

Original Research Article

Clan Strategies: A Relevant Alternative for the Fight against Neglected Tropical Diseases in the Western Region of Cameroon

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Article History

Received: 26.09.2025

Accepted: 21.11.2025

Published: 29.11.2025

Journal homepage:

<https://www.easpublisher.com>

Quick Response Code



Abstract: Objective: This article aims to analyze the relevance of clan strategies in the fight against Neglected Tropical Diseases (NTDs) in the Western region of Cameroon. **Introduction:** The abrupt cessation of mass distribution of Ivermectin for onchocerciasis control, due to the suspension of international funding in Cameroon, risks prolonging or undoing efforts made since the 2000s to eliminate onchocerciasis as a public health issue. To mitigate this, a strategy referred to as the "clan strategy" has been implemented. This strategy aims to empower families to manage their health issues, which have severe consequences on vision and skin. **Methodology:** This article is based on a descriptive and analytical study with a mixed approach (quantitative and qualitative), conducted from June to August 2025 in the health districts of Foubot, Bamendjou, and Bangourain in the Western Region of Cameroon. Data collection for the analysis of performance indicators of the program was carried out using an Excel spreadsheet for the quantitative aspect, and semi-structured interviews and Focus Group Discussions (FGDs) for the qualitative part. The study was conducted in communities where this strategy has been implemented, involving District Health Chiefs, Health Area Chiefs, clan distributors, and 81 clan members (clan leaders, community representatives), as well as household heads in the communities. The aim was to assess their knowledge, participation, and perceptions regarding NTD-related activities. **Results:** Motivational challenges faced by distributors, treatment delays, absenteeism, and refusals were reduced due to the strong community ownership of the onchocerciasis control efforts, particularly in rural areas. The post-distribution coverage survey shows that 85% of the areas were adequately covered. The implementation of the clan strategy in the mass distribution of Ivermectin for onchocerciasis control serves as a viable alternative to the cessation of international funding for NTDs in Cameroon. This strategy involves the empowerment of large families in managing public health issues. **Discussion:** The study highlights the high community acceptability of the project. The gradual reduction in treatment costs and the enhanced community ownership are expected to contribute to its sustainability. Performance indicators reveal a decrease in absenteeism and refusals due to the proximity of clan distributors who are familiar with the movements of clan members. **Conclusion:** In the context of reduced funding, the clan strategy will facilitate the continuation of mass distribution efforts to achieve the elimination of onchocerciasis as a public health problem. A progressive institutional integration of the clans, accompanied by capacity-building in communication and health leadership, is essential to achieving the WHO's NTD elimination goals by 2030.

Keywords: Neglected Tropical Diseases, Clan Strategies.

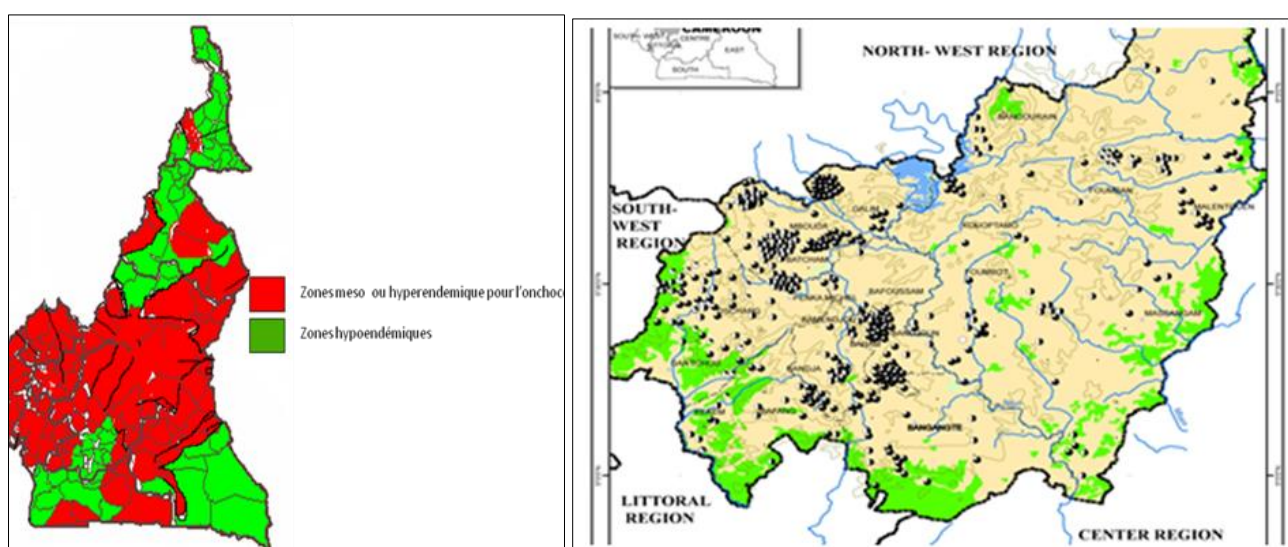
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1. INTRODUCTION

Neglected Tropical Diseases (NTDs) are a group of chronic infectious diseases that primarily affect impoverished populations living in rural or peri-urban areas of low- and middle-income countries. These diseases are responsible for significant morbidity, long-term disability, and substantial socio-economic losses in the affected communities [1, 2]. According to the World Health Organization (WHO), more than a billion people remain exposed to at least one NTD, with sub-Saharan Africa bearing the greatest burden [3]. In Cameroon, NTDs such as onchocerciasis, lymphatic filariasis, schistosomiasis, geohelminthiasis, and African trypanosomiasis remain major public health challenges [4, 5]. In the context of this study, epidemiological surveys have shown that all 20 health districts in the

Western Region of Cameroon are endemic for onchocerciasis, with varying levels of endemicity from one district to another (Epidemiological Surveys, 2016). The region is characterized by a high population density, a socio-cultural structure strongly organized around traditional chieftaincies, and significant ethnic diversity. It is endemic for several NTDs, notably onchocerciasis, lymphatic filariasis, schistosomiasis, and geohelminthiasis [6, 7]. The rugged terrain is interspersed with numerous rivers infested with blackflies, the vectors responsible for onchocerciasis transmission. The local populations, whose main economic activity is agriculture in areas watered by these rivers and fertile lands, are exposed daily to the bites of blackflies, which transmit the disease.

Onchocerciasis in the Western Region



After reading this flier that creates a veritable problem in public health, in Cameroun. Since 1996, the Government of Cameroon, in collaboration with its development partners, has opted for mass distribution of Ivermectin to eligible individuals through healthcare personnel who have conducted multiple outreach efforts within communities. This distribution was carried out at symbolic costs of 100 FCFA per treated adult and 25 FCFA for schoolchildren (Community-based Ivermectin Treatment, CBIT). Despite the sustained efforts of the National Program for the Fight against Neglected Tropical Diseases (PNLMTN), supported by the World Health Organization (WHO) and various partners, the coverage of community-based interventions remained variable across regions. In the Western region, where population density is high and sociocultural practices are deeply ingrained, formal public health strategies often struggle to reach certain remote communities. An evaluation of this strategy in 2000 revealed several weaknesses, including low therapeutic and geographical coverage, the overburdening of healthcare personnel, their low motivation, and poor community ownership of the fight against onchocerciasis. To address these

shortcomings, experts incorporated community agents into the mass distribution process (TIDC). Financially incentivized by the State, their training is provided by health personnel. An evaluation in 2011 showed significant progress, with therapeutic coverage exceeding 80%, and geographical coverage reaching 100%, meeting the elimination criteria set by the African Programme for Onchocerciasis Control (APOC) [10]. Between 2011 and 2025, this strategy faced several challenges, including the demotivation of community distributors (DCs), the abandonment of distribution efforts by some DCs, a gradual increase in poorly covered areas, resistance to treatment from certain groups, and absenteeism during distribution. Finally, the premature withdrawal of financial partners from the TIDC program further complicated the situation. In the face of the imminent risk of returning to the previous situation, marked by significant microfilarial burdens and severe complications such as blindness, subcutaneous nodules, filarial skin disease, and leopard skin, a new strategy called the "clan approach" was initiated to ensure the continuity of mass ivermectin

distribution within the community, mobilizing family resources.

In other words, involving traditional social structures, such as clans, chiefdoms, and cultural associations, has emerged as an alternative pathway to strengthen the fight against neglected tropical diseases. Clans, as units of cohesion, moral authority, and solidarity, hold considerable influence in community mobilization and the dissemination of health messages [11]. Several experiences in West and Central Africa have demonstrated that structured community participation, when guided by these traditional structures, can effectively enhance public health initiatives. Rooted in local values, it can improve coverage of deworming campaigns, awareness-raising, and community-based disease surveillance [12, 13]. The strategy known as the "clan approach" is one that requires a reorganization of health areas into large groups of people with family ties (clans). Each clan becomes autonomous in organizing the distribution of health products within its family, under the leadership and supervision of the clan chief. A family distributor (DC) is designated by the clan chief and briefed by the head of the health area, who coordinates the activity within their jurisdiction. Distribution registers are kept in the same manner as family contribution registers used for organizing major happy or sad events based on the genealogical tree. The register will evolve from the structuring of households to that of clans.

A clan may cover between 5 to 10 generations, multiple communities, and may have one or more Family Distributors to reduce the workload. Similarly, multiple clans can be present within a community. During family meetings, the head of the family raises awareness, publicly designates the Family Distributor, and sets the period for the distribution of Ivermectin. At the end of the distribution, a systematic performance evaluation meeting is held, including a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis, with all stakeholders. The meeting concludes with recommendations for the next campaign. A summary is provided to the head of the health area, who is responsible for entering the data into DHIS2 according to the communities of origin. This task is facilitated by the integration of clans into the communities. To measure the contribution of the family unit in the mobilization and implementation of health activities in our communities, a mixed-methods study (qualitative and quantitative) is conducted in the communities of the Western Region. This strategy can also be extended to the school environment, as schools can be considered clans, with the school principal as the clan chief and the teachers as heads of households. At the end of the treatment, the clan leader submits their report to the health area heads for synthesis and data entry into DHIS2.

Anthropological studies have shown that cultural values are respected within communities and traditional chiefdoms in the Western Region. However, few studies have systematically analyzed how these clan-based strategies can be integrated into public health approaches aimed at the elimination of neglected tropical diseases (NTDs) in the endemic zones of Western Cameroon. Understanding the governance mechanisms, communication, and collective action within these traditional structures could provide a culturally appropriate and sustainable framework to strengthen existing NTD control programs. It is within this context that this article seeks to analyze the role, potential, strengths, and weaknesses of clan-based strategies in the fight against neglected tropical diseases in the Western Region of Cameroon, particularly in a setting where external funding is scarce, with the aim of proposing a community integration model to support onchocerciasis elimination efforts. This article will also aim to demonstrate the impact of the clan strategy on improving key program indicators, as the success of a health project is not only limited to its design but also to factors that may hinder community adherence to the health program, of which the primary factor is responsible kinship.

2. METHODOLOGY

This article is based on a descriptive and analytical study with a mixed-methods approach (quantitative and qualitative), conducted from June to August 2025 in the health districts of Foubot, Bamendjou, and Bangourain, Western Region of Cameroon. This design was chosen to combine the advantages of quantifying community participation indicators and exploring in-depth social perceptions and dynamics within clan structures [14, 15]. The sampling method used was random. For the quantitative component, a questionnaire on the effectiveness of drug intake in households was used to collect data for the analysis of program performance indicators. Using an Excel spreadsheet, the information was calculated and analyzed. The qualitative component was conducted through (20) semi-structured interviews, (3) focus group discussions in communities where the strategy is implemented, with 03 health district heads, 09 health area heads, 81 clan distributors, 81 clan members (clan leaders, community leaders), and 27 household heads in communities where the strategy is being implemented, to assess their level of knowledge, participation, and perception of activities related to NTDs. Direct and participatory observations of clan meetings and community activities were also made. This data collection continued until data saturation was reached. The information sought included the number of communities, number of clans, average clan size, number of children under 5 years old, pregnant women, breastfeeding women, and individuals with severe illnesses. Secondary data were obtained from reports from the PNLMTN and the departmental health delegations. Ethical considerations accounted for informed consent, confidentiality, and administrative

authorization. All researchers were trained on ethical aspects, confidentiality, and standardization of data collection. For data analysis and processing, quantitative data were entered and analyzed using SPSS version 26.0 to assess program performance and coverage surveys. Qualitative data from interviews and focus groups were transcribed and thematically analyzed using NVIVO 12 software. The study protocol was submitted and approved by the National Ethics Committee for Health Research (CNERH) of Cameroon under protocol number N°2025/04/CE-CNERH/MINSANTE. Informed consent was obtained from all participants, and the anonymity and confidentiality of the data were strictly adhered to, in accordance with the Declaration of Helsinki [16]. All necessary administrative authorizations were obtained before data collection in the communities. Michel Crozier's systemic analysis and interpretive cultural theory were used to interpret the data.

3. RESULTS

This section aims to assess the level of preparedness of the stakeholders for the implementation of the clan strategy in the different health districts.

1. Preparation for the Implementation of the Clan Strategy

It is important not only to assess the level of information and perceptions of stakeholders regarding the strategy, but also to understand the best practices in organizing communities into clans and the distribution methods adopted.

1.1. Training of Stakeholders on the Orientations of the Clan Strategy

The implementation of the clan strategy was preceded by information and training sessions for stakeholders on the strategy's orientations and the desired approaches for its implementation within the communities. The goal was to evaluate the participation and level of understanding among stakeholders regarding the directions provided for the strategy and its implementation. During the training sessions leading up to the mass treatment launch in the health districts of Bamendjou, Bangourain, Foubot, and Massangam, participants received briefings on the clan strategy. In fact, the district-level team members were informed through a memo that already outlined the main orientations, and they also received them during training sessions organized at the regional level, as confirmed by one participant: "Yes, we received them through a memo already signed by senior management, which the NTD coordinator shared in the regional group and was then relayed at the district level by the district chief. So, we were informed about this strategy. During the training, we received directions for its implementation, and we were supposed to relay them to the heads of health areas that we supervise in our health district. (MMN_EIA_CBS_BMDJOU_01-07-25). Members of the district-level team also transmitted the strategy's orientations to the heads of health areas through the

health district managers. "During the training, we received new guidelines called the 'clan strategy'; what this means is that we should count the families, then train them and choose someone to distribute and monitor at the family level." (BDO_EIA_CA_Fset_04-07-25).

Yes, the district chief shared this with us. We were in training at the district level, and he briefed us on the concept of clans. Before that, he asked that we provide the number of clans or extended families in the communities. This hasn't been easy even up to today, and the chiefs themselves don't yet fully understand. In the Bajatsit2 community, for example, it is very vast, and the representative of the chief couldn't do it. He told me it's so vast he doesn't know how to assess it. Only Balatsit3 has made an effort to give us an idea of about 30 clans. Balatsit1 has also made progress where one elder mentioned about 15 large families or clans there. Otherwise, the field actors are already working and prefer to do so in the evenings because people are in the fields. (MMN_EIA_CA_Bltst_01-07-25).

Following the orientations received at the district level by the heads of health areas, they were also responsible for implementing them in the various communities covered by their respective health areas. This is exemplified by the head of the Bamendjou health area, who explains the implementation as follows:

Of course! We had the briefing at the district level with the regional supervisor. She provided some clarification along with the district chief and the head of the health office about the clan strategy. There was also a planned briefing with the community distributors (DCs), to explain to them what was communicated to us about the clan strategy during the district briefing. In Bamendjou health area, we have 9 communities, and in these 9 communities, we were given 54 DCs who were deployed. In these communities, the population size varies. The ones with the largest populations also had a higher number of DCs. (MMN_EIA_CAS_BMDJOU_01-07-25).

The implementation managers and community members met during the study had therefore received orientations on the strategy and each implemented it in their community. Their experience in implementation enables them to appreciate the new strategy.

1.2. Appreciation of the Clan Strategy by the Implementing Actors

The clan strategy is well received by the populations and the authorities responsible for its implementation. These stakeholders, in Bangourain, Foubot, and Bamendjou, unanimously agree on the potential of this strategy to ensure the sustainability of the fight against onchocerciasis in the context of a lack

of funding, due to the discontinuation of international financial support. For the majority of these actors, the ideal scenario has always been for each family to have its own Community Distributor (DC), with the community being responsible for its own health. The clan strategy thus implements this long-desired model, which is seen as essential for the fight against onchocerciasis. *"The approach should be better; it's what we've always wanted. The ideal would be for each family to have a DC, and then the distribution would be very easy, which is exactly what the clan strategy advocates for."* (MMN_EIA_CA_Bltsit_01-07-25). *"To be honest, it's a very good strategy because it makes community members responsible for their own health and that of their various families."* (BDO_EIA_CA_Fset_04-07-25). The strategy is welcomed, as it addresses the scarcity of resources, which constitutes a significant bottleneck for the distribution of Mectizan. Motivation of DCs in recent years, as the managers point out, has always been an issue in the challenges faced during ivermectin distribution. This strategy is seen as a way to overcome this obstacle. *It's definitely welcome, as the goal is to treat the population as we have always done. But given the scarcity of resources, as the hierarchy has mentioned, we could not leave the population untreated simply because we don't have the resources to recruit people for the task. The motivation of DCs has always been a problem, and this strategy attempts to circumvent this issue, which was preventing the distribution of Mectizan. I think the hierarchy made the right decision in implementing this strategy.* (MMN_EIA_CBS_BMDJOU_01-07-25).

The strategy is appreciated for the potential benefits it could bring in terms of improving the coverage of mass drug distribution. On the ground, mechanisms have been put in place to organize communities into family groups or clans.

1.1. Strategy for Organizing Communities into Clans

To organize communities into clans, the general approach has been to give local communities the freedom to organize themselves, adopting several approaches. In general, with the help of community leaders, communities have been organized into blocks or family groups. These blocks or family groups then designated their own DC for the distribution. Given the socio-cultural configuration and the settlement patterns of the population in the localities, it has been relatively easy to organize communities into clans. In Bamendjou, for example, following instructions from higher authorities, health area chiefs worked with community leaders to organize the communities for optimal goal achievement. *"At our level, we instructed the health area chiefs to meet with the local community leaders and inform them that this year, things would be different from the past. We have the medicine, and we cannot fail to treat the population just because we don't have enough DCs or because we don't have the means to motivate the DCs*

who usually do the job." (MMN_EIA_CBS_BMDJOU_01-07-25).

Thus, the health area chiefs were mobilized and sent to engage with the community chiefs and family heads to organize their communities into clans or family groups, based on the strategy's definition of a clan. This mobilization was followed by the assignment of DCs by the health area chiefs, as explained by the informants. *"As I told you earlier, before I met with the DCs, I first called the heads of the nine communities. They provided me with the blocks of each community. Based on these blocks, I divided and distributed the DCs. So, I organized the DCs according to the number of blocks."* (MMN_EIA_CAS_BMDJOU_01-07-25).

This organizational strategy, through the involvement of community leaders, has facilitated a more effective distribution of medications within the clans. Ultimately, it can be observed that the health area chiefs who received training go on to train the Community Dispensary Chiefs (DCs) within their respective communities, thereby ensuring the proper implementation of the clan strategy. However, this process is not without its challenges.

1.4. Difficulties in Implementation and Solutions

No major difficulties were reported or observed during the implementation of the clan strategy in the different communities of Bangourain, Foubot, and Bamendjou. In fact, according to the people interviewed, the strategy for fighting onchocerciasis is community-based. As a result, they are constantly in contact with community members when it comes to Mectizan distribution. Thus, it was not difficult to discuss the new strategy and its implementation with the community leaders with whom they are accustomed to collaborating. The only difficulty observed relates to the completion of distribution registers. Some health area chiefs continue to assist both new and old DCs to ensure proper filling of the registers. *"The difficulties are numerous. First, with the registers that were given to us, there are some that still find it very difficult to fill them out. When they finish filling them, they come to me so I can verify the completion."* (MMN_EIA_CAS_BMDJOU_01-07-25). It can be said that this difficulty related to mastering the registers is not significant enough to prevent the smooth implementation of the strategy. However, there is still a question about the actual willingness of families or clans to provide volunteers for the distribution of medicines, which remains one of the challenges observed during implementation.

1.5. Availability of Volunteer Community Distributors within Clans or Large Families

Given the importance placed on the medication and the detrimental effects of the disease in the communities, interest in the Mectizan distribution campaigns in the health districts of Bamendjou, Foubot, and Bangourain has been steadily increasing.

Consequently, it has not been particularly difficult to find volunteers within the clans or families to distribute the medicines. It is worth noting that the distributors in the TIDC strategy have always been voluntary actors from families or communities who collaborate with the health system in the fight against onchocerciasis. These distributors were retained if they wished to continue, and others were recruited as part of the clan strategy. The key difference now is that these actors work for their own clans or families, rather than for the entire community, which previously required significant economic sacrifices and more time commitment. Within the families, it has not been difficult to find volunteers for the distribution of medicines: *"Once they are trained, it means they are available. In fact, people here ask for the medicine when it doesn't arrive. So when we asked the families to provide volunteers, it wasn't difficult to find volunteers to assist the old DCs."* (AZ_EIA_CA_Kgba_03_07_25). Thus, there are indeed volunteers within the clans for the distribution of Mectizan. However, these individuals need to be well-trained to carry out their tasks effectively.

1.6. Clan DCs and the Need for Special Training

For the implementation of the clan strategy in the various communities, new volunteers were recruited. These new volunteers joined the former DCs who were retained for the execution of the strategy. While most of these new volunteers are unfamiliar with the distribution activity, it is important to note that every year, the launch of the distribution campaign is preceded by a training session and a briefing for the DCs on the distribution process. In this context, these new volunteers need to undergo special training on the distribution process and the clan strategy. As mentioned by the interviewees, this training should focus on eligibility criteria and the proper filling out of distribution registers: *"Indeed, they need training because the distribution register has to be well explained to them, as well as the eligibility of the medicine, etc. So, training is really necessary."* (AZ_EIA_CA_Kgba_03_07_25). Therefore, training clan DCs remains crucial to achieving the objectives of the clan strategy, which aims to revitalize the TIDC, the main strategy for fighting onchocerciasis. The success of the distribution campaigns using the clan strategy requires specific prerequisites to be observed.

1.7. Prerequisites for the Success of Mectizan Distribution Campaigns in the Communities

To achieve the goals of mass distribution campaigns using the clan strategy, a number of conditions or actions must be considered or taken into account. These key factors for Mectizan distribution were outlined by the informants and the actors involved in the implementation of activities on the ground. First, it was important to involve everyone in the process, including family heads and their members, community leaders, community associations, etc. Then, the process of the clan strategy should be clearly explained to them, along with its merits. It is also necessary to supervise the

activities during their execution and, especially, to engage in dialogue with the beneficiaries and DCs to collect feedback on their concerns and provide solutions. This is emphasized by the health area chief of Fosset: *"We asked the various stakeholders to involve everyone in the process, especially family heads, and to clearly explain what the clan strategy entails. Also, it is important to supervise, listen to the populations, listen to the DCs, and the beneficiaries to make sure we have an impact on the ground."* (BDO_EIA_CA_Fset_04-07-25). In addition to these conditions, other informants stressed the need for more time before organizing the campaigns. In fact, since the clan strategy is newly introduced in the TIDC due to the cessation of international funding, it would have been necessary, according to the health area chiefs, to provide more time to better organize the communities and clans to achieve optimal therapeutic coverage. This concern was raised in the districts of Bangourain, Foubot, and Bamendjou. The statement by the health area chief of Bamendjou is particularly explicit about this shared concern among the health districts involved:

Primarily in my area, I would prefer that in the future, when we are preparing for the campaigns, we are given a little more time for organization. The strategy is new, and the communities are scattered from one another. Also, people here go to the fields. So, they are not available, especially during the day, except perhaps in the evening or on Sundays. I spoke with some community chiefs on the phone. But if I had had more time, I would have gone to the field to try and meet with these chiefs in the 9 communities and identify the settlements in each block. This would allow me to know the number of households before I arrive. (MMN_EIA_CAS_BMDJOU_01-07-25)

This section highlights the importance of training new clan DCs and the need for adequate time to be allocated for organizing the communities and clans for the Mectizan distribution campaigns. Proper training on eligibility criteria and record-keeping is essential for effective implementation. Additionally, allowing sufficient time for preparation would facilitate smoother execution of the strategy, especially in remote areas where people are often unavailable during the day.

Primarily, in my area, I would prefer that, from now on, when campaigns are conducted, we are given more time to organize. The strategy is new, and the communities are dispersed. Additionally, people here work in the fields, so they are not available, especially during the day, unless perhaps in the evening or on Sundays. I have had discussions with some community chiefs over the phone. However, if I had been given a bit more time, I would have gone to the field to meet these chiefs in the nine communities and identify the concessions within the blocks. This would have allowed me

to know the number of concessions or clans per block before coming. Nevertheless, they did collaborate, but it would have been better if I had had more time.
(MMN_EIA_CAS_BMDJOU_01-07-25)

The success of mass drug distribution campaigns thus requires certain prerequisites, which can be summarized as follows: Involvement of all relevant community stakeholders; Providing information on the strategy, its process, and its rationale; Organizing the communities into clans and selecting clan distributors; Training on distribution and eligibility criteria; Supervising activities and addressing potential obstacles; Listening to the populations and Community Dispensary Chiefs (DCs), and considering their feedback and perceptions of the activity; Allocating sufficient time for preparation before the campaign.

The purpose of this article was to evaluate the preparatory activities for the implementation of the clan strategy in the Health Districts of Bangourain, Foubot, and Bamendjou. It is evident that both institutional and community actors have been trained or received guidance on the clan strategy and its implementation. This theoretical and practical exposure has enabled these actors to appreciate the strategy, which they regard as a beneficial approach, particularly given the funding challenges faced by mass treatment activities. Aside from a few difficulties, the impact of which is negligible due to the adopted workaround strategies, newly recruited Community Dispensary Chiefs (DCs) require specific training. Furthermore, the success of the campaigns depends on pooling resources through the involvement of all stakeholders (both institutional and community-based), training them on the strategy, and supervising their work in the field. In addition to these conditions, it is important to allow more time for preparation and organization of the campaigns. These preparatory activities thus contribute to enhancing community participation in the fight against onchocerciasis.

2. Implementation of the Clan Strategy and Improvement of Community Participation in the Fight against Onchocerciasis

The clan strategy, in its design, is built around an ideal: the elimination of onchocerciasis by improving community participation, which in turn enhances therapeutic coverage. This section will focus on understanding how the implementation of the clan strategy contributes to the improvement of community participation in the fight against onchocerciasis.

2.1. Passing the Baton to Family Heads and Organizing Campaigns

In order to delegate responsibility for organizing the distribution of medications to the heads of families or clans, health area managers and community leaders employed several approaches. These strategies

constitute good practices for initiating community leaders into the management of drug distribution within their communities. Thus, the health area chiefs typically begin by explaining the situation to the leaders, clearly outlining the suspension of international funding and the program's inability to finance the distribution. They also stress the need to continue taking the medication, which the program's efforts have made available. As one informant put it, *"We explain and show the head of the family how to administer the medication to prevent the disease in their household."* (BDO_EIA_CA_Fset_04-07-25).

We simply explained that given the government's past difficulty in continuing to support the DCs, and since treatment is a long process, the ivermectin must be taken for at least 10 years. Therefore, no one should stop taking it just because there isn't a DC coming to distribute it. The government, in response to this challenge, has opted for the clan strategy. Here's how it works: each extended family must propose a DC.. The size of the family determines who will collect the medication and distribute it to the household.
(MMN_EIA_CBS_BMDJOU_01-07-25).

In reality, the population is highly interested in the medication due to its known effectiveness, which has motivated their commitment to eradicating the disease. This determination drives their active involvement in organizing the campaigns as part of the clan strategy. One health area chief, in fact, speaks of this commitment in the following terms: *As I said, this is not propaganda; the people in my area are truly committed to contributing to progress. When I say I've selected a DC from each community, it means that when we show them the effects of this disease, it makes them more engaged and very enthusiastic about doing their work.* (MMN_EIA_CAS_BMDJOU_01-07-25). Faced with the impact of the disease, family heads are taking responsibility for their own health and that of their families. To delegate this responsibility, two approaches have been used. These involve emphasizing the importance of the medication and the necessity of taking it every year without interruption, as well as explaining the distribution process within the family.

2.2. Perception of the Substitution of the TIDC by the Clan Strategy

The clan strategy does not replace the TIDC (Community-Directed Treatment with Ivermectin), nor is it a substitute for it. Rather, it aims to reinvigorate the Ivermectin treatment under Community-Directed Guidelines, given the numerous difficulties that, over time, have made the previous approach less effective in achieving the goal of onchocerciasis elimination. In the previous approach, DCs were used for the community at large, whereas the clan strategy utilizes the smallest unit within the community, the family, or a group of families that together form a clan. Within this structure, volunteer

individuals are selected to serve as "Clan DCs" or "Family DCs." It is important to note that a community may have one or multiple clans or families. This strategy is seen as an innovative approach to utilizing community human resources to ensure the coverage of Mectizan distribution to the population. However, time will be needed for the population to adapt to this new approach. As a health area manager stated: *"Well! I think the approach is good; it's a better approach. But since we are implementing it for the first time, we need a little more time. By the next campaign, we will identify the difficulties, and with the community chiefs, we will develop a plan that will help ensure that every family or clan has someone to handle the distribution"*. (MMN_EIA_CA_Bltst01-07-25). Aside from potential difficulties that may arise given that this is the early stage of implementation, the clan strategy is also viewed as the easiest approach. It is seen as cost-effective and requires less effort for the Clan DCs, as they distribute the medication only within their own families and clans. *Well, as I told them, the clan strategy is, for me, the easiest. Because if I properly inform the head of the family and tell them what to do, it minimizes the effort; it saves a lot of resources—energy, money, etc. This means that if I do it, I think it's a better strategy compared to the door-to-door method we used before. Because when you arrive, the clan leader already knows the number of children, the number of eligible individuals, and the number of people. To me, the work is easier with this strategy.* (MMN_EIA_CAS_BMDJOU_01-07-25).

In summary, the clan strategy does not substitute the TIDC; rather, it redirects the Ivermectin treatment under community-directed guidelines by leveraging community resources more efficiently. Community Involvement in a Context Where Funding is Reduced or Suspended by Donors, Contributing to the Sustainability of the Fight Against Onchocerciasis. The clan strategy, like the classical approach, relies on members of the Health Area Committee (COSA) to support various aspects of community activities.

Involvement of COSA Members in Clan Awareness-Raising

In the organization of the healthcare system, the Health Area Committee (COSA) typically consists of community members who act as a link between the healthcare facility and the community. In the context of community activities, COSA members are mobilized to serve as health agents or Community Dispensary Chiefs (DCs). In this role, they are deeply involved in the implementation of the clan strategy. In the health districts of Bamendjou, Bangourain, Foubot, and Massangam, they participate in awareness-raising and mobilization efforts. This is evident from the information provided by informants, such as: *"Yes, the COSA members are involved; the president of the COSA himself is a DC and participates in the distribution."* (AZ_EIA_CA_BGAIN_02_07_25). *"The COSA*

members are heavily involved, particularly in terms of awareness-raising. If the right information reaches the right ears, the activity will be more effective, and it's the COSA members who take care of this." (MMN_EIA_CAS_BMDJOU_01-07-25). As a reminder, COSA members are selected from the community to serve as the communication link between the health facility and the community. They are often representative of the villages or neighborhoods within a health area. Among these members, some are former DCs who participated in training sessions for the implementation of the clan strategy. An informant further explains: *"Yes, the COSA members are from the community, and some of them are also DCs. For instance, during the training of health area chiefs, the COSA member who was trained in his community within the Fosset area, where he is a DC, distributed in his clan there. This shows that COSA members are first and foremost part of the community, and many are former DCs"*. (BDO_EIA_CBS_Fbt_05-07-25).

Thus, COSA members are an integral part of the community, and most represent their respective communities. In their role as intermediaries between health facilities (FOSA) and the community, in addition to being DCs for the majority, they are deeply involved in the implementation of the clan strategy.

2.4. Collaboration between Health Actors and Clan Leaders in the Fight against Onchocerciasis with the Clan Strategy

In the TIDC approach, the community plays a crucial role. Its involvement comes through community leaders who collaborate with local health authorities. These leaders are the key entry point for any community activity. Their collaboration is vital for achieving the objectives of onchocerciasis elimination. While in some health programs and community health strategies, these leaders are sometimes less involved, in the clan strategy, they are an essential link. As such, they are actively engaged and collaborate seamlessly with health area chiefs, who are the main responsible actors for implementing Mectizan distribution in the communities via the clan strategy. According to field reports, the collaboration with these key actors is smooth: *"At our level, there are no major difficulties. Given that in the TIDC, most of these clan leaders themselves, when the program is slow to start, they demand it. So for the most part, it's a routine- there are no issues."* (MMN_EIA_CAS_BMDJOU_01-07-25). This section highlights the importance of community involvement and the essential role of COSA members and clan leaders in the implementation of the clan strategy. COSA members, who are deeply embedded within the community, play a key role in communication and distribution efforts, ensuring that the strategy reaches the right individuals. Their collaboration with health area chiefs is crucial for the smooth operation of mass drug distribution campaigns. Community leaders, including clan chiefs, continue to be actively involved without

major difficulties in the implementation of health campaigns. They are often the ones to approach local health authorities when there are delays in the launch of campaigns. As one informant stated: *“When there is often a health meeting, we are called to come to the district. My son is a distributor of Mectizan; he often goes and reports back to us. This year, they asked us to distribute by family, and I requested that each family provide volunteers. I think this is happening. We have no issues with collaboration; it's for health.”* (AZ_EIA_Chef_MGAM_07_07_25). There is thus a strong collaboration between health areas, community leaders, and chiefs in the health districts of Bangourain, Bamendjou, and Foubot in the fight against onchocerciasis. In this spirit of collaboration, health officials support these leaders in advocating with local elites to secure their support for health and community health activities organized in the villages.

2.5. Support for Clan Chiefs in Advocacy with Local Elites and Municipalities

Supporting clan chiefs and community members in organizing advocacy with local elites and municipal councils (CTDs) involves assisting them in appealing to these elites for support of the community-based Mectizan distribution activities. It should be noted that local elites and CTDs have traditionally contributed to improving the living conditions of the populations when they are called upon. In some communities, they intervene in all sectors, as indicated by the following: *“The district chief himself requests support from the municipality whenever the opportunity arises, and when possible, they assist us. Not just for the TIDC, but for all health programs, including vaccination campaigns and others. The elites, too, in the various health areas, are involved, even if it's not necessarily for the TIDC, but in health in general.”* (MMN_EIA_CBS_BMDJOU_01-07-25). It becomes clear that in localities, the contribution of elites to health activities is often effective when they are approached by health authorities. They contribute through donations or other forms of support, and their dynamism is widely recognized: *“In many communities here, the elites contribute greatly to the development of health through multiple donations. The elites, I must say, are very dynamic in our district.”* (MMN_EIA_CBS_BMDJOU_01-07-25). Indeed, the contribution of local elites is generally seen as significant. However, there are certain health areas where their involvement is less pronounced than in others. An example is the Balatsit health area in the Bamendjou health district, where, according to informants, elite participation is almost non-existent despite regular requests for support. As one informant explained: *“Truly, this is another issue. I have even sent letters to the elites regarding the real needs of the health facilities, but they have remained silent. I will continue to talk to them, they are elites, we will keep advocating.”* (MMN_EIA_CA_Bltsit_01-07-25). Given these challenges, it becomes essential to support communities in advocating with their local elites to encourage their

contributions to health activities. Health authorities believe that it is important to bring the communities closer to their elites through dialogue and collaboration: *“At our level, the health area chiefs, we always tell them to get closer to the elites. It's all about dialogue, dialogue, and good collaboration - nothing more.”* (MMN_EIA_CAS_BMDJOU_01-07-25). The closer relationship between elites and communities, through dialogue and mutual cooperation, is crucial for ensuring sustained support for community-based health initiatives. This section emphasizes the critical role of community leaders and local elites in the success of health initiatives, particularly in the fight against onchocerciasis. While elite participation is generally seen as positive, there are areas where their involvement is lacking, highlighting the need for ongoing advocacy and communication. Health authorities stress the importance of dialogue between community leaders, health officials, and local elites to strengthen support for health programs and ensure their sustainability.

Collaboration between Health Authorities, Community Leaders, and Elites for Public Health Activities. In the context of public health activities, the collaboration between community leaders, health authorities, and local elites plays a critical role in supporting and sustaining health initiatives. Local elites often contribute to the strengthening of health infrastructure and the provision of health supplies, typically in the form of donations. This support is frequently activated once they have been approached by the community or the local health authorities (CTDs). As one informant described: *“In the district, the elites regularly contribute to the health infrastructure, not just for the TIDC but for all health programs, including vaccination campaigns and others. The elites are involved, even if it's not always specifically for the TIDC.”* (MMN_EIA_CBS_BMDJOU_01-07-25). While elites contribute to public health in various ways, health authorities continue to advise community leaders and members to engage more with their local elites to sustain their support. This approach ensures that elite involvement remains a vital aspect of public health activities.

2.6. Data Entry into DHIS2

The use of the DHIS2 platform requires proficiency in using computer technology, which can sometimes be a challenge in remote communities. Despite the lack of adequate equipment, actors in the field make efforts to input data into the platform. One informant explained: *“That's not an issue. Even though we don't have computers or laptops, I have my laptop, and that's where I enter the data.”* (AZ_EIA_Chef_MGAM_07_07_25). Moreover, some health districts offer support to chiefs of health areas, assisting them with data entry into DHIS2. When difficulties arise, the chiefs can contact the district authorities for assistance, as one chief mentioned: *“We were trained on how to use DHIS2. But when I encounter*

difficulties, I reach out to the district. They are always there to help.” (MMN_EIA_CAS_BMDJOU_01-07-25). In summary, providing the necessary equipment and training for actors to use DHIS2 effectively remains essential for the efficient reporting of coverage data across health districts. The DHIS2 platform was originally configured for community-level data, but the emergence of the clan strategy requires reconfiguration to adapt to this new approach.

3. Clan Strategy, Performance, and Sustainability of Onchocerciasis Control

The primary goal of the clan strategy is to enhance the Ivermectin Treatment under Community-Based Directives (TIDC) and ensure the long-term sustainability of efforts to eliminate onchocerciasis. This section highlights the contribution of the clan strategy to improving performance and ensuring the sustainability of onchocerciasis control.

3.1. Contribution of the clan Strategy to Reducing Mass Treatment Costs and Ensuring Sustainability in the Fight against Onchocerciasis

The clan strategy plays a significant role in the Ivermectin treatment under community directive. It contributes to reducing the costs associated with distributing Mectizan in the community. With the involvement of DCs (Distributors of Clan), the distribution process becomes more efficient and cost-effective, as it no longer requires travel expenses. Health area chiefs, who are responsible for overseeing and supervising the implementation of the distribution, now only need to monitor the process in the field. One informant explained: *“It’s very simple. If the clans can find someone within the family, that person just comes, and if there’s a public health activity like this, they contact me, and I just monitor what they are doing. There are no costs involved.”* (MMN_EIA_CA_Bltst_01-07-25). Informants were unanimous in agreeing that the clan strategy significantly reduces or eliminates certain costs, which were previously an obstacle to the sustainability of the onchocerciasis control efforts. *“As I said, this strategy already limits the costs. For example, if I have a household 3 kilometers away, just one household, once I’ve spoken with the family head, they will tell me, ‘I have this number of women, this number of children and grandchildren, and here’s who’s eligible.’ If I explain it well, this limits me from having to walk 3 kilometers just to collect the information.”* (MMN_EIA_CAS_BMDJOU_01-07-25).

This reduction in costs is a crucial factor in ensuring that the strategy remains economically viable and that the treatment reaches as many people as possible, especially in hard-to-reach areas. The clan strategy, in addition to improving the efficiency of treatment distribution, addresses financial challenges by reducing unnecessary costs. This approach significantly contributes to the sustainability of the fight against onchocerciasis, ensuring that treatment can continue

even in the face of reduced funding. As the strategy is further implemented, its effectiveness in reaching the community, alongside improved data management practices, will play a vital role in achieving the ultimate goal of eradicating onchocerciasis.

3.2. Perception of Program Acceptability with the Clan Strategy (Reduction of Refusal and Absence Cases)

The stakeholders interviewed unanimously agreed that the introduction of the clan strategy would significantly reduce cases of refusal, abandonment, and absenteeism. This reduction is attributed to the fact that the DC (Distributors of Clan), now being a member of the family or clan, fosters a higher level of trust among beneficiaries. The clan leader, knowing the activities and whereabouts of every clan member, is in a better position to ensure that all members receive their dose, even for those who might otherwise be absent. As one informant explained: *“This strategy is very effective on this point because the head of the family or clan knows the movements of every member. He knows who is present, who might be absent, and who might join later. If we adopt this strategy permanently, we will no longer face cases of refusal or absenteeism, because the clan leader will explain to the family why it is important for everyone to take the treatment.”* (MMN_EIA_CAS_BMDJOU_01-07-25).

In addition to improving acceptability, the clan strategy also reduces the number of refusals and increases therapeutic and geographical coverage. As informants pointed out, since the DC of clan is now a member of the very families to which they distribute the medicine, refusals are expected to decrease significantly. One informant added: *“We believe that there will be improvements in coverage because in the past, when the DCs distributed in the communities, refusals were rare, but with the clan strategy, since each DC will come from a large family, someone who is known and trusted, we think that this will really reduce refusals”.* (MMN_EIA_CBS_BMDJOU_01-07-25).

In sum, the feedback suggests that the clan strategy not only improves the acceptability of the Mectizan distribution program but also leads to a considerable reduction in cases of refusal, absenteeism, and potentially non-adherence to the annual treatment regimen. The increased trust and accountability within the family unit contribute to greater program success.

3.3. Perception of the Application of the Clan Strategy in Schools and Urban Areas

The clan strategy, with its emphasis on community participation and trust, is seen as a versatile approach that can be applied to other public health activities, particularly in the fight against tropical diseases in the Western Region. In the context of schools, for instance, a classroom could be viewed as a clan, where the teacher, acting as the DC, would ensure that

all students (as members of the clan) receive their medication. This model, adapted to school settings, guarantees that all students are covered by the distribution of Mectizan. However, some reservations were expressed regarding the application of this strategy in urban schools. Informants noted that while the strategy might work seamlessly in rural schools, the urban context presents unique challenges: *"In urban areas, it's really complicated because the context is not the same. But in rural schools, I believe this could work well, as the community structure is more cohesive and easier to manage."* (MMN_EIA_CBS_BMDJOU_01-07-25). These concerns stem from the more complex social dynamics in urban areas, where schools are typically more crowded, diverse, and less tied to a familial or community-based structure. The potential for greater logistical challenges, such as the identification of appropriate DCs and ensuring universal treatment coverage in urban settings, could limit the effectiveness of the clan strategy in these contexts.

The clan strategy represents a promising approach to reducing costs and improving acceptability in the treatment of onchocerciasis through community-based distribution of Mectizan. Its application shows clear potential for minimizing refusals, absenteeism, and improving overall treatment adherence. The strategy leverages the natural trust and cohesion within families and communities, which enhances the acceptance and distribution of the treatment. While it shows strong potential in rural areas, the strategy's application in urban schools or other urban settings requires careful adaptation to address the specific challenges these environments present. Continued engagement with community leaders and adaptation of the approach to different contexts will be key to its long-term success.

3.4. Application of the Clan Strategy in Schools and Urban Areas

The implementation of the clan strategy in schools has shown a significant reduction in cases of refusal, as teachers, especially school directors, are involved in the distribution activities as clan leaders. By leveraging the trust and authority of teachers within their classrooms, the strategy ensures higher compliance with treatment regimens. As noted by one informant, the strategy is more easily implemented in rural schools: *"Teachers in these schools, and especially some of the school directors, are involved in our activities, which reduces the number of refusals."* (MMN_EIA_CBS_BMDJOU_01-07-25). Thus, the application of the clan strategy in schools contributes to lowering refusal rates, as teachers assume the role of clan leaders, thereby fostering better engagement from students and their families.

- **Average Workload of a Clan DC**

With the clan strategy, which stipulates that the DC of Clan only distributes the Mectizan to members of their family or clan, the workload of these distributors is

significantly reduced. Across all the communities surveyed, it was reported that the work of the distributor has indeed been lightened. *"With this clan strategy, I can confidently say that the workload of the DC will be reduced because each clan has its own DC, and since we are in a rural area, an average family has about 5 to 6 people. So if each family sends a DC, you can see that the workload will be greatly reduced compared to the past, when one DC was in charge of treating an entire community."* (MMN_EIA_CBS_BMDJOU_01-07-25). *"With the clan strategy, the workload for the DC this year regarding the distribution of Mectizan has been reduced because the clan leader or household head is also involved."* (BDO_EIA_CA_MWEN_04-07-25). The involvement of the family head or a family member as a distributor significantly reduces the workload. While the clan model is much larger than the family model, the number of people each DC needs to cover is still considerably smaller than in the community-based approach. According to informants, the average number of people covered by a DC of Clan ranges from 20 to 50: *"Here it's much more manageable. A family has more than 20 members, and some even have up to 50 people in a family."* (MMN_EIA_CAS_BMDJOU_01-07-25). From the feedback received, it is clear that, with the clan strategy, which uses DCs of clan or family members, the workload is substantially lighter compared to the community-based model. However, some challenges and obstacles related to the implementation of the strategy have been identified, and several suggestions have been made to address these.

3.5. Suggestions and Contributions from Stakeholders for Optimizing the Implementation of the Clan Strategy and Ensuring the Sustainability of Onchocerciasis Control

Several suggestions have been put forward by stakeholders to optimize the implementation of the clan strategy and ensure the long-term sustainability of efforts to combat onchocerciasis. These suggestions include: Enhancing awareness and information Strengthening communication and sensitization around the clan strategy, ensuring that communities understand its benefits and importance. Encouraging community involvement: Increasing efforts to involve community members and leaders, thereby fostering stronger participation and adherence to the program. Providing more preparation time: Giving more time for proper preparation and mobilization before the launch of distribution activities on the ground. This would help ensure smoother operations and better outcomes.

3.6. RESULTS

The strategy's success can be measured through the treatment coverage of Mectizan across various health districts. This information provides key insights into the effectiveness of the clan-based distribution model and how it impacts the overall efforts to combat onchocerciasis.

Tableau 1: Coverage of Mectizan Treatment in the Bamendjou, Bangourain, and Foubot Health Districts.

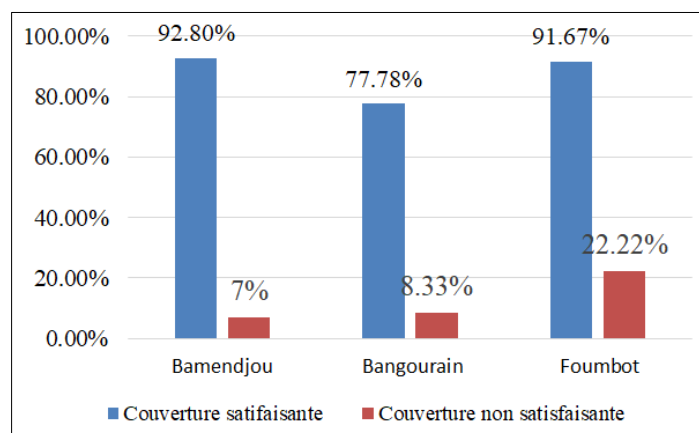
Districts	Pop 2025	Pers Tt 2025	Nbre Dc opérationnels 2025	CT 2025	CG 2025	Pers Tt 2024	Nbre Dc opérationnels 2024	CT 2024	CG 2024
Bafang	117696	97968	250	83,24	100	94840	350	82,54%	100
Baham	60720	50194	250	82,66	100	49224	300	82,66%	100
Bamendjou	49467	41022	200	82,93	100	40695	250	82,62%	100
Bandja	41331	33 874	200	81,96	100	33520	250	82,18%	100
Bandjoun	139119	113976	300	81,93	100	110776	300	81,92%	100
Bangangté	111010	91794	300	82,69	100	91311	400	82,81%	100
Bangourain	51307	42823	300	83,46	100	40831	300	80,75%	100
Batcham	110671	90497	300	81,77	100	90351	300	81,75%	100
Dschang	290219	236196	500	81,39	100	228328	700	81,06%	100
Foumban	262907	218295	500	83,03	100	209879	600	82,13%	100
Foubot	138266	112647	300	81,47	100	109811	600	81,36%	100
Galim	84782	69080	200	81,48	100	69080	300	81,60%	100
Kekem	35855	29664	200	82,73	100	29674	300	82,50%	100
Kouoptamo	86876	70964	300	81,68	100	70056	300	81,57%	100
Malantouen	218525	184187	300	84,29	100	168212	450	82,87%	100
Massangam	30628	24636	300	80,44	100	49347	600	81,05%	100
Mbouda	124221	101486	350	81,70	100	190880	400	81,75%	100
Mifi	430637	350129	500	81,30	100	350129	700	81,75%	100
Penka Michel	138266	112647	250	81,47	100	84588	350	80,56%	100
Santchou	35639	29695	200	83,32	100	30045	250	82,17%	100
Total	2558	2101	6000	82,16	100	2141577	8000	81,88%	100
Région	142	774							

The clan strategy offers a practical and sustainable model for distributing Mectizan in rural communities, with the key benefits of reduced workload for DCs, improved community engagement, and decreased refusal rates. In schools, the involvement of teachers as DCs also shows promise in increasing treatment acceptance. While the strategy is highly effective in rural areas, its application in urban settings may require further adaptation due to the different socio-demographic and logistical challenges. Overall, the success of the strategy hinges on enhancing

communication, ensuring active community involvement, and optimizing logistics to support its implementation.

4. DISCUSSION

The results of the survey on the coverage of the Mectizan treatment in the health districts of Bamendjou, Bangourain, and Foubot confirm the effectiveness of the clan strategy in terms of community involvement and cost reduction for treatment.



The data analysis shows impressive coverage rates, with satisfactory coverage of 77.78% in Bamendjou, 92.8% in Bangourain, and 91.67% in Foubot. These results not only indicate strong

acceptance of the treatment but also reflect the effectiveness of the strategy implemented, particularly in rural areas. Bamendjou and Bangourain, being rural areas, display higher coverage rates, demonstrating that

the clan strategy is particularly effective in communities with stronger social and familial ties, where managing family-based distributors (DC) is easier. Clan leaders, who are often members of these communities, play a key role in reducing the distance between public health interventions and beneficiaries, thus improving access to medicine and increasing trust in the distributors.

In contrast, Foubot, with a larger urban population, shows slightly lower coverage rates. The challenges in these urban areas stem from population diversity and greater mobility, which may lead to lower adherence to the program. This illustrates the unique challenges of applying the clan strategy in large cities, where social homogeneity and community structure are not as strong as in rural settings.

Reduction in Treatment Costs

Another key finding of the survey is the significant reduction in treatment costs per person. In 2024, with a budget of 101,000,000 FCFA, 2,141,577 people were treated, costing about 47 FCFA per person. In 2025, using the clan strategy, a reduced budget of 29,500,000 FCFA treated 2,101,774 people, resulting in a cost of only 14 FCFA per person treated. This cost reduction highlights the economic efficiency of the clan strategy. By involving clan leaders and community members, the distribution process becomes more localized and less expensive. Additionally, involving **community distributors** (DC) reduces travel and organizational expenses, allowing resources to be focused on purchasing medicines and other critical activities. This not only strengthens the program's effectiveness but also enhances its long-term sustainability by minimizing administrative and logistical costs.

The Central Role of Clans in Community Mobilization

Clans play a central role in mobilizing communities, particularly in the implementation of public health interventions. The clan strategy relies on community leaders to raise awareness, distribute medicines, and ensure that every family or clan member receives their treatment. The involvement of clan leaders, who are respected figures within their communities, helps to strengthen the legitimacy and acceptance of the program. Community members tend to trust clan members more than external agents, which reduces resistance and refusals. Therefore, the strategy is particularly suited to the social and cultural realities of rural populations, where family and community ties are at the heart of social structures.

Challenges in Urban Areas

However, while the clan strategy has yielded positive results in rural areas, its implementation in urban areas remains challenging. In these environments, populations are more dispersed, and family ties can be weaker. This complicates the identification of "clans"

and makes the management of medicine distribution more difficult. Moreover, high levels of population movement and frequent migration in urban areas can lead to absenteeism during distribution sessions. To optimize the strategy in urban areas, specific adaptations are needed, such as greater involvement of local institutions, schools, or urban community organizations to ensure equitable therapeutic coverage.

In summary, the clan strategy proves to be an effective model in both terms of health coverage and cost reduction. Its successful implementation in rural areas highlights the importance of strong community structures and interpersonal trust in the success of public health programs. However, adjustments are needed to overcome the obstacles encountered in urban areas, where social dynamics differ. Enhancing awareness, continuing training of community actors, and revising implementation strategies in urban settings are key measures to maximize the strategy's impact and ensure the long-term sustainability of the fight against onchocerciasis.

Against the NTDs in the Western Region of Cameroon: An Anthropological Perspective on the Clan Strategy

Therapeutic coverage for neglected tropical diseases (NTDs) in the Western Region of Cameroon stands at 82.16%, a satisfactory rate as recommended by the World Health Organization (WHO), including the geographical coverage necessary for reaching elimination points. This observation corroborates previous studies highlighting the importance of traditional social networks in the success of community health programs in sub-Saharan Africa [17, 18]. This performance builds upon that of previous years, reflecting continuity in the fight against onchocerciasis without interruption. The study revealed that most participants recognized the active involvement of clan leaders in raising awareness and mobilizing communities during drug distribution campaigns. The reduction in the number of refusals and absences clearly indicates the acceptability of distributors by clan members, as these distributors are familiar with the movements and dynamics of the community. The involvement of the clan leader in selecting the distributor strengthens their commitment to the task, as the work is viewed as a familial responsibility. This is in contrast to the traditional model, where distributors were not necessarily members of the family, and the workload was much heavier. These findings align with those observed in Ghana and Uganda, where the support of traditional authorities significantly improved the coverage and regularity of mass treatments for onchocerciasis and schistosomiasis [19, 20]. In Cameroon, Fokunang and Ndumbe [21], also showed that integrating traditional leaders into NTD control strategies enhances trust between health service providers and communities, especially in areas where modern medicine is perceived as distant, particularly in a context of drastic cuts in

international funding. This study confirms that clans serve as legitimate authority intermediaries, capable of conveying health messages in a culturally acceptable manner. Their involvement not only facilitates the dissemination of information but also helps legitimize biomedical interventions, a key factor for the sustainability of health programs. According to Rifkin's theory of community participation [22], the success of health programs depends on the perceived local ownership and legitimacy of actors. The results obtained support this approach, demonstrating that participation is strengthened when interventions align with local values and practices. In just under two weeks, distribution was completed in health areas. However, the lack of formalization in the partnership between traditional structures and the health system emerged as a major constraint. Although the data collection tools were not originally designed for this strategy, health area leaders adapted community treatment registers into clan treatment registers. This difficulty also extended to data entry into DHIS2 (District Health Information System 2). This study corroborates earlier findings that national programs currently rely primarily on community health workers (CHWs), with no operational framework for traditional leaders [23]. Organizing the clan strategy is easier in rural areas than in urban ones. Current studies do not specify the number of years needed for mass drug distribution to achieve elimination points. Research conducted by Sightsavers on alternative strategies for onchocerciasis control in the hot spots of the Massangam health district aimed at accelerating its elimination as a public health issue. This dual uncertainty—regarding both the effective duration of mass drug distribution for halting onchocerciasis transmission and the availability of funding—remains a challenge. These findings confirm the conclusions of Tchindjang *et al.*, who highlighted a communication gap between health teams and rural communities in NTD control programs in Cameroon. This underscores the need for strengthening the communication skills of clan leaders so that they can play a sustainable educational role [24]. This situation limits the coherence of interventions and the institutional recognition of the contribution of clans. Moreover, some cultural beliefs persist, particularly the spiritual perception of NTDs as ancestral punishment, which further complicates the acceptance of health interventions. This observation was also noted by several other authors, underscoring the importance of cultural sensitivity and the need to address local beliefs to improve the effectiveness of health programs in rural and traditional communities. The role of traditional authorities and clan leaders in Cameroon's fight against NTDs highlights the centrality of integrating local structures into national health programs. The clan strategy proves to be an effective tool for improving both community participation and therapeutic coverage, particularly in rural areas. However, for broader application, especially in urban settings, further adaptations are needed to account for the distinct socio-cultural dynamics of these areas. Strengthening

partnerships between traditional and formal health systems, enhancing the communication skills of community leaders, and addressing cultural barriers will be essential for achieving sustainable and effective NTD control in Cameroon and similar contexts in sub-Saharan Africa. Ahorlu *et al.*, [25] in Ghana highlights the need for an intercultural approach to public health, combining biomedical and symbolic references to overcome behavioral resistance. The integration of clan strategies in the fight against NTDs aligns with the recommendations of the WHO's Global Strategic Plan 2021–2030, which advocates for a community-centered approach and local systems [26]. In the Western Region of Cameroon, these structures represent an underutilized community lever that could be harnessed to: improve campaign targeting and post-treatment surveillance; enhance interpersonal communication between health staff and populations; and promote local acceptability and sustainability of preventive behaviors. Finally, this article paves the way for a participatory integration model, where traditional leadership and clans are not only intermediaries but institutional partners in local health governance. The limitations of this study are primarily related to its cross-sectional nature, which does not allow for establishing a direct causal relationship between clan participation and the reduction of NTD prevalence. However, the methodological triangulation (quantitative and qualitative) helped minimize these biases, providing a rich, contextualized understanding of the observed phenomena.

5. CONCLUSION

This article highlights the crucial role that clan structures can play in the fight against neglected tropical diseases (NTDs) in the Western Region of Cameroon. The findings show that clans are effective vectors for social mobilization, dissemination of prevention messages, and community surveillance. Their cultural legitimacy, social proximity, and cohesion represent key assets to complement traditional biomedical approaches, including: empowering clans in managing health issues, reducing the duration of mass drug distribution, improving treatment adherence, reducing refusals and absences during distribution, and decreasing the motivational burden on distributors. However, their potential remains underutilized due to the lack of a formal collaboration framework between traditional structures and the health system. In other words, while the clan strategy presents several benefits, it also faces challenges in urban areas due to the misconfiguration of clans, requiring thorough preparation for implementation and the adaptation of data collection tools to ensure that DHIS2 effectively reports data by clan. In a context of reduced funding, the clan strategy offers a way to continue mass distribution efforts to reach elimination points as a public health issue. A gradual institutional integration of clans, accompanied by capacity building in communication and health leadership, is essential for achieving the WHO's NTD elimination goals by 2030 [27]. Thus, the fight against NTDs would benefit from

adopting a "localized" approach—globally guided by public health policies but locally rooted in the social and cultural dynamics of communities. For the Western Region of Cameroon, the "clan strategy" offers a relevant alternative or complement in the march towards NTD elimination, particularly in a context of reduced funding.

Feedback, Observations, and Recommendations from Participants on the Clan Strategy Functionality

The concept of "clan" still needs further development through awareness-raising efforts. However, the population accepts the medicine and appreciates the so-called "clan strategy." Within the clans, several members are in favor of managing the distribution within their clan/family.

It is important to note that the communities in the Bamendjou Health District are organized by village and family. Within these families, at least one distributor is present. Given the sometimes large size of villages, it is recommended to recruit additional clan distributors to reinforce the distribution efforts.

For those few individuals who did not receive the medication, two main reasons are often cited: movement during the distribution period and the situation of pregnant women. Apart from some refusals due to fear of the medication, very few people refuse to take Mectizan.

Although some interviewees are unaware of the reasons for taking Mectizan, it is important to mention

that the medication is widely known, and people attribute its ability to treat all bodily ailments they regularly face.

The initiative was well-received and shared within families, which have derived real benefits from it. Furthermore, the implementation of the new "clan" approach was highly appreciated, as it fosters better cohesion and an equitable distribution of benefits.

The community accepted the Mectizan treatment and recognizes that the dosage, expressed in the number of tablets, is determined based on each individual's size, ensuring that the treatment is administered in a safe and appropriate manner.

Awareness-raising efforts were effective, and the distribution of Mectizan occurred under good conditions. The community embraced the approach and appreciated the process of care. There was a high level of acceptance for the Mectizan treatment, and the community appreciated the new "clan" approach.

In general, the "clan strategy" appears to be a successful alternative in the context of reduced funding for the fight against NTDs. With financial support from the CBCHS partner for the distribution of ivermectin against Onchocerciasis in the 20 health districts of the Western Region, a total of 2,101,774 people were treated with ivermectin in 6,234 clans across the region in 2025, achieving a therapeutic coverage rate of 82.16%. This coverage is deemed sufficient for the hope of reaching the elimination point of Onchocerciasis as a public health issue. However, this strategy is not without its constraints.

SWOT Matrix for the Clan Strategy

Strengths	Weaknesses	Opportunities	Threats
- Reduces distribution costs - Reduces workload for clan distributors (DCs) - High community adhesion - Reduction in refusals and dropouts - Ensures the sustainability of the fight against onchocerciasis and intestinal worms	- Poor preparation of activities - Limited preparation time - Lack of community evaluation meetings - Strengthened NTD control efforts - Poor organization of clans in urban areas	- Financial support from the CBCHS partner - Community ownership - Sustainability of the fight against NTDs	- Poor understanding of the strategy in urban areas - Implementation during school holidays - Delays in fund allocation

This SWOT analysis reflects the strengths of the clan strategy in terms of cost reduction, improved community engagement, and greater sustainability in the fight against NTDs. However, it also highlights weaknesses related to preparation, urban implementation challenges, and potential delays in funding, which could threaten its effectiveness. Nonetheless, the strategy provides significant opportunities for deeper community integration and long-term success in achieving NTD elimination goals, especially in rural contexts.

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Cite This Article: Nkouongnam Inoussa, Epée Emilienne, Mbapa Minkat Théophile, Nko'o Ayissi, Tchachoua Kamleu Patrick, Awa Jacques Chirac, Tamon James, Nsangou Moustapha Mohamed (2025). Clan Strategies: A Relevant Alternative for the Fight against Neglected Tropical Diseases in the Western Region of Cameroon. *East African Scholars J Edu Humanit Lit*, 8(11), 609-624.
