of communities.
3. In 1974, the international community established the Onchocerciasis Control Programme (OCP) in west Africa which covered 11 affected countries. The initial main strategy of the OCP was aerial insecticide spraying over fast-flowing rivers. In 1987, ivermectin was registered for human use, and Merck & Co., Inc. donated it free-of-charge as long as needed for onchocerciasis treatment.
4. In 1989, the OCP adopted mass treatment with ivermectin as its second strategy; because the programme achieved its objective, it was closed at the end of 2002. The advent of ivermectin made it possible to address the problem of onchocerciasis in all countries of the WHO African Region and Sudan where aerial insecticide spraying was not feasible. This led to the establishment of the African Programme for Onchocerciasis Control (APOC) in December 1995.
5. The primary and pioneer strategy of APOC is community-directed treatment with ivermectin (CDTI). This strategy empowers communities, builds trust and partnership between health-care services and communities, and strengthens national health systems.
6. APOC covers 19 countries in the WHO African Region and the Sudan (see Figure 1). Its objective is to establish, within a period of 12 to 15 years, effective and self-sustainable, community-directed ivermectin treatment throughout the endemic areas within the geographic scope of the programme. In addition, the aim is to eradicate the vector, if possible, in selected and isolated foci, by using environmentally-safe methods; the ultimate goal is the elimination of onchocerciasis as a disease of public health and socio-economic importance throughout Africa, thus improving the welfare of its people.
7. Rapid epidemiological mapping of onchocerciasis (REMO) has made it possible to delineate CDTI priority zones (see Figure 2) and forecast 102 million people at risk of contracting the disease in APOC countries by 2010. Some of these persons are co-infected with onchocerciasis and Loa loa; the level of co-infection is variable from place to place. A rapid assessment tool (known as RAPLOA) is used to delineate areas co-endemic for onchocerciasis and Loa loa.
8. Onchocerciasis has been eliminated as a public health problem in 10 countries in west Africa, and steps are being taken to reach this objective in 20 other African countries. However, available data indicate that in the absence of external financial support, control as well as surveillance activities are very limited in many countries, posing a high risk of recrudescence of the disease.

WHO, as the executing agency of the onchocerciasis control programmes, requests African governments to support and safeguard the unprecedented achievements of the OCP and APOC.

CURRENT SITUATION

9. Since 1999, CDTI implementation has progressed significantly as summarized in Figure 3. In 2005, more than 2661 000 community-directed distributors of ivermectin and 20 434 health workers were trained in 14 countries and participated in the implementation of CDTI projects. Itwara (Uganda) and Bioko (Equatorial Guinea) foci are now free from the vector, and the process for the certification of the elimination is under way; control efforts should continue in Mpamba-Nkusi (Uganda) and Tukuyu (Tanzania) foci.

10. The mid-term external evaluation (2001) and external evaluation (2005) by experts stated that the APOC CDTI strategy was both timely and innovative for fighting the disease, and that communities have been deeply involved in their own health care on a massive scale, raising hopes for sustainability.

11. The achievements of the onchocerciasis control programmes can be described in two phases. Phase 1 includes the OCP results from 1974 to 2002. With the OCP control activities, 40 million people in 11 countries were freed from infection and eye lesions; 600 000 cases of blindness were prevented; 18 million children are free of the threat of blindness and debilitating skin disease; over 1 million years of productive labour were generated in the participating nations; 25 million hectares of abandoned fertile arable land were reclaimed for settlement and agricultural production; and the economic rate of return of the programme has been estimated to be 20%.

12. Phase 2 includes the APOC results 1996–2005. In APOC countries, the second phase of the long-term impact studies of APOC showed that within five years of operation, 20% reduction in prevalence of onchocerciasis nodules was recorded; severe itching was reduced by 54%; the microfilarial load in the anterior chamber of the eye decreased by 45%; there was 26% reduction of sclerosing keratitis and 70% reduction of iridocyclitis; and the prevalence of blindness due to onchocerciasis was reduced by 33%. CDTI resulted in US\$ 7 per disability-adjusted life year averted (due primarily to donations from Merck & Co., Inc.), and the economic rate of return was 17%.

ISSUES AND CHALLENGES

13. Due to the movement of human populations, sociopolitical upheavals in the Region and the migration of *Simulium* blackflies, there is a high risk of recurring transmission and recrudescence of disease. There is therefore the risk that the funds already invested by countries and their development partners, together with the drug donation programme (more than US\$ 1 billion), will be lost. In addition, the absence of a macrofilaricide and a reliable tool for early detection of recrudescence is a particular concern of APOC.

14. People with high levels of filaraemia (generally over 30 000 parasites per microlitre of blood) are at risk of severe adverse events (SAEs) in cases of treatment with ivermectin. From 1 January 1989 to December 2001, the total number of SAE cases reported through a passive surveillance system was 207 out of 165 million reported treatments. SAEs can lead to coma and death, and

affected people will develop severe sequelae, especially children.¹ The co-endemicity of Loa loa with onchocerciasis slows the rate of implementation of CDTI projects in areas concerned. Sustaining high geographical and therapeutic coverage rates in conflict countries is important. Increasing and sustaining government financial commitment to the elimination of onchocerciasis is also a challenge being faced by APOC partners. There is the need to improve coordination mechanisms for ex-OCP countries, and to strengthen the Multi-Disease Surveillance Centre to support onchocerciasis surveillance. Finally, a financial gap of about US\$ 9 million needs to be filled.

WAY FORWARD

15. WHO and APOC management will undertake advocacy to regional bodies and strategic communication to maintain commitment and strong political interest in Member countries. Building capacity at peripheral health facility and community levels to sustain the investments in onchocerciasis control is also an important activity to be conducted by the programme. APOC will call countries to maintain annual and long-term compliance to ivermectin treatment and high treatment coverage in the absence of a macrofilaricide. In order to achieve this, there is a need to increase and guarantee sustainable government financing and integration of onchocerciasis control and surveillance into the health systems to safeguard the achievements of the OCP and APOC.

16. A systematic application of RAPLOA is required to determine areas of Loa loa hyper endemicity in order to avoid the use of ivermectin in such areas and also to apply alternative interventions. Strengthened surveillance will enable timely action to prevent onchocerciasis re-infestation in freed areas and, where appropriate, target vector control.

17. Vector control will be implemented in areas with a high potential for economic productivity where blackfly nuisance is intense. This will require that the existing but dwindling expertise be preserved and used as a resource to train more entomologists at national level.

18. The pharmaceutical companies are being sensitized and resources mobilized for the search for a macrofilaricide. APOC management is supporting country programmes in empowering communities and promoting sustainability through the use of APOC CDTI as a vehicle for multiple interventions. Finally, there is an important need for intercountry cooperation and collaboration.

CONCLUSIONS

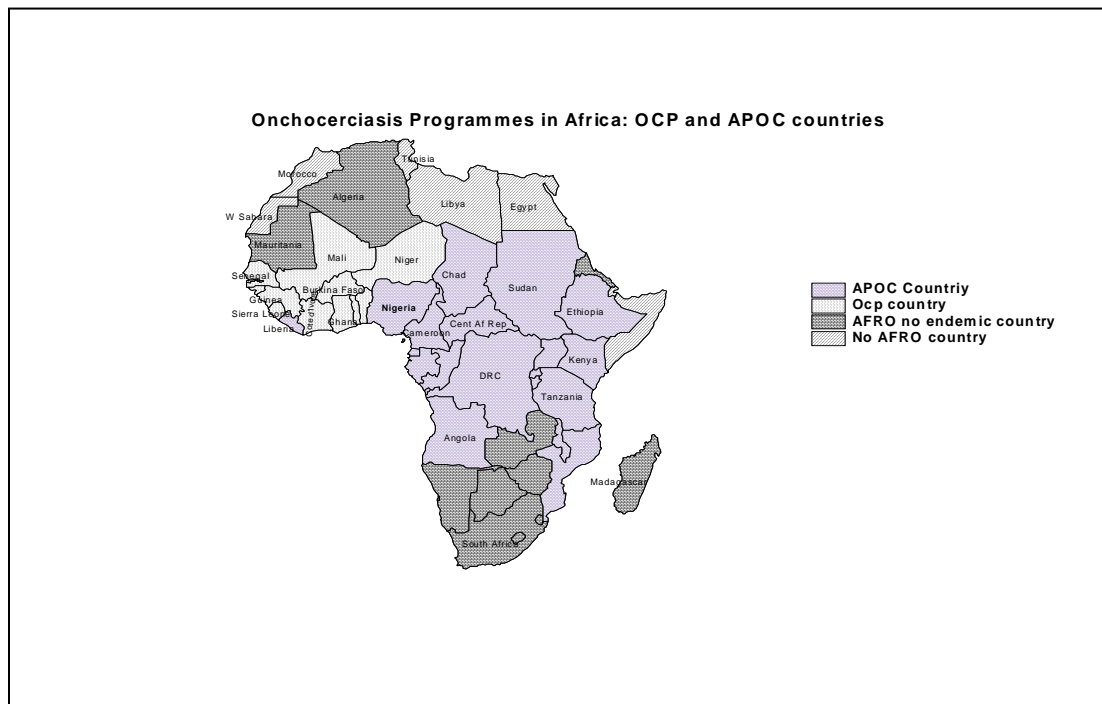
19. APOC is on the way to successfully fulfilling its mandate as evidenced by the results of ivermectin treatment, progress towards eradication of blackflies in selected foci, capacity built in affected countries for programme implementation, and integration of other public health interventions into CDTI. It is expected that APOC will achieve its objective of establishing sustainable drug distribution systems in Member countries by 2010.

20. There is, however, a high risk of re-introduction of the disease in areas previously freed from onchocerciasis and loss of the over US\$ 1 billion investment due to weak surveillance systems, ineffective control measures, movement of human populations and migration of the vector *Simulium*.

21. This document is submitted for the information of the Regional Committee.

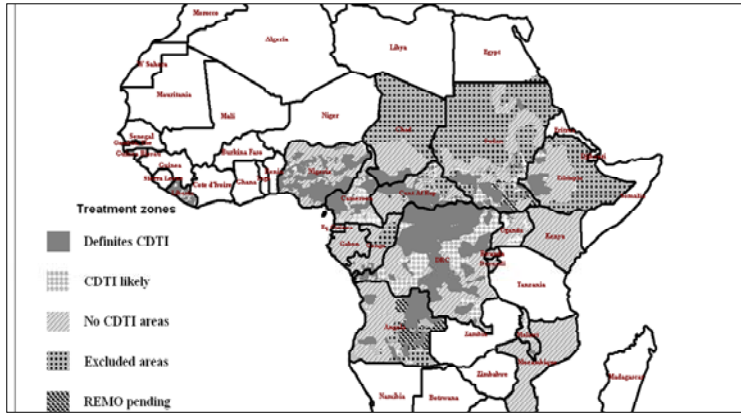
¹ Twum-Danso Nana AY, Serious adverse events following treatment with ivermectin for onchocerciasis control: a review of reported cases, *Filaria Journal* (supplement 1), 2003.

Figure 1: Onchocerciasis programmes in Africa



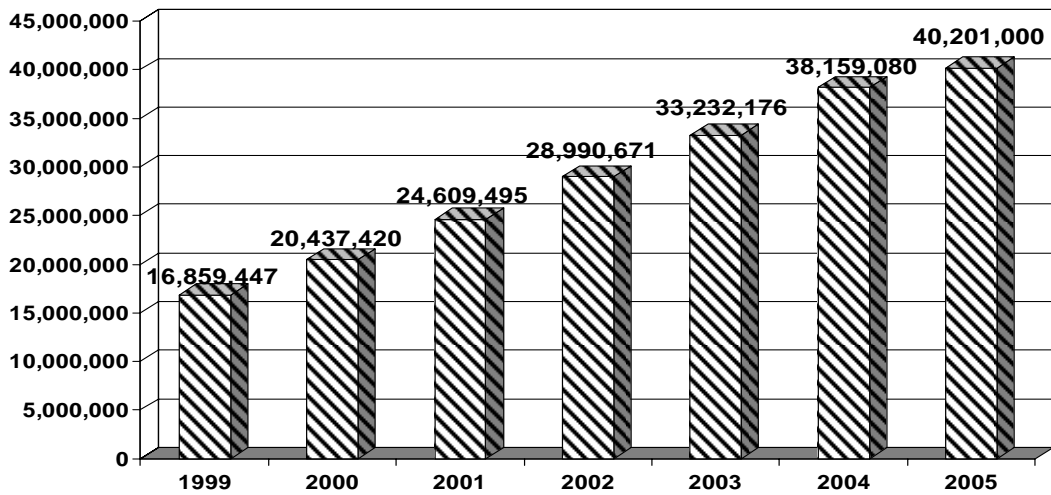
Source : APOC Management/EVE unit

Figure 2: Rapid epidemiological mapping of onchocerciasis results in APOC countries, 2005



Source: APOC Management/EVE unit

Figure 3: Number of persons treated in APOC countries, 1999–2005



Source: APOC Management/EVE unit