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| **SIDAMA REGION PUBLIC HEALTH INSTITUTE****5 YEAR STRATEGIC PLAN****(2014 EFY – 2018 EFY)** |

 **July, 2013 E.C**

**Hawassa, Sidama, Ethiopia**

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 **ACRONYMS**

|  |  |
| --- | --- |
| BSC BOD | Balanced ScorecardBurden of disease |
| EDHS  | Ethiopia Demographic and Health Survey |
| EFY  | Ethiopian Fiscal Year |
| EOC  | Emergency Operation Center |
| EPHI FAIRHSTP ISSIRICTITRSWOT | Ethiopian Public Health InstituteFindable, Accessible, Interoperable and Reusable.Health Sector Transformation Plan Information RevolutionIntegrated Supportive supervisionInformation Revolution Information and Communication Technologies implementation Information Transformation Roadmap |

|  |  |
| --- | --- |
| WHO | World Health Organization |
|  |  |
|  |  |
|  |  |
|  |  |
| SDG | Sustainable Developmental Goal  |
| Si-PHI  | Sidama public health institute |
| RHB | Regional health bureau |
| RDMC | Regional Data Management center |
| SWOT | Strength, weakness, opportunities and threat |
| RTDS | Research Tracking Database system  |
| FAIR | Findable, Accessible, Interoperable and Reusable |
| BOD | Burden Of Disease |
| SRSs | System Requirement Specifications  |

**EXECUTIVE SUMMARY**

Sidama Public Health institute has been established by regional council having its own legal entity as the main government body in charge of three main objectives as expressed in the regulation number 11/2013: Research (based on regional public health research agenda) on priority public health and nutrition issues, generate, translate and disseminate scientific and technological knowledge; Surveillance for the early identification and detection of public health risks and prevent public health emergencies through adequate preparedness, alert, timely information during public health emergency, respond effectively and timely and ensure rapid recovery of the affected population from the impact of public health emergency; referral diagnostic and analytical tests and support the capacity building of health and food science laboratories at the national level for quality laboratory services. In order to better fulfill its mission in alignment with the second growth and transformation plan (national development priorities) in general and health sector transformation plan (HSTP) in particular, SPHI developed its second five years (2014 – 2018 E.C) strategic plan that envisions ‘to be a center of excellence in public health in Africa’ through high engagement of its relevant stakeholders. The Balanced Score Card (BSC) approach was followed as a strategic planning and management system in developing and managing the strategic plan. The plan was built on four strategic themes and expected results:

* Excellence in public health emergency management with strategic result ‘protected and rehabilitated community from consequences of public health emergency’,
* Excellence in research and technology transfer with ultimate strategic result ‘evidence that will be translated into policies, programs, public education, product packages and products’,
* Excellence in quality laboratory system aspiring strategic result ‘Quality assured laboratories and services’, and
* Excellence in leadership, management & governance with strategic result ‘Effective and efficient management and governance system’.

To realize the Institute’s mission and vision the 11 strategic objectives have been designed in cause and effect relationship under thematic areas to come up with strategic results. Under each strategic objective strategic initiative have been set so as to achieve the respective objective as well as aligned objective (s). Performance measures (indicators) and respective targets have been also set to measure the achievements of each strategic objective. With this framework the SPM has been cascaded with annual plans and implemented in managing the institute with collective vision and gearing organizational initiatives towards achievement of institutional targets and results. So, the main objective of the midterm evaluation was to assess the implementation of the five years strategic plan over the first three years in order to provide key actors with necessary information on the progress made, challenges faced and lessons learnt to possibly redirect the actions and interventions to optimize results. The mid-term evaluation utilized standard evaluation criteria of effectiveness (the progress made to achieve strategic objectives); relevance (the extent to which the strategic themes and objectives were consistent with beneficiaries’ requirements, country and global priorities); efficiency (how economically resources/ inputs (funds, expertise, time, etc.) were converted to results); and sustainability (continuation of benefits from an intervention after it has been completed and to what extent the results/processes sustainable beyond the SPM implementation). Based on the evaluation parameters, the evaluation conducted based on analytical framework of judgment criteria and indicators to guide the midterm evaluation (MTE). Primary data and secondary data were also collected from EPHI, Federal Ministry of Health, and other stakeholders. Much of the information, for the mid-term evaluation, was availed and organized from documented routine monitoring reports. The primary data collection was conducted to obtain in-depth

**MISSION**

The mission of Sidama Public Health Institute is to improve the health of the Sidama people through undertaking research on priority health and nutrition issues for evidence based information utilization and technology transfer; effective public health emergency management; establishing quality laboratory system; and training public health researchers and practitioners for best public health interventions.

**VISION**

To be a center of excellence in public health in Ethiopia.

**1. Introduction**

**1.1 Approach to the strategic planning process**

An initial desk review was carried out regional and national experience and guiding frameworks. This was followed by gathering internal and external inputs through annual report as part of a situational analysis. Strategic approaches and expected results were crafted based on the findings from the strength, weakness, opportunity, and threat (SWOT) analysis and regional frameworks for the management of health emergencies.

**1.2 Findings of the situational analysis**

**Governance and leadership**: The most pressing problem in the governance of PHEM in the Region is the lack of a uniform and capable PHEM structure at different levels (from woreda, to facilities, and to communities). The PHEM system in the region has extensive capacity at the regional level but minimal structural arrangements at lower levels, making it difficult to execute PHEM activities. The weaker capacity at lower levels of the health system explains the observed delays in early recognition, confirmation, and response to health emergencies.

**Health workforce:** There are no human resource plans for health emergency management, or databases of staff trained in emergency management. Similarly, there are no clear procedures for integrating regional, national and international volunteers into service delivery in emergency situations. There exists no tailored in-service training to help develop a health workforce that is capable of effectively preparing for and responding to public health emergencies. The FGD participants from EPHI and the MOH noted that pre-service public health and medical education is not aligned with the skills and competencies required for health emergency preparedness, and for emergency response and recovery. The staffing pattern was also described as having the shape of an ‘inverted pyramid’.

**Medical and non-medical emergency commodities and supplies**: The Government of Ethiopia has a Central Medical Stores, and a drugs and equipment procurement and distribution system, both for routine healthcare and for emergencies, including for therapeutic feeding. Although the proclamation that established the Ethiopian Pharmaceutical Supply Agency (EPSA) clearly identifies the procurement of emergency supplies and equipment as its responsibility, clear mechanisms and guidelines are not in place to ensure it can carry out this function. The current procurement process for medical and non-medical commodities and supplies is not geared towards strategic pre-positioning and rapid deployment during emergencies. There is no dedicated channel for managing the logistics required to execute health emergency operations.

**Health information**: The national integrated disease surveillance captures 36 priority diseases. The main focus is to identify the occurrence of outbreaks of these diseases, and to notify stakeholders. The data capturing occurs from the level of the health post up to the highest level of health facilities. Little is said in the PHEM guideline about event-based surveillance, which could be very helpful in the early detection and notification of public health and nutrition emergencies related to malnutrition, food safety, zoonotic diseases, air pollution, water quality changes, drought, flooding, and issues involving refugees and internally displaced people (IDP). Lack of a real-time surveillance system for health emergency preparedness and response is the most pressing issue in this building block of the health system.

**Health financing**:The situational assessment indicated that there is a lack of finance to budget for emergency preparedness and response plans at all levels of the health system. Currently, available funding channels are neither responsive enough to deal with sudden-impact and rapidly evolving emergencies, nor flexible enough to cater to pre-emptive preparedness and containment measures. Domestic financing for health emergency management is almost non-existent.

**Service delivery**: Apart from the formal referral linkage between facilities, there is no intentional networking between health facilities to address overwhelming caseloads during public health emergencies. The emergency medical system is not well developed. The system across the country lacks standardisation, an emergency notification system, and an ambulance dispatch system. In order to have a functional ambulance dispatching system to pick up mass causalities quickly there is a need for a call centre that unifies security, fire, and health emergencies, but this does not currently exist. There is no institutional culture of planning for the continuity of essential health services in times of public health emergency at any level of the health system.

**1.3 Strategic objectives and expected results**

In the 10 years to come, the following 11 strategic objectives will be the focus of the national public health emergency system in Region:

**Strategic Objective 1:** Establish an accountable and visionary **governance system** to plan and coordinate pre-emergency preparation, emergency operation, and post-emergency recovery.

**Strategic Objective 2:** Build the **capacities** required to create a resilient health system to promptly respond in the context of health emergencies.

**Strategic Objective 3:** Mobilize the **resources** required to adequately fund emergency preparedness, emergency response operations, and recovery.

**Strategic Objective 4:** Establish **mechanisms for engaging** local communities, including community members, civil society, and the private sector, in PHEM.

**Strategic objective 5:** Establish mechanism to **Improve laboratory quality management** system

**Strategic Objective 6:** Conduct **health research on major selected health problem** in the region.

**Strategic objective 7:** Improve **data management system** by using technological data base system.

**Strategic objective 8:** Improve medical supply (equipments, laboratory reagents and drugs) access, distribution and utilization.

**Strategic objective 9:** Develop **partnership and media engagement**.

**Strategic Objective 10: Improve capacity building activities (**regular mentorship, ISS, and training)

 **Strategic objective 11:** **improve institutional reform** activities

The key expected results corresponding to these four strategic objectives are as follows: Standardized and capable PHEM structures are in place at all levels of the health system in the region. Health facilities can respond in a timely fashion to health emergencies.

An integrated call center and ambulance dispatching system is established. Regional and teaching

hospital laboratories that are capable of supporting health emergency surveillance and response

operation are established. Real-time surveillance system to support public health and nutrition risk

reduction and emergency Preparedness planning is created. Standardized risk communication

mechanisms to address the staff, the public, and the media are in place. A dedicated system for the

procurement and distribution of health emergency commodities is created as part of EPSA. A specific

health emergency logistics management system is established within SPHI. A dedicated budget for

risk reduction programs (risk financing), emergency preparedness programs, and emergency

response and recovery operations are availed as part of the regular health sector budget. Contingency

funds for response and recovery at the regional and woreda levels are assigned. An adequate number

of trained human resources with skills for health and nutrition emergency management are deployed

at all levels in the region. A database of trained human resources for health and nutrition emergency

management is created and maintained. Local communities are actively engaged in the identification

of, response to, and recovery from health and nutrition emergencies. A community-based

surveillance system is established.

**1.4 Strategic directions**

Realisation of these expected results requires the execution of several activities under the following **8 strategic directions:**

Establish favorable policies and guidelines to standardize and formalize all PHEM activities.

Establish a uniform PHEM structure at all levels of the health system in the region.

Strengthen coordination, collaboration, and partnership.

Develop a real-time surveillance system to facilitate public health and nutrition risk reduction and emergency preparedness planning, and timely response and recovery.

Establish standardized mechanisms for timely and appropriate risk communication to the staff, the public, and the media. Develop guidelines and the required capacity (ambulances with ventilators, incubators, etc.) to provide life support and critical care during patient dispatch to hospitals outside the affected area. Develop a health service delivery system that is capable of the early identification of, response to, and recovery from health and nutrition emergencies. Establish a dedicated system for the procurement and distribution of medical and non-medical supplies and equipment for emergency operations.

Allocate a dedicated budget for risk reduction programs, emergency preparedness programs, and emergency response and recovery operations. Develop and deploy adequately qualified human resources for PHEM at all levels in the region. Engage local communities and civil society in the early identification of, response to, and recovery from health and nutrition emergency. Enhance points of entry to region and neighboring region collaboration.

**SWOT analysis**

The strengths and weaknesses of the Sidaama Regional health system (internal environment), and the opportunities and threats with regards to the external environment (political, economic, social, technological, environmental/climate, legal, security/safety, religious, regulatory, and demographic factors) are summarised in Table 1 below

**Table 1: SWOT analysis for PHEM in Sidaama**

|  | **Strengths** | **Weaknesses** |
| --- | --- | --- |
| ***Governance and leadership*** | * Presence of guideline adopted from EPHI for PHEM
* Acknowledgement of the basic principles of PHEM in the guideline
* Presence of a well-organized PHEM division at the Regional level
* Some degree of PHEM-related activities at all levels down to the community
* Uniform PHEM structures across woredas
* Decentralization of EQA for TB and malaria microscopy.
* Availability of BSC and kaizen initiatives to enhance efficiency.
* Having experience on laboratory quality system
* Established a system for specimen referral linkage and testing services
 | * Absence of Regional action plan for health security (multi-sectorial)
* Failure to adhere to the principles of all-hazard, whole-health approach(i.e. PHEM activities are overly focused on outbreak-related emergencies)
* Absence of a specific plan for health sector emergencies
* Absence of regional strategy for leading PHEM
* No formal relationship between RPHI and woreda Health Office
* Understaffed PHEM structures at lower levels (‘inverted pyramid’)
* Lack of focus on risk management and emergency preparedness
* Lack of clarity of procedures and responsible organs/structures for safeguarding points of entry and health security
* TB and malaria focals didn’t submit slides in time.
* Due to lack of vehicle EQA centers face a lot challenges for discordant management.
* Focals did collect slides from non-eligible facility and
* Not keeping EQA feedbacks properly at each level.
* Shortage of Slide box
 |
| ***Health workforce*** | * Masters level field epidemiology training for professionals
* Presence of a large mass of community health volunteers (Women’s Development Army)
 | * No human resources plan for health emergency management
* Inadequate staffing of the PHEM system, particularly at lower levels
* Public health and medical education not tuned to equip professionals with competence in health emergency management
* No tailored in-service training for capacity development in PHEM
* No database of staff trained on emergency management
* No clear procedures for integrating regional and national volunteers into service delivery
 |
| ***Medical and non-medical emergency commodities and supplies***  | * Established system, including cold chain, for the distribution of medical supplies and equipment in the event of a health sector emergency
* Having equipped regional laboratory set up in Hawassa and branch laboratory building on good progress.
 | * No determination of essential laboratory and medical supplies and equipment for emergency operations on the basis of risk assessments and analyses
* No clear/specified mechanism/system for the procurement and distribution of supplies and equipment for emergency operations
* No guideline for maintenance of the inventory and the rotation and safe stockpiling of laboratory and medical supplies and equipment for emergency operations
* No strategic stockpiling of emergency drugs and supplies
 |
| ***Health information*** | * Functional integrated disease surveillance system
* Data capture begins at health posts
* Presence of reporting and data capturing formats for use at lower levels
 | * Data analysis and use limited to regional levels
* Lack of clear mechanism for data sharing with other relevant sectors
* Absence of regional laboratories
* Absence/none use of documented strategies for risk communication with the public and media
* No pre-assigned spokesperson for risk communication at any level
 |
| ***Health financing*** | * MOH were sending additional money through TB program from GF to held microscopy training for lab professionals.
 | * Limited funds for the multisectoral preparedness for, and management of, emergencies at the Regional and Woreda levels
* No designated funds for health sector emergency preparedness programme
* Lack of domestic funding for emergency preparedness and delays in receiving development partner support
* No contingency funding for response and recovery at the Regional and Woreda levels
* Several challenges in accessing funds from EHF
* Health sector financing mechanisms do not include a budget for a risk reduction programme
 |
| ***Service delivery*** | * A health system with a strong base at the village level
 | * No formal hospital emergency preparedness programme
* No planning committee for emergency response and recovery in hospitals (health facilities are poorly prepared for emergency response)
* Poor coordination and confusion of role between Emergency and Critical Care Directorate (ECCD) and PHEM (of EPHI) on emergency case management regional level
* No call center to unify health, fire, and security-related emergency response (no ambulance dispatching system) at Woreda level
* Lack of equipment (e.g. machinery, properly equipped ambulances) necessary for identifying victims and tracking missing persons in times of mass casualties
* No specific arrangements for the pre-hospital handling of patients
* Lack of a proactive emergency response plan for mass casualties
* Absence of mechanisms for identifying victims and tracking missing persons in times of mass casualties
* Absence of plans for ensuring the continuous delivery of essential health services in times of health and nutrition emergency
* Absence of emergency management system in health facilities
* No intentional networking between health facilities to address overwhelming caseloads during public health and nutrition emergencies.
* Absence of the strategic guiding document for the Regional Major Towns Medical Emergency and Critical Care Service Improvement Programme
* Presence of a national protocol for establishment and operation of emergency medical/ambulance dispatch centers
 |
| ***Nutrition emergency management*** | * Integration of management of acute malnutrition in the healthcare delivery system down to the health posts
 | * Lack of clarity on roles and responsibilities among RHB, RPHI, and RDRMC for nutrition emergency management
* Absence of structures for coordinating nutrition emergency management at the woreda levels
* Underfunding of nutrition emergencies related to competing demands from other clusters for humanitarian development
 |
|  | **Opportunities**  | **Threats**  |
|  | * Presence of a Regional structure for emergency management and coordination (a multisectoral committee)
* Policy encourages a decentralised disaster risk management system
* Increasing attention to PHEM among actors of global health
* Partners/donors interested in PHEM
* Presence of several stakeholders willing to join emergency response activities
* Legislative provision for possible declaration of state of emergency
 | * Poor living and working conditions among a large proportion of the population
* Natural and man-made disasters occurring concomitantly
* Regular surges of cases from common conditions (e.g. measles, cholera)
* Failure of other relevant sectors to collaborate on PHEM
* Lack of coordination among donors and implementing partners
* Irregular assessment of the nutrition situation of all woredas by the SI-PHI
* Absence of pre-established mechanisms to rapidly mobilize funds during emergencies
 |

**PUBLIC HEALTH EMERGENCY MANAGEMENT APPROACH**

**1.5** **Main hazards and associated risks**

A particular focus in this strategic plan for PHEM is on the management of health risks associated with **local/national outbreaks or pandemics, severe acute malnutrition, and mass casualties**. Local/national outbreaks or pandemics may follow a natural or human-induced hazard, which might have constituted an emergency itself. However, outbreaks may also turn out to be the primary hazards leading to morbidity and mortality among communities. **Error! Reference source not found.** provides a summary of natural and human-induced hazards that can pose health risks, with issues of focus in region highlighted in italic.

Table 2: Natural and human-induced hazards associated with health risks to populations

|  |  |
| --- | --- |
| **Natural hazards**  | **Human-induced hazards** |
| Biological hazards * Local and national outbreaks (e.g. measles)
* A Outbreaks due to pathogens with pandemic potential (e.g. Middle East respiratory syndrome coronavirus (MERS CoV) and avian A(H5N1) influenza)
* Pandemics (e.g. COVID-19)
 | Technological hazards * Toxic waste, transport accidents, factory explosions, fires, and chemical spills
 |
| Hydro meteorological and geophysical hazards * Floods, drought, earthquakes, wildfires, and others
 | Social hazards* Civil unrest through armed conflicts, terrorism involving the deliberate use of chemical, biological, radiological, and nuclear agents
 |

Severe acute malnutrition is a common phenomenon in Sidaama Region. However, it can turn into an emergency on a significant scale following other hazards, such as civil armed conflict, drought, or flooding. Similarly, mass casualties can result from a variety of hazards

A mass casualty incident (MCI) is any event that impacts negatively on a community, causing numerous casualties and thus outstripping that community’s ability to respond in a normal way.[[1]](#footnote-1) The point at which a community becomes overwhelmed is highly variable and entirely dependent on the size of the pre-hospital workforce, the available emergency room(s), the number of responders, and available supplies.[[2]](#footnote-2) MCIs can take a variety of forms and can result from natural and man-made disasters. Transportation systems (road traffic, aircraft, shipping, railroads) account for many such incidents, as does industry (chemical spills, factory fires), building collapses, and fire**s.** Poisonings can result from sources such as restaurants or water supplies. Outbreaks of disease can quickly outstrip the ability of local healthcare facilities to contain and treat them. Natural disasters, such as floods, windstorms, and earthquakes, are also a cause of MCIs. In the region, there exists the potential for MCIs due to all the above causes to occur. However, expert opinion indicated that traffic accidents (road traffic and railway), conflicts/ population displacement, building collapses, and flooding might have a higher potential of occurrence.

**1.6 Rationale for the strategic plan**

 Historically, public health emergencies in the region have been managed without proactive forecasting and preparedness. Such *ad hoc* approaches to emergency management often led to adelayed and poorly coordinated response, and consequently resulted in a high number of avoidable illnesses and deaths. Furthermore, the responses were costly due to the failure of containment measures.However, since the unprecedented Ebola Virus Disease in West Africa (2014–2016), the need for building a resilient health system has gained global attention. This experience demonstrated the need for health systems to anticipate and prepare for acute shocks and to continue to address the health needs of the population in the face of these shocks. Such shocks may also originate outside the health system and range from disease outbreaks, to social disruption, climatic and environmental crises, and even changing donor practices.The SRHB has identified risk assessment and emergency preparedness as a critical goal, as clearly outlined in the latest Health Sector Transformation Plan (HSTP).[[3]](#footnote-3) HSTP I make public health emergency and risk management a major strategic objective: 85% of woredas and health facilities are meant to be assessed annually for levels of safety, security, and preparedness.[[4]](#footnote-4) The SRHB has also moved a step forwards by establishing a PHEM division, as part of one of its technical agencies, SI-PHI. This regional structure adopted PHEM guideline[[5]](#footnote-5) in 2012 to help in effectively leading emergency preparedness, response, and recovery. However, a strategic approach is needed to ensure that the aims outlined in the 2017 WHO Strategic Framework for Emergency Preparedness[[6]](#footnote-6) are met and that recommended frameworks for emergency management in the global health literature are adhered to፡

Hence, a thoughtful approach to strategically leading the development and maintenance of resilient health systems in region is of utmost importance. This cannot be achieved without the presence of a proper **strategic plan** to successfully ensure appropriate measures are in place to make the health system resilient to acute shocks, while continuing to address chronic stressors. Moreover, the adopted PHEM guideline stated that a core indicator of proper functioning is the ‘existence of a health sector preparedness and response strategy document linked to regional needs and priorities’.[[7]](#footnote-7) Therefore, the PHEM center of SI-PHI, within the RHB of Sidaama, set out to develop a 10-year strategic plan for PHEM, with technical and financial support from partners.

The strategic plan is expected to address all parts of the PHEM cycle depicted in Figure 1 below



**1.7 Approach to the planning process**

The process of developing this strategic plan for PHEM in region followed the conventional approach to strategic planning. This included the development of the mission, vision, and/or values statements; an in-depth look at of the regional health system; and selection of the 10-year strategies and/or goals to achieve the vision. An action plan – an operational plan for the first 2013 Ethiopian Fiscal Year (EFY) – was then developed to specify who is going to do what and by when to achieve each goal. We followed the following steps to develop the plan:

**External and internal input gathering:** External stakeholder and issue scanning was conducted to identify political, economic, social, technological, environmental/climate, legal, security/safety, religious, regulatory, and demographic factors which could shape the PHEM efforts in the region. The internal environment of the regional health system was assessed through the lens of managing health emergencies. To obtain data on this, annual PHEM report review was carried out and guidelines relevant to the subject, including the PHEM guideline, the Strategic Management Plan of Si-PHI, and the Health Sector Transformation Plans (HSTP I and Draft HSTP II).

The outputs were a situational analysis organised broadly according to the six World Health Organization (WHO) health system building blocks (governance and leadership, health workforce, health information, medical supplies, health financing, and service delivery) and a SWOT analysis. **SWOT analysis:** Through a SWOT analysis, the internal strengths of the Regional health system, its internal weaknesses, the external opportunities for potential pursuit, and the external threats to consider were summarised. This was followed by the identification of the key needs of region’s PHEM system requiring attention in the development of the strategic plan.

**Development of mission and vision statements, strategic objectives, strategic directions, and performance framework:** After analysing the data drawn from the external and internal input gathering, the mission and vision statements were drafted, and these were then finalised after discussion with the PHEM team at SI-PHI. The strategic objectives were crafted in line with the 10 recommended elements of PHEM in the WHO Health Emergency and Disaster Risk Management Framework[[8]](#footnote-8), with the critical cycles (preparedness, response, recovery, and mitigation) in emergency management reflected. The findings of the situational analysis framed in the WHO health system building blocks and the weaknesses and threats identified during the SWOT analysis were also kept in mind. Corresponding strategic directions and major activities to operationalize the strategic objectives were also outlined. The draft strategic objectives and strategic directions were repeatedly reviewed and discussed with health managers in the PHEM centre at SI-PHI. Efforts were made to make sure that the major activities outlined are effective and efficient, will significantly impact the achievement of the strategic objectives, and, and can be realistically implemented by the health system given the available resources in terms of funds and staff. Finally, each of the strategic directions was linked to indicator(s)/performance measure(s) to track progress during the implementation of the strategic plan.

**Other sections:** The document also provides **implementation arrangements** for realising the intentions in the strategic plan, the **timeline for key activities** depicted in a chart and the **key milestones** and mechanisms to track progress and ensure appropriate monitoring and evaluation of the strategic plan. In the **assumptions and risks** section, risks are identified related to the external and internal environment and the proposed strategic directions. Possible mitigation mechanisms are proposed for the identified risks.

The draft of this strategic plan was shared with relevant/selected directorates of both the RHB and SI-PHI for their review and inputs which were incorporated into the final draft presented at a validation meeting. The participants in the validation meeting were drawn from regional and woreda levels that provided invaluable inputs to the draft of the document.

**1.8 Frameworks to inform the development of the strategic plan**

There are several frameworks and initiatives that address the concern for emergency preparedness and risk reduction. These include:

* The Sustainable Development Goals.
* Universal Health Coverage 2030.
* The WHO Strategic Framework for Emergency Preparedness
* The WHO Health Emergency and Disaster Risk Management Framework (2019).
* International Health Regulation (IHR) 2005.
* The Sendai Framework for Disaster Risk Reduction 2015–2030.
* The Pandemic Influenza Preparedness Framework.
* The Paris Agreement on Climate Change.
* The Global Health Security Agenda ; and

The Resilience Framework for Public Health Emergency Preparedness.

Many of these frameworks identify key components of a resilient public health system that allow successful responses to emergencies. While some discuss emergency preparedness and risk reduction more broadly, others include a focus on some aspects of PHEM. Of those specifically addressing PHEM, many tend to list the capacities and capabilities of the public health system, with little attention to system complexity, which is an inherent nature of any public health system. Moreover, attention to social capital in emergency management and addressing ethical values in the planning and implementation of responses are indicated as critical in many of the frameworks. The preparation of the PHEM strategic plan was carefully guided by the key capacities and capabilities of a resilient public health system as described by the frameworks listed above, with a concentration on those specifically addressing the subject of PHEM.

As clearly indicated under the International Health Regulation (IHR) (2005), the scope of public health emergencies has grown from merely those caused by infectious diseases to all threats, including nutritional, biological, ecological, and chemical hazards. The WHO quantitative risk assessment estimated that climate change, for example, will cause approximately 250,000 additional deaths between2030 and 2050, from malnutrition, malaria, diarrhoea, and heat stress.[[9]](#footnote-9)Countries with weak health infrastructure will be the least able to prepare and respond to any such incidents without assistance. As with the Ebola Virus Disease, these threats are likely to have the most impact in poorer countries with weak health systems. Acute shocks, moreover, limit health systems’ ability to respond to the everyday health needs of the population.

At the same time, beyond these acute events, health systems in low- and middle-income countries, such as Ethiopia, also face multiple day-to-day challenges, or chronic stressors, that themselves demand what has been termed ‘everyday resilience’. Examples of these stressors include resource constraints, corruption, chronic staff absenteeism, distrust among health system actors, and continuous organisational and policy change. Chronic stressors present daily challenges to those working in and using health systems, leading to an endless round of short-term ‘fire fighting’ that undermines health systems’ capacity to respond to acute shocks, and that limits innovation and performance improvement. Resilience has been defined, then, ‘as the systemic attribute of persistence in the face of chronic stress and acute shocks, and as one that not only allows health systems to absorb, but has the potential to support them to adapt and transform when faced with shorter or longer term challenges*.* Systems adopt different strategies when reacting to shock and stress. Absorptive strategies refer to resistance to challenges and enables continued system functionality without changes in system configuration. Higher-intensity challenges, however, may exhaust the system’s ability to absorb shock/stress, and require adaptations which entail incremental adjustments that facilitate continued performance. Hence, the EPHI released *A Strategic Framework for Emergency Preparedness* in 2017, with the aim of supporting regional health bureau of its member woredas to ‘prioritize and implement important emergency preparedness actions while strengthening inter-sectorial collaboration with other government sectors, the private sector and civil society. The framework clearly stated that the main objectives of the document were:

To strengthen regional and community emergency preparedness in order to ensure a timely, efficient and effective response to events including: local and regional outbreaks of infectious diseases that have the potential to cross borders; epidemics and pandemics; and other types of emergencies caused by natural, technological and societal hazards that can have a significant impact on people’s health and on society.

To advocate for prioritizing financial and other resources for community and regional emergency preparedness and mobilizing increased regional and national investment in this area. The WHO later published a more comprehensive framework in 2019, with the aim of providing ‘ministries of health and other stakeholders with a summary of policy considerations to reduce the risks and con­sequences of emergencies and disasters, and build the resilience of health systems, communities and countries.

This framework provides guidance on ‘assessing, communicating and reducing risks across the continuum of preven­tion, preparedness, readiness, response and recovery, and building the resilience of communities, countries and health systems. The core principles in the framework are a risk-based approach, comprehensive emergency management (across prevention, preparedness, readiness, response, and recovery), an all-hazards approach, being inclusive, a people- and community-centered approach, multisectoral and multidisciplinary collaboration, being whole-of-health-system-based, and regard for ethical considerations. The framework also outlines 10 components of a health emergency managements system that correspond with the six WHO building blocks of a health system. These are policies, strategies, and legislation; planning and coordination; human resources; financial resources; information and knowledge management; risk communications; health infrastructure and logistics; health and related services; community capacities for PHEM; and monitoring and evaluation. In line with these frameworks, this 10-year strategic plan does not only concentrate on outbreaks of national and international concern, it also gives due attention to health emergencies resulting from natural disasters (e.g. flooding, earthquakes, and drought) and human-induced disasters (e.g. dam failure, transport accidents, civil unrest and conflict). This plan sets out a strategy to increase the resilience of the Ethiopian health system to identify and manage health and nutrition emergencies and emphasizes the principles of an all-hazard, risk-based, whole-government, and community-cantered approach as well as multisectoral and multidisciplinary collaboration.

**Situational analysis**

Below are the results of the situational analysis. It begins with overviews of the Sidaama Regional health system and the situation as regards emergency response in Sidaama Region followed by findings related to each of the WHO building blocks.

**SRHB and the Regional health system**

The health system in the region is aligned to the regional administrative structure. Accordingly, the health management structure is devolved, with the Woreda Health Offices (WrHOs) as the responsible organ for the planning and implementation of health activities for their respective catchment populations. The WrHOs are accountable to the RHBs. Budgeting for both routine and emergency health services are carried out by WrHOs, with support from RHBs. Secondary- and primary-level hospitals are managed and supervised by the RHBs. Exceptions to this rule are special referral hospitals and public health programmes directly managed by the RHB, and, in a few cases, by the Ministry of Education (such as the teaching hospitals). The RHB primarily plays a regulatory and coordination role, carrying out such activities as the development of policies and guidelines, and the development and deployment of human resources for health. The RHBs oversee all health activities and play a major role in the allocation of financial and human resources to the WrHOs and hospitals under their jurisdiction. The delivery of health services is organised across three tiers, with differences between rural and urban settings. The primary level concentrates on the delivery of essential health services to the population: in rural areas, this is done through health posts, health centres, and primary hospitals. In urban areas, this level is composed of health centres and primary hospitals. There are also efforts to deploy urban health extension workers attached to health centres. The Primary Healthcare Units, consisting of a health centre with five satellite health posts, are meant to provide primary healthcare services to a population of about 25,000 in rural settings. A health centre in an urban setting serves 40,000 people. The secondary and tertiary levels are composed of secondary and referral hospitals, with catchment populations as indicated in **Error! Reference source not found.**2 below.

**SI-PHI and emergency response**

Si-PHI has three key mandate areas: research on priority public health and nutrition issues for evidence-based information utilisation and technology transfer; surveillance for the early identification and detection of public health risks and the prevention and management of health emergencies; and referral diagnostic and analytical tests for quality laboratory services. Accordingly, the institute has aligned its functions around three main themes – research and technology transfer, PHEM, and a quality laboratory system – which are complementary as regards achieving its mandate.

Si-PHI has established the Center for PHEM as a structural and functional arrangement to execute its mandate of identifying risks, emergency preparedness, and emergency response and recovery. The Sidaama Regional Health Bureau and respective woredas health administrative structures also coordinate facility- and community-level public health emergency response actions. Examples include management of cases, and risk communication and control measures, such as immunisation, where applicable.These activities are implemented by health facilities and temporary shelters, and through field campaigns, as necessary. To facilitate these activities all woreda in region have established PHEM units, while rural town administrative have focals. Nevertheless, it is important to note that these structural arrangements are very nascent in most of the woredas.

**Governance and leadership**

The Sidaama Regional Strategy on Disaster Risk Management (SRSDRM) follows an all-hazard approach has no strong multisectoral committee. There is also legislative provision for possible declaration of “state of emergency” in times of serious public health emergencies, as evidenced in what happened during the COVID-19 pandemic .The SRHB does not currently have a strategic document that guides public health emergency preparedness, early warning, response, and recovery. There exists, however, National adopted PHEM guideline aimed at ‘giving guidance to all public health officers, stakeholders and development partners who are taking part in PHEM, on how to implement the PHEM activities in a standardized way. The guideline overly concentrates on outbreaks as the key cause of health emergencies, although it states that ‘comprehensiveness’ or an all-hazard approach should be one of the basic principles in the execution of PHEM activities.

The guideline is more of a procedural document than a high-level policy document. Key informants from SRHB and Si-PHI have stated that the adopted policy of (1993) is supportive of PHEM initiatives. It was also noted that Si-PHI has adopted guidelines to facilitate compliance with IHR 2005. As a product of a joint evaluation carried out with IHR, a national action plan for health security was developed in 2019. However, key informants noted that there is lack of clarity about the procedures and responsible structures for boarder health security. It was also noted that the actions to safeguard points of entry and boarder health security are unclear and insufficient. In terms of structural arrangements, the NPSDRM clearly states that ‘a decentralized disaster risk management system that clearly identifies and assigns the roles and responsibilities of each level of government, concerned organizations at all levels, communities and individuals in accordance with disaster risk management activities shall be set up. This is to imply that the disaster risk management system is meant to start with ‘community centred and organized mass mobilization’, and to continue with coordinated structures up to the federal government. More specifically, the national adopted PHEM guideline specifies that preparedness; early warning, response, and recovery efforts are to be executed starting from the community level up to the PHEM division at SI-PHI. Going down the ladder, the WrHOs Health Offices are staffed with a single PHEM focal person, with the absence of dedicated staff for PHEM at the facility level. Health facilities usually have a focal person who does PHEM activities – notably compiling and submission of facility data to the WrHOs, outbreak alert, and participation in response – on top of other routine healthcare delivery responsibilities. The woreda PHEM focal person also does PHEM activities on top of several other responsibilities. At the community level, the health extension workers (HEWs) are expected to report on reportable diseases to the health centre or WrHOs, on top of their multiple responsibilities. HEWs do not receive training in health emergency management.

The health managers further noted that although health facilities are expected to be the frontline of PHEM, there exists no formal structure to deal with this responsibility in the health facilities. The central PHEM team has no formal linkage with the facilities, and consequently encounters serious .difficulties in organising timely responses to health and nutrition emergencies. It was noted that ‘capacity for identification of incidents and their causes’, along with capacity to initiate early response for health and nutrition emergencies, is essential at this level – but this does not happen in many of the health facilities, due to the absence of a formal PHEM system. Moreover, the management and staff at health facilities do not consider health and nutrition emergency management to be part of their duties. They feel that ‘SI-PHI is responsible for everything related to health emergencies’. Other challenges at the facility level that were pointed out include the fact that the way health facilities are built is not suitable for emergency response, the limited capacity for preparedness, response and recovery, and the failure to use drills to test existing capacity.

By contrast, the PHEM center at Si-PHI is very well structured and is staffed with 14 PHEM experts. It has four directorates: Early warning and surveillance, Preparedness; Response and Recovery and Rehabilitation. These directorates are organised into a total of 4 case teams. While there is extended capacity at the regional level, there are minimal structural arrangements at lower levels to actually execute PHEM activities. This creates an ‘inverted pyramid shape’ in the PHEM system in the country, which could explain the observed delays in early recognition and confirmation of, and response to, health emergencies.

The coordination of stakeholders participating in emergency response was identified to be a critical challenge faced by the regional PHEM team. This was related to a lack of an emergency preparedness plan to ensure a coordinated response

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| **Summary of findings:** There is extensive PHEM capacity at the regional level but with minimal structural arrangements at lower levels to actually execute PHEM activities. |

**Health workforce**

There is no separate human resource plan for health emergency management at lower level. According to FMOH recommendation one field epidemiologist required to serve for 200,000 pupation. However now day’s only three field epidemiologists in the woreda, which is very low compared expected.

The placement of graduates and pre-deployment induction are also poorly organised and *ad hoc* and there exists no tailored in-service training to maintain a health workforce that is capable of effectively preparing for and responding to health emergencies. Job descriptions do not include all expected tasks related to PHEM. Furthermore, there is no database of staff trained in emergency management and no clear procedures for integrating national and international volunteers in service delivery in emergency situations. Proper orientation and training of those deployed to emergency response missions is not often provided. The absence of incentive mechanisms for those professionals who engage in health and nutrition emergency-related activities was also identified as a challenge. Staffs also face shortage of medical supplies and equipment as essential as personal protective equipment in times of critical need. At the community level health extension workers and a large mass of community health volunteers (Women’s Development Army) exists. However, these also don’t have the orientation and training they need to adequately contribute in public health emergency management.

 **Summary of findings:** There is a lack of appropriate training to impart desired skills, an absence of any induction for new graduates on PHEM, and a failure to include expected tasks in staff job descriptions, which all contribute to the weak involvement of health workforce in PHEM.

**Medical and non-medical emergency commodities and supplies**

he Government of Ethiopia has a Central Medical Stores, and a drugs and equipment procurement and distribution system, both for routine healthcare and emergencies, including for therapeutic feeding. EPSA is mandated for the procurement and distribution of both routine healthcare and emergency medical supplies and equipment. Discussions with the different key informants revealed that there are often delays in the procurement and distribution process, which are attributed to the lack of proactive and risk-based forecasting and ordering of drugs and supplies for health emergencies. Although the proclamation to establish EPSA clearly identifies the procurement of emergency supplies and equipment as its responsibility, clear mechanisms or guidelines are not in place in regard to carrying out this function. Procurement is further constrained due to the limited local production capacity, both in terms of the quantity and mix of drugs and supplies, which mean a lengthy procurement process (which includes placing international tender and importing goods), must be followed.

The administrative process for order and distribution results in further delays in availing the required supplies on time and getting them to where they are required. There are no procedures for, and hence no practice of, strategic stockpiling of emergency drugs and supplies. Apart from the existence of regional hubs with EPSA warehouses, there are no mechanisms designed to deliver supplies and equipment when incidents hit remote areas with limited transportation means. Recognising this gap in the system, EPHI is exploring the possibility of obtaining the mandate for procuring and managing assorted emergency drugs and supplies. Similarly, some RHBs and Si-HPI have also requested to be mandated to execute local procurement of emergency drugs and supplies. To advocate for a shift in the current policy and practice, there is a need to assess the current practice and to generate evidence to support change.

An assessment of the financing for health-related emergencies carried out by Oxford Policy Management (OPM) in 2019 indicated that procurement by EPSA makes up only a small portion of total procurement for health emergencies. Much of the procurement of goods for emergency response is conducted by United Nations bodies: the WHO for medicines and the World Food Program (WFP) and the United Nations Children’s Fund (UNICEF) for nutrition supplies. They use parallel procurement systems for purchasing and delivering pharmaceuticals, resulting in an uncoordinated supply chain system for PHEM. WFP highlighted that funding delays and budget reductions had led to shortages in supplies. Short horizons from donors, resulting in uncommitted funding, and slow procurement, were highlighted as key reasons for delays.

**Summary of findings:** The he current procurement process for medical and non-medical commodities and supplies is not geared towards strategic pre-positioning and rapid deployment during emergencies. There is no dedicated channel for managing the logistics required to execute health emergency operations.

**Health information**

The adopted PHEM guideline details the surveillance system required to provide an early warning within Regions ‘PHEM system. Although the section on early warning sets out to provide guidance on all hazards leading to public health and nutrition emergencies, it mainly deals with the early detection and notification of outbreaks. The national integrated disease surveillance system captures 23 priority diseases and the main focus is to identify and notify stakeholders of the occurrence of an outbreak of these diseases. Data is captured from the level of the health post up to the highest level of health facilities. Laboratory-based surveillance resulting from the network of regional public health laboratories in the country also supports the early detection and notification of disease outbreaks. According to the guideline, the early warning system in Ethiopia is meant to use event-based and indicator-based surveillance. Indicator-based surveillance ‘refers to structured data collected through routine integrated disease surveillance, nutritional and laboratory surveillance. Event-based surveillance ‘is the organized and rapid capture of information about events that are potential risk to public health. This information can be rumors and other ad hoc reports transmitted through normal channels (i.e. established routine reporting systems) and informal channels (i.e., media, health workers and nongovernmental organizations reports, etc. However, little is said in the guideline about event-based surveillance, which could be very helpful in the early detection and notification of public health emergencies related to malnutrition, food safety, zoonotic diseases, air pollution, water quality changes, drought, flooding, and issues involving refugees and IDP. Protocols or formats exist for data collection and transmission relating to, and for early detection and notification of, outbreaks, but not in relation to other hazards with the potential of causing public health and nutrition emergencies. This is further complicated by the fact that most of the data collection is still paper-based, as a result of a lack of the required infrastructure for electronic data collection at the facility level. Surveillance data of EPHI are still in the process of being included in the routine District Health Information Software 2 (DHIS2). The types of data captured were also considered inadequate since these only include the ‘number of cases and deaths’. An assessment by OPM revealed that early warning systems for nutrition emergencies were mostly viewed as weak across the country, impacting on the ability to respond rapidly. For example, acute malnutrition data are reported to be at least six weeks old by the time they are reported. Surveillance systems are not viewed as providing data in real-time.

Although data management and analysis are ideally meant to start at health facilities, where data are generated, and at least at the woreda level, these actually mainly occur at the regional and federal levels. Some woredas do not have essential capacities to undertake the analysis and interpretation of compiled data, thereby resulting in delays to detect and swiftly contain public health events. The information management system at the federal level facilitates reporting according to the IHR reporting requirements. However, there is no clear mechanism for data sharing (interface mechanism) with agricultural, veterinary, and environmental disease surveillance systems. The information management system at the federal level facilitates reporting according to the IHR reporting requirements. However, there is no clear mechanism for data sharing (interface mechanism) with agricultural, veterinary, and environmental disease surveillance systems. The media outlets in the region do not have journalists with specific training/expertise in health emergency communication, which at times leads to misinforming the public about health emergencies. As evidenced in what has unfolded during the COVID-19 pandemic, documented strategies for risk communication with the public and media were not used. There is no pre-assigned spokesperson to address the public and the media in times of public health emergencies. This role is usually assumed by high-level officials including the Minister of Health and the Director General for EPHI There is also no documentation of success or failure stories in health emergency management at all levels that could be used for experience sharing and system learning.

**Summary of findings:** There is a lack of a real-time surveillance system for health emergency preparedness and response due to inadequate data collection, analysis, and mechanisms for data-sharing. There are no documented strategies for risk communication.

**Health financing**

There is a lack of finance to budget for emergency preparedness and response plans at all levels of the health system. Currently, contingency funding is practised only at woreda level. The contingency fund at this level, however, is very limited and since it is not specific to health and nutrition emergency it can be used by any of the sectors, as deemed necessary by the Woreda Council. Due to this lack of domestic financing and contingency funding, response efforts are at times severely hampered, this is compounded by delays in receiving development partner support.

The Ethiopian Humanitarian Fund (EHF) is a pooled fund which responds to conflict-related crises and disasters, triggered by natural hazards including drought, floods, and outbreaks of diseases. It focuses on critical life-saving and often underfunded sectors, including nutrition, water and sanitation, and health. In addition to providing critical funding, the EHF is intended to support humanitarian reform objectives, including improving humanitarian coordination, leadership, and response. Although EHF is viewed as the fastest mechanism for securing funding in emergencies for implementing partners in Ethiopia were several challenges exist.

 **Summary of findings:** Currently, available funding channels are neither responsive enough to deal with sudden-impact and rapidly evolving emergencies, nor flexible enough to cater for pre-emptive preparedness and containment measures. Domestic financing for health emergency management is almost non-existent.

**Service delivery**

**Planning and organization**

Currently, a specific plan for health sector emergencies does not exist in Ethiopia. While there are no pre-established mechanisms for rapidly mobilising additional resources (personnel, equipment, and materials), Apart from the formal referral linkage between facilities, there is no intentional networking between health facilities to address overwhelming caseloads during public health and nutrition emergencies. Taking a closer look at the management of hospitals in mass-casualty incidents, there are no formal hospital emergency preparedness programme and planning committees for emergency response and recovery in most hospitals in the country. The degree of readiness of the facilities after the arrival of cases following public health emergencies is also not optimal. For instance, many of the health facilities do not have a separate ward designated for contagious infectious diseases, and facility traffic management to promote infection prevention is rarely implemented.

**Pre-hospital care and the emergency medical system**

The strategic document aims to ‘provide a detail account of the national major cities medical emergency and critical care improvement programme and its management for all key stakeholders identified to implement the program’. A critical point the SWOT analysis of this document highlights is the fact that there is ‘poor coordination and confusion of roles between ECCD and PHEM center (of EPHI) on emergency case management both at national and regional level. The document identifies five strategic themes: excellence in coordination and collaboration; pre-facility emergency services; facility emergency services; critical care services; and liaison and referral services. The protocol clearly describes the human, material, and special requirements an ambulance dispatch centre should fulfil. It also describes the type and number of staff required to run such a centre. It further indicates that ambulance dispatch centres should be established at regional and zonal levels, with major cities in regions or zones possibly having their own centres. The ambulance dispatch centres are meant to relate tocall centres or Community Safety Answering Points, to which the public reports any emergency (crime, fire, health).

 However, despite the existence of these guidelines and protocols, the reality is that the emergency medical system is not well developed. The system across the country lacks standardisation, an emergency notification system, and an ambulance dispatch system. The presence of a call centre that unifies security, fire, and health emergencies is required in order to have a functional ambulance dispatching system that can pick up mass causalities in a timely fashion. Currently, the ECCD within the RHB is mandated to coordinate the response to MCIs in the Region, through emergency departments at health facilities. However, there is a lack of coordinated pre-hospital care services and standardised MCI management centres. Furthermore, mechanisms for identifying victims and tracking missing persons in times of such mass casualties are not in place.

**Delivery of essential health services during emergencies**

Another critical challenge in times of public health and nutrition emergencies is to ensure continuity of essential health programmes and services delivery. During the COVID-19 pandemic, for example, delivery of essential health services at primary and higher levels has been significantly affected in Ethiopia, as in other settings. A reduction in the utilisation of maternal and child health services, and in communicable and non-communicable diseases and mental health services,has clearly been observed particularly during the early days of COVID-19 in the country. This is mainly caused by the absence of plans for ensuring the continuous delivery of essential health services while managing public health emergencies

 **Summary of findings:** The health system is not resilient enough to cope with fast-evolving and unprecedented crises, such as the COVID-19 pandemic and mass displacements, and to maintain essential public health services without major re-adjustments.

**Nutrition emergency management**

The management and coordination of risk assessment and response to nutrition emergencies in Ethiopia is in a way very unique. The assessment of risk for nutrition emergencies in all woredas of the Region is performed by a platform known as the Emergency Nutrition Coordination Unit (ENCU). This is a platform housed in the Early Warning and Response Directorate of the Regional Disaster and Risk Management Commission (NDRMC), under the RAB. ENCU coordinates the efforts of four United Nations agencies (WHO, UNICEF, WFP, and the United Nations High Commissioner for Refugees (UNHCR)) and 15 national and international non-governmental organisations (NGOs) working in the prevention and management of acute malnutrition in Ethiopia. It supports the development of the humanitarian response plan, mobilising funds, and capacity building in key competencies for nutrition response (e.g. the treatment of acute malnutrition and adequate young infant feeding practices). ENCU collects information about who does what, where, and when every month from the NGOs working on the prevention and management of nutrition problems in the country. This enables the unit to differentiate between woredas with or without needed support. Regular assessment of the nutritional situation in the woredas is conducted based on the admission case report for severe acute malnutrition from Si-PHI’s weekly epidemiological bulletin, rapid assessment conducted by regional offices of the NDRMC, and sometimes cross-sectional nutrition surveys with prevalence estimates, as well as SNDRMC hotspot woreda classification, which is conducted twice a year. But there was no such strong bi-annually regular joint nutritional assessment in the region.

A key challenge faced by ENCU is that there are no clear guidelines outlining the roles and responsibilities of SI-PHI, the Nutrition Case Team of the SRHB, and SRDRMC in the management of nutrition emergencies. Since some roles are with Si-PHI, others with the SRHB, and others with SRDRMC, there is a lack of clarity and coordination at the national level. At the woreda level, nutrition emergency response is usually coordinated by a taskforce comprised of different governmental and non-governmental actors co-chaired by woreda administrator as WrHOs as members. RHB staff members and the regional ENCU staff organised at regional level. The structures for nutrition emergency management become less visible at the level ofthe woredas. At these levels there is usually a focal person in the health offices, who is usually not adequately skilled or well supported.

At the level of health facilities management of severe acute malnutrition is already integrated with child health service delivery. The HEWs participate in the management of moderate and mild acute malnutrition as an outpatient service. The case-by-case management of acute malnutrition is done by the health system staff, with the national and international NGOs providing the resources and supplies required for the response. UNICEF, for instance, provides all the ready-made nutritional preparations and medicines required to treat children with severe acute malnutrition. The supplies are distributed by the woreda and NDRMC to the health facilities managing the cases.

Financing for nutrition emergency management in Ethiopia follows the same pattern as that of health emergencies, in that it is almost entirely externally funded. United Nations agencies, such as WHO, UNICEF, WFP, and UNHCR, work to get enough funds from donors (mainly the United States Agency for International Development (USAID), the UK Department for International Development (DFID), and the European Commission) to support the prevention and management of acute malnutrition in Ethiopia. Another source of finances for nutrition emergency management in the country is the EHF (a pool of finance donated by different actors). Since the pooled resource at the EHF is for all clusters of humanitarian response, the ENCU must always make sure that it secures a sufficient share of this fund for nutrition emergency management. While a governmental entity, such as EPHI, is not entitled to seek funding from EHF, national and international NGOs, with support from the ENCU, can submit requests. OCHA works closely with NDRMC to develop the humanitarian response plan, in which the budget required for nutrition emergency response in the following year is specified. For the year 2020 about US$ 200 million was specified to be mobilised for nutrition emergency response, with only 25% of this mobilised by the month of July 2020.

**Summary of findings:** The lack of clarity about the roles and responsibilities for nutrition emergency management among the SRHB, SI-PHI, and RDRMC is a critical challenge.

**Key needs identified**

Based on the gaps identified as part of the situational analysis, the key needs of Sidaama’s PHEM system are summarised in Table 3.

**Table 3: Key needs identified during the situational analysis**

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| **Thematic areas**  | **Key needs identified** |
| *Governance and leadership* | 1. Development of a functional high-level incident management structure for health (e.g. health security council)
 |
| 1. Creating a standardized and capable PHEM structure at all levels of the health system, ensuring communication between all levels
 |
| 1. Availing risk management and emergency preparedness
 |
| *Health workforce*  | 1. Developing and deploying a health workforce with the required competencies for public health and nutrition management, in adequate numbers
 |
| 1. Creating a database of the health workforce trained in public health and nutrition management
 |
| 1. Designing a formal mechanism to enable volunteers to seamlessly join emergency response operations
 |
| *Medical and non-medical emergency commodities and supplies* | 1. Establishing a separate system for the procurement and distribution of emergency commodities and supplies within EPSA
 |
| 1. Ensuring maintenance of inventory, rotation, and safe stockpiling of laboratory and medical supplies and equipment for emergency operations at all levels
 |
| 1. Establishing a logistics management unit for health and nutrition emergencies in SI-PHI
 |
| *Health information*  | 1. Establishing a real-time surveillance system interfaced with the surveillance systems of other relevant sectors (e.g. agriculture, meteorology, transportation)
 |
| 1. Ensuring the use of surveillance data for detection of and timely response to health and nutrition emergencies at the facility and woreda levels
 |
| 1. Establish a risk communication structures
 |
| 1. Establishing Regional Public Health laboratory with necessary equipment and adequate human power
 |
| *Health financing*  | 1. Securing designated funds for the health sector emergency preparedness programme from regional sources
 |
| 1. Allocating contingency funding for health emergency response and recovery at the regional and woreda levels
 |
| *Service delivery* | 1. Developing a standardised emergency management system with an effective ambulance dispatching system
 |
| 1. Developing the capability of health and nutrition emergency identification, response, and recovery at health facilities of all levels
 |
| *Nutrition emergency management* | 1. Clarifying the roles and responsibilities of SI-PHI, SRHB, and RDRMC for nutrition emergency prevention and response
 |
| 1. Strengthening the management structures for nutrition emergency prevention and response at the woreda levels
 |

**Strategic objectives**

**Strategic Objective 1: Establish an accountable and visionary governance system to plan and coordinate pre-emergency preparation, emergency operation, and post-emergency recovery**

***Description***

The establishment of a resilient health system with a high degree of readiness will allow for timely and effective response and recovery in times of public health and nutrition emergencies. Such a level of operational readiness cannot be realised in the absence of accountable and visionary governance and leadership for PHEM. Policies, guidelines, and legislation are all required for effective PHEM. However, proper governance and leadership is required to realise the intentions in these documents, through a PHEM system which has a strong presence at all levels. The governance for PHEM should lay out the procedures for planning emergency preparedness, response, and recovery. Mechanisms to coordinate structures and operations for risk mitigation, emergency preparedness, and emergency response and recovery should be in place.

***Expected result***

Standardized and capable PHEM structures are in place at all levels of the health system to govern emergency preparedness, emergency response operations, and post-emergency recovery.

***Strategic direction 1.1:* Develop favorable policies and guidelines to standardize and formalize all PHEM activities**

A standardised and uniform PHEM system requires the availability and use of appropriate policy documents which guide action in the system. Apart from the development and distribution of guidelines there is also a need for the training and orientation of all stakeholders to ensure compliance to the standards set in the guidelines. The policies and guidelines that govern the PHEM system must be sufficiently known to the leadership and the staff of the system. Other key players, including partners and sector offices, should be adequately informed of the policy framework, to ensure that they play their part in the identification of, response to, and recovery from health emergencies. In addition to the development of policies and plans in the PHEM system, it is also essential that the mainstreaming of planning for health and nutrition emergencies within and outside of the health sector is ensured.

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| **Major activities** | **Expected results** |
| Adapt guidelines on PHEM to facilitate a whole-health, all-hazard approach to PHEM  | * Revised Si-PHI guidelines on PHEM
* Clarified roles and responsibilities for RHB, Si-PHI, and RDRMB regarding nutrition emergency management
 |
| Adapt national guidelines to facilitate a whole-health, all-hazard approach to PHEM  | * National guidelines on PHEM adapted
 |
| Initiate and sustain the development of emergency response-specific health plans at health facility level  | * Health facilities have emergency response-specific health plans
 |

***Strategic direction 1.2:* Establish a uniform PHEM structure at all levels of the health system**

The realisation of policies, guidelines, and plans related to PHEM will not be possible in the absence of capable structural/institutional arrangements at all levels of the health system. There should be a clear functional linkage between levels, and each of the levels must be adequately staffed and resourced to execute its function. While the central level should engage in coordination and guidance, lower levels should be sufficiently staffed to engage in the actual task of identifying and responding to health emergencies. There is a need to form different committees and at different levels, based on recommended approaches to organising health emergency management. Capacity building for leaders and managers at all levels will contribute to smooth interaction between and within levels of PHEM system.

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| **Major activities** | **Expected results** |
| Reform staffing and structure of PHEM teams at regional and woreda levels, and ensure they are adequately staffed | Structure of the PHEM teams at regional and woreda levels is reformed and staffing is adequate |
| Organize in-service trainings for health managers and policymakers in PHEM system | In-service trainings for health managers and policymakers organized |
| Inculcate a culture of Inter-action review (IAR) at all levels | IAR is conducted following every health and nutrition emergency |
| Inculcate a culture of after-action review (AAR) at all levels | AAR is conducted following every health and nutrition emergency |
| Conduct health research  | Disseminate research finding to the community  |
| Assure quality and access of laboratory services | Improve quality (according to SLMTA) and access of laboratory services |

***Strategic direction 1.3:* Strengthen coordination, collaboration, and partnership**

A coordinated emergency preparedness and response system is an essential condition for effective management of public health emergencies. Horizontal coordination addresses links among different directorates, sectors, and institutions at regional, woreda, and kebele levels. Sector bureau, partners, and other stakeholders should be adequately informed about the existing public health policy frameworks, to ensure they play their part in the identification of risks, and response to and recovery from public health emergencies. Horizontal coordination also includes neighbouring regions, and coordination between woredas and kebeles within the region. Vertical coordination addresses the hierarchy from the national level to kebele level.

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| **Major activities** | **Expected results** |
| Establish a structure for PHEM with a high-level multidisciplinary committee linked to similar structures supported by operational entities at all levels of system | High-level multidisciplinary committee for PHEM established at all levels |
| Establish a regional steering committee for PHEM with high-level representatives of all relevant sectors and disciplines | Regional steering committee for PHEM with high-level representatives established |
| Mainstream PHEM within Si-PHI, agencies and directorates of RHB, and other relevant sectors, by ensuring that these entities develop health emergency response plans | Directorates in Si-PHI have health emergency response plans RHB directorate have health emergency response plansDirectorates of RHB have health emergency response plansNon-health sector government structures have health emergency response plans |

***Strategic Objective 2*: Build the capacities required to create a resilient health system with the ability to promptly respond in the context of health emergencies**

Assessments of the risks and capacities to determine the priorities for emergency preparedness; surveillance and early warning through information management; access to diagnostic services during emergencies; basic and safe health and emergency services; capability for risk communications; and evaluations to inform and accelerate emergency preparedness – these are all essential components of a resilient health system that can promptly handle health emergencies.

The delivery of quality and equitable health services which are responsive to the needs of the population is a critical goal of all health systems. Attainment of this goal is hampered by a complex set of factors even under normal circumstances, with the situation much worse in low-income countries such as Ethiopia. Health systems which are challenged by chronic stressors require an exceptional degree of preparedness to respond to and recover from significant public health and nutrition incidents effectively and efficiently. Hence, developing capabilities to effectively respond to and recover from public health emergencies while sustaining delivery of essential health services always requires putting in place several measures.

Incident recognition, risk characterisation, and surveillance are all critical capabilities a health system should perform to effectively handle public health and nutrition emergency. The national health management information system and other health emergency-specific information systems are required to effectively deliver these capabilities. Information management in emergency situations should also include risk communication to the public, the media, and the health workforce.

***Expected results***

A real-time surveillance system to support public health and nutrition risk reduction and emergency preparedness planning is created.

Regional and teaching hospital laboratories are capable of supporting health emergency surveillance and response operation is established.

Standardized risk communication mechanisms to address the staff, the public, and the media are in place.

An integrated call center and ambulance dispatching system is created.

Health facilities are capable of promptly responding to health emergencies.

Health facilities have plans to ensure the continuity of essential health services in times of health emergencies.

***Strategic direction 2.1:* Establish a real-time surveillance system to facilitate public health and nutrition risk reduction and emergency preparedness planning, and timely response and recovery**

The availability and use of reliable data to ensure early detection and reduction of risks to human health is an essential capability of a PHEM system. Emergency preparedness planning and timely response to and recovery from health and nutrition emergencies all depend on the availability and use of relevant data. This cannot be realised in the absence of a real-time surveillance system, preferably integrated into the routine electronic health information system.

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| **Major activities** | **Expected results** |
| Adapt national guidelines for the collection, management, analysis, and dissemination of the necessary data for conducting risk assessments and performing emergency preparedness planning | Adapted National guidelines  |
| Contextualization of national guideline by Woreda |  Woredascontextualized national guidelines |
| Create and revise a regional profile of public health and nutrition risk annually | Up-to-date regional profile of public health and nutrition risk availed  |
| Include disaggregated data for PHEM at regional and woredalevel in DHIS2, with triggers defined for switching from routine to emergency reporting | Disaggregated data for PHEM at regional and woreda level integrated into DHIS2 |
| Enable and sustain access to and use of surveillance data by emergency managers at all levels, with procedures defined for data sharing with relevant sectors | Access to surveillance data by health emergency managers at all levels and relevant sectors ensured  |

***Strategic direction 2.2:* Develop standardised mechanisms for timely and appropriate risk communication to the staff, the public, and the media**

Proper planning and delivery of risk communication in times of health and nutrition events is possible only if a predesigned system exists to do this. The presence of guidelines and adequately trained staff to assist the incident manager in risk communication planning and delivery is essential. In the absence of these, the system risks easily misinforming the staff and the public, which could significantly affect the response and recovery operations.

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| **Major activities** | **Expected results** |
| Adapt national guidelines for risk communication with the public, the media, and staff  | National risk communication guidelines adapted |
| Contextualize adapted national risk communication guidelines for individual woreda | National risk communication guidelines contextualized to reach woreda adapted |
| Train health managers and policymakers on risk communication | Training on risk communication provided to health managers and policymakers  |

***Strategic direction 2.3:* Develop guidelines and the required capacity (ambulances with ventilators, incubators, etc.) to provide life support and critical care during patient dispatch to hospitals outside the affected area during MCIs and other emergencies**

Pre-defined mechanisms to provide life support and critical care during patient dispatch to hospitals outside the affected area are essential to minimise morbidity and mortality following major mass causalities and other medical emergencies. This can be realised through the development and sustained use of guidelines to assist the managers and staff involved. There is also a need for the required human and material resources to be available to ensure safe patient dispatching to hospitals from the area of the disaster.

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| **Major activities** | **Expected results** |
| Establish a joint steering committee of Si-PHI, Emergency and Critical Care Directorate (ECCD) and other stakeholders to coordinate emergency case management | Role of all actors in emergency case management is clarifiedEmergency case management is well coordinated  |
|  Adapt national guidelines to provide life support and critical care during patient dispatch to hospitals outside the affected area | National guidelines to provide life support and critical care during patient dispatch adapted |
| Conduct needs assessment regarding the equipment and machinery required for rescue operations in MCIs  | Needs assessment regarding the equipment and machinery required for rescue operations in MCIs conducted  |
|  Adapt operational guidelines for pre-hospital handling of patients during health and nutrition incidents | Operational guidelines for pre-hospital handling of patients adapted |
| Establish coordinated call and ambulance dispatch centers | Coordinated call and ambulance dispatch centers developed  |
|  Adapt a regionalmass causality response plan, with anticipated mobile treatment centers and required resources | Mass causality response plan, with anticipated mobile treatment centers and required resources, is adapted |
| Adapt woredas mass casualty response plans with anticipated mobile treatment centers and required resources | Woredas mass casualty response plans adapted, with anticipated mobile treatment centers and required resources |
| Develop operational guidelines for identifying victims and tracking missing persons during MCIs  | Operational guidelines for identifying victims and tracking missing persons during MCIs prepared  |
| Provide training and orientation on the guidelines to the staff of the PHEM system | Training and orientation provided  |
| Procure and purchase the equipment and machinery required for rescue operations in MCIs | Equipment and machinery required for rescue operations in MCIs purchased  |

***Strategic direction 2.4:* Establish a health service delivery system that is capable of early identification of, response to, and recovery from health and nutrition emergencies**

Health facilities are at the forefront and face the largest burden in times of health events. This makes them vulnerable to significant disruption as a result of such events if they do not create the capacity to remain resilient in such instances. Enhancing the capability of the health service delivery system begins with the creation of emergency response and recovery programmes in all hospitals. The leadership of the RHBs in the development and implementation of emergency preparedness and response plans is essential. The health service delivery system should have a mechanism to quickly mobilise additional resources in times of health events that exceed normal capacity. Given that outbreaks or pandemics of infectious diseases are threats to national and international health security, there is a need to establish properly designed centres for infectious disease control in major cities.

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| **Major activities** | **Expected results** |
| Assist Woredas to develop woreda health and nutrition emergency response plans | Woredas develop health and nutrition emergency response plans |
| Provide capacity building for hospitals to make them ready to provide adequate medical evaluation and care when normal capacity limits are exceeded | Hospitals develop the capacity to provide adequate medical evaluation and care when normal capacity limits are exceeded |
| Develop guidelines to facilitate the rapid mobilization of additional resources during health and nutrition incidents | Guidelines to facilitate the rapid mobilization of additional resources during health and nutrition incidents are developed |
| Create and sustain emergency response and recovery programs in all hospitals | Emergency response and recovery programs are established in all hospitals |
| Build the capacity of all hospitals to dispatch a medical team within 24 hours of an IDP event in their catchment area | Hospitals can dispatch a medical team within 24 hours of an IDP event  |
| Establish centers for infectious disease control in major cities in the country | Infectious disease control centers are established |
| Enable all hospitals to develop business continuity plan for providing essential health services while responding to health emergencies  | All hospitals develop business continuity plan for providing essential health services while responding to health emergencies |
| Adapt capacity for diagnostic services for emergencies at all levels (regional and teaching hospital laboratories) general and teaching Hospitals |  Regional diagnostics/laboratory capacity for health emergencies is strengthened Regional capacity for diagnostics services for health emergencies is createdTeaching hospitals’ own laboratories are capable of supporting surveillance and response efforts for health emergencies |

***Strategic Objective 3*: Mobilize the resources required for emergency preparedness, emergency response operations, and recovery**

Financial resources for emergency preparedness and contingency funding for response; logistics mechanisms and essential supplies for health; and dedicated, trained, and equipped human resources for emergencies – these are all resources for emergency and risk management that are recommended by the WHO. The health financing gaps in the Ethiopian health system are huge. There is little attention being given to strategic financing for public health emergencies, with limited or no designated funds for risk reduction programmes, emergency preparedness programmes, and emergency response and recovery operations. Measures to improve the current funding situation would require implementing several activities aiming at drawing the attention of policymakers to the importance of dedicated funds for health emergency preparedness, response, and recovery.

Response to health emergencies is impacted by the availability of essential medical supplies and equipment. There is a need to ensure that the needs for essential medical supplies in the context of health and nutrition incidents are determined beforehand, based on risk assessment and analysis. It is also critical to understand that not all medical supplies and equipment that may be required to deal with emergencies are on the list of essential medical supplies and equipment. Hence, it is of paramount importance that there is a thoughtfully designed system for forecasting, procurement, and distribution of medical supplies and equipment for emergency operations.

Early detection, response, and recovery in times of public health emergencies require the availability of a multidisciplinary health workforce with the right knowledge, skills, and abilities. ‘Formal education does not necessarily equip public health or other professionals with the knowledge, skills and abilities that are required to perform their jobs effectively.

in the context of health emergencies. Therefore, intentional effort is required to create a critical mass as regards a health workforce that is capable of effectively functioning in emergency situations, and to ensure the equitable distribution of this workforce at all levels of the health system.

***Expected results***

A dedicated system for the procurement and distribution of health emergency commodities is created as part of EPSA.

A specific health emergency logistics management system is established within Si-PHI.

A dedicated budget for risk reduction programs (risk financing), emergency preparedness programs, and emergency response and recovery operations are availed as part of the regular health sector budget.

Contingency funds for health emergency response and recovery at the regional and woreda levels are assigned.

An adequate number of trained human resources with skills for health and nutrition emergency management are deployed at all levels.

A database of trained human resources for health and nutrition emergency management is created and maintained.

***Strategic direction 3.1:* Establish a dedicated system for the procurement and distribution of medical and non-medical supplies and equipment for emergency operations**

The execution of activities in emergency response operations is highly contingent on the availability of required supplies and equipment. Due to the urgent and time-sensitive nature of health emergency response operations, proactive forecasting, procurement, and stockpiling are essential. It is also necessary for there to be clear mechanisms that enable the emergency procurement and distribution of items which are not in the regular list. There is also a need for a dedicated system to efficiently manage logistical issues relating to the transportation and accommodation of staff deployed to the field in times of emergency response operations.

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| **Major activities** | **Expected results** |
| Negotiate for a dedicated channel for the procurement and distribution of medical supplies and equipment for emergency operations within EPSA | A dedicated channel for the procurement and distribution of medical supplies and equipment for emergency operations within EPSA established  |
| Build capacity for planning and forecasting essential laboratory and medical supplies and equipment for emergency operations  | Capacity for planning essential laboratory and medical supplies and equipment for emergency operations developed |
| Adapt regional guidelines/protocols for the maintenance of the inventory, the rotation and safe stockpiling, and distribution of laboratory and medical supplies and equipment | Regional protocol/guidelines adapted for the maintenance of the inventory, the rotation and safe stockpiling, and distribution of laboratory and medical supplies and equipment |
| Contextualize the adapted regional guidelines for individual Woredas | Woredascontextualize adapted the regional guidelines |
| Create a dedicated channel for the exceptional procurement and distribution of medical supplies that are not on the list of basic equipment and supplies | A dedicated channel for exceptional procurement and distribution of medical supplies that are not on the list of basic equipment and supplies is established  |
| Create a dedicated unit of logistics (personnel, travel and accommodation arrangements, stationery and other supplies etc.) management for health and nutrition emergencies within Si-PHI. | A dedicated unit of logistics management for health and nutrition emergencies created within Si-PHI. |

***Strategic direction 3.2:* Allocate a dedicated budget for risk reduction programmes, emergency preparedness programmes, and emergency response and recovery operations**

Adequate financial resources are essential for the implementation of risk reduction programmes, emergency preparedness programmes, and emergency response and recovery operations. An absence of dedicated funds as part of the routine health sector budget for health emergency compromises timely detection and response in times of health and nutrition events. Hence, there should be a dialogue between SI-PHI and policymakers to advocate for the need for a regular allocation of financial resources for PHEM activities. Furthermore, there is a need to assign contingency fund for health emergency response operations at all levels of the health system.

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| **Major activities** | **Expected results** |
| Negotiate for a dedicated budget for risk reduction programs as part of the regular health sector budget | A dedicated budget for risk reduction programs is secured |
| Negotiate for a dedicated budget for emergency preparedness programs, as part of the regular health sector budget | A dedicated budget for emergency preparedness programs is secured  |
| Negotiate for a dedicated budget for emergency response and recovery operations as part of the regular health sector budget | A dedicated budget for emergency response and recovery operations is secured  |
| Negotiate for allocating contingency funds for response and recovery at the regional and woreda levels | Contingency funds for response and recovery are allocated at the regional and woreda levels |
| Create an emergency pool fund that is available for immediate use before the regular system releases funds | A national emergency pool fund is created  |
| Collaborate with the EHF to facilitate timely fund release to implementing partners | Funds for emergency response operations are released in time |

***Strategic direction 3.3:* Develop and deploy adequately qualified human resources for PHEM at all levels**

Conventional development of human resources for health may not adequately meet the needs and requirements in respect to the health emergency management workforce. Hence, there is a need for the intentional development of human resources with competencies relevant to PHEM. This requires a review of existing curricula for pre-service and in-service trainings for human resources development for health in the country. Moreover, there is a need to create a database of staff trained on PHEM, for use in times of need. There should also be a system to swiftly integrate the volunteer health workforce during health emergency response operations.

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| **Major activities** | **Expected results** |
| Prepare roadmap for the development and deployment of human resources for PHEM | Roadmap for the development and deployment of human resources for PHEM prepared  |
| Build capacity for conducting needs assessment and forecasting human resources needs for the PHEM system in Sidaama Region | Needs assessment and forecasting completed  |
| Create and regularly update a regional database of PHEM-trained staff  | Up to date regional database of PHEM-trained staff created |
| Design competency-based leadership and governance trainings relevant to PHEM | Competency-based leadership and governance trainings designed  |
| Design competency-based technical in-service trainings on PHEM | Competency-based technical in-service trainings designed  |
| Organize competency-based technical in-service trainings on PHEM | Competency-based technical in-service trainings organized |
|  Adapt regional guidelines for integrating regional and national volunteers  | Regional guidelines for integrating regions and national volunteers adapted |
| Contextualize the adapted national guidelines for individual woredas | Adapted nationalguidelines contextualized for individual woredas |

***Strategic Objective 4***: Establish mechanisms for engaging local communities in PHEM

Local communities should be considered as crucial partners in PHEM. This will enable the system to design and implement ‘strategies and activities are context-specific, culturally appropriate, efficient, and cost-effective. If properly coordinated and engaged, civil society can contribute to ‘community-level surveillance, household preparedness, local stockpiling, first aid training, and emergency response. To realise this strategic objective requires the intentional planning of community engagement in health emergencies. Expected results

Local communities are actively engaged in the identification of, response to, and recoveryfromhealth emergencies

A community-based surveillance system is established.

***Strategic direction 4.1:* Engage local communities and civil society in the early identification of, response to, and recovery from health and nutrition emergencies**

Local communities are the first to be affected by health and nutrition events. They can be drawn on to facilitate early detection and response activities in the PHEM system, which can save time, resources, and lives. Hence, the engagement of local communities in health and nutrition emergency management should be seriously considered. Civil society can also be involved in the emergency response operation, with appropriate coordination from the PHEM system.

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| **Major activities** | **Expected results** |
| Facilitate community engagement in the identification of hazards, the development of preparedness plans, the detection of and response to emergencies, and the implementation of recovery efforts | Mechanisms for community engagement in PHEM established |
| Establish a community-based surveillance system to facilitate early detection  | Community-based surveillance system established  |
| Use HEWs and other frontline health workers in PHEM as deemed necessary | Mechanisms to activate use of HEWs and other frontline health workers created  |
| Engage civil society and local communities in capacity development | Civil society and local communities included in capacity development efforts  |
| Engage civil society and local communities in the provision of services and assistance to meet the basic needs of populations with high levels of vulnerability | Civil society and local communities engaged in the provision of services and assistance |

**Implementation arrangements**

Apart from extensive dissemination of the strategic plan among key actors, coasted annual operational plans will be developed every year, with mechanisms for resource mobilisation defined. The development of the annual plans will be led by a regional taskforce established for the implementation and monitoring of the strategic plan. To realise the intention of developing a standardised PHEM system at all levels, the regional taskforce will assist the woredas the adaptation of the regional strategic plan to their context. With close support from the Deputy Director General for PHEM, the regional taskforce will regularly monitor the implementation of the regional strategic plan as outlined in the monitoring and evaluation plan.

The realisation of the strategic objectives and directives above requires the alignment of decisions by health managers in the regional HEM system at all levels in relation to activity planning and resource allocation. This will only happen if there are a substantial degree of buy-in among health managers at all levels. Efforts in this regard have included engaging the health managers from the start of the development of the plan and sharing the final strategic plan document with them.

Implementation of the strategic plan will not be possible without the active engagement of other actors within the health sector, including directorates of SI-PHI other than those under the PHEM division. Hence, lobbying and advocacy for mainstreaming of PHEM into the plans of other actors within the health sector will be regularly conducted through intentional communications, to familiarise the actors with the strategic plan. Furthermore, the strategic plan will be shared with relevant government sector offices outside of the health sector, as well as with donors and NGOs and health professional associations.

**Summary of implementation arrangements.**

* Approval of the regional strategic plan by RHB and Si-PHI
* Dissemination of the regional strategic plan
* Establishment of regional taskforce for implementation and monitoring
* Development of coasted annual operational plans
* Resource mobilization

Adaptation of the regional strategic plan for woreda levels

**Timeline and key activities**

Table 4 below shows the timeline for implementing the major activities in order to achieve the strategic objectives over the 10-year period.

**Table 4 Major activities and timeline for implementation**

| **Activities**  | **Y 1** | **Y 2** | **Y 3** | **Y 4** | **Y 5** |
| --- | --- | --- | --- | --- | --- |
| Adapt the national guidelines on PHEM to facilitate a whole-health, all-hazard approach to PHEM |  |  |  |  |  |
| Initiate and sustain the development of emergency response-specific health plans at health facility level  |  |  |  |  |  |
| Reform staffing and structure of PHEM teams at regional and woreda and health facilities levels, and ensure they are adequately staffed |  |  |  |  |  |
| Organize in-service trainings for health managers and policymakers in the PHEM system |  |  |  |  |  |
| Inculcate a culture of AAR at all levels |  |  |  |  |  |
| Inculcate a culture of IAR at all levels |  |  |  |  |  |
| Establish regional multidisciplinary committee for PHEM |  |  |  |  |  |
| Establish woreda multidisciplinary committees for PHEM |  |  |  |  |  |
| Establish and sustain a health facility planning committee for emergency response and recovery |  |  |  |  |  |
| Establish a regional steering committee for PHEM with high-level representatives |  |  |  |  |  |
| Mainstream PHEM within Si-PHI, agencies and directorates of RHB, and other relevant sectors |  |  |  |  |  |
| Prepare a roadmap for the development and deployment of human resources for PHEM |  |  |  |  |  |
| Build capacity for conducting a needs assessment and forecasting human resources needs for the PHEM system in Ethiopia |  |  |  |  |  |
| Adaptand regularly update a regional database of PHEM-trained staff  |  |  |  |  |  |
| Design competency-based leadership and governance trainings relevant to PHEM |  |  |  |  |  |
| Design competency-based technical in-service trainings on PHEM |  |  |  |  |  |
| Organize competency-based technical in-service trainings on PHEM |  |  |  |  |  |
| Adapt regional guidelines for integrating regional and national volunteers  |  |  |  |  |  |
| Contextualize the adapted regional guideline for individual woredas |  |  |  |  |  |
| Adapt regional guidelines for the collection, management, analysis, and dissemination of the necessary data for conducting risk assessments and performing emergency preparedness planning |  |  |  |  |  |
| Contextualize the adapted regional guideline for individual woredas |  |  |  |  |  |
| Adapt and revise a regional profile of public health and nutrition risk annually |  |  |  |  |  |
| Include disaggregated data for PHEM at regional, and woreda level in DHIS2, with triggers defined for switching from routine to emergency reporting  |  |  |  |  |  |
| Enable and sustain access to surveillance data by emergency managers at all levels, with procedures defined for data sharing with relevant sectors |  |  |  |  |  |
| Recognition of and reporting on any event of potential public health concern within 24 hours |  |  |  |  |  |
| Adapt regional guidelines for risk communication with the public, the media, and the staff  |  |  |  |  |  |
| Contextualize the regional risk communication guidelines for individual woredas |  |  |  |  |  |
| Train health managers and policymakers on risk communication |  |  |  |  |  |
| Adapt nationalguidelines to provide life support and critical care during patient dispatch to hospitals outside the affected area |  |  |  |  |  |
| Conduct needs assessment for equipment and machinery required for rescue operations in mass causality incidents |  |  |  |  |  |
|  Adapt operational guidelines for pre-hospital handling of patients during health and nutrition incidents |  |  |  |  |  |
| Establish coordinated call and ambulance dispatch centers |  |  |  |  |  |
|  Adapt MCI response plan with anticipated mobile treatment centres and required resources |  |  |  |  |  |
| Develop woreda mass casualty response plans developed, with anticipated mobile treatment centres and required resources |  |  |  |  |  |
| Adapt operational guidelines for identifying victims and tracking missing persons |  |  |  |  |  |
| Provide training and orientation on the guidelines to the staff of the PHEM system |  |  |  |  |  |
| Procure and purchase equipment and machinery required for rescue operations in mass causality incidents\* |  |  |  |  |  |
| Assist woredas to develop woreda health emergency response plans |  |  |  |  |  |
| Capacity building for hospitals to make them ready to provide adequate medical evaluation and care during events that exceed the normal limits |  |  |  |  |  |
| Adapt guidelines to facilitate rapid mobilization of additional resources during health and nutrition incidents |  |  |  |  |  |
| Establish and sustain emergency response and recovery programmes in all hospitals |  |  |  |  |  |
| Build capacity of all hospitals to dispatch a medical team within 24 hours of an IDP event in their catchment area |  |  |  |  |  |
| Establish centers for infectious disease control in major cities in the region |  |  |  |  |  |
| Adapt capacity for diagnostic services for emergency at all levels |  |  |  |  |  |
| Negotiate for a dedicated channel for procurement and distribution of medical supplies and equipment for emergency operations within EPSA |  |  |  |  |  |
| Build capacity for planning and forecast essential laboratory and medical supplies and equipment for emergency operations |  |  |  |  |  |
| Adapt national guidelines/protocol for maintenance of the inventory, the rotation and safe stockpiling, and distribution of laboratory and medical supplies and equipment |  |  |  |  |  |
| Contextualize the adapted national guideline for individual woredas |  |  |  |  |  |
| Establish a dedicated channel for exceptional procurement and distribution of medical supplies that are not on the list of basic equipment and supplies |  |  |  |  |  |
| Establish a dedicated unit of logistics (personnel, travel and accommodation arrangements, stationery and other supplies etc.) management for health and nutrition emergency within Si-PHI |  |  |  |  |  |
| Negotiate for a dedicated budget for risk reduction programmes, as part of the regular health sector budget |  |  |  |  |  |
| Negotiate for a dedicated budget for emergency preparedness programmes, as part of the regular health sector budget |  |  |  |  |  |
| Negotiate for a dedicated budget for emergency response and recovery operations, as part of the regular health sector budget |  |  |  |  |  |
| Negotiate for allocating contingency funds for response and recovery at the national and regional levels |  |  |  |  |  |
| Develop an emergency pool fund that is available for immediate use before the regular system releases funds |  |  |  |  |  |
| Collaborate with the EHF to facilitate timely fund release to implementing partners |  |  |  |  |  |
| Facilitate community engagement in PHEM |  |  |  |  |  |
| Establish a community-based surveillance system to facilitate early detection |  |  |  |  |  |
| Use HEWs and other frontline health workers in PHEM as deemed necessary |  |  |  |  |  |
| Engage civil society and local communities in capacity development |  |  |  |  |  |
| Engage civil society and local communities in the provision of services and assistance to meet the basic needs of populations with high levels of vulnerability |  |  |  |  |  |

\*Equipment and machinery may include sufficiently equipped ambulances, helicopters, forklifts, and other items as deemed necessary.

**Strategic performance measures/ indicators**

The status of the implementation of the strategic plan will be ascertained by close follow-up of performance indicators associated with each of the strategic initiatives set out in **Error! Reference source not found.**. The frequency with which the strategic initiatives will be reviewed will vary from monthly to quarterly according to the specific activities.

**Table 5: Strategic objectives, major activities and associated performance measures/indicators**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Strategic objectives** | **Strategic initiatives**  | **Indicator(s)**  | **Description/explanation** | **Owner**  | **Data source(s)** | **Frequency**  |
| **SO 1** | Revise the regional guidelines on PHEM to facilitate a whole-health, all-hazard approach to PHEM | Adopted guideline  | Guidelines adopted with the leadership of the PHEM division of Si-PHI | PHEM division of Si-PHI | Record review  | Annually  |
| Adapt woreda guidelines to facilitate a whole-health, all-hazard approach to PHEM | Number of woredas that have guidelines | Guidelines adapted with the leadership of the PHEM division of WrHOs | PHEM division of WrHOs | Record review  | Annually |
| Initiate and sustain the development of emergency response-specific health plans at health facility level | Emergency response-specific regional health plans adhering to the all-hazard and whole-health approach developed | Plans developed with the leadership of the PHEM division of Si-PHI | PHEM division of Si-PHI | Record review  | Annually |
| Reform staffing and structure of PHEM teams at regional and woreda levels, and ensure they are adequately staffed | Number of woredas with adequately staffed PHEM team | woredas create the PHEM team with technical support from SRPHI | PHEM division of WrHOs | Routine report | Annually  |
| Proportion of woredas with adequately staffed PHEM team | WrHOs create the PHEM teams with technical and financial support from RHBs | PHEM division of WrHOs | Routine report | Annually  |
| Provide in-service trainings to health managers and policymakers and health professionals in the PHEM system to enhance leadership and governance capacity | Proportion of health managers/policymakers trained | The PHEM division of Si-PHIorganizes the trainings with financial and technical support from partners | PHEM division of Si-PHI | Routine report | Biannually from 2015 EFY onwards |
| Inculcate a culture of AAR at all levels | Proportion of health emergencies followed by AAR | PHEM divisions of Si-PHI and RHB work collaboratively to conduct AARs | PHEM divisions of Si-PHI and RHB | Routine report | Quarterly  |
| Inculcate a culture of IAR at all levels | Proportion of health emergencies followed by IAR | PHEM divisions of Si-PHI and RHB work collaboratively to conduct AARs | PHEM divisions of Si-PHI and RHB | Routine report | Quarterly  |
| Establish a structure for PHEM with a high-level multidisciplinary committee linked to similar structures supported by operational entities at all levels of the health system | High-level multidisciplinary committee for PHEM established  | A committee to be established and led by PHEM division of Si-PHI | PHEM division of Si-PHI | Routine report  | Once in 20134EFY |
| Number of regional states with multidisciplinary committee for PHEM | Committees to be established and led by PHEM division of each woreda | PHEM division of WrHOs | Routine report | Once in 2014 EFY |
| Proportion of woredas with multidisciplinary committee for PHEM | Committees to be established and led by WrHOs | PHEM division of WrHOs | Routine report | Once in 2014 EFY |
| Proportion of health facilities with a planning committee for emergency response and recovery  | Health facilities establish the planning committee with technical and financial support from the WrHOs and the RHBs | Health facility management  | Routine report | Annually  |
| Establish a regional steering committee for PHEM with high-level representatives of all relevant sectors and disciplines | Regional committee for PHEM with high-level representatives established  | A committee to be established and led by RHB (Programme) | RHB (Programme) | Routine report | Once in 2014 EFY |
| Mainstream PHEM within Si-PHI, agencies and directorates of RHB, and other relevant sectors by ensuring that these entities develop health emergency response plans | Number of directorates with health emergency response plan in Si-PHI | Directorates of Si-PHI develop the plan with technical support from the PHEM division | Directorates of Si-PHI | Rapid assessment | Annually |
| Number of RHB agencies with health emergency response plan | Agencies of RHB develop the plan with technical support from the PHEM division  | Agencies of RHB | Rapid assessment | Annually |
| Number of directorates of RHB with health emergency response plan | Directorates of the RHB develop the plan with technical support from the PHEM division | Directorates of the RHB | Rapid assessment | Annually |
| Number of non-health sector government structures with health emergency response plan | Other relevant sectors develop the plan with technical support from the PHEM division | Other relevant sectors (e.g. agriculture, water, energy, transportation, etc.) | Rapid assessment | Annually |
| **SO 2** | Adapt guidelines for the collection, management, analysis, and dissemination of the necessary data for conducting risk assessments and performing emergency preparedness planning | Regional guidelines for the collection, management, analysis, and dissemination of the necessary data adapted | The PHEM division of SI-PHI develops the guidelines with financial and technical support from partners | PHEM division of Si-PHI | Routine report | Once in 2014 EFY |
| Number of woredas which have contextualized the guidelines | Guidelines contextualized with the leadership of the PHEM division of WrHOs | PHEM division of WrHOs | Routine report | Once in 2014 EFY  |
| Create and revise every year aregional profile of public health and nutrition risk, based on disaggregated risk, hazard, and vulnerability data | A regional profile of public health and nutrition risk is created | The PHEM division of Si-PHI creates the profile and revises it every year | PHEM division of Si-PHI | Routine report | Annually from 2014 EFY onwards |
| Include disaggregated data for PHEM at regional and woreda levels in DHIS2, with triggers defined for switching from routine to emergency reporting  | Types of disaggregated data relevant to PHEM included in DHIS2 | The PHEM division of Si-PHI will work with the Policy, Plan, Monitoring and Evaluation Directorate (PPMED) of RHB to ensure relevant indicators are included in DHIS2 | PHEM division of Si-PHI | Routine report | Once in 2014 |
| Number of indicators relevant to PHEM included in DHIS2  | The PHEM division of SI-PHI will work with the PPMED of RHB to ensure relevant indicators are included in DHIS2 | PHEM division of Si-PHI | Routine report | Once in 2014 |
| Triggers defined for switching from routine to emergency reporting  | The PHEM division of Si-PHI will work with the PPMED of RHB to define triggers for switching from routine to emergency reporting | PHEM division of Si-PHI | Routine report | Once in 2014 |
| Enable access to surveillance data by emergency managers at all levels, with procedures defined for data sharing with relevant sectors  | Levels at which emergency managers have access to surveillance data  | The PHEM division of SI-PHI facilitates access at all levels and provides support as required | PHEM division of Si-PHI | Routine report | Annually from 2014 EFY onwards  |
| Number of sectors that have ever accessed surveillance data  | The PHEM division of SI-PHI shares data with relevant sectors and provides support as required | PHEM division of Si-PHI | Routine report | Annually from 2014 onwards  |
| Strengthen early warning capacity to enable recognition of and reporting on any event of potential public health concern within 24 hours | Proportion of events of public health concern recognized and reported within 24 hours  | N/A | PHEM operational entities at all levels | Routine report | Annually from 2014 EFY onwards  |
| Conduct rapid assessment of population and health services’ needs as soon as a public health emergency is detected | Proportion of public health and nutrition incidents for which rapid assessment was conducted (national/regional) | The PHEM divisions of Si-PHI and RHBs conduct the rapid assessments  | PHEM divisions of SI-PHI and WrHOs | Routine report | Annually from 2014 EFY onwards  |
| Adapt documented guidelines for risk communication with the public, the media, and the staff involved in emergency management  | Regional guidelines for risk communication adapted | The PHEM division of Si-PHI develops the guidelines with financial and technical support from partners | PHEM division of Si-PHI | Routine report | Once in 2014 EFY |
| Contextualize the regional risk communication guidelines for individual woreda | Number of woredas which have contextualized the guidelines  | Guidelines contextualized by the PHEM division of woredas | PHEM division of WrHOs | Routine report | Once in 2014 EFY  |
| Train health managers on risk communication | Number of emergency managers, who have received orientation/training on risk communication | The PHEM divisions of Si-PHI and woredasorganize the orientation | PHEM divisions of Si-PHI and WrHOs | Routine report | Annually from 2014 EFY onwards  |
| Adapt guidelines to provide life support and critical care during patient dispatch to hospitals outside the affected area during MCIs, they should specify the required capacity (ambulances with ventilators, incubators, etc.) based on a needs assessment | Regional guidelines adapted to provide life support and critical care during patient dispatch to hospitals outside the affected area  | The PHEM division of SI-PHI develops the protocols with technical and financial support from partners  | PHEM division of Si-PHI | Routine report | Once in 2015 EFY |
| Create specific arrangements for the pre-hospital handling of patients with diseases of epidemic potential and victims of other public health and nutrition incidents | Operational guidelines developed for pre-hospital handling of patients during health and nutrition incidents  | The PHEM division of Si-PHI develops the guidelines with technical and financial support from partners  | PHEM division of Si-PHI | Routine report | Once in 2015 EFY |
| Establish a joint steering committee of Si-PHI, Emergency and Critical Care Directorate (ECCD) and other stakeholders to coordinate emergency case management | Joint steering committee of Si-PHI, Emergency and Critical Care Directorate (ECCD) and other stakeholders established | The PHEM division of Si-PHI collaborates with the ECCD to establish the committee  | ECCD | Annual review report  | Once in 2015 EFY |
| Establish coordinated call and ambulance dispatch centers | Coordinated call and ambulance dispatch centers established | The PHEM division of Si-PHI supports the ECCD of RHB to establish the centers at strategic locations | ECCD of RHB | Annual review report | Annually from 2014 EFY onwards |
| Develop regionalmass casualty response plan with anticipated mobile treatment centres and required resources | Regional mass casualty response plans developed, with anticipated mobile treatment centers and required resources | The PHEM division of Si-PHI and the ECCD of RHB work together to develop a regional plan and support woredas to develop woreda plans | ECCD of RHB | Annual review report | Annually from 2014 EFY onwards |
| Woredasmass casualty response plans developed, with anticipated mobile treatment centers and required resources | Number of woredas with mass casualty response plans developed, with anticipated mobile treatment centers and required resources | The PHEM division of Si-PHI and the ECCD of RHB work together to develop a regional plan and support wordas to develop woredas plans | ECCD of RHB | Annual review report | Annually from 2014 EFY onwards |
| Adapt operational guidelines for identifying victims and tracking missing persons in times of mass causalities  | Operational guidelines adapted for identifying victims and tracking missing persons in times of mass causalities | The PHEM division of Si-PHI develops the guidelines with technical and financial support from partners  | PHEM division of Si-PHI | Routine report | Once in 2015 EFY |
| Provide training and orientation on the guidelines to the staff of the PHEM system | Proportion of staff who received orientation and training on the guidelines | The PHEM division of Si-PHI organizes the orientation and training with technical and financial support from partners | PHEM division of Si-PHI | Routine report | Quarterly in 2015 and 2016 EFY |
| Procure and purchase the equipment and machinery required for rescue operations in MCIs | Number of adequately equipped ambulances ready for use Regionally | The PHEM division of Si-PHI works with relevant directorates at the ECCD of RHB to procure and purchase the equipment and machinery  | ECCD of RHB | Supervision/Routine report | Annually from 2015 EFY onwards |
| Number of adequately equipped ambulances ready for use (per woreda) | The PHEM division of SI-PHI works with relevant directorates at the ECCD of RHB and the woredas to manage the ambulances  | ECCD of RHB | Supervision/Routine report | Annually from 2015 EFY onwards |
| Assist woredas to develop woredas emergency response plans based on the regional strategic plan for PHEM | Number of woredas with woredasemergency response plan | The PHEM division of Si-PHI technically supports woredas to develop plans | PHEM divisions of SI-PHI and WrHOs | Routine report | Once in 2016 EFY onwards  |
| Provide capacity building for hospitals to make them ready to provide adequate medical evaluation and care during events that exceed the capacity of the normal medical infrastructure of an affected area during an outbreak of an infectious disease of high impact, or other public health incident | Proportion of hospitals ready to provide adequate medical evaluation and care during public health emergencies regionally | The PHEM divisions of Si-PHI and woredas support hospitals to build capacity | PHEM division of Si-PHI | Supervision/routine reports | Annually from 2014 EFY onwards  |
| Proportion of hospitals ready to provide adequate medical evaluation and care during public health emergencies (per woreda) | The PHEM divisions of Si-PHI and woredas support hospitals to build capacity | PHEM division of WrHOs | Supervision/routine reports | Annually from 2014 EFY onwards  |
| Establish mechanisms to rapidly mobilize additional resources (personnel, equipment, and materials) during health emergencies | Guidelines developed to facilitate rapid mobilization of additional resources during health and nutrition incidents  | The PHEM division of Si-PHI develops the protocols with technical and financial support from partners  | PHEM division of SI-PHI | Routine report | Once in 2015 EFY |
| Enable all hospitals to design emergency response and recovery programmes, with a planning committee for emergency response and recovery in place | Proportion of hospitals having emergency response and recovery programme (regional and per woreda) | Hospitals to be supported by the PHEM division of Si-PHI and WrHOsto develop emergency response and recovery programmes | PHEM divisions of Si-PHI and WrHOs | Routine report | Annually from 2014 EFY onwards  |
| Proportion of hospitals having a functional planning committee for emergency response and recovery (regional and per woreda) | Hospitals to be supported by the PHEM division of Si-PHI and WrHOs to develop emergency response and recovery programmes | PHEM divisions of Si-PHI and WrHOs | Routine report | Annually from 2014 EFY onwards  |
| Build the capacity of all hospitals to dispatch a medical team within 24 hours of an IDP event in their catchment area | Proportion of hospitals with capacity to dispatch a medical team within 24 hours of an IDP event in their catchment (regional and per woreda) | Hospitals to be supported by the PHEM division of Si-PHI and WrHOsto build capacity to dispatch a medical team within 24 hours of an IDP event in their catchment area | PHEM divisio Si-PHI and WrHOs | Routine report | Annually from 2014 EFY onwards  |
|  | Establish center for infectious disease control inHawaasa city and major administrations of region | Center for infectious disease control established inHawaasa city and major administrations of region  | The PHEM division of Si-PHI works with the RHB (Programme), the Disease Prevention and Control Directorate and the Medical Services General Directorate of RHB to Establish center for infectious disease control in Hawaasa | Medical Services General Directorate | Review meeting  | Annually from 2015 EFY onwards  |
| Develop capacity for diagnostic services for emergency at all levels | Number of infectious diseases for which confirmatory tests are sent outside of the country | The PHEM division of Si-PHI works with the RHB and partners to build the capacity of the lab at SI-PHI | Laboratory Division of Si-PHI | Review meeting  | Annually from 2015 EFY onwards |
| Number of regional states with at least one accredited laboratory for health emergency operations  | The PHEM division of Si-PHI supports WrHOs to develop lab capacity | PHEM divisions of WrHOs | Review meeting  | Annually from 2015 EFY onwards |
|  | Advocate for the creation of a dedicated channel for procurement and distribution of medical supplies, including those that are not on the list of basic equipment and supplies | Advocacy carried out, with compelling concept note prepared  | The PHEM division of Si-PHI develops a concept note and conduct advocacytargeting decision makers at RHB and EPSA  | PHEM division of Si-PHI | Routine report | Annually from 2014 EFY onwards |
| **SO 3** | Build capacity for planning and forecast essential laboratory and medical supplies and equipment for emergency operations on the basis of risk assessment and analysis  | Regional planning and forecasting carried out based on risk assessment | The PHEM division of Si-PHI works with EPSA to conduct regional planning and forecasting out based on risk assessment | PHEM division of Si-PHI | Routine report | Annually from 2014 EFY onwards |
| Number of woredas with risk assessment-based planning and forecasting | PHEM divisions of woredas work with EPSA regional branch to conduct regional planning and forecasting based on risk assessment | PHEM divisions of WrHOs | Routine report | Annually from 2014 EFY onwards |
| Adapt regional guidelines/protocols for the maintenance of the inventory, the rotation and safe stockpiling, and distribution of laboratory and medical supplies and equipment for emergency operations | Regional guidelines Adapted | The PHEM division of Si-PHI works with EPSA to Adapted regional guidelines | PHEM division of Si-PHI | Routine report | Once in 2014 EFY |
| Number of woredas which have contextualized the guidelines | The PHEM divisions of woredas work with EPSA regional branches to contextualize the guidelines | PHEM divisions of WrHOs | Routine report | Once in 2014 EFY |
| Create a dedicated unit of logistics (personnel, travel and accommodation arrangements, stationery and other supplies etc.) management for health emergency within SI-PHI | A functional unit of logistics management for health and nutrition emergencies established  | The Deputy Director General for PHEM works with the Director General to facilitate the establishment of a dedicated unit of logistics | PHEM division of Si-PHI | Routine report | Once in 2014 EFY |
|  | Negotiate for a dedicated budget for risk reduction programmes, emergency preparedness programmes, and emergency response and recovery operations as part of the regular health sector budget | Percentage increase in the budget for risk reduction programmes (regional/woreda) (dedicated budget for risk reduction programmes/total health sector budget) | The PHEM division of Si-PHI works with RHB to ear-mark budgets | PHEM divisions of Si-PHI and WrHOs | Routine report | Annually from 2014 EFY onwards |
| Percentage increase in the budget for emergency preparedness programmers (regional/woreda) (dedicated budget for emergency preparedness programmers/total health sector budget) | PHEM divisions of SI-PHI and WrHOs | Routine report | Annually from 2014 EFY onwards |
| Percentage increase in the budget for emergency response and recovery operations (regional/woreda) (dedicated budget for emergency response and recovery operations/total health sector budget) | PHEM divisions of Si-PHI and WrHOs | Routine report | Annually from 2014 EFY onwards |
| Negotiate for allocating contingency funds for response and recovery at the regional and woreda levels | Percentage of contingency funds for response and recovery (contingency funds for response and recovery/total health sector budget) (regional/woreda) | The PHEM division of Si-PHI works with RHB to allocating contingency funds for response and recovery | PHEM divisions of Si-PHI and WrHOs | Routine report | Annually from 2014 EFY onwards |
| Create an emergency pool fund available for immediate use before the regular system releases funds | Amount of emergency pool fund in birr | The PHEM division of SI-PHI works with partners and RHB to create and sustain the pool fund | PHEM division of Si-PHI | Routine report | Annually from 2014 EFY onwards |
| Collaborate with the EHF to facilitate timely fund release to implementing partners addressing health and nutrition emergencies  | Average number of weeks to process fund release from EHF | The PHEM division of SI-PHI works with EHF to facilitate timely fund release | PHEM division of Si-PHI | Routine report | Annually from 2013 EFY onwards |
|  | Develop a human resources plan for health emergency management | Human resources needs for PHEM determined/forecasted for the duration of the strategic plan | The PHEM division of Si-PHI conducts the needs assessment and forecasting with financial and technical support from partners | PHEM division of Si-PHI | Routine report | Once in 2014 EFY |
| Roadmap for the development and deployment of human resources developed  | The PHEM division of Si-PHI crafts the roadmap with financial and technical support from partners | PHEM division of Si-PHI | Routine report | Once in 2014 EFY |
| Develop a database of staff trained on PHEM and ensure it is updated regularly | A regional database of PHEM-trained staff created | The PHEM division of Si-PHI creates the database with financial and technical support from partners | PHEM division of Si-PHI | Routine report | Once in 2016 EFY |
| Develop competency-based in-service training programmes for all categories of professionals required in times of public health and nutrition emergencies | Proportion of health managers and policy makers trained with competency-based leadership and governance courses  | The PHEM division of Si-PHI prepares the courses with financial and technical support from partners | PHEM division of Si-PHI | Routine report | Biannually in 2014 EFY  |
| Proportion of staff in the PHEM system trained with competency-based technical in-service trainings  | The PHEM division of Si-PHI prepares the courses with financial and technical support from partners | PHEM division of Si-PHI | Routine report | Biannually in 2014 EFY  |
| Adapt guidelines for integrating regional, national and international volunteers into service delivery in times of public health emergencies | Regional guidelines adapted for integrating regional, national and international volunteers into service delivery  | The PHEM division of Si-PHIdevelopsthe guidelines with technical and financial support from partners  | PHEM division of Si-PHI | Routine report | Once in 2016 EFY  |
| Number of woredas which have contextualized the guidelines | Woredas will contextualize the guidelines withsupport from PHEM division of Si-PHI | PHEM division of WrHOs | Routine report | Once in 2016 EFY  |
| **SO 4** | Facilitate community engagement in the identification of hazards, the development of preparedness plans, the detection of and response to emergencies, and the implementation of recovery efforts | Proportion of WrHOs actively participating in the identification of hazards/development of preparedness plans/ detection of and response to emergencies (regional/woreda) (number of actively participating WrHOs/total number of woredas in the region) | The PHEM division of Si-PHI supports the RHBs to enhance community engagement | PHEM divisions of WrHOs | Routine report | Annually from 2013 EFY onwards |
| Establish a community-based surveillance system to facilitate early detection | Percentage of woredas with functional community-based surveillance system in place | The PHEM division of Si-PHI collaborates with the PHEM divisions of WrHOs to create functional community-based surveillance systems | PHEM divisions of WRHOs | Routine report | Annually from 2014 EFY onwards |
| Use HEWs and other frontline health workers to disseminate information, identify people at risk, and build public confidence | Number of incidents where HEWs were involved in disseminating information, identifying people at risk, and/or building public confidence (regional/woreda) | SI-PHIs work with WrHOs to involve HEWs in the PHEM response | PHEM divisions of WrHOs | Routine report | Annually from 2014 EFY onwards |
| Engage civil society and local communities in capacity development and provision of services and assistance to meet the basic needs of populations with high levels of vulnerability (such as food, health, shelter, and water and sanitation) | Percentage of budget for capacity development of civil society and local communities (Budget for capacity development of civil society and local communities/total budget for PHEM) |  Si-PHI work with WrHOs to involve communities in the PHEM response | PHEM divisions ofSI-PHI and WrHOs | Routine report | Annually from 2014 EFY onwards |

**Performance measurements and Targets**

| **Strategic Objective**  | **Strategic initiatives/Major activities**  | **Indicators**  | **Unit**  | **Targets** | **2021/22** | **2022/23** | **2023/24** | **2024/25** | **2025/26** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SO 1Establish accountable and visionary governance system to plan and coordinate pre-emergency preparation, emergency operation and post- emergency recovery | 1. Institutionalize (develop legal framework, policies, guidelines and plans to facilitate) a whole-health, all-hazard approach to PHEM at all levels of the health system
 | Legal framework developed | Number  | 1 | 1 |  |  |  |  |
| Policy developed  | Number  | 1 | 1 |  |  |  |  |
| # of PHEM guideline revised  | Number  | 1 | 1 |  |  |  |  |
| # of woreda& CAs adapted guidelines  | %  | 100 |  | 100 |  |  |  |
| # of woreda emergency preparedness and response health plans developed/adapted  |  19 | 37 | 19 | 37 | 37 | 37 | 37 |
| Proportion of developed/revised guidelines adhering to the all-hazard, whole health approach (presence of both)  | % | 100 | 100 | 100 | 100 | 100 | 100 |
|  |  | Proportion of health plans developed/revised adhering to the all-hazard, whole- health approach | %  | 100 | 100 | 100 | 100 | 100 | 100 |
| 1. Revise the TOR for existing PHEM coordination plat forms at all levels of the health system
 | The TOR for multi- sectors committee for PHEM at woreda level is revised  | Number | 1at regional | 1 |  |  |  |  |
| Proportion of WrHOs with multi sectors committee for PHEM | %  | 100 | 100 | 100 | 100 | 100 | 100 |
| Proportion of woredas with multidepartment committee for PHEM  | % | 100 | 60 | 70 | 80 | 90 | 100 |
| 1. Established/revise the structure of PHEM at all levels
 | Proportion of woredas with adequately staffed PHEM team | # | 30 | 37 | 37 | 37 | 37 | 37 |
| Proportion of health facilities with emergency response plan with personnel assigned  | %  | 100 | 60 | 70 | 80 | 90 | 100 |
| Number of rounds of PHEM in-service trainings organized | Number  | 40(Every quarter)  | 4 | 4 | 4 | 4 | 4 |
| Proportion of PHEM manager strained | Number  | 100 | 60 | 70 | 80 | 90 | 100 |
| 1. Mainstreaming PHEM within SRPHI, agencies and directorates of RHB, and other relevant sectors
 | Proportion of Directorates with health emergency preparedness and response plan in Si-PHI  | % | 100 | 100 | 100 | 100 | 100 | 100 |
| Proportion of RHB agencies with health emergency preparedness and response plan | % | 100 | 100 | 100 | 100 | 100 | 100 |
| Proportion of directorates of RHB with health emergency preparedness and response plan | % | 100 | 100 | 100 | 100 | 100 | 100 |
| Proportion of non-health sector government structures with health emergency preparedness and response plan | % | 100 | 40 | 65 | 100 | 100 | 100 |
| 1. Institutionalize M&E of all health emergencies
 | Proportion of health emergencies for which impact assessment done  | % | 100 | 100 | 100 | 100 | 100 | 100 |
| Proportion of health emergencies followed by IAR/AAR | % | 100 | 100 | 100 | 100 | 100 | 100 |
| SO 2Build capacities required to create resilient health systems to promptly respond in the context of health emergencies | 1. Adopt guidelines for the collection, management, analysis and dissemination of the necessary data for conducting risk assessments and performing emergency-preparedness planning
 | Adopted regional guidelines for the collection, management, analysis and dissemination of the necessary data developed | # | 1 | 1 | 1 | 1 | 1 | 1 |
| Proportion of WrHOs which have contextualized the guidelines | # | 37 | 37 | 37 | 37 | 37 | 37 |
| 1. Create and revise every year a national profile of public health and nutrition risk based on disaggregated risk, hazard and vulnerability data
 | A regional profile of public health and nutrition risk developed  | # | 10 (every year) | 1 | 1 | 1 | 1 | 1 |
| 1. Include disaggregated data for PHEM at regional and woreda level in DHIS2 with triggers for switching from routine to emergency reporting defined
 | Types of disaggregated data relevant to PHEM to be included in DHIS2 determined  | # of time | Every year | 1 | 1 | 1 | 1 | 1 |
| Indicators relevant to PHEM included in DHIS2 indicators  | # of time | Every year | 1 | 1 | 1 | 1 | 1 |
| Indictors with triggers for switching from routine to emergency reporting defined | # of time | Every year | 1 | 1 | 1 | 1 | 1 |
| Proportion of HF reported weekly surveillance report through DHIS2  | # | 37 |  |  |  |  |  |
| Proportion health facilities reporting timely weekly diseases report | % | 100 | 60 | 70 | 80 | 90 | 100 |
| 1. Disseminate information for relevant sectors defined
 | Guidelines with guiding procedures for data sharing with relevant sectors developed | # | 1 | 1 | 1 |  |  |  |
| Proportion of sectors received surveillance information  | # | 100 | 40 | 60 | 80 | 100 | 100 |
| 1. Strengthen early-warning capacity to enable recognition of and reporting on any event of potential public health concern within 24 hours
 | Proportion of events of public health concern recognized and reported within 24 hours  | % | 100 | 100 | 100 | 100 | 100 | 100 |
| 1. Conduct rapid assessment of population and health services’ needs as soon as a public health emergency detected
 | Proportion of health facilities assessed for service availability and readiness  | % | 100 | 60 | 70 | 80 | 90 | 100 |
| 1. Develop documented strategies for risk communication with the public, the media and the staff involved in emergency management
 | Regional guidelines for risk communication adopted | # | 1 | 1 | 1 | 1 | 1 | 1 |
| Proportion of WrHOs which adapted the guidelines  | % | 100 |  100 | 100 | 100 | 100 | 100 |
| Proportion of health workers, media and communication personnel trained  | % | 100 | 60 | 70 | 80 | 90 | 100 |
| 1. Develop regional emergency response plan based on the national strategic plan for PHEM
 | Proportion of woredas with EPRP  | % | 100 | 51 | 100 | 100 | 100 | 100 |
| Proportion of health facilities with emergency preparedness and response plan  | % | 100 |  |  |  |  |  |
| 1. Provide adequate medical evaluation and care during events that exceed the limits of the normal medical infrastructure of an affected area during an outbreak of an infectious disease of high impact (IDHI) or other public health and nutrition incident
 | Proportion of health facility ready to provide adequate medical evaluation and care during events that exceed the limits  | % | 100 | 50 | 70 | 80 | 90 | 100 |
| 1. Established mechanisms to rapidly mobilize additional resources y
 | Number of strategies designed and implemented  | Number  | 1 | 1 |  |  |  |  |
| 1. Adopt guidelines and the required capacity (ambulances with ventilators, incubators, etc.) to provide life support and critical care during patient dispatch to hospitals outside the affected area during mass causality
 | Adopted Regional guidelines to provide life support and critical care during patient dispatch to hospitals outside the affected area developed | # | 1 | 1 |  |  |  |  |
| Proportion of ambulances fully equipped and ready for use (regionally)  | % | 100 |  |  |  |  |  |
| Proportion of adequately equipped ambulances ready for use (per woreda) | % | 100 |  |  |  |  |  |
| 1. Create specific arrangements for the pre-hospital handling of patients with diseases of epidemic potential and victims of other public health and nutrition incidents
 | Operational guidelines for pre-hospital handling of patients during health incidents developed  | # | 1 | 1 |  |  |  |  |
| 1. Establish coordinated call and ambulance dispatch center
 | Number of coordinated call and ambulance dispatch centers established | # | (regional &all woredas& CAs) |  |  |  |  |  |
| 1. Develop mass causality response system with mobile treatment center
 | Regional and woredas mass causality response plan with anticipated mobile treatment centers and required resources developed | # | Plan or review the plan yearly | 1 | 1 | 1 | 1 | 1 |
| 1. Establish mechanisms for identifying victims and tracking missing persons in times of mass fatality
 | Operational guidelines identifying victims and tracking missing persons in times of mass fatality developed  | # | 1 | 1 |  |  |  |  |
| Proportion of missed individuals traced  | % | 100 | 100 | 100 | 100 | 100 | 100 |
| 1. Enable all Health facilities to design emergency response and recovery programs response and recovery in place
 | Proportion of health facilities having emergency response and recovery system | % | 100 | 60 | 70 | 80 | 90 | 100 |
| Proportion of health facilities committee for emergency response and recovery (regional and per woreda) | % | 100 | 60 | 70 | 80 | 90 | 100 |
| 1. Introduce mechanisms to assure displaced populations have access to essential health programs
 | Proportion of health facilities ready to dispatch a medical team in 24 hours of an IDP event  | % | 100 |  |  |  |  |  |
| 1. Establish centers for infectious disease control in major city of the regions
 | Number of mobile treatment facilities established | # | 1 |  |  |  |  |  |
| 1. Establish centers for infectious diseases
 | Proportion of infectious diseases with an infection control center  | # | 4 | 1 |  | 1 |  | 1 |
| 1. Develop capacity for diagnostic services for emergency at all levels
 | Proportion of lab confirmed outbreaks  | % | 100 | 100 | 100 | 100 | 100 | 100 |
| Proportion of Laboratory feedback received per the standard TAT  | % | 100 | 100 | 100 | 100 | 100 | 100 |
| Number of zones with at least accredited laboratory for health emergency operations  | # | 4 | 1 |  |  | 1 |  |
| 1. Build core capacity
 | Proportion of points of entry with required core capacities | % | 100 | 100 | 100 | 100 | 100 | 100 |
| 1. Establish functional neighboring regions collaboration and coordination with neighboring regions
 | Number of neighboring regions collaboration meetings  | # | 2(with all neighboring regions) every year) | 2 | 2 | 2 | 2 | 2 |
| SO 3Mobilize resources required for effective emergency preparedness, emergency response operations and recovery  | 1. Institutionalize risk-based planning and forecasting
 | Regional VRAM conducted  | # | Every year |  | 1 | 1 | 1 | 1 |
| Proportion of woredas who conduct VRAM | % | 100 | 40 | 60 | 80 | 90 | 100 |
| 1. Plan and forecast essential laboratory and medical supplies and equipment for emergency operations on the basis of risk assessment and analysis
 | Regional planning and forecasting carried out based on risk assessment | # | Every year  | 1 | 1 | 1 | 1 | 1 |
| Proportion of woredas with risk assessment-based planning and forecasting | % | Every year by all woredas | 100 | 100 | 100 | 100 | 100 |
| 1. Develop guidelines/protocol for maintenance of the inventory, the rotation and safe stockpiling, and distribution of laboratory and medical supplies and equipment for emergency operations
 | Regional guidelines adopted | # | 1 |  | 1 |  |  |  |
| % of WrHOs which contextualized the guidelines | # | All |  |  | 100 |  |  |
| 1. Develop legal framework for emergency procurement
 | Develop legal framework for emergency procurement | # of times | At least one time | 1 |  |  |  |  |
| 1. Create a dedicated unit of emergency logistics and supply chain management at all levels
 | A functional unit of logistics management for health and nutrition emergency established | # | 1 |  | 1 |  |  |  |
| Proportion of woredas with a dedicated unit of emergency logistics and supply chain management | % | 100 | 100 | 100 | 100 | 100 | 100 |
| Proportion of HCs with a dedicated unit of emergency logistics and supply chain management |  | 100 | 60 | 70 | 80 | 90 | 100 |
| 1. Institutionalizing of dedicated budgeting for emergency risk-management
 | No of health sector budget allocated for emergency risk management at regional  | # | 2 | 2 | 2 | 2 | 2 | 2 |
| No of health sector budget allocated for emergency risk management at woreda level  | # | 37 | 37 | 37 | 37 | 37 | 37 |
| 1. Create emergency pool fund
 | Emergency pool fund created  | # | 1 | 1 |  |  |  |  |
| 1. Improve the turn round time of budget release from existing Humanitarian Funds (HF) to facilitate timely fund release to implementing partners addressing health and nutrition emergencies
 | Average number of weeks to process fund release from HF | # | 1wk | 4wk | 2wk | 1wk | 1wk | 1wk |
| 1. Develop a human resource strategic plan and roadmap for health and nutrition emergency management
 | Strategic plan for the development and deployment of human resources developed  | # | 2 |  |  |  |  |  |
| Road map for the development and deployment of human resources developed  | # | 2 |  |  |  |  |  |
| 1. Create a HRH information system for PHEM
 | HRH information system for PHEM created | # | Develop/revise every year  | 1 | 1 | 1 | 1 | 1 |
| 1. Develop and implement competency-based in-service training programs for all categories of professionals required in times of public health and nutrition emergency
 | Number of competency-based technical in-service trainings organized  | # | Every quarter of the year  | 4 | 4 | 4 | 4 | 4 |
| 1. Develop legal frame work/guidelines for integrating regional and national volunteers into service delivery in times of public health and nutrition emergency
 | Develop legal framework for regional and national volunteer’s management  | # | 1 | 1 |  |  |  |  |
| Regional guidelines for integrating regional, national and international volunteers into service delivery developed | # | 1 |  | 1 |  |  |  |
| Proportion of woredas which have contextualized the guidelines | # | All |  |  | 100 |  |  |
| 1. Integrate PHEM training to existing health professionals training programs
 | Number of curriculums revised and implemented  | Number  | 1 |  | 1 |  |  |  |
| 1. Establish PHEM professionals training programs
 | Number of PHEM professionals training programs established  | Number  | 4 | 4 | 4 | 4 | 4 | 4 |
| SO 4: To establish mechanisms for engaging local communities, including community members, civil society and the private sector, in public health emergency management | 1. Facilitate community engagement in the identification of hazards, development of preparedness plans, detection and response to emergencies, and the implementation of recovery efforts
 | Proportion incidents reported by the community  | % | 100 | 60 | 70 | 80 | 90 | 100 |
| 1. Establish community-based surveillance system to facilitate early detection
 | Percentage of woredas with functional community-based surveillance system in place | % | 100 | 60 | 70 | 80 | 90 | 100 |
| 1. Implement community-based surveillance (use health extension workers (HEWs) and other frontline health workers to disseminate information, identify people at risk and build public confidence)
 | Proportion of Kebeles implementing community-based surveillance | % | 100 | 60 | 70 | 80 | 90 | 100 |
| 1. Engage civil society and local communities in capacity development and provision of services and assistance to meet the basic needs of populations with high levels of vulnerability (such as food, health, shelter, water and sanitation)
 | Proportion of woredas who engaged in civil society and local communities in capacity development and provision of services and assistance to meet the basic needs of populations with high levels of vulnerability | % | 50 | 60 | 70 | 80 | 90 | 100 |

**Monitoring and evaluation mechanisms and key milestones**

Table 6 below provides the key milestones to be used in the monitoring and evaluation of the implementation of the strategic plan.

**Table 6: Key milestones for monitoring and evaluating the implementation of the Regional strategic plan**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.No.** | **Milestones**  | **Timeline**  | **Responsible body** | **Budget**  |
| 1 | Approval of the strategic plan by Si-PHI | First quarter of 2014 EFY | Centre for PHEM, Si-PHI |  |
| 2 | Establishment of regional taskforce for implementation and monitoring | First quarter of 2014 EFY | Centre for PHEM, Si-PHI |  |
| 3 | Adaptation of the regional strategic plan by woredas | Second quarter of 2014 EFY | WrHOs with the support of PHEM of SI-PHI |  |
| 4 | Preparation of annual operational plan | Fourth quarter of each EFY | Centre for PHEM, SI-PHI |  |
| 5 | Annual performance review meeting  | First quarter of each EFY starting from 2014 EFY | Centre for PHEM, SI-PHI in collaboration with woreda- and HC-level PHEM structures |  |
| 6 | Tracking progress using performance indicators (Table 5) | Monthly, quarterly or annually depending the nature of the activities | Centre for PHEM, SI-PHI |  |
| 7 | In-house evaluation | Every two years | Centre for PHEM, SI-PHI |  |
| 8 | Mid-term evaluation | Fourth quarter of 2014EFY | Centre for PHEM, SI-PHI |  |

**Assumptions and risks**

Key assumptions and risks with the potential to affect implementation of the strategic plan are listed below along with mitigation mechanisms.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Assumptions** | **Associated risks**  | **Mitigation mechanisms** |
| **Internal** (within the health system) | * Sustained high degree of commitment by health managers and policymakers at the PHEM division of SI-PHI
* Top officials in the RHB and SI-PHI adequately backthe endorsement and implementation of the strategic plan
* WrHOs and their PHEM divisions embrace the implementation of the strategic plan
* Relevant directorates and agencies of RHB sufficiently backthe implementation of the strategic plan
* Communities and frontline health workers respond favourably to the implementation of the strategic plan
 | * High turnover of health managers and policymakers at all levels
* Resistance by health managers and health workers at all levels,who seek to maintain the status quo
* Reluctance on the part of relevant directorates and agencies of RHB
* Overloaded frontline health workers
* Communities are not accessible for engagement
 | * Keep whoever assumes a managerial role in the PHEM system (at all levels) informed
* Improve engagement of health managers and health workers at all stages of the strategic plan
* Engage relevant directorates of RHB during the development of the strategic plan
* Negotiate for improved staffing of WrHOs and health facilities
* Use tailored approaches to access all communities for engagement in PHEM
* Use civil society groups and opinion leaders to persuade communities
 |
| **External** (the immediate and general environment) | * Relevant sector ministries and other offices back the implementation of the sector plan
* There is peace and stability to allow implementation
* Donors and implementing partners are willing to support the implementation of the strategic plan
* The global community continues to be committed to collaborating on public health risks of a cross-border nature
* Infrastructure and amenities are available to facilitate execution of PHEM activities
* Universities are willing to participate in human resources development for PHEM
 | * Relevant sector bureau and other offices are not supportive
* Conflict and instability
* Some donors and implementing partners are not willing to align with the strategic plan
* Compliance with IHR 2005 is not the norm for some nations
* Lack of infrastructure and amenities
* Universities and other training institutions not interested in preparing and delivering PHEM-relevant courses
 | * Engage relevant sector ministries and other offices from early on
* Engage key donors and implementing partners from early on
* Work with the WHO to ensure neighbouring countries in particular comply with the IHR 2005
* Provide technical and financial support to universities and other training institutions to motivate participation in human resources development for PHEM
 |

**PUBLIC HEALTH LABORATORY**

**Increase and Maintain Quality assured Laboratories.**

Currently, the institute has been striving to improve the status of laboratories through the stepwise laboratory improvement process towards accreditation (SLIPTA) program and the progress toward SLIPTA for hospitals is 9% in the region. Health centers enrolled in LQMS in the last five years were 6%. However, the enrollments hospitals and Health centers were increased to 7/22(32%) and 5% of the total regional wide functional laboratories respectively.

The accreditation program is the milestone to measure the quality management implementation and ensure the quality of services provided in the laboratory. Over the last five years, laboratories achieved limited accreditation and applied for limited accreditation were 1 and 2, respectively. During the implementation of this SLPTA and accreditation program, the institute faces continuous quality improvement, maintenance, weak follow-up, monitoring, mentor ship and feedback, poor documentation, limitation in ownership to handle quality assurance initiatives, and unsuitable laboratory infrastructure.

Laboratory equipment calibration support to produce quality results from the laboratories. As there is no established laboratory calibration center used for laboratory equipment calibration, the activity is outsourced and done by the regional meteorological institute. Due to this limiting factor laboratory equipment calibration is planned only for ISO-accredited laboratories.



***Figure 1 the current status of hospital labs on SLPTA***

2**.1.3.2 Laboratory Quality Management System Implementation**

To strengthen the laboratory quality management system (LQMS) the institute has planned to support facility laboratories to implements 12 as of 2020/21. All tiers of facility laboratories participate in one of External Quality Assessment *i.e.,* Coverage is 25 % of the total functional governmental facilities in the region. But now it progresses to 70% laboratories that implemented basic laboratory quality management systems.

Currently, 40 laboratories have participated for one or more of EQA programs including one world accuracy Programs using PT panel samples for Bacterial, Viral and other laboratory testing’s methods through the region in addition to that Regional EQA program enrolled around 127 laboratories on TB and Malaria microscopy.

* 1. **Performance measurements and Targets**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Strategic Direction  | Indicators  | Unit  | Baseline  | 20/21 | 21/22 | 22/23 | 23/24 | 24/25 |
| Establish qualified and standardized diagnostic service of public health laboratory on molecular, microbiology and virology  | Compile and report Gene xpert MTB /MDR/-TB testing  | # of report  | 0 | 4 | 4 | 12 | 12 | 12 |
| Compile and report HIV Viral Load/EID testing service | # of report  | 0 | 4 | 4 |  |  |  |
| Reading and compile feedback for EQA centers laboratory  | # of rounds | 2 | 4 | 4 | 4 | 4 | 4 |
| Capacity building training to improve the quality of laboratory services | Training on Laboratory quality management system (LQMS)  | # of trainees | 0 | 0 | 16 | 20 | 25 | 30 |
| Training on Sample transport and referral linkage for lab person and courier | # of trainees | 0 |  | 10 | 15 | 20 | 25 |
| Training on Laboratory bio-safety and infection prevention  | # of trainees | 0 |  | 10 | 15 | 20 | 25 |
| Training on HIV rapid test and quality assurance and DTS implementation for lab personnel | # of trainees | 0 |  | 10 | 15 | 20 | 25 |
| Training on Basic/gap filling SLMTA for newly enrolled hospitals /for previously enrolled hospitals  | # of trainees | 0 |  | 8 | 12 | 16 | 20 |
| Training on FM/ZN technique and EQA for AFB Microscopy | # of trainees |  |  | 20 | 25 | 30 | 40 |
| Training on malaria microscopy and EQA | # of trainees |  |  | 20 | 25 | 30 | 40 |
| Strengthen the implementation of laboratory quality management system and accreditation | Conduct annual SLIPTA final assessment and star level recognition SLIPTA enrolled labs | # of health facility |  0 | 3 | 5 | 6 | 7 | 10 |
| Conduct embedded Quarterly mentor ship and auditing for existing and new SLIPTA enrolled Hospital labs  | # of audit | 0 | 1 | 2 | 4 | 4 | 4 |
| Number of health laboratories accredited by limited scope to pertinent ISO standards  | Number  | 1 | 1 | 1 | 2 | 3 | 4 |
| Proportion of laboratories maintaining their accreditation status  | % |  | 100 | 100 | 100 | 100 | 100 |
| Number of laboratories with SLIPTA 3-5 star levels (Proportion of Laboratories with SLIPTA Star 3 from enrolled)  | Number |  |  | 1 | 2 | 3 | 4 |
| Proportion of laboratories with SLIPTA 1-2 star level  | % | 0 | 2 | 5  | 7 | 15  | 20 |
| Proportion of laboratories implemented basic LQMS  | % |  | 20 | 25 | 30 | 35 | 45 |
| Decentralize and increase EQA center | # | 4 | 5 | 6 | 7 | 8 | 9 |
| Scale up Gene xpert site  | # | 9 | 10 | 11 | 12 | 13 | 14 |
| Enhance Standardization and Expansion of Laboratory Services  | Number of laboratories to which existing testing capacities is scaled up  | Number |  |  |  | 3 | 3 | 3 |
| Strengthen reagent preparation capacities for EQA centers | Number  | 0 | 1 | 2 | 3 | 4 | 5 |
| Weekly and monthly follow-up for conventional VL/EID/HPV-24report, Xpert EID/VL/12 report, Xpert TB 12 report, Referal linkage reports CD4/Hematology-12 reports, EQA for Malaria & TB lab service-12፡ for all with action items | % |  | 100 | 100 | 100 | 100 | 100 |
| Proportion of laboratories networked to specimen referral linkage and testing services  |  |  | 20 | 25 | 40 | 70 | 80 |
| Proportion of referring laboratories receiving their results within acceptable (pre-defined) TAT for prioritized diseases  |  |  | 70 | 75 | 80 | 85 | 90 |
| Review and update map for MDR-TB, viral load, EID ,EQA and ART-Lab monitoring sample referral linkage with postal system | **#** | 0 | 1 | 1 | 1 | 1 | 1 |
| Prepare sample referral and delivery checklist, SOP for all referral test and distribute for HFs | Developed checklist | **0** |  |  |  |  |  |
| Strengthen laboratory equipment management system  | Proportion of calibrated laboratory equipment for accredited laboratories  |  |  | **100%** | **100%** | **100%** | **100%** | **100%** |
| Proportion of major laboratory equipment for those preventive Maintenance done. |  |  | **100%** | **100%** | **100%** | **100%** | **100%** |
| Strengthen Bio-safety, Bio security and Hazardous Waste Management system  | Proportion of laboratories bio-safety and bio-security system implemented | % |  | 5 | 15 | 25 | 35 | 50 |
| Proportion of laboratories safe handling and disposal of hazardous waste system Implemented. | % |  | 5 | 15 | 25 | 35 | 50 |
| Proportion of laboratories chemical hygiene plan implemented. | % |  | 5 | 15 | 25 | 35 | 50 |
| Number of professionals trained on biosafety and biosecurity | **#** |  | 10 | 20 | 30 | 35 | 50 |
| Number of health laboratories biosafety and biosecurity guidelines and manuals Implemented.  |  |  | 2 | 3 | 7 | 15 | 20 |
| Enhance the Implementation of External Quality Assessment (EQA) schemes  | Follow –up (IEQAS and NEQAS) sample receiving and result submission in to One World Accuracy data base | # of health facility |  | 1 | 2 | 5 | 7 | 10 |
| Number of laboratories enrolled in NEQAS Schemes.  |  |  | 5 | 7 | 10 | 25 | 30 |
| Proportion of laboratories with EQA (NEQAS) performance level of >80%  |  |  | 80% | 80% | 80% | 80% | 80% |
| Number of laboratories enrolled in REQAS PT schemes/ proportion / |  |  | 10 | 15 | 20 | 25 | 35 |
| Proportion of laboratories with EQA (REQAS) performance level of >80%  |  |  | 80% | 80% | 80% | 80% | 80% |
| Numbers of laboratories enrolled/participated for randomly blind rechecking | Number  |  | 120 | 127 | 135 | 150 | 160 |
| Proportion of laboratories covered in random blinded rechecking/ onsite evaluation schemes  |  |  | 60% | 70% | 75% | 80% | 85% |
| Number (Type) of quality control Reference materials produced. | **#** |  | 1 | 1 | 2 | 3 | 4 |
| Number of facilities used the produced control/ Reference materials produced  | **#** |  | 4 | 8 | 15 | 20 | 35 |
| (Proportion) Number of laboratories enrolled in international EQA Scheme  | **#** |  | 3 | 5 | 10 | 15 | 20 |

**RESEARCH AND TECHNOLOGY TRANSFER**

**Objectives:**

* To improve research on health system and
* To improve evidence-based decision making
* To determine the magnitude, distribution and determinants of malnutrition in the region,

**Major activities:**

* Identifying priority public health problems,
* Setting directions for health system research,
* Developing relevant and good-quality study protocols for health system research,
* Providing evidence based information to ensure relevance, quality, efficiency and ethical standards of public health service,
* Ensuring quality and utilization of research products.
* Providing evidence based information for sustainable capacity building of the health system, and
* Providing good governance to ensure health system research yields maximal benefits and minimal harm to health development.
* National nutrition program end line Survey,
* Identifying priority public health problems,
* Setting directions for health system research,
* Developing relevant and good-quality study protocols for health system research,
* Providing evidence based information to ensure relevance, quality, efficiency and ethical standards of public health service,
* Ensuring quality and utilization of research products.
* Providing evidence based information for sustainable capacity building of the health system,

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Activities** | **Measure** | **Quantity** | **2014** | **2015** | **2016** | **2017** | **2018** | Remark |
| 1. | Offer support letter to investigators or organization which conducts research | Output | Number | 60 | 65 | 70 | 75 | 80 |  |
| 2. | Conduct community based research in the region on selected health problem | Output | Number | 3 | 4 | 5 | 6 | 8 |  |
| 3 | Number of publications produced in peer reviewed journals | Output | Number | 3 | 4 | 5 | 6 | 8 |  |
| 4 | Number of technical reports produced from research and evaluation | Output | Number | 2 | 3 | 4 | 4 | 5 |  |

**REGIONAL DATA MANAGEMENT CENTER**

1. **Key Strategies of RDMC**

RDMC has five key strategies;

**Strategy 1:** Build regional capacities including human capital, digital infrastructure, systems and networks to ensure safe and secured data storage, sharing, access; systems and expertise for health data analytics (mathematical, epidemiological, geospatial and climate modeling, forecasting, data science, data mining, machine learning, integrated, heterogeneous and big data analyses); as well as systems and expertise to ensure advanced evidence synthesis and translations (**Capacity**)

**Strategy 2:** Establish Regional standard repository and databases for health and health related data within RDMC, archive data, publish meta-data, facilitate data access and sharing. Advancing public health through the development and application of data science, advanced statistical, climate, epidemiological, geospatial and mathematical modelling, computational methods, and visualization techniques to improve data and evidence availability and accessibility for local and international users **(Data)**

**Strategy 3**: Ensure local and international funding to undertake the different health and health related researches **(Funding)**

**Strategy 4:** Ensure utilization of data, analysis outputs, estimates and population health evidence for decision at RHB, SI-PHI and key partners **(Utilization)**

**Strategy 5**: Establish and strengthen local and international collaboration for the realization of the aforementioned four strategies of the center **(Collaboration**).

**4. Strategic Objective**

**Enhance Sidama region health data repository, analytics through the application of data science and health metrics sciences, burden of disease estimates, digital health and information systems**

**Description**

The basic functions of this strategic objective are creating and strengthen health data repositories and hubs, strong data governance and data exchange, data interoperability and integration, data security systems, health data analytics and visualization hubs, and other applications, data curation and standardization, and enhance digital health and health information system strategies of the Sidama region. It encompasses identifying relevant data sources and making them interoperable, establishing and managing data repositories and securities, putting in place data governance standards and regulations, enhancing standard data exchange, applying robust data analytical tools and methods on regional priority health issues. Apply advanced health data analysis and basic concepts of data science such as artificial intelligence, machine learning, data mining to discover useful patterns and natural clusters in health data, to build robust models that are capable of predicting future events for formulating proper decisions and policies to be taken accordingly.

The health data repository and governance function includes archiving all health and health related regional available data with their respective data sources and institutions, data standards and regulations, building state of the art data systems and capacities to support regional digital health and health information system strategies. Ultimately this improves data availability, accessibility, interoperability and reusability of data in the region using digital technologies, dashboards and visualization tools, to various users and actors including public/citizen, clients/patients, health care providers, health care managers, researchers, academic institutions, donors, implementing partners and other health sector stakeholders.

1. **4.1 Strategic Directions**

**4.1.1. Enhance Sidama region health data repository, data security systems and strong data governance systems and maintain database interoperability**

**Description**

This strategic direction aims to build and strengthen health and health related regional data repository with strong human resource capacity and technological requirements that includes implementing full security and backup systems which in turn enables to maintain both physical and cyber security challenges. This strategic direction aims to build the data repository with two-factor authentication including data mart which has high storage for health and health related data. And implement a data warehouse with a data quality monitoring system.

There is a need to ensure data governance through standards and regulations to enhance open data systems and open data access. This needs to develop and execute data policies and regulations such as, data access and sharing policy through well-developed systems, endorsing data regulations and procedures. There is also a need to improve health data quality and integrity using state-of-the-art applications to automate data systems and provide regular updates. Thus includes developing data quality assessment methods to enhance data quality assurance procedures and techniques to address data quality problems. Furthermore, it needs to have a regional data-quality governing body(i.e. this strategic direction is to define data governance and structure arrangements such as steering committee, advisory groups or technical working groups) to function through an established standardized process engaging health data actors.

In the interoperability, it is to define data architecture and minimum standards to clarify the mapping and archiving process of both institutional and population-based data sources, arranged and interconnected with defined criteria or standard using FAIR (Findable, Accessible, Interoperable and Reusable) principles. It needs setting standards for identifying best fit data exchange applications and interoperability. This need developing data exchange standards for interoperability of the data, data exchange between sources, data storage and analysis and data security.

The standards to be developed may include but not limited to

1) Develop and execution of terminology/vocabulary to address the ability to represent concepts in an unambiguous manner between a sender and receiver

2) Define data content standards, data transport standards, data privacy and security standards

 3) Develop and execute data and related policy, proclamation, regulations, directives and guidelines, frameworks, standard operating procedures (SOPs).

Lastly, there is a need to improve data use culture through promotion and advocate and incentives, “data campaigns, and assigning regional data day”, developing data use strategy with defined monitoring schemes and evidence quality standardization procedures. Furthermore, organizing regional workshops and other initiatives to disseminate activities for wider use.

**Major Activities**

1. Create a Regional health data hub/data repository with data backup and recovery, for seamless data sharing between diverse endpoints.
2. Enhancing advanced data infrastructures and data security systems
* Standard data warehouse (ICT infrastructure) development
* Building standard data security, backup and recovery system
1. Mapping and archival of prospective & retrospective data sets at Regional & Zonal level
* Mapping all possible data sources at regional levels including governmental and nongovernmental organizations
* Establishing communication, follow-up of all government organizations including NGOs and associations helps for retrospective archival of health-related data.
* Retrospective data archival is a preferred way for actively archiving all available data and for early use of data for decision making.
* Creating sustainable systems and using secured electronic data-sharing platforms with all organizations and SI-PHI directorates for prospective data archival.
1. Digitizing hard copy documents and making them ready for reuse can be considered as a backup and builds the data repository in terms of variety of health-related data
2. Developing metadata for archived data sets, catalogue and index health and health-related data using standard systems on RTDS enhances the open data system for the visibility of data sets to the public and encourages data use trends of the region.
3. Digitization/automation of data systems and regular update with data dashboards
* Automating data cleaning and data update. Includes error handling; data entry page; translating data results into relational databases.
* Managing archived data, review for its content, preparing and cleaning, and ready for data analysis
1. Ensure data governance (data sharing protocols/data sharing regulation) to enhance open data system and open data access to advance open research landscape, improved research integrity, innovation, and discovery (FAIR Principle)
* Endorse regional data sharing policies, strategies & implementation manuals /arrangements/
* Ensure the implementation of open data access system through the health system
* Ensure the implementation of standard data collection tool development & ensure its integrity throughout the process
1. Make health information systems interoperable and interconnected with interoperability architecture within SI-PHI and across the region.
* Conduct health information system interoperability assessment across region
* Conduct health information system interoperability workshop within SI-PHI and partners
* Developing real-time case-based surveillance system and health information system interoperability layer.
1. Capacity building and technology transfer among different data actors
* Capacitating zonal, SI-PHI, regional health Bureau and other stakeholders on data management systems
* conducting training need assessment and providing different software training
1. Providing technical support to other teams and SI-PHI directorates
* Developing data collection tools for different directorates
1. Improve data use culture through advocacy and promotion
2. Strengthen collaboration and engagement Different stakeholders
3. Enhancing data quality status of secondary data and improving its use for decision making
* Developing data quality assurance guidelines
* Conducting data quality assessment for existing secondary data and recommending for future improvement
* Regularly assess the data quality status of the received datasets based on standard and making a decision for sharing based on the level of the data quality
* Providing different data quality training and support

**Expected Results**

1. Enhanced and Advanced data infrastructures and data security systems at data repository and governance unit
2. An enlarged number of data sets archived at RDMC and increased data use habit
3. Improving the data quality of secondary data in order to generate relevant facts
4. Improved automated data systems for error handling; data entry page; translating data results into relational databases.
5. Increased number of digitized hard documents and improved habit of using this digitized document for decision making and research
6. An improved data sharing trend, data use culture and enhanced open data system and open data access for different research and policy making
7. Enhanced interoperable and interconnected departments and organizations
8. Enhanced and developed the metadata for archived data sets, catalogue and index health and health-related data using standard systems on research tracking database management system.
9. Advanced data collection tools for different directorates.

**4.1.2. Advancing public health through the development and application of data science, advanced statistical and mathematical modelling, computational methods, and visualization techniques**

**Description**

This strategic direction designed to transform health data analytics and result representations, using cutting-edge techniques, methods and applications that blends mathematical and rigorous statistical theories and techniques to advance health data analytics, modelling, forecasting, integrated analysis, heterogeneous and geospatial analysis. This is crucial because traditional study design and analytical approaches are inadequate to tackle challenges posed by the unprecedented volume of large and unstructured health related datasets. This needs wrangling, scraping, creating, and managing large health-related datasets; applying advanced statistical and mathematical methods to draw conclusions from data. This strictly requires the utilizations and the application of data science methods to reveal features of large and complex health data; developing and advancing statistical and mathematical theories behind common data science methods; summarizing, visualizing, and interpreting data; and finally, effectively and timely communicate and disseminate the results.

There is a need for providing innovative and robust computational and visualization approaches for high-dimensional health data, while bringing novel statistical and mathematical methods that can improve inference about the health data, at the same time developing new ideas that can lessen bias and reduce variance in particular area. This needs to identify, design, develop and execute several analytical platforms that fit to multiple data sources. These platforms must be enabled with data visualization modules that provide accessible way to see and understand trends, outliers, and patterns in health data. This is a crucial step for making data-driven solutions. This requires creation of a web based platform which is very interactive with enormous visualization galleries; simple to use and openly accessible; useful in quantifying and presenting health loss from different diseases, injuries and risk factors; helpful in assisting policy makers and in general health workers to understand the true nature of Sidama region health care challenges; useful in rapidly characterizing, identifying and estimating infectious disease parameters and predicting the outcomes.

There is a constant increment in both collected and stored health related data. These data are becoming huge in volume, fast in velocity, well varied, and mixed in variety. There are also incredible change and improvement in technologies and methods used in processing, analysing and visualizing the data the centre has at hand. From regional health systems, surveillance, surveys, rural clinics to the most advanced high-throughput sequencing technologies—data are central to our ability to improve health, from delivering care to conducting health research. As data are becoming deeper and richer with new sources of data, generated using new technologies and sensors, our ability to harness and leverage useful knowledge from these data are critical to accelerate discoveries and innovations that can impact public health. This requires building data science and analytic capacities on big data analytics through short-term data science trainings.

**Major Activities**

1. Apply data science, big data analytics for health and fostering and enriching public health intelligence
2. Advance health data analytics, modeling, forecasting, integrated analysis, heterogeneous and geospatial analysis through development and application of advanced statistical and mathematical methods
3. Maximize the use and utilization of local health datasets through generation of extensive data quality assessment reports and guidelines of applying advanced health data analytics methods.
4. Developing and maintaining regional health data analytics and visualization hub Developing a regional health data catalog
5. Apply Python package at regional level
6. Developing regional health Geo-portal
7. Establishing and Implementing Web based Early Warning, Alert and Response System and platform to enhance public health emergency early warning, prevention, detection, response and recovery to disease outbreak.
8. Support the automation and digitization work of the institute, the center and the team.
9. Build data science capacity: by providing short-term standard training with training manuals and curriculum on basics of health data science, and advanced data science.
10. Modernize and standardize the data management of the center
11. Increase the unit’s bio (statistical) and mathematical modeling, and data science utilization capacities
12. Providing a scientific platform for advocating scientific methodologies, and developed platforms
13. Application of geospatial technologies for systematic management of geospatial data
14. Development and implementation of geospatial health data sharing policy
15. Strengthen collaboration and engagement with other institutes and organizations to advance the centers work.

**Expected results**

1. Developed and maintained platforms which are simple, easily and openly accessible, and interactive; useful in quantifying and presenting health loss from different diseases, injuries and risk factors; helpful in assisting policy makers and in general health workers to understand the true nature of regional health care challenges.
2. Developed and maintained system for providing a comprehensive catalog of health and health-related raw and analyzed datasets.
3. Developed and maintained platforms, systems, visualization dashboards, portals, and enhanced data collection toolkits and/or systems for advancing the institute, the center and the team towards digitization era.
4. Deployed and utilized python package to provide easy access to different data analytic and help public health and medical researchers to synthesis, and utilize evidence generation methods using standard data science procedure.
5. Advanced, operational zed, and fully functional early warning alert and response models and platforms, and enabled sentinel sites for rapid clinical and environmental data capture.
6. Developed and maintained integrated health geo-portals
7. Developed advanced health data analytics methods, models, forecast techniques, integrated and heterogeneous data analysis methods.
8. Generated and disseminated quality assessment reports and guidelines for improving the utilization of local health data sources.
9. Identified, developed, and executed data science concepts using Mining/Big Data Analytics for real time disease modelling, SDG, HSTP and GTP indicators tracking, and for predictive analysis for regional and national health data.
10. Developed, reviewed and accredited face-to-face and online course materials for basics and advanced of health data science, proper health data management, Geo-spatial data analysis, climate data analysis for early warning, alert and response, and technical trainings providing guidance for using developed platforms and systems in form short-term training sessions.
11. Trained individuals on face-to-face and online sessions for basics and advanced of health data science, proper health data management, Geo-spatial data analysis and climate data analysis for early warning, alert and response, and technical trainings providing guidance for using developed platforms and systems in form short-term training sessions.
12. Generated and shared maps that shows spatial distribution BoD, risk factors etc
13. Developed and approved health geospatial data sharing policy document
14. The specific effects of climate variability and change on disease burden and on opportunities and effectiveness in the public health response were quantified and understood
15. Need assessment reports, System Requirement Specifications (SRSs), guidelines and documentation, methodological papers, and evidence/policy briefs developed and communicated for deployed platforms and/or systems, models, and data science techniques.

**4.1.3. Enhance regional and zonal burden of diseases estimate using health metrics measurements**

**Description**

Sidama Public Health Institute has planned to establish a comprehensive and comparable regional and zonal burden of disease quantification efforts using available and accessible health and health related data in collaboration with the Ethiopian public health institute (EPHI), Sidama regional health bureau (SRHB), Hawassa universities and different stakeholders and burden of disease collaborator researchers. These efforts are aiming to show health improvements in the region and across zone; to show health inequalities in socio-economic, population and demography, and access to health care across regions and zone, to help utilization of our limited resources efficiently in priority areas

Burden of disease estimates have been instrumental to revise Essential Health Service Package, to develop strategies and interventions, to monitor and evaluate HSTP II with its M&E framework and indicators, to evaluate health progress in region, to ban all advertising of alcoholic drinks and forbade smoking near public places, to introduce a car-free day in capital major town in sidama region. The source of data includes census, demographic surveillance, household surveys, diseases registry, health service utilization, disease notification, and other data sources. Burden of disease, injury and risk factor quantification provides estimates on life expectancy, health adjusted life expectancy, fertility, socio-demographic index (composite indicator consists of income, education and fertility). It also quantifies all cause and specific causes of death, incidence and prevalence of diseases, Years of Life Lost (YLL), Years Lived with Disabilities (YLD), Disability-Adjusted Life Years (DALYs) by cause, age, sex and years, and health risk factors’ prevalence attributable health loss, life expectancy gain through decomposition methods.

**Major activities**

1. Develop and customize innovative burden of disease theories and concepts, methods and techniques
2. Develop and execute regional burden of disease implementation working guidelines
3. Provide regional, zonal and local burden of disease, and risk factor estimates
4. Provide burden of disease estimates for national and regional SDG and HSTP indicators
5. Produce annual regional and zonal health atlas, epidemiological disease profiles
6. Provide strategic support to RHB and partners on burden of disease issues.
7. Provide support to Hawassa universities, Yirgalem health science college, Hawassa health science college, private health science colleges, and sidama regional public Health Institutes on burden of disease related issues
8. Strengthen regional burden of disease collaboration with EPHI and other partners
9. Serve as Ethiopian public health institute burden of disease hub in collaboration with EPHI and other partners
10. Develop manuscripts and evidence briefs using RBD and other regional data sources
11. Provide updated annual burden of disease estimates to stakeholders
12. Triangulate and synthesis regional burden of disease estimates with EPHI, and other estimate sources and national research outputs

**Expected Results**

1. Customized innovative burden of disease theories, concepts and methods developed
2. regional burden of disease implementation working guideline developed and executed
3. Annual regional and zonal burden of disease, and risk factor estimate provided
4. Annual regional and zonal health atlas produced,
5. Epidemiological disease profiles developed
6. Produced burden of disease scientific manuscripts, and technical reports on priority health issues
7. Established burden of disease collaboration within EPHI and partners
8. Strengthened skill and knowledge transition focusing on burden of disease methods, techniques and estimates
9. Triangulated and synthesized regional burden of disease estimates with other data sources
10. Became Ethiopian public health institute burden of disease regional hub
11. Developed manuscripts and evidence briefs using RBD and other national data sources.

**4.1.4. Advance evidence synthesis, policy analysis, and translation for informed decision making**

**Description**

This strategic direction focuses on the prioritization of regional health priorities, the generation and synthesis of demand-driven high-quality evidences and health policy analysis, the use of evidence to make informed decisions, and the promotion of a culture of evidence-based decision-making and practice. It aims at improving evidence synthesis and policy analysis through application of systematic reviews and other rigorous scientific methodologies using various data sources that are archived by data repository and governance of RDMC. This strategic direction also aims to standardize the process and conduct of prioritizing health problems, applying rigorous scientific methods for evidence synthesis, communicating synthesized evidence to various stakeholders through existing media outlets and scientific communication channels, and tracking and evaluating evidence usage for policy framework and improved health practice in the Sidama region. The ultimate goal of this strategic direction aspires to improve evidence informed decision making and public health practice in Sidama region.

**Major Activities**

1. Developing working guidelines
* Develop/customize guidelines for regional health priority setting, evidence synthesis, and evidence translation
1. Setting regional health priorities for evidence synthesis
	* Conduct annual evidence demand assessment of RHB and Partners;
	* Facilitate the prioritization of regional health problems for evidence synthesis through review of scientific and program documents and consultative workshops;
	* Establish collaboration with EPHI expertise in health priority setting and evidence use on capacity building (short and long-term trainings) and technical support;
	* Identify possible regional hot/public health emergency issues.
	* Prepare a cost-effectiveness analysis (CEA) database (registry)
2. Synthesizing evidence on identified health priorities
	* Develop protocol/term of reference on evidence synthesis priorities to guide data mapping, organization, integration, and analysis;
	* Facilitate visualization/dashboard use;
	* Produce evidence briefs, issue briefs, manuscripts and peer-reviewed publications;
3. Enhance health policy analysis and informed decision making
	* Identify and prioritize policy issues that needs new policy formulation or revision
	* Coordinate and lead evidence synthesis platforms
	* Facilitate and coordinates health policy and strategy formulation
	* Develop standards, protocol, and short and long term policy plans
4. Advancing evidence translation and use
	* Disseminate evidences through different communication outlets (workshop, broadcasted media, and scientific conference) for a wider audience;
	* Facilitate evidence use for decision by RHB and partners;
	* Track, verify, and measure the use of evidence for decision, policy framework and public health practice;
	* Conduct advocacy on the culture of evidence use.

**Expected results**

* + Identified regional health priorities
	+ Synthesized evidence on regional health priorities
	+ Improved evidence-informed decisions and practice
	+ Enhanced digital health and information system
* **Table 7:- five year detailed plan of RDMC, Sidama, Hawassa, 2014**

| **Major Activities**  | **Justification and Scope**  | **Specific Activities**  | **unit** | **Baseline**  | **Year** |
| --- | --- | --- | --- | --- | --- |
| **2014** | **2015** | **2016** | **2017** | **2018** |
| Create a Regional health data hub/data repository with data backup and recovery. | This contains in creating regional health data hub and data repository through building standard data security system | ICT infrastructure development  | **#** |  |  |  | **1** | **1** | **1** |
| Building standard data security system | **#** |  |  |  | **1** | **1** | **1** |
| Digitizing hard copy documents and making them ready for reuse | Using various tools to digitize old hard copies and documents  | Scanning and archiving old documents  | **#** | **0** | 0 | 0 | 12 | 24 | 36 |
| Mapping and archival of prospective & retrospective data sets at Regional & Zonal level | These efforts are mostly aimed at centrally archiving health and health-related datasets at regional data management centers. By integrating different sources and reducing duplication of effort, this could aid in improving data usage for better decision-making. This also allows different researchers to obtain different datasets to perform their research depending on data sharing and management rules. |  Archival of prospective & retrospective available health and health related data | **#** | **4** |  |  | **12** | **42** | **60** |
| Mapping all possible data sources  | **#** | **0** |  |  | **2** | **6** | **6** |
| Mapping all possible data sources in NGO s and associations | **#** | **0** |  |  | **0** | **2** | **2** |
| Establishing communication, follow-up of all government organizations including NGOs and associations  | **#** | **0** |  |  | **2** | **6** | **6** |
| Creating sustainable systems and using secured electronic data-sharing platforms with all organizations and SI-PHI directorates for prospective data archival. | **#** | **0** | **0** | **0** | 1 |  | 1 |
| Developing metadata for archived data sets, catalogue and index health and health-related data  | This cover creating metadata on RTDS and catalogue and index health related data using standard systems on RTDS enhances the open data system for the visibility of data sets to the public.  | Storing all research publications conducted by Si-PHI staffs using different reference management software | **#** | **0** |  |  | **1** | **2** | **3** |
| Develop and store the metadata on RTDS depending on the updated guideline. | **#** | 0 | 0 | 0 | 1 | 12 | **24** |
| Enhancing data quality status of secondary data and improving its use for decision making | This is to enhance the quality of all secondary data archived to SI-PHI by conducting regular data quality assessment and grading | Conducting regular data quality assessment  | **#** | **0** | 0 | 0 | 2 | 4 | 4 |
|  Conducting Data quality grading based on the assessment of the data and making decision for data sharing  | **#** | **0** | **0** | **0** | 2 | 4 | 4 |
|  Developing data quality assurance guidelines | **#** | **0** |  |  |  | **1** |  |
| Providing different data quality training and support  | **#** | **0** |  | **0** | 1 | 4 | 4 |
| Developing data quality monitoring system  | **#** | **0** | **0** | 0 | 1 | 4 | 4 |
| Providing technical support to other teams and SI-PHI Directorates  | This major activity majorly contains providing need based technical support to different SI-PHI directorates to capacitate their data management systems and develop data collection tools. | Developing Data collection tools for different SI-PHI research Directorates | **#** |  |  | **0** | **0** | **1** | **1** |
| Providing system development  | **#** |  |  | **0** | **0** | **1** | **1** |
| Digitization/automation of data systems and regular update with data visualization/dashboard |  These major activities cover the automation of data systems includes data reprocessing and auto update for the data for SI-PHI data visualization system  | Automating data cleaning and data update | **#** |  |  |  | **1** | **1** | **1** |
| Managing archived data, review for its content, preparing and cleaning, and ready for data analysis | **#** |  |  |  | 2 | 4 | 4 |
| Endorse regional data sharing policies, strategies & implementation (manuals /arrangements/  | **#** |  |  |  |  | 1 |  |
| Make data systems interoperable and interconnected with interoperability architecture within SI-PHI and across the region.  | These major activities cover the health information systems interoperable and interconnected with interoperability architecture within SI-PHI and across the region to create one health system and building regional data analysis and platform for data policy making decisions and scientific community. | Making the data bases interoperable for wider use in across the regions  | **#** | 0 | 0 |  |  |  | **1** |
|  Database creation and standardization across the region  | **#** | 0 | 0 |  | 1 | 2 | **2** |
| Provide standard training for staffs on (database development, data security system development and other trainings  | **#** | 0 |  |  | 1 | 2 | **2** |
| Improve data use culture through advocacy and promotion | These major activities cover how to improve the data use culture through advocacy and promotion by conducting regional data campaign and celebration of data days regularly | Conduct Regional data campaign and celebration of data days regularly  | **#** | 0 |  |  | 1 | 1 | **1** |
| Regular Visit organization | **#** | 0 |  |  | 1 | 4 | **4** |
| Advance health data analytics, modelling, forecasting, mathematical methods | This major activity covers ways of maximizing the utilization of multiple available health data sources.. | Geospatial analysis and spatial models for health data and production of updated maps.  | **#** |  |  |  |  |  | 1 |
| Ensure data governance (data sharing protocols/data sharing regulation | This activity majorly contains developing and ensuring data sharing policy and strategy and assuring its implementation to overcome the open data access system.  | Ensure the implementation of open data access system throughout the health system (FAIR principles) | **#** | 0 |  |  |  | 1 | **1** |
| Ensure the implementation of standard data collection tool development & ensure its integrity throughout the process | **#** | 0 |  |  |  | 1 | **1** |
| Maximize the use and utilization of local health datasets through generation of extensive data quality assessment  | the applications of in-depth quality assessment techniques on local datasets to identify gaps, which hinders proper data use and apply advanced data analytics method to extract new insights and knowledge accordingly. | Quality assessment reports, and guidelines on applying advanced analytics methods on datasets | **#** |  |  |  |  | 2 | 2 |
| Capacity building and technology transfer among different data actors  | This major activity covers providing training and other capacity building for stakeholders as needed.  | Conducting training need assessment and providing different software training | **#** | 0 |  |  | 1 | 2 | **2** |
| Advance health data analytics, modelling, forecasting, integrated analysis, heterogeneous and geospatial analysis through development and application of advanced statistical and mathematical methods | This major activity covers ways of maximizing the utilization of multiple available health data sources and advancing medical/public health research and/or M&E, to fill the evidence gaps on evidence informed health decision through the application of rigorous scientific methods. | Identifying data sources for mortality estimation, identifying possible methodologies and models, | **#** |  |  |  |  |  | 1 |
| Longitudinal data analysis and modeling: (eg: viral load data at region) | **#** |  |  |  |  | 1 | 1 |
| Infectious Disease data analytics and modeling by applying GLM, time-to-event modeling,  | **#** |  |  |  |  |  | 1 |
| Developing and maintaining regional health data analytics and visualization hub | This activity is required to provide data visualization modules that provide accessible way to see and understand trends, outliers, and patterns in health data for generate data-driven solutions.  | Presenting analyzed or estimated trends of regional health for different diseases in an interactive manner, using various visualization tools such as maps, bar charts, tree maps | **#** |  |  |  | 1 | 4 | **4** |
| Comparing diseases and patterns of their risk factor along with the trends of socio-economic, behavioral and biological factors.  | **#** |  |  |  |  |  | 1 |
| Providing information on how trends in regional health have changed over periods of time and identify indicators forcing these changes. | **#** |  |  |  |  |  | **1** |
| Drill down from a regional representation into specific details for zones and woredas for comprehensive view of the regional health profile. | **#** |  |  |  |  | 2 | **4** |
| Presenting comparisons various causes of death at a regional level by applying advanced analytical methods and visualization mechanisms. | **#** |  |  |  |  | 1 | **1** |
| Presenting real time analytics and modeling for infectious diseases is the other role of the platform.  | **#** |  |  |  |  |  | **1** |
| Developing a regional health data catalog | This activity is aimed in providing a comprehensive health data catalog at all levels, extensive information on methodologies applied in the analytical work, both for source data extraction and results generation, and finally implementation. | Developing and maintaining a platform for providing information of data input sources synthesized the analytics and visualization; and also linking the resources accordingly with Research Tracking Database System. | **#** |  |  |  |  | 1 | **1** |
| Developing and maintaining a platform that will allow users to share data. | **#** |  |  |  |  | 1 | 1 |
| Support the automation and digitization work of the institute, the centers and the team. | This major activity includes developing and maintaining web platforms and dashboards for the institute, the center and the unit to facilitate basic routine activities. This Work encompasses assessment, design and implementation This activity will be the first step and initiation of this scale towards creating **Paper-less** institute.  | Automate RDMC unit’s routine activities. RTDS database system design and enhancement Automated analyzed result submission platform | **#** |  |  |  |  | 1 | **1** |
| Conduct an extensive need assessment by considering technology, human resource and, leadership and governance domains to get input for the proposed ERP system. | **#** | 0 |  | 0 |  | 0 | **1** |
| Based on the assessment of the developed SRS   develop and maintain required module automating the institutes work process. | **#** | 0 |  | 0 | 0 |  | **1** |
| Developing data collection applications with cleaner, faster, and easier-to-use  | **#** | 0 | 0 |  |  | 1 | **1** |
| Identify, develop, deploy and provide support on visualization dashboards, platforms, systems, and enhancing or developing data collection toolkits, | **#** |  |  |  |  | 1 | **2** |
| Launching advocacy platforms for collecting feedbacks | **#** | 0 |  |  |  | 1 | **1** |
| Develop System Requirement Specifications (SRS) for planning the functional requirements of the platforms | **#** |  |  |  |  | 1 | **1** |
| Develop a training manual and provide training sessions for the system users. | **#** | 0 |  |  |  | 1 |  |
| Modernize and standardize the data management of the center. | Dynamic visualization platforms follow a BASE (Basically Available, Soft State, & Eventually Consistent), model to provide an effective connection channel between the front-end and back-end modules. | Transforming stored and archived data sets from structural data format to unstructured datasets | **#** | 0 |  | 0 | 0 | 0 | **1** |
| Standardize the units operating systems and application software | **#** |  |  |  |  | 1 | **1** |
| Facility design and procuring the required items (networking devices, servers, storages, cabling, generators, | **#** | 0 | 0 |  | 0 | 1 | **0** |
| Increase the unit’s bio (statistical) and mathematical modelling, and data science utilization capacities | Strengthening the abilities or capacities of individual to solve problems in respective sector and meet their objectives on a sustainable basis is essential. | Identify gaps and providing rationale for the proposed on job training, and/or workshop | **#** |  |  |  |  | 1 | **1** |
| Identify partners, collaborators or organizations with best practices in advanced health data analytics and health data science, and prepare experience sharing platforms | **#** |  |  |  |  | 1 | **1** |
| Arranging workshop/seminars/webinars to advocate and promoting regional health data catalog | **#** | 0 | 0 | 0 |  | 1 | **1** |
| Arranging workshop/seminars/webinars to provide trainings on proper health data utilization by applying advanced data management techniques.  | **#** |  |  |  |  |  | **1** |
| Strengthen collaboration and engagement with hawassa university and organization to advance the centers work. | This major activity is mainly focused in creating an experience-sharing platform on the development, application and validations of advanced statistical and mathematical models, and data science techniques, and the generated results, | Collaborate in advancement of public health emergency early warning, prevention, detection, response and recovery models and platforms | **#** |  |  |  | 0 | 0 | **1** |
| Establish collaboration and partnership for utilizing data science concepts in our health sectors | **#** |  |  |  |  | 1 | **1** |
| Prepare and facilitate the authorizations of MoUs/TORs/ | **#** |  |  |  | 1 | 1 | **1** |
| Creates and maintains websites in collaboration with web developers. | This activities include maintain web content and design to ensure that the assigned website is functional, accurate, and up to date. | Develop/update Sidama public health website  | **#** |  |  |  | 1 |  | **1** |
| Reviews web content, links, and design; provides necessary updates and enhancements in a timely manner. | **#** |  |  |  | 2 | 12 | **12** |
| Monitors site security; reports suspected or actual security breaches and denial of service attacks to appropriate staff. | **#** |  |  |  | 2 | 12 | **12** |
| Implements appropriate security measures such as firewalls or message encryption. | **#** |  |  |  | 1 | 4 | **4** |
| Manages internet and/or internet infrastructure including but not limited to web, file transfer protocol (FTP), mail servers, and news. | **#** |  |  |  | 2 | 12 | **12** |
| Identifies useful site performance metrics; collects, tracks, records, compiles, analyzes, and reports site usage data. | **#** |  |  |  | 1 | 4 | **4** |
| Conducts user testing and use analysis to assess usability and effectiveness of site; recommends improvements based on analysis. | **#** |  |  |  |  | 2 | **4** |
| Maintains knowledge and expertise in web design and development; participates in professional meeting, workshops, and groups. | **#** |  |  |  | 1 | 4 | **4** |
| Drafts, documents, and implements backup, recovery, ands continuity plans. | **#** |  |  |  | 2 | 12 | **12** |
| Website launching & advocacy | **#** |  |  |  | 1 |  |  |
| Support and maintain in-house technology equipment and IT assets. | This Activity includes installing, configuring, diagnosing, repairing, and upgrading all hardware, Software and equipment while ensuring its optimal performance. Solve troubleshoot problem areas in a timely and accurate fashion, and provide end user training and assistance where required. | Conduct research on computer products in support of PC procurement and development efforts. Evaluate and recommend hardware products for purchase. | **#** |  |  |  | 1 | 2 | **2** |
| Write technical specifications for purchase of PCs, desktops,networking hardware and related products | **#** |  |  |  | 2 | 2 | **2** |
| Recommend, schedule, and perform PC, hardware and peripheral equipment improvements, upgrades, and repairs. | **#** |  |  |  | 10 | 12 | **12** |
| Liaise with, and provide training and support to, end users and staff on computer operation and other issues. | **#** |  |  |  | 1 | 2 | **2** |
| install, configure, test, maintain, monitor, and troubleshoot associated end user workstation software and networking software products | **#** |  |  |  | 4 | 12 | **12** |
| Perform on-site analysis, diagnosis, and resolution of complex PC problems for a variety of end users, and recommend and implement corrective hardware solutions, including off-site repair as needed. | **#** |  |  |  | 1 | 4 | **4** |
| Receive and respond to incoming calls, pages, and/or e-mails regarding PC and/or hardware problems. | **#** |  |  |  | 6 | 24 | **24** |
| Develop and maintain an inventory of all monitors, keyboards, hard drives, modems, printers, scanners, and other peripheral equipment. | **#** |  |  |  | 5 | 12 | **12** |
| Accurately document instances of hardware failure, repair, installation, and removal | **#** |  |  |  | 6 | 12 | **12** |
|  Develop training manual and provide training sessions on basic computer and electronics equipment use. | **#** |  |  |  |  | 2 | **1** |

| **Major Activities**  | **Justification and Scope**  | **Specific Activities**  | **Unit**  | **Baseline**  | **Year** |
| --- | --- | --- | --- | --- | --- |
| **2014** | **2015** | **2016** | **2017** | **2018** |
| Develop and customize innovative burden of disease theories and concepts, methods and techniques | This major activity covers the development of methods, theories and concepts to estimate national burden of diseases  | Develop and customize theories for regional BoD estimate | # |  |  |  |  | 1 |  |
| Develop concepts for Regional BoD estimate | # |  |  |  |  | 1 |  |
| Develop methods and techniques for regional BoD estimate | # |  |  |  |  |  | 1 |
| Develop regional disease implementation working guideline | This major activity intends to develop and execute burden of disease Implementation of working guideline considering available data, skill and knowledge, national priorities, priority metrics, and computational powers of the institute  | Develop regional burden of disease implementation working guideline | # |  |  |  |  | 1 |  |
| Execute regional burden of disease estimate using developed working guideline | # |  |  |  |  | 1 | 1 |
| Provide burden of disease estimates regional SDG and HSTP indicators | This major activity intends to monitor and evaluate SDG and HSTP indicators using BOD estimates | Provide burden of disease estimates for regional HSTP indicators | # |  |  |  |  | 1 | 1 |
| Provide burden of disease estimates for regional SDG indicators | # |  |  |  |  | 1 | 1 |
|  Produce annual regional health atlas, epidemiological disease profiles  | The production of health atlas and epidemiological diseases profile is used to make informed decision making at regional level  | Produce regional health atlas with collaboration with EPHI | # |  |  |  |  | 1 | 1 |
| regional epidemiological disease profiles | # |  |  |  |  | 1 | 1 |
| Serve as EPHI and other organization burden of disease regional hub | This major activity includes establishing a burden of disease regional hub, at the institute, conduct promotional workshop, and developing data sharing and governance system.  | Map and analyse stakeholders  | # |  |  | 1 |  | 1 |  |
| Develop data sharing and governance policy | # |  |  |  |  | 1 |  |
| Conduct advocacy and promotion workshops | # |  |  |  |  |  | **1** |
| Establish BoD hub at SI-PHI | # |  |  |  |  | 1 |  |
| Setting regional health priorities for evidence synthesis | This major activity covers the identification and prioritization of existing and emergency health issues and their economic aspects that need evidence. It also includes capacity building on health prioritization. | Conduct annual evidence demand assessment of RHB and Partners | # |  |  |  |  | **1** | **1** |
| Facilitate the prioritization of regional health problems for evidence synthesis through review of scientific and program documents and consultative workshops | # |  |  |  |  | **1** | **1** |
| Establish collaboration with regional, international /national institutions expertise in health priority setting and evidence use on capacity building and technical support | # |  |  |  |  | **1** |  |
| Synthesizing evidence on identified health priorities | This major activity covers the synthesis of demand-driven high-quality evidences that helps inform regional health policy and practice | Develop protocol/term of reference on evidence synthesis priorities to guide data mapping, organization, integration, and analysis | # |  |  |  |  | **1** | **1** |
| Facilitate visualization/ dashboard use | # |  |  |  | **1** | **4** | **4** |
| Produce evidence and or issue briefs  | # |  |  |  |  | **1** | **1** |
| Advancing evidence translation and use | The major activity incorporates the dissemination and communication of synthesized evidences to potential stake holders and general public. It extends to monitoring the utilization of the evidences by the stakeholders for informed decision and practice. | Facilitate evidences communication through either of the different outlets (workshop, broadcasted media, and scientific conference) | # |  |  |  | **1** | **1** | **1** |
| Facilitate evidence use for decision by SI-PHI,RHB and Partners | % |  |  |  |  | **100%** | **100%** |
| Conduct advocacy on culture of evidence use  | # |  |  |  |  | **1** | **1** |
| Developing working guidelines | This major activity focuses on developing and revising working guidelines that are used to guide the process of priority setting for evidence synthesis, evidence synthesis, and evidence translation and communication.  | Develop roadmaps/guidelines for regional health priority setting, evidence synthesis, and evidence translation; | # | **1** |  |  |  | **1** |  |

**Table 8:- Proposed indicators for strategic direction of RDMC, Sidama, Hawassa, 2014**

|  |  |  |
| --- | --- | --- |
| 1 | **Proportion of data sets archived to the regional health data repository**  | Proportion of data sets archived to the regional health data center |
| Formula  | Total number of data sets archived with in health data center x100 |
| Total number of data sets Identified with in the SI-PHI, NGO, RHB and Associations |
| Interpretation  | Data set Identified Means total data sets tracked and identified to be shared to RDMC |
| Data Source  | SI-PHI data mapping and follow-up digitized register |
| Frequency of reporting  | Annually  |
| Disaggregation  | By organization |
| 2 | **Percentage of data shared to Regional, national and international organizations (FAIR principles)** | Percentage of data shared to regional, National and International Organizations |
| Formula  | Total data shared to regional, national and international organizations x100 |
|  | Total data request offered to RDMC  |
| Interpretation  | Total Data request offered is total data requested from RHB, national and international organizations  |
| Data Source  | Data sharing and request follow up digitized register |
| Frequency of reporting  | Annually |
| Disaggregation  | By organizations |
| 3 | Number of HIS’s interoperable and interconnected within SI-PHI and across regions | Number of HISs Interoperable and interconnected with in SI-PHI and across regions  |
| Formula  | Number of HISs Interoperable and interconnected with in SI-PHI and across regions  |
| Interpretation  | This indicator is to show total interconnected departments and organizations based on the priority  |
| Data Source  |  |
| Frequency of reporting  | Annually  |
| Disaggregation  | By Department and by organizations  |
| 4 | **Proportion of executed data science techniques, advanced statistical and mathematical models and forecasting techniques** |
| Formula  | Formula: $=\frac{\left(\# of executed data science techniques, advanced statistical and mathematical models and forecasting techniques\right)}{(\# of identified data science techniques, advanced statistical and mathematical models and forecasting techniques)}$ |
| Frequency of reporting  | Annually  |
| 5 | **Number of developed and/or customized computational tools** |
| Formula  | Formula $=sum(packages and/or librariesdeveloped)$ |
| Frequency of reporting  | Annually |
| 6 | **Proportion of deployed platforms, systems, visualization dashboards, portals, and data communication channels** |
| Formula  | $$=\frac{\left(of deployed platforms, systems, visualization dashboards, portals, and data communication channels\right)}{\left(identified and/or developed and/or enhanced, platforms, systems, visualization dashboards, portals, and data communication channels\right))}$$ |
| Frequency of reporting  | Annually  |
| 7 | **Percentage of developed data science techniques, advanced statistical and mathematical models and forecasting techniques**  |
| Formula  | $$=\frac{\left(\# of developed data science techniques, advanced statistical and mathematical models and forecasting techniques\right)}{(\# of identified data science techniques, advanced statistical and mathematical models and forecasting techniques)}$$ |
| Frequency of reporting  | Annually  |
| 8 | Number of evidence briefs produced  |
| Frequency of reporting  | Annually  |
| 9 | Number of papers/brief presented in different meeting |
| Frequency of reporting  | Annually  |

The cost estimation of PHEM strategic plan for the next ten years based on four main strategic objectives indicated in the table below incorporate costs attributed to regional level support to the system. Th

**ESTIMATED BUDGET**

The cost estimation has been done using a standard OHT. The estimated cost also includes costs of governance and leadership, build capacities required to create resilient health systems, resources mobilization and community engagement. As indicated on Table below, out of the total required budget for the next ten years, 0.74 % covered for strategic objective one, 95.9% for building capacities required to create resilient health systems, 2.85 % forr resources mobilization and 0.5 % will be used to enhance community engagement related activities. The major cost of the strategic plan is on strategic objective two due to the fact that planning to establish canters for infectious disease control in major towns and regional city at a general hospital level took the lions share. The cost of establishing canters for infectious disease control in major towns and city administration of the region has been estimated based on the information gathered from infrastructure development directorate for only the engineering cost and the cost does not include the medical equipment and human resource cost for this specific activity. The strategic plan cost includes estimated cost of human resource required for the next ten years plus the current human resource yearly salary in dollar. The human resource estimated cost also includes the recurrent and setting up cost for the projected human resource demand in PHEM from 2014 to 2018.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Strategic Objectives**  | **2014** | **2015** | **2016** | **2017** | **2018** | **Remark** |
|  |  | *15% increment* | *25% increment* | *35% increment* | *45% increment* |
| SO1 Grand Total | 860,000 | 989,000 | 1,075,000 | 1,118,000 | 1,247,000 |   |
| SO2 Grand Total | 8,250,000 | 9,487,500 | 10,312,500 | 10,725,000 | 11,962,500 |   |
| SO3 Grand Total | 464,000 | 533,600 | 580,000 | 603,200 | 672,800 |   |
| SO4 Grand Total | 1,650,000 | 1,897,500 | 2,062,500 | 2,145,000 | 2,392,500 |   |
| SO5 Grand Total | 3,450,000 | 3,967,500 | 4,312,500 | 4,485,000 | 5,002,500 |   |
| SO6 Grand Total | 2,000,000 | 2,300,000 | 2,500,000 | 2,600,000 | 2,900,000 |   |
| SO7 Grand Total | 1,500,000 | 1,725,000 | 1,875,000 | 1,950,000 | 2,175,000 |   |
| SO8 Grand Total | 3,400,000 | 3,910,000 | 4,250,000 | 4,420,000 | 4,930,000 |   |
| SO9 Grand Total | 600,000 | 690,000 | 750,000 | 780,000 | 870,000 |   |
| SO10 Grand Total | 3,800,000 | 4,370,000 | 4,750,000 | 4,940,000 | 5,510,000 |   |
| SO11 Grand Total | 300,000 | 345,000 | 375,000 | 390,000 | 435,000 |   |
| **GRAND TOTAL (Activities)** | **26,274,000** | **30,215,100** | **32,842,500** | **34,156,200** | **38,097,300** |  |
| Human resource total cost | 9,200,000 | 10,580,000 | 11,500,000 | 11,960,000 | 13,340,000 |   |
| SP + HRH  | 35,474,000 | 40,795,100 | 44,342,500 | 46,116,200 | 51,437,300 |   |
| **TOTAL COST with inflation**  | **40,795,100** | **46,914,365** | **50,993,875** | **53,033,630** | **59,152,895** |  |

1. [↑](#footnote-ref-1)
2. [↑](#footnote-ref-2)
3. [↑](#footnote-ref-3)
4. [↑](#footnote-ref-4)
5. [↑](#footnote-ref-5)
6. [↑](#footnote-ref-6)
7. [↑](#footnote-ref-7)
8. [↑](#footnote-ref-8)
9. [↑](#footnote-ref-9)