



Jowhar Heat-Health Action Preparedness and Management Plan (HHAPMP)

Federal Government of Somalia

Hirshabele State

July 2026

Prepared by Ministry of Health & Human Services — Federal
Government of Somalia (FMOH) and International Medical Corps



(Note that this document can serve as an anticipatory action protocol)

Executive Summary

Jowhar, the administrative capital of Hirshabelle State of Somalia, faces increasing threats from extreme heat events driven by climate change. The district's vulnerability is compounded by widespread poverty, a large population of internally displaced persons (IDPs), fragile infrastructure, and limited access to essential services. Recent assessments reveal that nearly all households in Jowhar have experienced extreme heat, with significant impacts on health, livelihoods, and daily functioning particularly among children, the elderly, pregnant women, and those with chronic illnesses.

The Jowhar Heat Health Management Preparedness Action Plan (HHAPMP) has been developed through a collaborative, evidence-based process involving local authorities, health professionals, humanitarian partners, and community representatives. The plan aims to reduce heat-related health risks and build resilience by strengthening early warning systems, upgrading health facility and community infrastructure, and enhancing the capacity of health workers and local institutions.

Key preparedness actions include upgrading IDP shelters with heat-reflective materials and improved ventilation, expanding water storage and access, installing solar power in health facilities, and ensuring a reliable supply of essential medicines. The plan prioritizes the development and implementation of heat-health protocols, regular staff training, and the integration of heat-related illness surveillance into health information systems. Community awareness campaigns, targeted support for vulnerable groups, and the establishment of emergency transport and financial protection mechanisms are also central components.

Testing and evaluation arrangements are built into the plan, with regular simulation exercises, facility drills, and after-action reviews to ensure readiness and continuous improvement. Monitoring and evaluation will be conducted through routine data collection, community feedback, and annual stakeholder reviews. By aligning with national adaptation strategies and WHO guidance, the Jowhar HHAPMP provides a practical, locally tailored roadmap for protecting health and saving lives in the face of rising temperatures. Its successful implementation will require sustained commitment, multi-sectoral coordination, and targeted investment to address the structural drivers of vulnerability and ensure equitable protection for all residents of Jowhar.

Table of Contents

Executive Summary	2
List of Tables & Figures	3
1. Introduction	4
1.1 The Purpose of the HHAPMP	4
1.2 Scope of the HHAPMP	4
1.3 Methodology	5
2. Country and Location (District / Region) of Heat Health Action Plan:	5
3. Brief assessment of risks and vulnerabilities related to heat	6
3.1 Long-term Risk:	6
3.2 Emergency Risks:	7
3.3 Vulnerable Groups.....	7
4. Participating organizations: Arrangements for coordinating	8
5. Adaptations to existing services to address risks of increased average temperatures in Jowhar	8
5.1 Identified Key Gaps in Existing Services	8
5.2 Community and Household Level Adaptation.....	9
5.3 Health Facility and System Adaptation	9
5.4 Policy and Institutional Adaptation	9
5.5 Cross-Cutting Priorities	10
6. Preparedness Adaptation Response for Heat-health:.....	11
7. Arrangements for Testing Preparedness and Response Activities.....	13
8. Arrangements for Evaluation of the Heat Action Plan	14
9. Arrangements for fund mobilization	15
9.1 Financing and Resource Mobilization	15
Annex 1: Preparedness stocks of medication and equipment for heatwaves	19
Annex 2: Preparedness stocks of medication and equipment for heatwaves	20
Annex 3: Heat and Occupational Health.....	21
Annex 4: Community Feedback Tools	23
Annex 5: Health Facility Lists	24

List of Tables & Figures

Table 1: Adaptation Priorities for Jowhar District.....	10
Table 2: Preparedness Actions Table for Jowhar District	11
Table 3: Testing Preparedness and Response Activities	13
Table 4: Evaluation of HHAPMP	14
Table 5: Estimated HHAPMP Budget Plan for Key Activities	16
Figure 1: Map of Jowhar Region	6
Figure 2: Aerial View of Jowhar	6

1. Introduction

Jowhar District, situated in Hirshabelle State, Somalia, is increasingly vulnerable to extreme heat events due to the accelerating impacts of climate change. The district faces a unique convergence of risks, including high ambient temperatures, limited access to reliable water and electricity, and a significant population of internally displaced persons (IDPs) living in overcrowded, poorly ventilated shelters. A recent baseline assessment revealed that no health facilities in Jowhar currently have heat action plans, and only a quarter of health workers have received training on heat-related illnesses. These gaps, coupled with inadequate infrastructure, such as limited shaded waiting areas and poor ventilation this underscore the urgent need for a localized, evidence-based Heat Health Management Preparedness Action Plan HHAPMP (HHAPMP) that strengthens both community resilience and health system readiness.

This HHAPMP document for Jowhar District outlines a comprehensive strategy to adapt existing services and build new capacities to mitigate the health impacts of extreme heat. It prioritizes the development of early warning systems, integration of heat-related illness surveillance into the District Health Information System (DHIS2), and the establishment of cooling zones and hydration stations in health facilities. The plan also emphasizes community engagement through culturally appropriate risk communication, the empowerment of vulnerable groups, and the promotion of low-cost, locally driven adaptation measures such as tree planting and shelter improvements. By aligning with national frameworks like the National Adaptation Plan (NAP), Health National Adaptation Plan (HNAP), and the Nationally Determined Contributions (NDCs), this plan aims to ensure that Jowhar's health system is better equipped to protect its population from the growing threat of heat-related health emergencies.

1.1 The Purpose of the HHAPMP

The purpose of the Jowhar HHAPMP is:-

- To reduce the health impacts of extreme heat through a coordinated, preparedness, response, and adaptation strategies of multisectoral approach.
- To protect vulnerable populations, strengthen the capacity of health systems, and ensure timely and effective responses to heatwaves.
- It also aims to integrate heat risk management into routine health programming and disaster preparedness frameworks, ensuring that the health sector is better equipped to deal with both chronic and acute heat-related threats.
- To be a living document—one that evolves based on evidence, feedback, and changing climate realities.

1.2 Scope of the HHAPMP

This action plan focuses on the Jowhar region, with a particular emphasis on Jowhar and its surrounding villages. It addresses both long-term adaptations to rising average temperatures and short-term preparedness and response to heatwaves. The scope includes health facility readiness, community education, early warning systems, coordination mechanisms, and

monitoring and evaluation. The plan is designed to be inclusive, scalable, and adaptable to other regions in Somalia facing similar risks.

1.3 Methodology

The HHAPMP was developed through a participatory and evidence-based process. It began with climate and health data provided the Somalia Heat and Health Vulnerability and Impact Assessment (IMC, 2025), findings from focus group discussions (FGDs), and stakeholder workshops held in Jowhar in September 2025, which included representatives from FMOH, State MoH, IMC, WHO, and local NGOs. These consultations helped identify priority risks, vulnerable groups, and gaps in capacity. The plan was structured using IMC's recommended format and validated through technical inputs, review and feedback from MOH, local health authorities and partners.

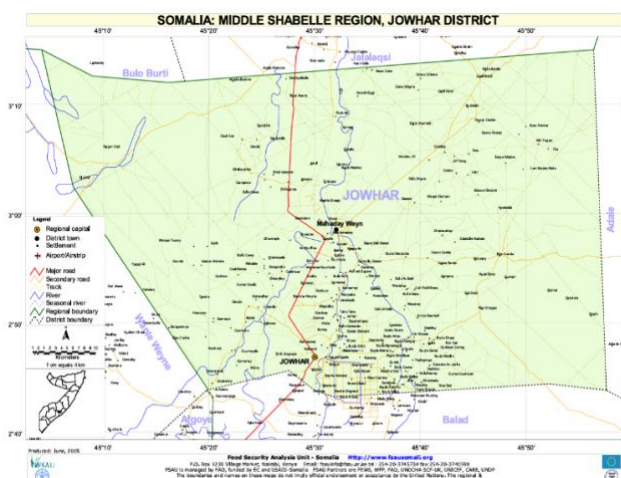
2. Country and Location (District / Region) of Heat Health Action Plan:

Country: Somalia, located in the Horn of Africa, is one of the countries most vulnerable to the impacts of climate change, particularly extreme heat. With a predominantly arid and semi-arid climate, the country experiences high temperatures year-round, which are intensifying due to global warming. The health sector in Somalia faces significant challenges in responding to climate-related risks, including limited infrastructure, fragile health systems, and high levels of poverty and displacement. These challenges are especially pronounced in urban centers like Mogadishu, where rapid population growth and informal settlements exacerbate exposure to heat.

Region: Jowhar is a key town in Middle Shabelle region, located about 90 kilometers north of Mogadishu along the Shabelle River. It serves as the administrative capital of the Hirshabelle State, and is a major agricultural center, benefiting from fertile riverine lands that support both farming and livestock. The town is composed of urban neighborhoods and surrounding rural settlements, with a significant population of IDPs around 35700 living in temporary shelters due to ongoing insecurity and climate shocks. Jowhar's strategic position on the main road linking Mogadishu to central Somalia makes it an important hub for trade, transport, and humanitarian activities. The climate is typically hot and semi-arid, with seasonal variations influenced by the river and agricultural cycles. Health facilities in Jowhar face substantial challenges: most lack heat action plans, shaded waiting areas, reliable electricity, and adequate water supply. Only a minority of staff are trained to manage heat-related illnesses, and there are frequent shortages of medicines for chronic conditions such as cardiovascular disease and diabetes. These gaps in health infrastructure and service delivery are compounded by the high vulnerability of IDPs and limited access to essential care, making Jowhar particularly exposed to the health impacts of extreme heat and climate change.

Table 1: Health Facilities

District	Health Facility Name	HF Type
Jowhar	Jowhar Regional Hospital	Referral Hospital
Jowhar	Bullo Sheikh Health center	Health Center
Jowhar	Kulmis Health Center	Health Center

**Figure 1: Map of Jowhar Region Highlighting****Figure 2: Aerial View of Jowhar**

This figure illustrates the geographical layout of Jowhar Region.

3. Brief assessment of risks and vulnerabilities related to heat

3.1 Long-term Risk:

Jowhar's communities are already experiencing the slow but relentless impacts of rising average temperatures, a trend is projected to accelerate in the coming decades. According to the World Bank, Somalia's mean annual temperature has been increasing at approximately 0.21°C per decade since 1991, with Jowhar's and peri-urban areas exposed due to the limited green spaces. This gradual warming is not just a statistic it translates into longer hot seasons, more frequent days above 40°C, and persistent discomfort for families living in poorly ventilated shelters or informal IDP settlements. Over time, these conditions erode the health and resilience of the most vulnerable people such as children, the elderly, pregnant women, and people with chronic illnesses, who face higher risks of dehydration, heat exhaustion, and worsening of cardiovascular and respiratory diseases (World Bank, 2022; Somalia Heat and Health Vulnerability Capacity Assessment, 2025).

The long-term rise in temperature also places a silent but growing strain on Jowhar's health system and social safety. Health facilities, already stretched by resource limitation, must cope with increased patient loads during hot periods, while also facing challenges in maintaining cold chains for medicines and vaccines. Water scarcity becomes more acute as evaporation rates rise, threatening both drinking water supplies and hygiene standards. For many households, especially in IDP camps, the lack of shade, cooling infrastructure, and reliable electricity means that daily life becomes a struggle for comfort and safety. The following are the long-term risks:

- Rising means annual temperature.
- Increased frequency/severity of heat days.
- Chronic health impacts: cardiovascular, respiratory, renal, mental health.
- Strain on health infrastructure, water, and energy.

3.2 Emergency Risks:

Jowhar faces acute emergency risks during periods of extreme heat, particularly when temperatures soar above 40°C and humidity levels are high. These heatwaves can trigger sudden spikes in heat-related illnesses such as heat exhaustion, dehydration, and life-threatening heatstroke, overwhelming health facilities that are already operating with limited resources. Power outages are common during peak heat. They can disrupt cooling systems, water supply, and the cold chain for essential medicines and vaccines, further compounding health risks.

3.3 Vulnerable Groups

The impacts of extreme heat in Jowhar are not felt equally certain groups face far greater risks due to their age, health status, living conditions, or occupation. Children under five, whose bodies are less able to regulate temperature, and elderly people who often have underlying health conditions, are especially susceptible to heat-related illnesses and dehydration. Pregnant and lactating women face additional risks as high temperatures can threaten both maternal and fetal health. People living with chronic diseases such as cardiovascular, respiratory, or renal conditions are at heightened risk of complications or death during heatwaves. Outdoor workers including laborers, farmers, market vendors, and transport workers are exposed to the sun for long hours with limited access to shade or hydration. IDPs and residents of informal settlements are among the most exposed, often living in overcrowded, poorly ventilated shelters made of heat-trapping materials. People with disabilities and those with limited mobility may struggle to access cooling centers or emergency services. Recognizing and prioritizing these vulnerable groups is essential for an effective, equitable heat-health action plan (Somalia Heat Health Vulnerability and Capacity Assessment 2025).

4. Participating organizations: Arrangements for coordinating

Lead Organization: Ministry of Health and Human Services (MOH)

Participating organizations: MoECC, MoWE, IMC, WHO, SoDMA

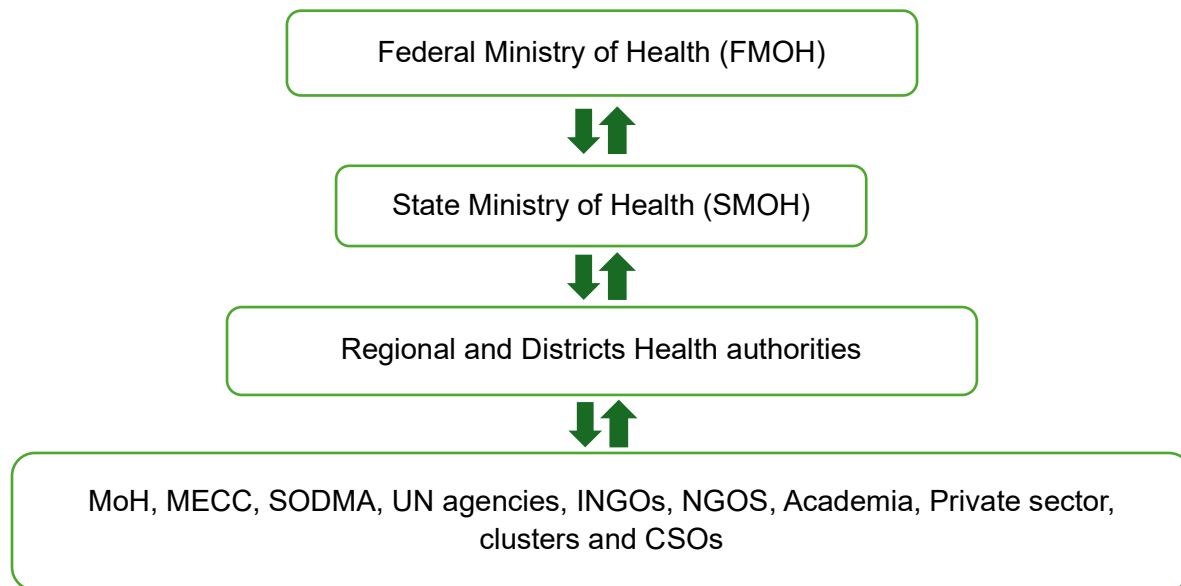


Figure 3. Coordination Structure for HHAPMP Implementation in Jowhar

This flowchart illustrates the hierarchical coordination current participating organizations mechanism, with the State Ministry of Health and Human Services (MoH) leading at the state level, supported by a Technical Working Group (TWG) comprising key partners, including IMC, WHO, UNICEF, Horn Environmental & Sustainable Development (HESDA), Gapbridge Institute for Research and Consultancy, and authorities including Federal MOH's, BRA, MoECC SoDMA, and State level MOH's and MoECC. Coordination cascades down to district health teams and health facilities, ensuring localized implementation and community-level responsiveness.

5. Adaptations to existing services to address risks of increased average temperatures in Jowhar

5.1 Identified Key Gaps in Existing Services

- No health facility in Jowhar had a heat action plan.

- Only 25% of facilities had staff trained on heat illness.
- Infrastructure is weak: only 58% had shaded waiting areas, <50% had reliable electricity, and just 17% had cross-ventilation.
- DHIS2 does not record heat-related illness, limiting early warning and response.
- Water reliability and electricity access are the strongest predictors of vulnerability.
- IDPs face a “displacement penalty”: double the vulnerability scores, higher exposure, and weaker adaptive capacity than host communities.

5.2 Community and Household Level Adaptation

- **Shelter Upgrades:** Support IDPs and vulnerable households with durable, heat-reflective roofing, improved ventilation, and shaded communal spaces.
- **Water and Cooling:** Expand access to water storage, promote tree planting, and introduce low-cost cooling solutions (e.g., passive ventilation, wet cloths, shaded areas).
- **Behavior Change:** Develop risk communication through trusted local channels (radio, health workers, religious/community leaders), linking lived experience to climate science.
- **Empowerment:** Involve women, youth, and elders in designing and implementing local adaptation strategies.

5.3 Health Facility and System Adaptation

- **Protocols:** Develop and roll out standardized protocols for triage, treatment, and referral of heat-related illnesses.
- **Infrastructure:** Prioritize shaded waiting areas, cross-ventilation, reliable electricity (including solar), and water supply in health facility investments.
- **Capacity Building:** Train health workers on heat-illness recognition, management, and counseling for high-risk groups (CVD patients, elderly, pregnant women, children).
- **Chronic Disease Care:** Expand CVD and diabetes screening, ensure consistent medication supply chains, and integrate chronic disease management with seasonal heat preparedness.
- **Surveillance:** Include heat-related illness categories in DHIS, link meteorological data with health surveillance, and build early warning–early action protocols.

5.4 Policy and Institutional Adaptation

- **Explicit Policy Recognition:** Designate extreme heat as a distinct hazard within national and district health frameworks.
- **Coordination:** Establish a clear lead agency for heat-health, supported by joint planning between health, climate, water, housing, and disaster management sectors.
- **Financing:** Create dedicated budget lines for heat-health within the Ministry of Health and disaster management agencies, ensuring prevention and preparedness are funded alongside response.

- **Equity:** Direct resources to IDPs, high-burden regions, and facilities serving the most disadvantaged populations.

5.5 Cross-Cutting Priorities

- **Equity and Inclusion:** Ensure all interventions are gender-sensitive, displacement-aware, and targeted to those facing the greatest risks.
- **Community Engagement:** Embed co-creation approaches with local knowledge holders, combining indigenous climate indicators with scientific forecasts.
- **Sustainability:** Reduce reliance on ad hoc donor-driven support by embedding heat-health into core health system strengthening and leveraging multi-sector partnerships.

Table 1: Adaptation Priorities for Jowhar District

Level	Priority Adaptation Actions
Community/Household	• Upgrade shelters (roofing, ventilation, shade) • Expand water storage and cooling options • Risk communication via trusted channels • Empower vulnerable groups in planning
Health Facility	• Develop heat-health protocols • Upgrade infrastructure (shade, ventilation, electricity, water) • Train staff on heat illness and CVD • Improve surveillance and early warning
Policy/Institutional	• Recognize heat as a distinct hazard • Assign lead agency and coordinate sectors • Create dedicated budgets • Target resources to IDPs and high-burden areas
Cross-Cutting	• Ensure gender/displacement equity • Engage communities in co-design • Build sustainability into all interventions

6. Preparedness Adaptation Response for Heat-health:

Table 2: Preparedness Actions Table for Jowhar District

Preparedness Area	Action	Responsible	Priority Level	Timeline	Indicators of Success	Supporting organization
Shelter & Housing	Upgrade IDP shelters with heat-reflective roofing, improved ventilation, and shaded spaces	Local government, NGOs, IDP committees	High	3-12 months	% of targeted IDP shelters upgraded with reflective roofing, improved ventilation, or shade by the end of the pre-heat season; # communal shaded spaces functional before heat season.	Partners
Water Security	Expand water storage capacity and ensure reliable supply during hot periods	MoWE, district authorities, NGOs	High	3-6 months	# water storage points installed in targeted health facility/community sites before heat season; % of registered vulnerable households reporting reliable drinking-water access during heatwave alerts.	Government, Partners
Electricity Access	Install solar panels or improve grid access for health facilities and vulnerable households	District authorities, energy providers	Medium	6-18 months	# of targeted health facilities with functional solar or grid backup before heat season; # of vulnerable households or IDP communal sites supported with solar or improved electricity access.	Somali Electricity Sector Recovery Project (SESERP), MoH, Facility managers
Cooling Solutions	Distribute low-cost cooling devices (fans, wet cloths); promote passive cooling strategies	Health facilities, NGOs and district health office	Medium	3-6 months	# of low-cost cooling items distributed to registered vulnerable households/communal areas before heat season; # passive cooling demonstrations conducted with community groups.	Health facilities, partners, CHWs
Health Facility Readiness	Develop and implement heat-health action protocols; train staff on heat	District Health Office, MoH	High	1-6 months	# and % of health facilities with approved heat-health action protocol before heat season; # clinicians/CHWs trained on heat-	MOH, Facility manager, partners

	illness management				related illness management and passing post-test.	
Facility Infrastructure	Upgrade shaded waiting areas, cross-ventilation, reliable water and electricity supply	Facility managers, MoH	High		% of assessed health facilities with shaded waiting area and cross-ventilation; % with functional water and backup power during heat alerts; patient satisfaction score with shaded/cooled waiting areas.	DHO, MOH, partners
Early warning Alerts and Trigger Activation	Define heat alert thresholds; disseminate alerts through SMS, radio, mosques, CHWs, and facility channels; trigger facility and community anticipatory actions.	District Health Office Emergency Preparedness Focal Point	High	1-3 months; activate during alerts	# heat alerts issued within 24 hours of trigger; % of targeted health facilities and CHWs receiving alert; # facility/community anticipatory actions initiated within 48 hours.	MoH, SoDMA, MoECC, local government, partners, radio/SMS providers, community leaders
Health Facility Staffing and Medical Surge Capacity	Maintain a pre-season surge roster; train/retrain clinicians and CHWs; redeploy staff during heat alerts to triage, hydration, and referral points.	District Health Office, facilities, MOH	High	Annual pre-season; during alerts	# and % of target facilities with updated surge roster before heat season; # staff trained or refreshed annually; % facilities meeting minimum heat-season staffing standard during alerts.	Facility managers, MOH, partners, academic/training institutions
Outreach to Vulnerable Individuals	Register and prioritize elderly people, pregnant/lactating women, people with chronic disease or disability, outdoor workers, and IDP households for targeted alerts, visits, and referrals.	DHO, MOH, CHW	High	1-6 months; intensify during heat season	# high-risk households registered before heat season; % registered high-risk households receiving at least one heat-preparedness visit or alert; # referrals completed for heat-related risk or illness.	CHWs, IDP committees, facilities, NGOs, partners, community /religious leaders
Facility Operations Adjustment During Heat Alerts	Activate heat protocols, shaded triage, hydration points, adjusted clinic hours, and fast-track referral for heat illness and high-risk chronic disease patients.	Facility Manager / DHO Clinical Services Lead	High	During alerts	% facilities activating heat protocol within 24 hours of alert; # facilities adjusting service hours or triage flow during alerts; average waiting time in shaded/cooled triage areas.	MoH, facility, ambulance /transport partners

Cooling Equipment Maintenance	Service and document functionality of fans, ventilation, refrigerators/cold chain, water points, and backup power before and during heat season.	Facility, MOH	Medium	Quarterly, pre-heat season check	% facilities with completed cooling-equipment maintenance log each quarter; % priority cooling/cold-chain equipment functional during heat alerts; # corrective maintenance actions closed.	DHO logistics, MOH, facility managers, energy providers
--------------------------------------	--	---------------	--------	----------------------------------	---	---

7. Arrangements for Testing Preparedness and Response Activities

Table 3: Testing Preparedness and Response Activities

Activity	Description	Lead and Responsible Parties	Frequency/Timeline
Tabletop Simulation Exercises	Conduct scenario-based discussions with health facility staff, local authorities, and partners to test response protocols for heatwaves (e.g., sudden spike in temperature, mass casualty from heat illness).	MOH lead, District Health Office, Facility Managers, NGOs responsible parties	Twice per year (before and during hot season)
Facility Drills	Organize practical drills in health facilities to test activation of heat-health protocols, triage, hydration points, and emergency transport.	MOH lead, Facility Managers, MoH, CHWs responsible	Annually, before heat season
Community Alert System Test	Simulate early warning dissemination via radio, SMS, and community leaders to assess reach and timeliness.	MOH lead, District Administration, MOH, Community Leaders, partners are responsible parties	Annually, before hot season
Supply Chain Readiness Check	Test availability and rapid deployment of essential supplies (ORS, IV fluids, cooling packs) in facilities.	MOH lead, Facility Managers, Supply Chain Partners are responsible parties	Quarterly
Staff Knowledge Assessment	Conduct pre- and post-training quizzes or interviews to evaluate staff understanding of heat protocols.	MOH lead, Facility Managers, MoH	After each training session

8. Arrangements for Evaluation of the Heat Action Plan

Table 4: Evaluation of HHAPMP

Evaluation Component	Description	Lead Responsible Parties	Frequency/Timeline	Supporting Organizations /Contributors
Routine Monitoring	Collect and review data on heat-related illness cases, supply usage, and response times using DHIS and facility records.	MOH Lead, Facility Managers, District Health Office responsible parties	Monthly/Quarterly	MOH, facility managers
After-Action Reviews	Hold a brief meetings after heatwave events or drills to identify strengths, gaps, and lessons learned.	MOH, District Health Office, Facility Managers, NGOs	After each event/drill	Facility managers, NGOs, community representatives
Community Feedback	Gather feedback from community members and vulnerable groups on alert effectiveness, access to care, and satisfaction.	CHWs, NGOs, Community Leaders	Annually	CHWs, NGOs, community leaders
Annual Plan Review	Convene stakeholders to review overall performance, update protocols, and revise the Heat Action Plan based on evidence and feedback.	District Health Office, MoH, Partners	Annually	MoH, partners, local government
External Evaluation	Engage independent evaluators or partners to assess plan effectiveness, equity, and sustainability.	Donors, NGOs	Every 3 years	Donors, NGOs, independent evaluators
Budget and Funding Mobilization Tracking	Maintain a resource tracker showing required budget, committed funds, disbursed funds, funding gaps, proposal status, and responsible follow-up for each HHAPMP activity.	MOH, Finance Officer	Monthly during planning; quarterly during implementation	MoH Finance Directorate, IMC, local government, donor focal points
Advocacy and Policy Change Tracking	Track advocacy actions needed to establish heat-health budget lines, recognize extreme heat as a district health hazard, and integrate heat-health actions into annual plans.	MOH, and State MoH/DHO Leadership	Monthly until policy/budget actions are completed	Local government, SoDMA, MoECC, partners, TWG partners

Impact Evaluation Partnership	Scope a rigorous impact evaluation with a university or research organization, including a feasible comparison/control design, baseline measures, ethics review, and phased scale-up plan.	MoH Planning/M&E Directorate	Protocol development in Year 1; evaluation according to partner protocol	Somali university or research organization, donors, District Health Office, partners
--------------------------------------	--	------------------------------	--	--

9. Arrangements for fund mobilization

Funding for the implementation of the Jowhar HHAPMP is expected to be mobilized through a combination of national and international sources. As outlined in Somalia's Third Nationally Determined Contribution (NDC 3.0) the health sector is explicitly recognized as a priority for climate adaptation and resilience, with commitments to channel climate finance towards strengthening public health systems and preparedness for climate-related risks, including extreme heat. While dedicated funding streams are still being developed for the key activities, the plan anticipates support from the Somalia national budget, as well as from international climate change funding instruments such as the Green Climate Fund, Adaptation Fund, and bilateral and multilateral donors such as Novo Nordisk Foundation. The integration of health sector adaptation in the NDC 3.0 provides a strong policy basis for aligning domestic resources and leveraging external climate finance to ensure the sustainability and effectiveness of heat-health action preparedness activities in Jowhar and across Somalia.

9.1 Financing and Resource Mobilization

- Develop a costed implementation plan with budgeted actions.
- Seek funding from IMC, Novo Nordisk Foundation, UN Agencies, and local partners.
- Encourage public-private partnerships for water provision, shade infrastructure, and communication technology.
- Advocate for budget allocation under the local government annual plan.

Table 5: Estimated HHAPMP Budget Plan for Key Activities

Component	Activity Description	Responsible Organization(s)	Monitoring Indicators	Budget (USD)	Funding Source
Key Adaptations to Existing Services					
Activity 1: Community Heat Risk Education	Awareness campaigns through radio (Maay language), social media, and community meetings; outreach in IDP camps, markets, and schools.	MoH, Partners	- Number of sessions conducted- People reached- Community feedback reports	25,000	Novo Nordisk Foundation, GCF, Adaptation Fund, UN Agencies, World Bank, African Development Bank
Activity 2: Facility Adaptation and Infrastructure Improvement	Install solar fans, shaded triage areas, and water points in all health facilities; maintain ventilation and cooling systems.	Health facilities management	- Number of facilities upgraded- Functionality of cooling systems- Facility monitoring reports	70,000	MoH / MoECC, Partners
Activity 3: Training Health Workers	Conduct training for clinicians and CHWs on recognition and management of heat-related illnesses.	MoH, Partners	- Number of trained staff- Pre-/post-training assessment scores	18,000	MoH, Partners
Activity 4: Health Facility Staffing and Surge Readiness	Maintain a surge roster; provide annual pre-season refresher training; redeploy trained staff during heat alerts.	Lead: DHO HR/Clinical Services; Support: facility managers, MoH, and Partners	- # surge rosters updated before heat season- # staff refreshed annually- % facilities meeting heat-season staffing standard	15,000	MoH / partners, donors
Activity 5: Cooling Equipment Maintenance	Quarterly servicing and maintenance of fans, ventilation, cold-chain equipment, water points, and backup power.	Lead: Facility maintenance focal point; Support: DHO logistics, local government, energy providers	- % facilities with current maintenance logs- % priority equipment functional during alerts- # corrective actions closed	10,000	MoH / local government / partners
Subtotal – Adaptations				138,000	
Early Warning System (EWS) and Triggers					

EWS Implementation	Use of Jowhar LOCAL GOVERNMENT/SODMA/MoECC meteorological data, WHO localized Heat EWS, and community alert mechanisms via SMS and radio.	LOCAL GOVERNMENT, MoH, IMC	- Timeliness of EWS reports- Number of alerts disseminated	10,000	MOH / LOCAL GOVERNMENT
Trigger Activation & Public Communication	Disseminate alerts through SMS, radio, mosques, and CHWs when temperature >40°C for 3 days or heat index >45°C.	MoH, IMC, Community Committees	- Response time after alert- Population coverage	8,000	MoH /partners
Subtotal – EWS				18,000	
Key Preparedness and Response Activities					
Activity 1: Establishment of Cooling Centers	Convert community halls and tents into cooling shelters in IDP settlements and markets.	MoH, IMC, LOCAL GOVERNMENT, HF Management	- Number of operational centers- People accessing centers	45,000	GOVERNMENT, PARTNERS
Activity 2: Prepositioning of Medical and Cooling Supplies	Store ORS, IV fluids, cooling blankets, fans, and electrolyte solutions.	District Health Office, IMC Logistics Team	- Stock inventory levels- Monthly reporting	30,000	MoH/LOCAL GOVERNMENT/ PARTNERS
Activity 3: Communication and Public Alerts	Disseminate information via radio, SMS, megaphones, posters, and CHW visits; ensure Maay and Somali messaging.	MoECC, MoH, HESDA	- Number of alerts- Community feedback- Reach of campaigns	20,000	MOH / IMC
Activity 4: Vulnerable Household Outreach and Registration	Register high-risk households and provide targeted visits, alerts, and referrals for elderly people, pregnant/lactating women, people with chronic disease/disability, outdoor workers, and IDP households.	Lead: DHO Health Promotion/CHW Supervisor; Support: CHWs, IDP committees, NGOs, community leaders	- # high-risk households registered- % registered households receiving preparedness visit or alert- # referrals completed	12,000	MoH / partners/ NGOs
Activity 5: Facility Operations Adjustment During Heat Alerts	Activate heat protocols, shaded triage, hydration points, adjusted clinic hours, and fast-track referral during heat alerts.	Lead: Facility Manager / DHO Clinical Services; Support: facility departments, transport partners, partners.	- % facilities activating protocol within 24 hours- # facilities adjusting service hours/triage- average shaded-triage waiting time	8,000	MoH / local government / partners
Subtotal – Preparedness and Response				115,000	
Testing Preparedness and Response	Conduct biannual simulation drills with community members, CHWs, and facility staff. Evaluate coordination, response time, and communication.	MoH, PARTNERS , HFs	- Number of drills conducted- Response time improvement	12,000	MoH / partners

Evaluation of Heat-Health Plan	Annual review by Jowhar Heat-Health Taskforce to assess reduction in heat illness, facility readiness, and public awareness.	MoH, PARTNERS, Taskforce	- Annual evaluation report- Indicator performance	7,000	MoH / PARTNERS
Implementation Process Monitoring, Budgeting, and Advocacy	Maintain resource-mobilization tracker, advocacy log, and monthly implementation follow-up for budget lines, policy recognition, procurement, and activity completion.	Lead: DHO Planning and Finance; Support: State MoH, local government, Partners, TWG partners	- % required budget secured/committed/dispensed- # funding proposals submitted- dedicated heat-health budget line established (Y/N)- # advocacy actions completed	5,000	MoH / local government / partners
Impact Evaluation Scoping and Research Partnership	Develop concept note/protocol with a university or impact-evaluation partner; define baseline, comparison group, ethics review, and phased implementation approach.	Lead: MoH Planning/M&E Directorate; Support: university/research partner, DHO, partners, donors	- Partner agreement signed- protocol/concept note approved- baseline and comparison approach defined	15,000	Research partner / donors / MoH
Subtotal – Evaluation and Testing				39,000	
Total Estimated Budget for Jowhar Heat Health Management Plan				310,000 USD	

Note:

- Budget includes direct implementation, monitoring, and coordination costs. The Final Jowhar budget should be validated before clearance.
- Administrative overheads (approx. 5%) and contingency funds are embedded in total estimates.
- Community-based monitoring will ensure transparency and accountability through joint reviews by IMC, MoH, local and, International partners.

Annex 1: Preparedness stocks of medication and equipment for heatwaves

This annex outlines the essential medical supplies and equipment required to prepare health facilities in Jowhar for heatwave response. These items support hydration, emergency treatment, cooling, and protection of vulnerable patients and health workers.

Item	Quantity Needed	Storage Location	Responsible	Status/Note
Oral Rehydration Salts (ORS)		Central medical warehouse	MOH	High demand in heatwaves
Iv Fluids (Ringer's Lactate, NS)		Referral hospitals, clinics	MOH	
Electrolyte Tablets		Mobile health units	IMC, partners	
Cooling Fans		Health facilities	LOCAL GOVERNMENT	
Solar/Backup Generators		Major health facilities (Hospitals)	MOH, WHO	
Shade Structures		Health centres/IDPs	WASH/HEALTH Cluster	
PPE for Heat Response		All health facilities	MOH	
Water Tanks		Clinics, PHU, cooking centres	WASH Cluster	
Thermometers		All HF, & mobile units	MOH, IMC, all partners	
Emergency Medical Kits		Pre-positioned in facilities	MOH & All partners	

Annex 2: Preparedness stocks of medication and equipment for heatwaves

This annex outlines key measures to protect health workers and support staff from the risks of extreme heat during heatwaves and hot seasons. These actions aim to ensure staff safety, maintain service continuity, and reduce heat-related illness among frontline personnel.

Measure	Target Group	Implementation Method	Responsible Institution	Monitoring Indicator
Work/rest cycles during heatwaves	Health workers	Adjust shift schedules to reduce exposure during peak heat hours	MoH, IMC & partners	Staff feedback, absenteeism rates
Hydration stations in clinics	All staff	Install water dispensers and provide drinking water	MoH, WASH Cluster	Water usage logs
Shaded rest areas	Health workers	Set up tents or ventilated rooms for breaks	LOCAL GOVERNMENT, HF managers	Facility audits
Heat stress awareness training	All staff	Conduct seasonal workshops and briefings	IMC, WHO, Partners	# trained, knowledge assessment
PPE adjustments for hot conditions	Frontline workers	Provide lightweight uniforms and cooling vests	MoH, LOCAL GOVERNMENT	Staff satisfaction surveys
Monitoring of heat-related staff illness	All staff	Establish incident reporting system for heat-related symptoms	MoH, IMC, WHO	# of reported cases
Cooling equipment maintenance	Facility staff	Regular servicing of fans, AC units, and backup generators	MoH, LOCAL GOVERNMENT	Equipment uptime logs
Mental health support during heatwaves	Health workers	Provide counseling and peer support for stress management	MoH, IMC and partners	# of sessions held, feedback reports

Annex 3: Heat and Occupational Health

This annex outlines key measures to protect health workers and support staff from the risks of extreme heat during heatwaves and hot seasons. These actions aim to ensure staff safety, maintain service continuity, and reduce heat-related illness among frontline personnel. The following is a more detailed set of activities to ensure the health of staff during heatwaves:

1. In preparation for heat events, host a heat stress awareness session for staff.
 - a. Encourage staff to “stay healthy”, hydrate, and maintain a basic level of aerobic fitness.
 - b. Encourage heat acclimatization planning and use progressive exposure to improve thermal tolerance.
2. Ensure awareness of hot weather conditions amongst staff.
 - a. Provide information on local weather conditions and forecasts as well as associated risk, particularly when conditions change.
 - b. Monitor workers for signs and symptoms of heat-related illness
 - c. Create a ‘buddy’ system for informal peer-to-peer monitoring of heat stress, following a protocol that is appropriate to your context.
 - d. In conditions conducive to heat stress, avoid situations where staff work alone.
 - e. Supervisors are also responsible for monitoring staff for the signs and symptoms of heat stress.
3. Limit staff exposure to heat and/or exertion.
 - a. Consider needed staffing levels to enable surge/shadow rotations to facilitate break and rest periods.
 - b. Schedule work that may result in the rapid storage of body heat and/or increase body core temperature as manageable periods of time. Follow this with exposure to cooler areas to dissipate body heat and reduce the risk of heat stress. This could involve directing staff to tasks and wards requiring different levels of PPE.
 - c. Work/rest cycles are an established approach but may not always be practicable. Mechanical aids (e.g. trolleys) can also help to reduce physical workloads and, as a result, the body’s metabolic heat production.
4. Establish a cool rest area for staff.
 - a. Provide a cool area for staff and schedule adequate time for cooling during rest breaks.
 - b. Ensure air conditioning and ventilation systems are regularly inspected and maintained, and operate at the correct settings.
 - c. In many places, electric fans may be more accessible; but may help transmit the virus indoors, and in very hot and dry environments these can increase heat stress.
 - d. Consider supplementing with ice slurry consumption where cooling facilities are not available or are insufficient, particularly in hot and humid conditions.
 - e. Consider the use of cooling devices under protective garments such as a vest with phase change materials, ice or equivalent.
5. Ensure sufficient hydration and nutrition for staff.
 - a. Provide cool water and access to food within clean (and ideally cool) areas.
 - b. Encourage staff to self-monitor their hydration. Practical options include: displaying simple urine-colour charts in toilet facilities; and providing weighing scales in

- changing rooms so that staff can weigh themselves before and after each shift to calculate fluctuations in their body mass (and therefore hydration level).
6. Consider how to ensure cooled toilet facilities.
 - a. Providing toilet facilities within hot areas encourages staff to continue hydrating rather than reducing their fluid intake to avoid urinating until they can reach a more convenient toilet in a cooler area. This reduces their risk of dehydration due to the combined effects of heat and a lack of fluids.
 7. Establish a formal monitoring system for staff heat experiences.
 - a. Encourage workers to report heat stress symptoms.
 - b. Consider issuing a brief anonymous staff survey to monitor heat stress symptoms and the adequacy of control strategies.
 - c. Create a critical incident log to record heat illness and “near misses”. This can inform future policies as well as the training of new staff.
 8. Ensure access to treatment area for heat-related illness of staff, including heat stroke.
 - a. Provide access to cooling facilities for staff to rapidly reverse excessively high body core temperature.
 - b. Where immersion in cool water is not practicable, apply cold towels and/or ice packs to the body.

Measure	Target Group	Implementation Method	Responsible Institution	Monitoring Indicator
Work/rest cycles during heatwaves	Health workers	Adjust shift schedules to reduce exposure during peak heat hours	MoH, IMC & partners	Staff feedback, absenteeism rates
Hydration stations in clinics	All staff	Install water dispensers and provide drinking water	MoH, WASH Cluster	Water usage logs
Shaded rest areas	Health workers	Set up tents or ventilated rooms for breaks	LOCAL GOVERNMENT, HF managers	Facility audits
Heat stress awareness training	All staff	Conduct seasonal workshops and briefings	IMC, WHO, Partners	# trained, knowledge assessment
PPE adjustments for hot conditions	Frontline workers	Provide lightweight uniforms and cooling vests	MoH, LOCAL GOVERNMENT	Staff satisfaction surveys
Monitoring of heat-related staff illness	All staff	Establish incident reporting system for heat-related symptoms	MoH, IMC, WHO	# of reported cases
Cooling equipment maintenance	Facility staff	Regular servicing of fans, AC units, and backup generators	MoH, LOCAL GOVERNMENT	Equipment uptime logs
Mental health support during heatwaves	Health workers	Provide counseling and peer support for stress management	MoH, IMC and partners	# of sessions held, feedback reports

Annex 4: Community Feedback Tools

This annex outlines the tools and mechanisms used to gather feedback from communities regarding heat-related health risks, preparedness activities, and service delivery. These tools are essential for ensuring that the HHAPMP remains responsive, inclusive, and grounded in community realities.

Tool / Method	Purpose	Target Group	Frequency	Responsible Institution	Monitoring Indicator
Community Surveys	Assess awareness, behaviors, and satisfaction	General public, vulnerable groups	Bi-annual	MoH, LOCAL GOVERNMENT IMC, Local NGOs	# of surveys completed, % response rate
Focus Group Discussions (FGDs)	Gather qualitative insights on heat impacts and needs	Women, elderly, IDPs, youth	Annual (pre-heat season)	LOCAL GOVERNMENT, IMC, Universities	# FGDs held, key themes documented
Suggestion Boxes at Facilities	Collect anonymous feedback on services and preparedness	Health facility users	Continuous	MoH, Facility Managers	# of suggestions received, action taken
Community Health Volunteer Reports	Relay community concerns and observations	CHWs, community leaders	Monthly	MoH, Partners	# of reports submitted, issues escalated
Hotline / SMS Feedback System	Enable real-time reporting of heat-related issues	General public	During heatwave alerts	MoH, LOCAL GOVERNMENT	# of messages received, response time
Stakeholder Review Meetings	Validate feedback and adjust plan accordingly	TWG members, community reps	Post-heat season	MOH	

Annex 5: Health Facility Lists

S\No	Region	District	HF Name	HF Type	Latitude	Longitude
1	Middle Shabelle	Jowhar				

S\No	Region	District	HF Name	HF Type
1	Middle Shabelle	Jowhar	Jowhar Regional Hospital	Referral Hospital
2	Middle Shabelle	Jowhar	Bullo Sheikh Health Centre	Health Centre
3	Middle Shabelle	Jowhar	Kulmis Health Centre	Health Centre