DREF Operation Final Report

Sudan / Gedaref: Kalazar cases increase

International Federation of Red Cross and Red Crescent Societies

DREF Operation	**Operation n° MDRSD031**
Date of Issue: 07 March 2022	**Glide number: EP-2022-000177-SDN**
Operation start date: 07 March 2022	**Operation end date: 30 June 2022**
Host National Society: Sudan Red Crescent Society	**Operation budget: CHF 46,609**
Number of people affected: 495,680 (82,613 HH)	**Number of people assisted: 118,963 (19,827 HH)**
Red Cross Red Crescent Movement partners currently actively involved in the operation: IFRC and Netherlands Red Cross	
Other partner organizations actively involved in the operation: None	

The major donors and partners of the Disaster Relief Emergency Fund (DREF) include the Red Cross Societies and governments of Belgium, Britain, Canada, Denmark, Germany, Ireland, Italy, Japan, Luxembourg, New Zealand, Norway, Republic of Korea, Spain, Sweden and Switzerland, as well as DG ECHO and Blizzard Entertainment, Mondelez International Foundation, Fortive Corporation and other corporate and private donors. On behalf of the Sudanese Red Crescent Society (SRCS), the IFRC would like to extend gratitude to all for their generous contributions.

A. SITUATION ANALYSIS

Description of the disaster

On the 12 of February 2022, Gedaref State Ministry of Health (SMoH) released a press statement indicating a spike in the case of Visceral Leishmaniasis (VL). The report showed that there was 46% (2002) and 8% (34) cases and mortality increase in 2021 when compared to 2020. The month of January 2022 had registered unusually high cases and death compared to the previous 3 years at the same period. Sudan Federal Ministry of Health (FMoH) epidemiological 2022 surveillance data indicates that 80% of the burden of Visceral leishmaniasis (VL) also known as Kala-azar in the country originate from Gedaref state. The state has an estimated population of 2 million and contributes more than 3,000 cases annually to the 500,000 country's burden of VL. The 245 endemic villages are in the localities of Quraysha, Eastern Al-Qalabat, Al-Fasha, Basunda, Western Al-Qalabat, Almafaza and more recently, Alnahal has started to report cases.

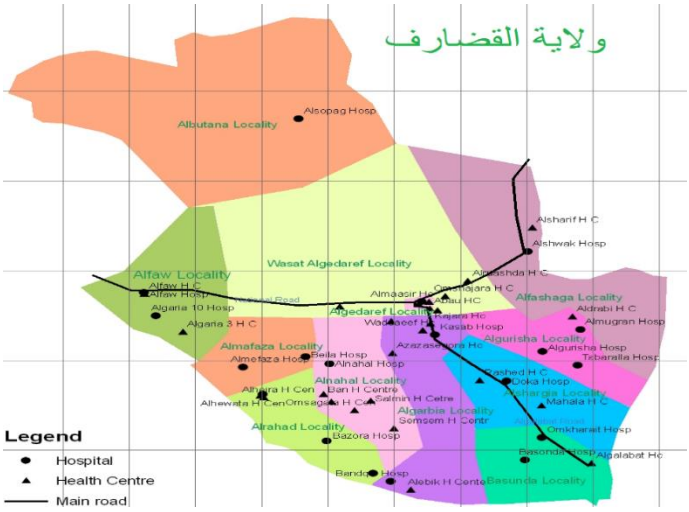

Figure 1 Map of Gedaref – Courtesy of SMOH 2022

VL is commonly classified as a neglected tropical disease with a public health challenge in the country and in danger of being deprioritized. Sudan falls within the Eastern Africa countries of Kenya, Somalia, South Sudan that contribute 57% of the WHO estimated global new cases between 50,000 to 90,000 annually (Makau-Barasa et al 2022). The Disaster Relief Emergency Fund (DREF) provided means that supported in-depth assessment and selected community-based actions to contribute to awareness and health promotion alongside the State Ministry of Health (SMoH). The outcomes of this DREF operation and the assessment information details in this final report and the update 1 aimed to inform humanitarian response in Gederef state for VL disease.

Summary of response

Overview of Host National Society

SRCS has responded to this VL case increase by complementing governmental action plans and fulfilling its auxiliary function. SRCS has a well-established working relationship with public authorities at federal, state, and local levels, good partnership, and collaboration with RCRC movement partners, UN agencies, and national and international NGOs working in the state. Following the press release by the Gedaref SMOH, SRCS local coordinators were mobilized with support from IFRC public health delegate. In total 140 volunteers were selected and briefed to be part of the intervention. In addition, 70 (Male 27: Female 43) volunteers were trained on Community-Based Health and First aid (CBHFA) module 1. SRCS, both at the head office and states, has significant experience in operating in the context of epidemic control and responses. Specifically, SRCS has strong capacities in community outreaches, vector control, floods, population movement, first aid, and primary health care among others.

At the end of the implementation timeframe, activities implemented were as follows:

- 7 SRCS volunteers were trained on community entry points and Community-based health and first aid (CBFA)- module one.
- 140 volunteers were mobilized and briefed although only 70 were engaged as the workload wasn't as envisaged.
- Conducted assessment to understand details under the provided leishmaniasis data and clarify Kalazar data number including clear identification of treatment centers, drug supply, treatment compliance, and partner roles (assessment report is annexed).
- At least 250,000 people were reached with community health promotion activities through tailored messages including home visits, radio, and IEC materials, where key barriers VL eliminations were addressed. 3,000 IEC material (leaflets) and 4,000 posters were printed for sensitization.
- Participated and supported state coordination meetings and forums - Developed and Distributed IEC materials including posters for an awareness campaign.
- Procurement of 8 megaphones for volunteer sensitization support.
- Collective informative sessions were conducted among the communities through Training of teachers and students in schools, and Focus Group discussions.
- Organized the lesson learned workshop in Gedaref

Overview of Red Cross Red Crescent Movement in country

The International Federation of Red Cross and Red Crescent Societies (IFRC) supports SRCS through the Sudan and Eritrea Country Cluster Delegation, based in Khartoum. IFRC Cluster Delegation consists of the head of delegation, national society development and public health delegates, operations manager, finance controller, finance officer and a driver. The International Committee of the Red Cross (ICRC) has presence in Sudan and in Eastern Sudan, there is a delegation in Kassala state and an upcoming office at Gedaref. In Gedaref, ICRC supports capacity strengthening of Primary Health Care (PHC) and restoring family links among the Ethiopian refugees.

Other movement partners in the country include Danish Red Cross (RC), German RC, Turkish RC, Netherlands RC, Spanish RC, Swedish RC and Swiss RC. Danish RC supports Mental Health and

Psychosocial Support (MPHSS) in the state among the Ethiopian refugees while Netherlands RC who support WASH intervention in the camps, contribute to volunteer incentives in the VL operations.
In the country, the movement partners meet once every two weeks to discuss and coordinate emergency response and preparedness actions. The meeting is chaired by the SRCS head of Disaster Management, and all in-country RCRC movement partners are participants. Additional meetings for urgent updates are planned ad hoc with the involved partners.

Overview of non-RCRC actors in country

WHO routinely supplies insecticide and fogging equipment to the SMoH. Drug for Neglected Diseases initiative (DNDi) founded by MSF, WHO with other five international research institutions donate drugs. The Integrated Vector Management (IVM) department leads the eradication interventions that includes testing and treatment centers, vector surveys and control activities and health education. There are 13 testing and treatment centers in the state.
Additional information on the summary of the response can be found in Operations Update 1.

Needs analysis and scenario planning

SRCS conducted a detailed assessment in Gedaref with an objective of providing a justification for the DREF with indication of increased caseload in the same period over the previous years. The assessment was also useful in informing interventions priorities based on ongoing SMoH activities, assessing prevailing level of VL prevention knowledge and awareness, and gathering information on practices among the affected population.

Methodology:

Both qualitative and quantitative methodologies were utilized in the assessment.

- **The literature review** provided an overview of studies conducted in the VL geographical locations that allowed for a comprehensive context understanding.
- **A retrospective data review** supported the analysis of routine data collected as part of health information system. Information was gathered from persons with relevant knowledge and insight through **key Informant Interviews (KII),** allowing a better understanding of factors fostering VL in the region**.**
- **Focus Group Discussions (FGD) and community consultation** with women, youth and men in the communities uncovered gaps in awareness initiatives. Transect walks in the villages observing the terrain, vegetations and housing was informed by the literature review that human habitation was a key driver of the disease.

Main Conclusions:

Using this chronology methodology above, summary of key assessment findings has been identified as shown below:

i. Gedaref State is the main endemic area of VL in Sudan with literature review indicating that up to an incidence rate of 75 cases per 10,000 persons per year. The state contributes between 2,000 to 7,000 cases annually to the global annual caseload estimates of 500,000 cases and 51,000 deaths.

ii. The **retrospective data** shows

- A disease average burden of more than 3000 cases monthly, an incidence rate of 34/10,000 over the endemic localities and 15/10,000 over the state population. The average case fatality rate for the period 2000 to 2022 is 3%. Those aged between 5 and 14 are more affected compared to all other age segments.
- The months of November, December, and January are observed peak month of VL cases. Acacia and Heglig trees, cracks in the house walls and ground provide habitation for Sand fly.
- The main testing and treatment sites are Professor Mohamed Alhasan hospital Dooka, Bandigaw, Alnahal, Alhawata, Tabarkallah, Basunda, Um alkhir, Almogran, Kassab, Bazoora, Obstetrical, pediatric, and Gadarif hospitals.
- The first line treatment is Sodium Stibogluconate (SSG) + paromomycin 750 with Ambisome (Amphotericin B) being the second line.

- The main preventive interventions include distribution of treated nets, environmental spaying and health education and promotion. Some of reasons why people are not implementing Kala Azar protocols include low uptake of behavior changes initiatives.

iii. **key Informant Interviews (KII)** establishes that the State Ministry of Health is competently in charge of all the interventions ranging from treatment, prevention, and collaboration with partners.

iv. **FGD and community-based observation/evidence** revealed that there is awareness about VL though misconceptions still exist. Cultural approaches have a sway on attitudes and believes regarding VL that affect practices.

Strengthening the surveillance system especially amongst displaced populations is recommended as the current sentinel sites are considered passive detection. External support, particularly from humanitarian agencies and non-relief organizations, would boost the government efforts and innovative research such as, scientific disease modeling can provide an explicit framework for understanding VL transmissibility dynamics and potential case increase or outbreaks.

- Acacia and Heglig trees, cracked house walls, and ground soil provide habitation for Sandflies.

The ecology and epidemiology of the vector-borne parasitic disease is crucial, environmental factors such as housing, climate and habitation are important key drivers of spread.

The black cotton soil described as hygroscopic shrinks and cracks during summer seasons when it loses water and becomes very sticky mud during rainy sessions. The cracks essentially create microhabitats for Sand-fly breeding place.

Figure 1: Cracked ground in village SRCS 2022

Local ecological knowledge revealed that Laloub or Heglig (Balanites aegyptiaca) tree is drought resistant, and it is ever green tree with deep vertical barks fissures that attract numerous insects. The tree produces a bitter-sweet edible pulp fruit when fresh or dried. Different parts of the tree are used as traditional medicine. Wood from the tree is durable and most preferred for furniture.

Figure 3- Heglig tree (Balanites aegyptiaca) - SRCS 2022

The Acacia tree – (*Acacia seya)* – Taleh tree has greenish yellow to reddish-brown bark characterized by spines or thorns. The tree is an important source of building poles, gums, fuel wood and charcoal and tannins. The tree is said to provide an ideal dwelling place from the high temperatures and direct sunlight.

The traditionally constructed house has a round structure with a peaked roof. The walls are plastered with mud made of soil and water. When the mud dries, it cracks up providing ideal habitat for the sandfly breeding.

Surveys and collected data showed that villages with high incidence are clustered along two rivers and Atbarah and Rahad). The river basin has forest of Acacia trees and typical low altitude.

Figure 4 - Acacia tree - (Acacia seya) – Taleh - SRCS 2022

Key Informant Interviews among the health facilities head, IVM at the SMOH and Health executives at the locality clearly showed a sustainable framework of surveillance, treatment, vector control and research. However, financial and logistics constraints encumber the service delivery.

Community Engagement and Accountability approach particularly through focused group discussions among the affected communities mainly the youth, women, religious and community leaders enabled improving the hygiene promotion strategy.

Main Analysis:

The literature reviews

Gedaref State is the main endemic area of VL in in Sudan particular southern part with up to an incidence rate of 75 cases per 10,000 persons per year (Mueller et al 2018). A retrospective descriptive study (Gama et al. 2016) that investigated VL in Eastern Sudan showed 51,773 cumulative cases with, 3.3% case fatality rate. Sudan contributes between 2,000 to 7,000 cases annually to the global burden (WHO 2016). Kala Azar formally joined the list of neglected tropical disease (NTD) in 2015 due to reduced public funding, high mortality and endemicity among the poor. The 2021 – 2030 goal of the World Health Organization (WHO) is to reduce VL mortality to less than 1%.

Studies (Hammam Hicks 2021 and Nackers et al. 2015) indicate that the risk of VL increase during evening outdoor activities such as listening to radio or watching TV, working proximity to Acacia and Heglig trees or forests especially during heavy Sand fly density period. In addition, cracks in the walls and ground are identified as important risk factors. The sandflies prefer to reside in dark places due to intolerance to the high temperatures and sunlight (Marleen and Shyam 2014).

The SMOH and affected communities routinely utilized key strategies of intervention are diagnosis and treatment, vector control, surveillance, social mobilization and working with stakeholders. The assessment report attached to this report provides additional information for comprehensives view.

Retrospective data until June 2022

The SMOH has a strong surveillance system for detection and monitoring of the disease trends. The data routinely collected from health facility-based sentinel site surveillance system is complete and accurate as it is based on rK39 antigen-based rapid test for clinically suspected cases. Bone marrow aspirate microscopic examination test is used as a complementary test.

The retrospective data collection and analysis is based on reports received at SMOH from the sentinel sites. These sites are 1) Bandigaw, 2) Alnahal, 3) Alhawata, 4) Tabarkallah, 5) Doka, 6) Basunda, 7) Um alkhir, 8) Almogran, 9) Kassab, 10) Bazora, 11) Obstetrical hospital, 12) Peadiatric hospital, and 13) Gadaref hospital. Records that included data on the new cases, relapse, or post Kala azar dermal leishmaniasis, age, and treatment outcomes. For the purpose and objective of the report, focus is only on cases, incidence, and mortality. At the time of the visit, qualified staff were in place and during the interviews, it was observed that the staff had very good understanding of their roles. Although on incidence of diminishing stock of drugs and test kits, the SMOH had adequate stocks.

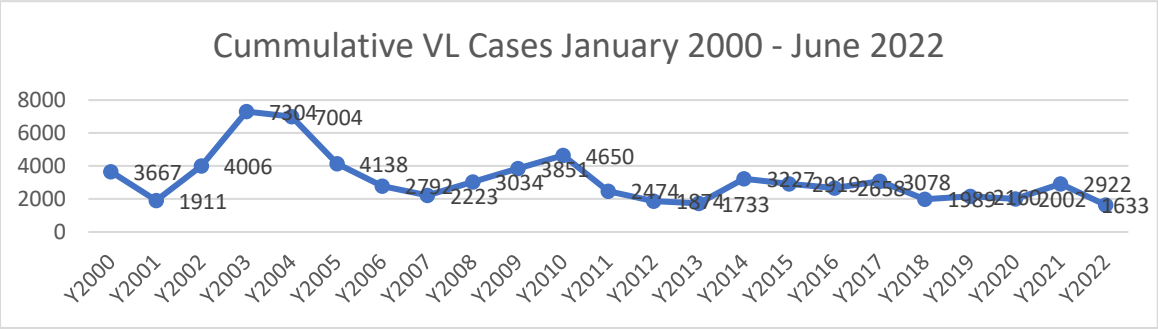

Figure 2 Cumulative VL cases during periods January 2000 to 2022

- The figures in the graph point to confirmation of actual cases and trends over time as gathered during the assessment.
- The spike in cases in 2003 and 2004 correlates with support MSF was providing which attracted patients from Sinnar state which shares a border with Gedaref.
- Between 2000 to June 2022, Gedaref state contributed an average of 3,255 of the annual VL cases countrywide.

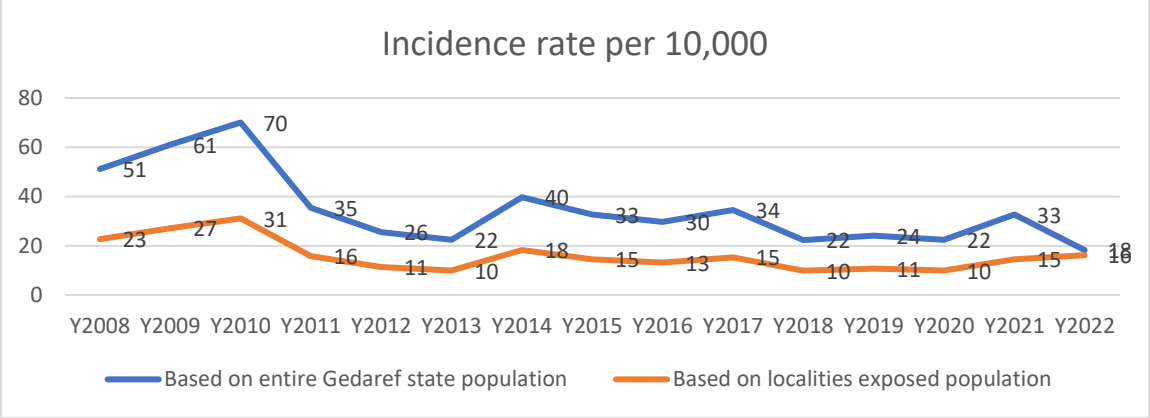

Figure 3 Incidence rate per 10,000 during periods January 2008 to June 2022

- The curve indicates significant progress towards declining VL incidence over years. These efforts can be attributed to focused vector control to reduce transmission and a sustained surveillance.
- With the exception of 2010, 2014, 2017 and 2021 when there were spikes in incidences, the curve indicates a general flattening trend.

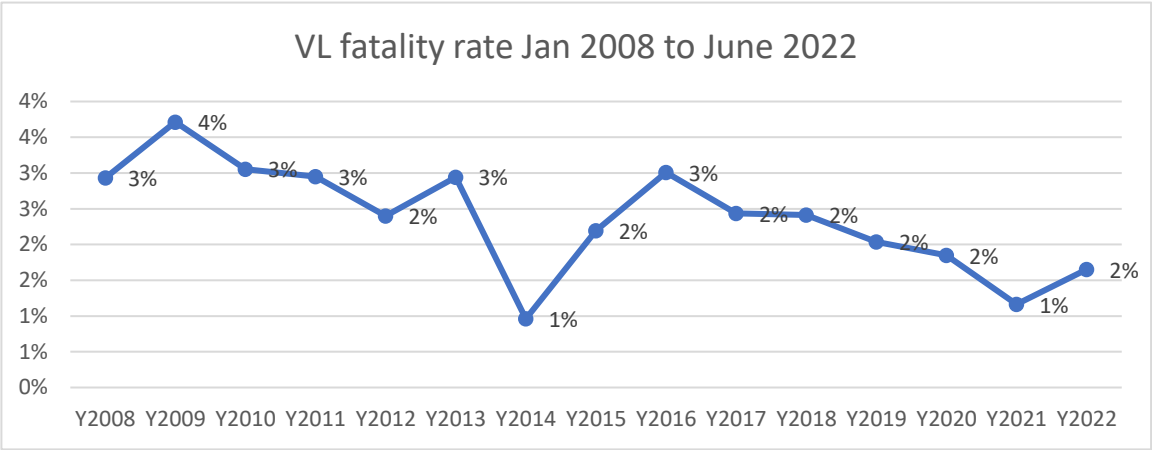

Figure 4 VL fatality rate Jan 2008 to June 2022

- As noted on the incidence rate reduction, there is sustained decrease in fatality rate over a considerable period. This is probably due to access to diagnosis and treatment and most importantly, the availability of second line treatment.
- The average fatality rate for the period 2000 to 2022 is 3%.
- No explanation has been established on the drop in the average CFR in 2014.
- The WHO 2021–2030 Neglected Tropical Diseases Road map goal aims to reduce death caused by the disease to less than 1%.
- Fatality rate may indicate quality of care or state of health care, although other co-infection may be associated, and patients may commerce treatment when it's too late

Key informant

- To gain the insight on the strengths and challenges related to the VL intervention strengths and challenges, key informant interviews were conducted to gather information through experiences and opinions. Participants were purposefully selected from locality health executives, head of health facilities and department of IVCM. These individuals have VL context specific knowledge, access to data and information about the community. The initial contact was established through IVC office and information delivered through locality SRCS coordinators. The interview questions used were developed in relation to the operation objective. The aggregated and summarized report below is extrapolated from the interviews conducted.

- Sudan has three levels of government namely federal, state and localities. The Locality (district) level is where most health promotional and operational activities take place. Locality heads of health are mainly responsible for primary health care, health promotion, community engagement and Water and sanitation through the Primary Health Care (PHC) strategy. Localities form the geographical units that make up the SMOH. Questions asked for the health executives (HE) were categorized into six themes namely, availability of testing and treatment, preventions, interventions, challenges, and gaps. The findings are as below.

Locality health executives KII

Questions	Response
Availability of testing and treatment	→ Testing and treatment centers are Professor Mohamed Alhasan hospital Dooka, Bandigaw, Alnahal, Alhawata, Tabarkallah, Basunda, Um alkhir, Almogran, Kassab, Bazoora, Obstetrical, Pediatric, and Gadaref hospitals.
What are the key prevention and control measure of Sandflies	→ There are no vaccines or drugs to prevent infection → The use of insecticide treated mosquito net when sleeping can protect from sandfly bites → Spraying environment, houses with recommended insecticide can reduce the number of Sandflies
What key interventions are implemented to prevent and control Sandflies	→ The SMOH has been distributing one insecticide treated net for every two persons once every year. Pregnant women who attend Antenatal clinics and children at routine vaccination points receive nets also. However, in the recent years, distribution has been erratic and insufficient to cover all the villages. → The SMOH has supported biannual spraying of internal and external house walls and outer surfaces and bushes that have potential to shelter Sandflies. → Unfortunately, the same insecticide used for agriculture are the same used during spraying campaigns. The fear is that this may contribute to insecticide resistance. → Health education has always accompanied the vector spraying and mosquito net distribution. However, these days, there are no health promotion activity specific for Kala-Azar
Challenges/Barriers	→ There is a serious lack of long-term sustainability of interventions due to budgetary limitation to impact on uptake of recommended behavior change → Large number of people in the affected villages are poor economically with inability to construct better houses.
What are the gaps and way forward?	→ Sandfly is part of the ecosystem and therefore, community is being encouraged to plant more Neem trees

Health Facilities heads KII

Questions	Answers
Kala azar tests and drugs supplies	→ Rapid diagnostic tests (RDT) rK39 and treatment drug are supplied by SMOH as well as laboratory reagents
Availability of tests	→ Rapid diagnostic tests (RDT) rK39 → Bone marrow aspirates smear slides microscopic examination
Availability of treatment	→ The first line treatment is by sodium stibogluconate (SSG) + paromomycin 750 → The second line treatment is Ambisome (Amphotericin B) → Incidence of stocks of amphotericin B stock outs are reported
Partnerships and collaboration	→ Drugs supply with support of Neglected Diseases *initiative* (DND*i*), a not-for-profit product development partnership working in research and develop of new and improved treatments for neglected disease. → World Health Organization supports with spraying and fogging equipment for vector control campaigns.

	→ ICRC supports Dook and Kassab hospitals with essential/basic PHC drug
Key Achievement	→ Our cure rates are very high with low cases of relapses
What has been the four main challenges?	→ There are times when we run sort drugs → There are no good latrines and waiting areas in the facilities supporting treatment → Most patients are very poor. Not able to afford or purchase food → Rehabilitation waiting area for patient and co-patient

KII with Head of Integrated Vector Management department

Questions	Response
Kala Azar elimination operational guidelines	→ Having the department of integrated vector management ensures efficacy and effectiveness, holistic approach, seeks and improves collaboration, mobilization and advocacy → Residual spraying twice a year with vector density surveys → Health education through radio and IEC materials → Dedicated phone line for community reporting → Supporting testing and treatment centers → Distribution of mosquito nets annually
Annual budgetary allocation to Kala Azar elimination	→ An annual budget of Sudanese Pounds 100,000,000 is required. However, the FMOH usually disperse just a fraction. For example, this year, not all the money was provided
Main challenges	→ Kala azar is part of our ecosystem → Most nets are for Malaria and not Sandflies → Low update of behaviour change – Takes long → Most children have low immunity → Children sleep on low bed close to the floor – Exposing them to the sand fly bites
Key partners in the Kala Azar interventions	→ Ongoing partnership with the university of Khartoum project, but there is need to improve collaboration with SMOH → Previously, only MSF worked on case management. → World Health Organization donates drugs, tests, fogging equipment and insecticides → Currently with support from SRCS plus volunteers who are now helping in spraying and health promotion in the villages and media (Radio)
Any other observation by the IVM department	→ Period of infection is from December peaking in March → Transmission is low during rainy season (July, August, September) → Again, transition from Oct/Nov/Dec peaking in March → There is ongoing research at Dook, there is no information about vaccines

Focus Group Discussion

Following the reported VL cases increase, planned assessment and in aligning intervention to the needs of the community, exploration of knowledge, attitudes and perceptions were crucial in crafting and improving existing methodologies of health seeking behavior and control activities. Purposively selected participants in 7 affected localities and Tunaydab refugee camp. With a team of four facilitators trained and briefed on interview methodology and notes taking, discussions were among males, youth, women, community, and religious leaders of between 12 and 15 persons. The IFRC public health delegate provided supervision during the exercise.

Questions	Response
What is Kala Azar> What are the local names for Kala Azar	Diverse responses but key ones – Kala azar disease is recognized by fever, inability to eat. Locally the disease is referred to Marad Sayeed as well as Tohal (Adnominal swelling)

How do people get infected with Kala Azar? What causes Kala Azar	Anyone can get Kala Azar. As well, some participants did mention that persons from Alsaid areas (Localities identified are endemic) usually get infected. Houseflies, mosquito, Sandfly, Mice were also mentioned to infect humans with Kala Azar
What is the treatment for Kala Aza	People are generally aware of Kala azar treatment availability at government health facilities. However, voices of some participants indicated uvulectomy, boiling roots and drinking leaves from Garad and mango trees. Treatment centres of Tabarkallah , Gadarif , Kasab , Galalnahal , Um kuraa , Um alkeer , Alfaw , Bazora , Banigiow , Alfashaga , white Nile , Basonda , Doka were frequently mentioned
Attitudes and believes	
What are the believes about Kala-azar	Although it was clear from the discussion that health facility-based treatment (injections) was available at no cost, there were beliefs that in some instance, traditional treatment is attempted before referring the patients to the doctors
What kind of people, Families or communities get Kala Azar	All persons were at risk of contracting but those suffering from Kala Azar are always from poor background.
Practices	
What challenges are faced to reach to the treatment centers	Although treatment for Kala Azar is free, the cost for transport, roads cut off by heavy rains were expenses that posed challenges to seeking health facility care.
What are the prevention measures against Kala Azar	Participants were aware of government insecticide spraying against Sandfly and use of mosquito nets when sleeping. However, general cleanliness of the house and environment, cutting of trees that hide Sandflies and use of smoke as repellent were mentioned

More details about needs analysis and scenario planning can be found in the published EPoA and Operations Update 1.

B. OPERATIONAL STRATEGY

The overall objective

The priority for the DREF operation was to support SRCS and Gedaref State ministry of Health in Limiting and prevent escalation of cases and mortality due to Leishmaniasis, especially Kala-Azar by ensuring a proper understanding of the disease (situation, factors with relevant data collection and analysis, a community mobilization and awareness complemented the already SMOH ongoing vector spraying campaigns to 24% of the most vulnerable population in Gedaref and border localities for 3 months (118,963 people,19,827 HH).

The implementation Strategy

DREF design was mainly for assessment and provide an initial support to the prevention actions even if the SMOH appeal was towards environmental spraying, sourcing of relevant IEC materials, and general RCCE. Therefore, with the assessment environmental conclusion, a flexible approach was adopted to allow SRCS volunteers to participate in the spraying activities in support of MoH; community evolvement on localized and community-based solutions in vector control and disease prevention considering the endemic characteristic of VL in Eastern Sudan.

Assessment

The operation main focus ends up being t*he assessment*, *important as* the data provided by the rapid secondary data analysis in the operation update shows the situation was not an emergency state but more an endemic outbreak in the area with incubation period typically ranges from weeks to months *in* a passive surveillance, may not have capacity for real time warning for appropriate response. No relevant analysis which could justify a scale-up of the ongoing response but need for more information and understanding of trends, factors, gaps of the response and way to improve the response to VL.

Community mobilization and awareness

During the vector management through indoor residual spraying, 7 SRCS volunteers were trained on community entry points and Community-based health and first aid (CBHFA)-module one. Following feedback obtained from the FGD, Information, Education and Communication (IEC) materials were tailored for effective communication. Besides message through the FM radio, messages of early care-seeking behaviour were emphasised through various channel details in section C, and a dedicated phone bought to reach out to the department of IVM (0115555555).

Figure 5 - Local house - SRCS 2022

Indoor residual spraying

Indoor residual spraying (IRIS) was incorporated as stated in the EPOA where emphasis was placed on use of WHO/MoH response plan and response guidelines would be applied as standards or benchmarks.

Planting of tree seedlings

Communities are increasingly being encouraged to plant Azadirachta *indica* - A. Juss, commonly known as the Neem, which is considered to be medicinal and perceived locally to repel insects and provides a better shade for human resting. A total of 2,600 trees were transported and planted in the affected communities as part of the Pan African Tree Planting and caring initiative under the IFRC and African agenda for renewal.

Figure 6 - Tree planting by Governor - Gedaref state

C. DETAILED OPERATIONAL PLAN

Health

People reached:250,000
Male: 122,500
Female: 127,500

Outcome 1: The immediate risks to the health of affected populations are reduced

Indicators:	Target	Actual
# of people reach with preventive messages on Kala-Azar (118,963 people (19,827 HH)	118,963	250,000
#of assessment conducted (01)	1	1
#of FGD conducted to document the operation and inform the strategy (minimum 10)	10	16

Output 1.1: The health situation and immediate risks are assessed using agreed guidelines

Indicators:	Target	Actual
# of volunteers/technical staff briefed on assessment process (30)	30	30
# of assessment conducted on Leishmaniasis and Kal-Azar health issue (01)	1	1
#of assessment report (01)	1	1

Outcome 4: Transmission of diseases of epidemic potential is reduced		
Indicators:	**Target**	**Actual**
#of people reached with health promotion (118,963 people (19,827 HH))	118,963 people	250,000
Output 4.1: Community-based disease control and health promotion is provided to the target population		
Indicators:	**Target**	**Actual**
#of cases refer/identified in communities (1%)	1%	0%
#of CBS surveillance system in place (01)	1	0
# Training on CBHFA conducted (01) – Module one	1	1
Health Output 4.6: **Improved knowledge about public health issues among GEDAREF and around population**		
Indicators:	**Target**	**Actual**
# of CBHFA volunteers identified and activated for emergency response (140)	140	140
#IEC material printed (1000) – Leaflets	1000	3000
# of posters printed for sensitization (500)	500	4000

Narrative description of achievements

Assessment

The assessment indicated a significant decrease of VL cases over years. However, the cases in January 2022 that triggered the call for assistance were indeed a significant increase compared to the same period in the last two years although not on an outbreak level. Since the assessment, the decision to limit the DREF operation to the provided funding was made. The program period was extended to make sure activities were exhaustively completed. The assessment report is attached to this report.

Figure 5: Interview at Kassab hospital SRCS 2022

Preventive messages

The DREF aimed to contribute to the SMOH efforts of reaching out to the populations for appropriate behavior change through getting the right and correct knowledge. The government Integrated Vector Management (IVM) approach is the main strategy in optimizing resources. Volunteers supported timely IRIS activities that reduced vector density. Following community feedback on VL concerns, tailored messages through home visits, radio and IEC materials, key barriers VL eliminations were addressed. At least 250,000 people were reached with community health promotion activities breacked down below:

- Volunteers equipped with tailored messages and appropriate IEC materials. They reached 67,735 people (M-31,942: F-32,793) during home visits linked to the IRIS campaigns. The program targeted specifically 7 localities with option to reach a much wider population indirectly. However, after review of the assessment data, one more locality with reported cases was added.
- Live radio shows and broadcast on Gedaref community radio and Omdurman radio with audiences to entire country.
- The SRCS Gedaref branch communication team used the WhatsApp platform to pass messages on Kala Azar prevention to 15 groups with a membership of 253 individuals. In addition, 50 persons were directly reached through their mobile phones.
- During the World Refugee Day at Tunaydba refugee camp, a video on Kala Azar cases was aired, reaching to more than 10,000 persons.

Focus Group Discussions

Sixteen FGD were conducted to inform and improve the operational strategy. There were 2 FGDs with Special group (Nomads in Remala and Daily workers in farms (Metra 17) in Basunda locality, 2 FGD among

the Ethiopia refugees (Female and Male), 4 FGD with Religious leaders, 4 with the youth 4 FGD among general and population (1 Male and 3 Female). The groups being female and male, and youth enabled capturing of the breadth of issues and reaching out to at least all participating localities ensured a greater depth and understanding of issues. The outcomes of the various discussion are details in the need analysis above.

Health Outcome 1.1: The health situation and immediate risks are assessed using agreed guidelines
For practical reasons, only 7 heads of volunteers were briefed as they played a liaison role. The intervention was not massive as initially anticipated which necessitated the need to reduce on the number of volunteers trained. Furthermore, the assessment was majorly on review of data at the SMOH, KII and FDG which required specific skills. and a smaller team. Kala Azar is endemic in the Gedaref region and therefore, only one Leishmaniasis assessment was conducted to assess details round the increased cases and for better understanding of the community perception on the disease.

Health Outcome 4: Transmission of diseases of epidemic potential is reduced
In the state, VL elimination program is operating in a setting where resources are limited. The establishment of health facility-based sentinel site surveillance system for monitoring trend avails accurate data for detection of outbreaks and indication of disease burden. For the short DREF period, the assessment's initial findings did not warrant community case findings and establishment of Community Based Surveillance (CBS). That explains why the number of cases referred or identified in communities is at 0%. Discussion beyond the scope of this DREF will continue to establish how SRCS volunteers can participate in a potential community-based surveillance. CBHFA module one training was at least conducted for volunteers with focus on introduction to the RCRC movement particularly on the principles of humanity and output 4.4 linked to CBS and referral of cases was removed since the operation update.
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Health Output 4.6: Improved knowledge about public health issues among Gedaref and around population
The initial plan was to implement Community-based health and first aid (CBHFA) as means to build Resilience. The period of the DREF did not allow full implementation of the CBFA approach that can take at least 6 months period. CBHFA works in a way that goes beyond basic first aid techniques. It addresses health needs and incorporates empowerment of volunteers and communities to take charge of their own health. The inclusion of CBHFA that is usually in 5 modules on the basis of building practical approach to an outbreak towards adoption of healthy behaviors during and after disasters in an event an outbreak was confirmed. In this case, no outbreak was established and as such only module one that dealt with introduction to RCRC was implemented.
Due to the limited time factor, the DREF utilized already tested and culturally appropriate information, education, and communication (IEC) materials to improve awareness particularly on health care seeking behavior, which was to promote the use of mosquito nets. Due to gains from the exchange, more IEC materials and posters were produced.
Only 70 out of the targeted 140 volunteers were engaged as the amount of work was less than initially anticipated.

All lessons learnt and challenges are summarized in the strategy for implementation below.

Strengthen National Society

Outcome 1: National Society capacity building and organizational development objectives are facilitated to ensure that National Societies have the necessary legal, ethical and financial foundations, systems and structures, competences and capacities to plan and perform

Indicators:	Target	Actual
#of volunteers involved in the operation who has conducted the required briefing	140	140
#of staff involved in the operation (05)	5	6
#of volunteers insured (140)	140	140
#of NS monitoring visit from branch (05)	5	5
#of community feedback system in place (01)	1	1

Narrative description of achievements

National Societies have the necessary corporate infrastructure and systems in place
The mobilized human resource for this intervention was volunteers and staff from the state and IFRC delegate based in Gederef during the period.
140 volunteers were mobilized and briefed though only 70 were engaged as the workload wasn't what was envisaged. 70 active bi-monthly in compliance with SRCS Human Resource regulation of not allowing volunteers to work continuously for 2 weeks unless contracted. With support from IFRC and ICRC, 3000 volunteers in different parts of the country are insured and therefore, there was no need to spend on this activity. 6 Staff directly managed the operation: A driver, field Health coordinator, health field officer, branch finance officer, IFRC finance controller and SRCS finance officer with support from public Health delegate. Frequently visits were jointly done by the SMOH, IFRC and SRCS to the Indoor residual spraying (IRS), public awareness and radio shows.

Leveraging on the volunteer network in the state, previously established relationship with the SMOH and trust from the communities, SRCS was able to quickly commence activities though there were delays in receiving funds. The CBHFA module one training was conducted to lay emphasis on the Red Cross principles of humanity. The provision of phone credit to volunteers also ensured that communication was enhanced, and reporting was timely.

Community engagement and Feedback system to inform the strategy
Following FGD and feedback from the various leader, the SMOH reactivated the telephone line with a dedicated number (0115555555) for Kala Azar to enable receive concerns and reporting suspected case of Kala cases from the community. This was used as the main active feedback through during the operation. The information's collected from there and the Focus group have informed the awareness and has been shared with SMoH. Working closely with the SMOH and creating community awareness will ensure continuation of practices after the project life.

Challenges

The cost of fuel that was not anticipated escalated the cost of vehicle hiring which necessitated budget realignment.

Lessons Learned

There is steady progress over the years albeit challenges in reducing the burden of Kala Azar.

- VL limitation strategies that include health facility surveillance, vector control via ITNs, IRS and vector surveillance are in place and functional.
- Community based surveillance that is lacking has the advantage of tracking trends in infection rates and gauge the effect of the elimination programme. It's recommended that IVM department proactively to hold stakeholder's forum annually to ensure the VL agenda remains relevant.
- Relevant departments to check on the rational use of pesticides that are apparently the same insecticide for elimination of Sand fly to reduce resistance.
- Due to the short initial implementation period as well as budget limitation, the CBHFA training only focused on module one, an introduction to the RCRC movement when CBHFA was meant to go beyond basic first aid techniques by addressing health needs and empowerment of volunteers and communities to take charge of their own health. Thanks to the State staff and volunteers' capacity before the DREF.
- Engagement of the alternative funding such as business community participation in the elimination efforts is an option to foresee rather than depending only on government funding and humanitarian organisations. For instance, social marketing of repellents for people working on farms and mosquito nets specifically for children can bring on board new partnerships.

Influence others as leading strategic partner

Coordinating role of the IFRC within the international humanitarian system is enhanced

IFRC has a public health delegate based in Gedaref majorly to support the Ethiopia population movement project interventions and to assist the branch executive director in participating in wider humanitarian forums that bring the real community concerns on the forefront. While other humanitarians work to support mainly the Ethiopian refugees, this IFRC DREF intervention reaches out to the host community and complements government efforts of eradicating Kala Azar.

Outcome S3.1: The IFRC secretariat, together with National Societies uses their unique position to influence decisions at local, national and international levels that affect the most vulnerable.

Indicators:	Target	Actual
# of coordination meeting held with partners on this response (06)	6	2
# of radio message diffusion (50)	50	0
# of publication on Social media (at least 2)	2(minimum)	1
# of media coverage to on this operation (03)	3	1
# of monitoring mission and technical support from IFRC (new)	2	1

Narrative description of achievements

Using already infrastructure at the branch and SMOH, it was relatively quick in starting intervention. There were no separate VL coordination meetings as envisaged in the EPoA but NS kept strong coordination with MoH and WHO regarding the activities planned and the complementarity in the MoH response plan. Netherlands Red Cross with supporting SRCS WASH activities in the Ethiopian Refugee camps in the state contributed to volunteers cost during the environmental vector control.

Challenges

There were some delays in cash reaching the field that delayed commencement of some activities.

Lessons Learned

- Volunteers are not salaried and therefore no legal requirement for insurance cover as opposed to paid employees. However, placing volunteers on insurance cover during their work is a demonstration of duty of care liability.
- Although there was no incident to warrant the insurance, it is very important to maintenance or update volunteer register to ascertain categories of actual volunteers.
- Lack of contingency funding in ongoing projects in emergency prone areas may mean delays in commencing initial assessment due to important delays before the money hit the bank account in the country and on the field. Therefore, incorporating contingency budgets in routine projects and programs is essential for initial action.
- The support by Netherlands Red Cross in paying volunteers incentive was a huge relief and a good movement collaboration.

D. Financial Report

The overall allocation and budget for this DREF was CHF 46,609 to be spent in 3 months. The NS received CHF 38,832 (83%) out of the total budget. Total expenditure by the end of the implementation is CHF 41,030 (88%) with an unspent balance of CHF 5,579 (12%) in majority related to IFRC support cost will be returned to the DREF pot. Rounding of major variances are explained per cost category in the table below:

Description	Budget	Expenditure	Variance	Variance %	Variance explanation
Relief items, Construction, Supplies					
Medical & First Aid	2,195	1,179	1,017	46%	Under this (AP021 – budget group 540), sanitiser and gloves were not bought as enough was already purchases under ongoing COVID-19 program.
Teaching Materials	13,129	7,140	5,989	46%	the duration the DREF didn't allow the implementation of the ECV Epidemic Control for Volunteers. So only IEC for preventive messages was printed and used.
Logistics, Transport & Storage					
Transport & Vehicles Costs	8,602	6,313	2,289	27%	Travel from HQ not conducted, the cost for vehicles was finally low than planned.
Personnel					
National Society Staff	2,464	614	1,850	75%	Part of this cost contributed to national Society admin fee that was not included in the budget
Volunteers	5,855	5,184	671	11%	Some volunteer incentives were paid by Netherlands Red Cross in the environmental campaigns
Workshops & Training					
Workshops & Training	4,760	14,155	-9,395	-197%	The frequency cost of volunteers in awareness and actual involvement in the implementation was more than planned and booked in the training but the saving from other lines went to cover the additional costs.
General Expenditure					
Travel	4,572		4,572	100%	The staff in Khartoum who were supposed to come and supervise the program did not come due to other engagements. Support was provided by IFRC delegate based in Gedaref.
Office Costs	626	402	224	36%	Since the assessment did not indicate continuity, there was no need to buy additional furniture. Instead, saving budget was used for operational needs.
Communications	614	1,191	-577	-94%	More Communication cost were needed for data collection and coordination during the extension.
Financial Charges	948	-232	1,180	124%	The balance is due to changes in exchange rate that improve, thus the currency re-evaluation was better than planned.
Other General Expenses		2,581	-2,581	-100%	The NS admin fee of 7% expenditure was not included in the budget. Savings from other budget line contributed to this cost.

Contact information

Reference documents

Click here for:

- Previous Appeals and updates
- Emergency Plan of Action (EPoA)

For further information, specifically related to this operation please contact:

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For IFRC Resource Mobilization and Pledges support:

- IFRC Africa Regional Office for Resource Mobilization and Pledge: Louise Daintrey, Head of Unit, Partnership and Resource Development, Nairobi, email: louise.daintrey@ifrc.org;

For In-Kind donations and Mobilization table support:

- **IFRC Africa Regional Office for Logistics Unit:** Rishi Ramrakha, Head of Africa Regional Logistics Unit, email: rishi.ramrakha@ifrc.org; phone: +254 733 888 022

For Performance and Accountability support (planning, monitoring, evaluation, and reporting enquiries)

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How we work

All IFRC assistance seeks to adhere to the **Code of Conduct** for the International Red Cross and Red Crescent Movement and Non-Governmental Organizations (NGO's) in Disaster Relief and the **Humanitarian Charter and Minimum Standards in Humanitarian Response (Sphere**) in delivering assistance to the most vulnerable. The IFRC's vision is to inspire**, encourage, facilitate and promote at all times all forms of humanitarian activities** by National Societies, with a view to **preventing and alleviating human suffering**, and thereby contributing to the maintenance and promotion of human dignity and peace in the world.

The IFRC's work is guided by Strategy 2020 which puts forward three strategic aims:

1. Save lives, protect livelihoods, and strengthen recovery from disaster and crises.
2. Enable healthy and safe living.

3. Promote social inclusion and a culture of non-violence and peace

Selected Parameters			
Reporting Timeframe	2022/3-2022/9	Operation	MDRSD031
Budget Timeframe	2022/3-2022/6	Budget	APPROVED

DREF Operation

FINAL FINANCIAL REPORT

Prepared on 31/Oct/2022

All figures are in Swiss Francs (CHF)

MDRSD031 - Sudan - Kala-Azar emergency cases increase 2022

Operating Timeframe: 04 Mar 2022 to 30 Jun 2022

I. Summary

Opening Balance	**0**
Funds & Other Income	**46,609**
DREF Allocations	46,609
Expenditure	**-41,030**
Closing Balance	**5,579**

II. Expenditure by planned operations / enabling approaches

Description	Budget	Expenditure	Variance
PO01 - Shelter and Basic Household Items			**0**
PO02 - Livelihoods			**0**
PO03 - Multi-purpose Cash			**0**
PO04 - Health	38,649	39,054	**-405**
PO05 - Water, Sanitation & Hygiene			**0**
PO06 - Protection, Gender and Inclusion			**0**
PO07 - Education			**0**
PO08 - Migration			**0**
PO09 - Risk Reduction, Climate Adaptation and Recovery			**0**
PO10 - Community Engagement and Accountability			**0**
PO11 - Environmental Sustainability			**0**
Planned Operations Total	**38,649**	**39,054**	**-405**
EA01 - Coordination and Partnerships	213		**213**
EA02 - Secretariat Services			**0**
EA03 - National Society Strengthening	7,747	1,975	**5,771**
Enabling Approaches Total	**7,960**	**1,975**	**5,984**
Grand Total	**46,609**	**41,030**	**5,579**

DREF Operation

FINAL FINANCIAL REPORT

Selected Parameters			
Reporting Timeframe	2022/3-2022/9	Operation	MDRSD031
Budget Timeframe	2022/3-2022/6	Budget	APPROVED

Prepared on 31/Oct/2022

All figures are in Swiss Francs (CHF)

MDRSD031 - Sudan - Kala-Azar emergency cases increase 2022

Operating Timeframe: 04 Mar 2022 to 30 Jun 2022

III. Expenditure by budget category & group

Description	Budget	Expenditure	Variance
Relief items, Construction, Supplies	**15,324**	**8,319**	**7,005**
Medical & First Aid	2,195	1,179	1,017
Teaching Materials	13,129	7,140	5,988
Logistics, Transport & Storage	**8,602**	**6,313**	**2,289**
Transport & Vehicles Costs	8,602	6,313	2,289
Personnel	**8,319**	**5,797**	**2,522**
National Society Staff	2,464	614	1,850
Volunteers	5,855	5,184	671
Workshops & Training	**4,760**	**14,155**	**-9,395**
Workshops & Training	4,760	14,155	-9,395
General Expenditure	**6,760**	**3,942**	**2,818**
Travel	4,572		4,572
Office Costs	626	402	223
Communications	614	1,191	-576
Financial Charges	948	-232	1,180
Other General Expenses		2,581	-2,581
Indirect Costs	**2,845**	**2,504**	**341**
Programme & Services Support Recover	2,845	2,504	341
Grand Total	**46,609**	**41,030**	**5,579**