

# Somalia Oxygen Scale-up Partners Workshop Report

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Mogadishu, Somalia

WHO EMRO WHE/IHP



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## Executive Summary

Medical oxygen is a critical, life-saving resource, yet significant gaps in access persist across Somalia. In response, WHO convened a national workshop to address these challenges, bringing together key stakeholders from government, international organizations, and healthcare facilities. This report highlights the workshop's findings, discussions, and actionable recommendations to scale-up oxygen access nationwide.

The workshop highlighted the urgent need for coordinated efforts to address critical barriers such as poor coordination and oversight, high energy costs, workforce shortages, and limited infrastructure for oxygen delivery. It also underscored Somalia's healthcare system's heavy dependence on short-term donor funding, as government financing remains insufficient for operational support and infrastructure development.

Despite these challenges, the workshop showcased notable progress, including the installation of PSA plants, oxygen concentrators, and solar-powered systems by various partners. However, participants emphasized the critical need for sustainable strategies to maintain and expand these advancements.

To address the identified challenges and build on the progress made, the workshop proposed the following actionable steps:

1. **National Oxygen Task Force:** Establish a task force to lead coordination, oversight, and governance of oxygen systems, leveraging a multi-tiered structure for strategic and technical leadership.
2. **Comprehensive Situational Analysis:** Conduct a detailed assessment of oxygen demand, supply, workforce capacity, and policies to guide strategic planning and resource allocation.
3. **PSA Plant Maintenance and Sustainability Plan:** Develop a robust framework to ensure sustained plant functionality through regular maintenance, local capacity building, and innovative financing models including public-private partnerships.
4. **National Oxygen Roadmap:** Initiate the development of a strategic roadmap to set clear goals, monitor progress, and build a resilient oxygen ecosystem.

By fostering collaboration and leveraging collective expertise, this initiative provides a foundation for transforming Somalia's oxygen landscape. It aims to address immediate needs while building sustainable systems for improved health outcomes and better preparedness for future emergencies.

## Background

Oxygen is a critical, life-saving essential medicine with no substitute. Lack of medical oxygen was a defining inequity of the COVID-19 pandemic, with countries including Somalia bearing the brunt of oxygen shortages and related deaths. While notable advancements have been made in increasing access to medical oxygen in Somalia, including deployment of solar-powered oxygen concentrators and commissioning of several PSA oxygen plants with the support of numerous stakeholders, access gaps still remain. Addressing these requires a shared understanding of oxygen demands during routine periods and surges, alongside an evaluation of the type and scale of support needed to strengthen the health system cost-effectively.

To ensure efficient use of resources and prevent duplication of efforts, a unified approach is essential. This includes coordinated action among stakeholders to align strategies and optimize outcomes for oxygen access.

This workshop aims to bring stakeholders together to foster collaboration and identify practical solutions to scale up oxygen access in the country.

## Workshop Objectives

- Convene a national workshop bringing together state and non-state actors working in the oxygen space, creating a coordination mechanism to support effective partnerships, advocacy and leveraged capabilities to increase and sustain medical oxygen in Somalia.
- Share and interpret collective medical oxygen ecosystem data for a nationally representative situational analysis and resource mapping toward having a system for tracking medical oxygen in Somalia.
- Facilitate the formation of an inclusive oxygen working group focused on collaboration, coordination, sharing data for scaling up medical oxygen in Somalia.
- Provide actionable recommendations outlining strategies to address identified gaps and challenges.

## Introduction

This report is organized into three parts as follows:

Part 1: A summary of findings from partner presentations on their oxygen-related activities, challenges and priorities in Somalia.

Part 2: Findings from group work sessions conducted on the second day of the workshop.

Part 3: Recommendations on activities to strengthening the oxygen ecosystem in Somalia.

## Part 1: Findings from Partners Presentations

This part provides an overview of the insights shared by partners during their presentations, highlighting their focus areas, critical challenges and future priorities in strengthening the oxygen ecosystem in Somalia. The findings reflect a comprehensive view of ongoing efforts and gaps in scaling up nationwide oxygen access.

### Focus Areas and Current Activities of Partners

Organizations	Focus areas and key activities
<b>Ministry of Health (MoH) – Biomedical engineers</b>	<ul style="list-style-type: none"><li>• Mapping of all PSA plants in public hospitals across the country with functionality status and donor information.</li><li>• Conducted training on oxygen plants operation to operators and technicians across all states.</li><li>• Developed training materials including videos in Somali language for medical device users.</li><li>• Need collaboration and technical support for advanced technical training, data management and financing for equipment upgrades and new installations.</li></ul>
<b>World Health Organization (WHO)</b>	<ul style="list-style-type: none"><li>• Installation of 5 containerized PSA plants with maintenance agreements and spare parts for 2 years. Installation of 3 additional planned.</li><li>• Installation of solar power-driven oxygen concentrator systems in 16 district hospitals. Installation planned in 14 additional hospitals.</li><li>• Equipping 376 PHCs with oxygen concentrators and pulse oximeters.</li><li>• Capacity building for biomedical engineers and technicians.</li></ul>
<b>UNICEF</b>	<ul style="list-style-type: none"><li>• Procurement, installation and commission of 7 PSA plants which will include maintenance and spare parts for 2 years.</li><li>• Solarization of 2 of the PSA plants as well as 50 health facilities.</li><li>• Procurement of oxygen consumables.</li><li>• Plan to install medical gas piping in some hospitals.</li><li>• Plan to distribute 367 resilient, energy efficient oxygen concentrators designed for low resource settings.</li></ul>

<b>United Nations Population Fund (UNFPA)</b>	<ul style="list-style-type: none"> <li>• Strengthen maternal and reproductive health through support for Basic and Comprehensive Emergency Obstetric and Newborn Care (BEmONC and CEmONC) in 26 health facilities by providing essential equipment, supplies, and medicines.</li> <li>• Capacity building for healthcare workers to effectively deliver BEmONC and CEmONC services.</li> </ul>
<b>Save the Children</b>	<ul style="list-style-type: none"> <li>• Installation of medical oxygen plant in Puntland.</li> <li>• Distribution of oxygen concentrators.</li> <li>• Development of guidelines for oxygen production devices and conducting training on monitoring and evaluation.</li> </ul>
<b>Islamic Relief Worldwide</b>	<ul style="list-style-type: none"> <li>• Installed PSA plants.</li> <li>• Distributed oxygen cylinders to hospitals.</li> <li>• Currently no longer specifically supporting oxygen scale-up but will explore opportunities for future support.</li> </ul>

## Shared Critical Challenges in Oxygen Access and Scale-up

This section outlines the key barriers affecting the oxygen ecosystem in Somalia, as identified by stakeholders.

### 1. Weak coordination and governance

- Lack of a functional oxygen task force, leading to governance gaps and poor ownership.
- Poor coordination among partners and donors, with unaligned strategies.
- Absence of national or sub-national oxygen roadmaps to guide scale-up efforts.

### 2. High energy costs and power supply issues

- Inability to fully utilize some PSA plants and oxygen concentrators due to prohibitively high energy costs.
- Frequent power outages disrupt plant operations and high upfront costs for solar alternatives limit widespread adoption.

### 3. Severe shortage of skilled personnel

- A critical shortage of trained biomedical engineers and technicians to operate and maintain oxygen plants exists, with reports of only 10 BMEs and no technicians specifically trained in biomedical engineering in the country, compared to the ATMO2S guideline recommendation of approximately 950 BME/Ts based on the population size.
- Healthcare workers lack adequate training in oxygen therapy and hypoxemia management, especially for newborns and children.
- Limited access to supervision, mentorship and career development initiatives reduces workforce capacity and retention, with many trained healthcare workers leaving public facilities for private ones or migrating abroad.

#### **4. Logistical and maintenance barriers**

- Challenges with obtaining contextualized technical specifications during procurement.
- Difficulties in transportation of PSA plants and other equipment to subnational levels.
- In more remote regions, oxygen cylinder prices can be as high as \$70 to \$100 per cylinder, making oxygen unaffordable for many facilities and patients.
- Misuse of oxygen plant components for non-healthcare purposes and the lack of quality assurance mechanisms compromise functionality and safety.
- Limited local availability of spare parts and consumables, causing prolonged equipment downtime.

#### **5. Underutilization of oxygen in health services**

- Oxygen therapy and hypoxemia management are not fully integrated into service delivery platforms such as IMNCI, BE/CEmONC.
- Many facilities lack medical gas piping systems to efficiently deliver oxygen to patients.
- Absence of established systems to redistribute excess oxygen from facilities producing more oxygen than their daily need to other health facilities.
- In some cases, oxygen equipment such as concentrators remain in storage at health facilities due to inadequate distribution planning including failure to assess demand, training needs and compatibility with available electricity infrastructure.

#### **6. Insufficient planning and lack of long-term sustainability measures**

- National and sub-national oxygen needs are not adequately mapped resulting in poorly targeted interventions and inefficient resource allocation.
- Lack of clear guidelines and difficulties in estimating budgets for sustainable implementation and operation of PSA plants.
- Absence of policies and guidelines to ensure provision of oxygen and pulse oximetry at primary healthcare level, hindering decentralized access and early detection of hypoxemia.
- No comprehensive plans for sustained provision of oxygen delivery consumables (e.g. nasal prongs, masks, tubing) leading to frequent shortages.
- Limited national investment in oxygen infrastructure, with heavy reliance on short-term donor funding.
- Lack of government-level strategies to sustain the operations of existing PSA plants. Donated PSA plants also often arrive without associated maintenance plans, leaving the government to bear unaffordable repair costs.
- Service level maintenance agreements, if present, are often short-term with no long-term sustainability plans in place after they end.



## Future Priorities, Activities and Projects across the MOH and Partners

In their presentations, the MOH and invited stakeholders highlighted the following areas as organizational priorities for advancing oxygen scale-up initiatives, acknowledging that funding constraints remain a major challenge.

### **1. Developing a national oxygen roadmap and policy framework**

- Establishing a national oxygen task force for coordination and oversight of oxygen systems.
- Creating a costed national oxygen roadmap to guide scale-up efforts.
- Updating and standardizing guidelines, regulations and clinical training for medical oxygen.

### **2. Expanding and optimizing oxygen infrastructure**

- Deploying and operationalizing oxygen equipment, integrating oxygen supply into healthcare systems at all levels.
- Conducting needs assessment and site evaluations to address improper placement of oxygen plants.

### **3. Building resilient power, maintenance and funding systems**

- Collaborating to develop long-term maintenance plans for PSA plants.
- Securing funding for the expansion, operation and maintenance of oxygen equipment.

### **4. Strengthening workforce capacity and technical expertise**

- Training healthcare workers on oxygen therapy provision and equipment use.
- Building technical capacity by training biomedical engineers and technicians.
- Developing ongoing mentorship and supervision programs to enhance workforce retention, skill development and knowledge transfer in oxygen management and maintenance.

### **5. Enhancing data collection and safety measures**

- Integrating centralized data collection and monitoring to track the availability, usage and performance of oxygen systems.
- Integrating oxygen data into DHIS 2 and addressing LMIS gaps to provide actionable insights for decision-making and impact assessment.
- Implementing safety protocols and emergency preparedness plans to improve the resilience and efficiency of oxygen systems.

## Part 2: Findings from the Group Sessions

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On the second day of the workshop, participants took part in three focused sessions featuring presentations and group discussions aimed at addressing key aspects of improving oxygen access in Somalia.

### Session 1 – Collaboration, Coordination and Data sharing

The session featured a presentation on enhancing collaboration and coordination to strengthen oxygen systems, emphasizing the development of a National Oxygen Roadmap as a strategic framework to support scale-up efforts. Examples from other countries highlighted how roadmaps address challenges, while the need for effective coordination mechanisms and an oxygen task force with clear terms of reference was underscored.

Following the presentation, participants engaged in group discussions centered around the following key questions:

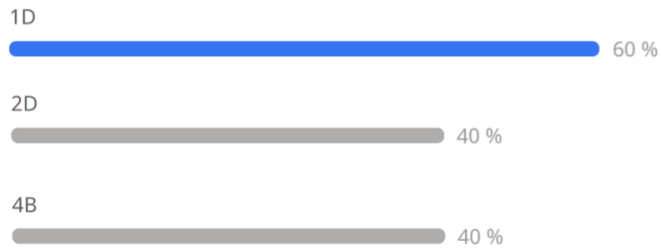
- i. Is the current collaboration and coordination for medical oxygen in Somalia optimal? If not, what is missing or needed?
- ii. Is the quantification of oxygen needs and the sharing of medical oxygen data being performed effectively? If not, what is missing or needed?

Participants unanimously agreed that coordination mechanisms for medical oxygen in Somalia are currently non-existent, with some coordination efforts during the COVID-19 period having since dissipated. They also emphasized the absence of a structured mechanism for sharing data among partners, further complicating collaborative efforts and effective planning.

### Sessions 2 and 3 – Identifying Priorities and Action Planning

During session 2, participants were introduced to the Access to Medical Oxygen Scorecard (ATMO2S), a tool designed to support countries in monitoring their implementation of the WHO *Increasing Access to Medical Oxygen* resolution. They discussed preliminary results of the ATMO2S scorecard in Somalia's context and collaboratively identified immediate priorities (aligned with ATMO2S criteria) for the next 6 months. This culminated with individuals voting on the top 3 overall priorities with results shown below:

## Session #2: Which priority do you consider most important?



### Descriptions of voted priorities

1D - Have coordination mechanisms in place across state and non-state actors to support effective partnerships, evidence use, advocacy and leveraged capabilities to increase and sustain oxygen access.

2D - Have guidance documents and contracts to connect production (e.g., gas companies, distributors) and end-user organizations (e.g., hospitals, district health boards) at national and sub-national levels. E.g. service level agreements for maintenance and distribution of medical oxygen.

4B - Have sufficient trained biomedical engineers / technicians, with access to appropriate equipment and supplies, to manage medical oxygen technology safely and effectively.

During [group work 3](#), participants identified specific steps required to address the selected priorities, recommending lead organizations, assigning roles and responsibilities, and proposing realistic timelines.

These sessions facilitated dynamic discussions and collaboration among participants, laying the groundwork for concrete actions to improve oxygen access and management in Somalia. The findings have been incorporated into the recommendations provided in Part 3 of this report, representing a collective effort to address immediate priorities and set a path for long-term improvements of the nationwide oxygen ecosystem.

## Part 3: Recommendations on Next Steps for Strengthening the Oxygen Ecosystem in Somalia

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Based on the workshop discussions, participant feedback, and additional insights, the following actionable recommendations are proposed:

### 1. Establish and Operationalize a National Oxygen Task force/ Working Group

- *Formation and Leadership:* A National Oxygen Task force should be created immediately to provide leadership, coordination and oversight for scaling up medical oxygen access across Somalia. It should be led by the Department of Medical Services at the Federal Ministry of Health, with the Director of Medical Services taking overall responsibility for its operations. WHO may serve as the secretariat to support administrative and technical functions.
- *Membership:* Include diverse stakeholders such as medical professionals, biomedical engineers, public health experts, representatives from relevant ministries (e.g., Commerce, Justice, Finance, Energy), regulatory bodies, representatives from public and private health facilities, local and international NGOs, as well as private companies involved in oxygen production, supply or equipment maintenance. A balanced representation while avoiding conflicts of interest should be ensured.
- Given Somalia's context and federal structure, consider a three-tiered system for the task force as follows:
  - *Strategic Leadership:* This should comprise senior leaders including Federal and State Ministers of Health and country representatives from WHO, UNICEF, and other key organizations. They will be responsible for facilitating inter-ministerial coordination, advocating for resources and setting policy direction ensuring alignment with national priorities.
  - *Technical Leadership:* Members of this group should include senior technical advisors from UN agencies & NGOs and nominated representatives from strategic leadership. Higher level representatives (e.g. directors) from other ministries may be included here to ensure cross-sectoral coordination. This group will provide guidance on systemic challenges and serve as the link between strategic leadership and on-the-ground implementation.
  - *Technical Working Group (TWG):* This will include operational experts such as clinicians, biomedical engineers, public health experts and field-level representatives from the private sector, and others as described above. They focus on implementation of task force directives such as conducting oxygen needs assessments, creating plans for maintaining oxygen plants and drafting the National Oxygen Roadmap. This group should meet regularly (at least once a month recommended) with clear objectives and actionable outcomes.

Immediate actions for the TWG should include:

- i. Engaging strategic leadership to explain the objectives of the oxygen task force and formally request nominations for relevant representatives.
- ii. Development of the Terms of Reference outlining objectives, roles, responsibilities and expected deliverables of the task force.

- iii. Expand on the stakeholder mapping initiated during the workshop, leveraging the health cluster if applicable, to identify additional partners whose expertise can be utilized and invite them to participate in the task force.
- iv. Begin meeting immediately, leveraging attendees from the workshop as an initial group to start working on key activities. These activities may proceed with support from technical leadership, even before the full task force is officially established.

## 2. Initiate Data Collection for a Comprehensive Situational Analysis

To address gaps and guide strategic planning, a comprehensive situational analysis should be initiated. This will provide evidence-based insights into current challenges, opportunities and resource needs across Somalia. Key areas for analysis are:

- *Oxygen demand* – As agreed during the workshop, the UNICEF Oxygen Systems Planning Tool (OSPT) should be utilized to generate an aggregated view of oxygen demand at health facilities across different levels of the health system. The tool can also provide health-facility level recommendations on oxygen sources, guide placement of new oxygen plants, generate procurement lists for oxygen equipment and consumables, and estimate capital and operating costs.
- *Oxygen supply and infrastructure* – Assess the functionality and distribution of oxygen-equipment (e.g. PSA plants, oxygen cylinders, concentrators, ventilators, pulse oximeters) to allow clear identification of needs. As some data is already available on WHO’s Live Oxygen Platform (LOP), efforts should be made to expand on this data for completeness.
- *Workforce capacity* – Workshop participants widely acknowledged there is an insufficient workforce to manage oxygen systems effectively, but detailed data on existing human resources and specific training gaps is lacking. While information on biomedical engineers and technicians exists, there is a lack of clarity on their training levels and competencies. Mapping key personnel involved in oxygen management will identify gaps and guide targeted interventions to strengthen the workforce.
- *Policies and guidelines* – Review existing national regulations, clinical guidelines, and oxygen standards to align policies with current needs and promote standardization.

### Immediate actions:

Since the workshop, WHO and UNICEF have initiated collaboration to conduct a needs assessment using the UNICEF OSPT. Other partners, especially those supporting or managing specific health facilities can contribute valuable data.

For efficient data collection, consolidate mapping efforts across components (e.g., demand, infrastructure, workforce) to enable simultaneous data collection during facility visits.

## 3. Develop a Comprehensive PSA Oxygen Plant Maintenance & Sustainability Plan

The need for such a plan was emphasized during the workshop, where critical issues were highlighted, including many plants remaining uninstalled, un-commissioned or

non-operational (as shown in Annex A) and some failing shortly after installation, despite the urgent demand for oxygen production.

The development of this plan should be led by the Biomedical Engineering Unit of the MOH and should include the following key components -

- *Data updating and further assessments*: Building on existing data (as outlined in Annex A), conduct a comprehensive assessment of PSA plants across all states. Evaluate availability of valid warranties and maintenance agreements and document gaps. Identify faults in non-functional plants and obtain repair quotes.
- *Development of a maintenance framework*: Create a maintenance schedule and strategy for each plant. The MOH must take ownership of all plants, including those funded by community groups, while leveraging the local private sector to enhance technical expertise. Public-Private Partnerships (PPPs) and different financing models should be explored, such as:
  - Allowing private companies to install and/or manage PSA plants in public hospitals, providing free oxygen to the hospital while selling to others (addressing the lack of government funds for maintenance).
  - Enabling public facilities to sell surplus oxygen in cylinders to private hospitals.
  - Strengthening local companies to build their maintenance capacity and foster collaboration with manufacturers, thereby improving the local technical ecosystem.
- *Donor and stakeholder engagement*: Conduct targeted outreach to private organizations and community groups that donated PSA plants to seek their support for repairs and maintenance while educating them on technical and operational sustainability requirements. Consider also developing a donor guidance package that outlines best practices for oxygen plant donation, leveraging WHO resources (Annex C).
- *Build workforce capacity*: Integrate workforce training and capacity-building efforts throughout the process, ensuring all personnel managing PSA plants are trained and re-trained to effectively operate and maintain the systems.

Immediate actions should prioritize assessing the requirements for operationalizing all PSA plants in the country. The aim is to reduce underutilization of existing plants and prevent the inefficiency of procuring new plants without robust operational plans in place.

#### **4. Develop a National Oxygen Roadmap**

The activities outlined above will form the foundation for developing a comprehensive National Oxygen Roadmap for Somalia. This roadmap will define clear goals and establish timelines to address critical gaps in Somalia's oxygen ecosystem. By aligning efforts, facilitating coordination, and incorporating monitoring mechanisms, the roadmap will provide a strategic framework to build a resilient, sustainable oxygen ecosystem that ensures equitable access to medical oxygen.

## Annex

### Annex A: Interim Data on PSA Oxygen Plants in Somalia (data collection and validation is ongoing)

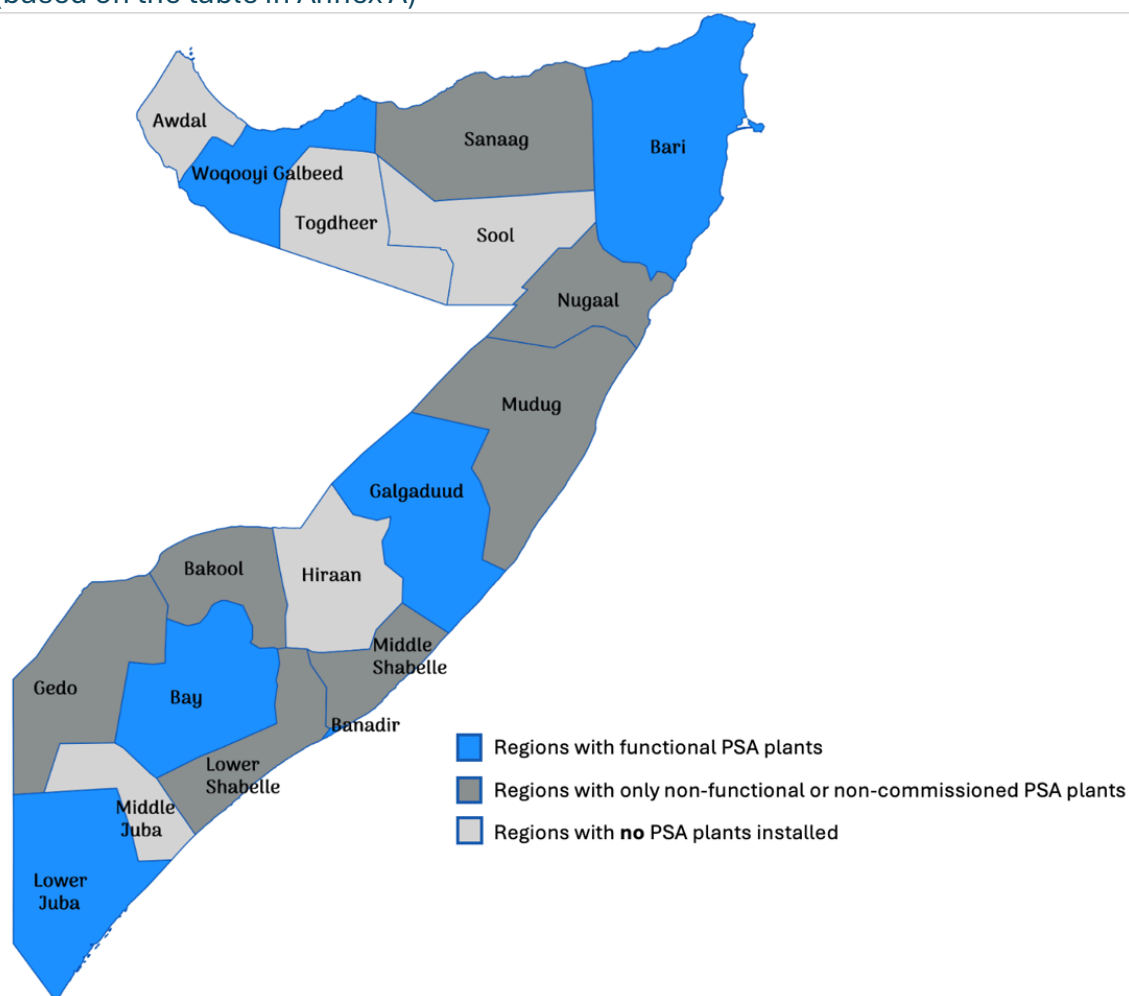
No	Facility	Region	State	Year	Donor	Status
1	Badhan District Hospital	Sanaag	Puntland	2022	World Bank (RCRF)	Non-functional
2	Demartino Hospital	Banadir	Banadir	2021	WHO	Functional
3	Demartino Hospital	Banadir	Banadir	2021	WHO	Functional
4	Puntland MOH	Nugal	Puntland	2022	WHO	Functional
5	Hargeisa Group Hospital	Woqooyi Galbeed	Somaliland	2022	WHO	Functional
6	Hargeisa Group Hospital	Woqooyi Galbeed	Somaliland	2022	WHO	Non-functional
7	Bakool Regional Hospital	Bakool	South West	-	WHO	Not installed
8	Bakool Regional Hospital	Bakool	South West	-	WHO	Not installed
9	Dhahar District Hospital	Sanaag	Puntland	-	WHO	Not installed
10	Abudwak District Hospital	Galguduud	Galmudug	-	UNICEF	Not commissioned
11	Baraawe District Hospital	Lower Shabelle	Jubaland	-	UNICEF	Not commissioned
12	Garbaharey District Hospital	Gedo	Jubaland	-	UNICEF	Not commissioned
13	Hargeisa Group Hospital	Woqooyi Galbeed	Somaliland	-	UNICEF	Not commissioned
14	Jowhar Hospital	Middle Shabelle	Hirshabelle	-	UNICEF	Not commissioned
15	Garowe General Hospital	Nugal	Puntland	-	UNICEF	Not installed
16	Mudug Regional Hospital, Gaalka	Mudug	Puntland	-	UNICEF	Not installed
17	Bay Regional Hospital	Bay	South West	2024	SCRP Project	Functional
18	Dhusamareb General Hospital	Galguduud	Galmudug	2022	SCRP Project	Functional
19	Kismayo Hospital	Lower Juba	Jubaland	2022	SCRP Project	Functional
20	Galdogob General Hospital	Mudug	Puntland	2022	Save the Children	Non-functional
21	Qardho General Hospital	Bari (Karkar)	Puntland	2021	Islamic Relief	Non-functional
22	Madina Hospital	Banadir	Banadir	2022	Islamic Relief	Functional
23	Banadir Hospital	Banadir	Banadir	2021	Hormud Foundation	Functional
24	Demartino Hospital	Banadir	Banadir	2021	Dahabshil Bank	Non-functional
25	Wa'iye District Hospital	Bari (Karkar)	Puntland	2021	Communityfunded	Functional
26	Bosaso Oxygen Plant	Bari	Puntland	2023	Communityfunded	Non-functional
27	Bay Regional Hospital	Bay	South West	2022		Non-functional

This data was compiled by biomedical engineers from the MoH and updated during the workshop based on feedback from participants.

To date, 27 PSA plants have been identified in public hospitals across Somalia. Of these, 10 are functional, 7 are non-functional, and 10 are not yet commissioned or installed.

Note: During the workshop, WHO and Save the Children confirmed their commitment to ensuring the PSA plants they donated are repaired. UNICEF shared update pictures and noted that 5 PSA plants are expected to be commissioned soon, although no specific dates were provided.

## Annex B: Distribution of PSA Oxygen Plants Across Regions of Somalia (based on the table in Annex A)



## Annex C: Helpful Resources

- [Statement on access to quality and safe medical oxygen](#)
- [WHO Increasing access to medical oxygen resolution](#)
- [WHO Foundations of medical oxygen systems](#)
- [WHO virtual workshop series for developing national medical oxygen scale-up plans](#)
- [Published oxygen roadmaps from other countries](#)
- [Medical device donations: Considerations for solicitation and provision. 2<sup>nd</sup> edition](#)

## Annex D: List of Workshop Participants

### WHO Team

No	Name	Title	Organization
1	Hauwa Mohammed	BME Consultant	WHO-EMRO
2	Florestan Boualame	BME Consultant	WHO-EMRO
3	Gary Kuniyoshi	Medical Officer	WHO-EMRO
4	Abdirashid Asir	Case Management Officer	WHO Country Office



*Somalia Oxygen Stakeholders and Partners in attendance*

No	Name	Title	Organization
1	Abdirahman Hadi Omar	Head of Biomedical Engineering	FMOH
2	Nima Abdulkadir	Biomedical Engineer	FMOH
3	Mohamed Abdnor Omar	Head of Mass Casualty Management and Trauma	FMOH
4	Amal Abdillahi Umar	Child Health Officer	FMOH
5	Abdiwahab Ismail Nor	Biomedical Engineer	Puntland MOH
6	Liban Ali Osman	Medical Director	DeMartino Hospital (Public)
7	Ali Abdullahi Abdi	Administrative Supervisor	Recep Tayyip Erdogan Hospital (Public/Private)
8	Aweis Ali Abdi	Head of Logistics	Madina Hospital (Public)
9	Mohammed Awadh Mohammed	Biomedical Engineer	Madina Hospital (Public)
10	Abdullahi Abdirisak Hassan	Oxygen Plant Supervisor	Banadir Hospital (Public)
11	Fahad Ali Nur	Head of Biomed	Bay Regional Hospital, Baidoa (Public)
12	Abdisalam Omar Abdulle	Technician	SIMAD University - Dr Sumail Hospital (Private)
13	Abukar Samow	Health Specialist	UNICEF
14	Fadumo Nour	Health Officer	UNICEF
15	Ali Salad Mohamed	Health Officer	UNFPA
16	Awil Ibrahim Hussein	Programme Coordinator	Islamic Relief Worldwide
17	Abubakar Ali Aden	HMIS and M&E Manager	Save the Children

## Annex E: Photos from the Workshop



Foundation	Yes	
Islamic Relief	Yes	Electricity challenge solved
Islamic Relief	No	Waiting spare Parts
WHO/EU	Yes	
Savethechildren	No	Waiting spares
World Bank(RCRF )	No	Electricity Issue
Community	Yes	

