## General information معلومات عمومی

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| **FCDO – Driving Action for Wellbeing to Avert Mortality (DAWAM) Project**  **تلاش برای رفا و کاهش مرگ و میر** | |
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| **Administration of survey** | **مدیریت سروی** |
| Name of province: | Ghor |
| Name of district: | Lal & Sarjangal |
| Name of health center | Safid chashma |
| Health Center Type: please select one ( H3, CHC,BHC,SHC) | SHC |
| Building ownership (private or governmental) | Government |
| Number of clinic personnel | 6 |
| Number of patients visited in clinic (daily basis) | 43 |
| Number of hospitalized patients (the max capacity) | N/A |
| Name of surveyor(s) | Riazaddin Ranjbar & M. Ismael Farjad |
| DATE of survey | 21-May-24 |

## Description of workتشریح کار

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| **Scope of intervention**  **عرصه حمایت** | | **All three component require major maintenance:** | |
| **Perimeter protection** | | The provision and improvement of Water, Sanitation, and Hygiene (WASH) facilities play a pivotal role in safeguarding human health and overall well-being. These initiatives serve multifaceted purposes, ranging from the prevention of waterborne and diarrheal diseases to the control of vector-borne illnesses. Additionally, they contribute to the enhancement of health and nutrition outcomes, mitigate the risk of epidemics, and foster dignity and safety among communities. Economically, investing in WASH facilities yields significant benefits, while also ensuring environmental protection and alignment with international sustainability and health standards.  To enhance the capacity of healthcare workers to uphold hygiene standards, ActionAid is committed to revitalizing and enhancing existing Water, Sanitation, and Hygiene (WASH) facilities in targeted Healthcare Facilities (HCFs). | |
| **Clinic map** نقشه کلینیک | | | |
| GPS of HCF: Please collect the GPS related HCF building جی پی اس نقاط کلیدی: لطفا جی پی کلنیک مربوطه را بگیرید: | | | |
| 1 | N: 34.35903° | | E: 66.25081˚ |
| Please draw a freehand sketch of the HCF facility; point out : Main building – Sanitation facilities, water source , waste disposal site ) | | | |
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## Project feasibilityامکان پذیری پروژه

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| **Parameters inspection and findings**  **بررسی پارامترها و یافته ها** | Background information: Health facility services are a fundamental right for every individual. However, communities located in the catchment area of Safid chashma faced to difficulties due to the far distance from the center of Lal & Sarjangal district. But there is a healthcare facility which is constructed by government several years ago.  The healthcare facility (HCF) is staffed by One nurse (male), a midwife, a vaccinator, a nutrition consultant, a distributer for nutrition items and one male guard in there is working 6 staff in the Safid Chashma SHC.  The healthcare facility is located in the Safid chashma Valley, 30 kilometers far away from Lal-Sarjangale district. This facility serves the people living in this area. The clinic can serve about 43 outpatients on a daily basis, with 22 males and 21 females.  The main challenges which is facing the health center are the lack of safe drinking water and sanitation services, which leads to the spread of diseases. Currently, the water amount needed for the health center is being transported from a distance of 1 kilometer.  Therefore, the ActionAid office technical team had a technical survey during the need assessment and technical survey the main problems found in this Sub Health Center (SHC)are as bellow:  - They don’t have access to safe water source.  - The HCF building does not have any water supply system, and wastewater system.  - The existing toilets are damaged and doesn’t have any water supply system so they are using from toilets as latrine with dry pit the WC’s are damaged and the toilets waste system isn’t connected to the septic tank.  - There isn’t any functional waste management system and they are using from an unprotected and system which there is a metallic stow without ashes pit and an unprotected pit without cover for sharps and placenta.  - The OPD room, vaccination room, nutrition room, hall, and all baths and toilets do not have floor drains, tiles, or ceramic. Additionally, there isn’t any bath/toilet in the delivery room area.  -There is water supply system in the building but it isn’t connected well to the sinks and toilets.  - There isn’t hand washing sinks in clinic rooms. Water source For drinking purposes, Currently, they are fetching water from a distance of 1km, meanwhile the transported water is only for drinking purpose and they can’t fell the water tank by this method, so there isn’t sufficient water for washing purpose, that severely impacts operations and personal hygiene of the staff and patients. Water storage and distributionWater TanksThere is a water tank with 1000 litter capacity in the roof of the clinic which is protected by protection walls but this amount isn’t sufficient for daily use of the clinic.Water reticulation outside the compoundsHand washing There is not any hand washing facility like: hand washing sinks/tanks in the health facility. Bathroom There is two bathrooms inside the health facility building but they are severely damaged and the showers have leakages without mixers and the baths drain system isn’t connected to the waste water system. Toilets and latrines There are two single latrines in the clinic and the problems are as below.   * Latrines floors, pits, walls and washbasins are damaged. * The internal part of latrine (wall and floor) are not washable or easy to clean. * Latrines do not have access to water.  Kitchen The kitchen problems are as below:   * No dish washing sink. * No cabinet for storing the dishes * The floor is PCC not washable with no floor drain.  Septic Tank: There is a septic tank in the clinic compound which is damaged internally and externally. Waste management The existing waste management system in Safid Chashma SHC is not functional and the problems are as below: Waste collection and separation: Safid Chashma HCF doesn’t have incinerator and pits to dispose the wastes in separated pits they are burning the waste in a metallic stow and two unprotected well pits with no cover which is dangerous, because it’s a safe place for germs and bacteria’s.  According to WHO’s requirements the environment must be protected against clinical hazardous waste and also should be secure from domestic waste generated within the healthcare facilities. For the safe disposal of the waste we should have a proper waste disposal system which should have incinerator with three pits (for sharp waste and organic waste).  Although all types of solid waste are separately stored and collected, the available pits are of low quality and insufficient to handle the daily volume of disposed waste. Incineration A temporary metallic incinerator is available on the premises, positioned over a pit to allow ash to be directly emptied into it. However, the incinerator is damaged and not functioning properly. The surface is not sealed, allowing rainwater to enter the pit. The incinerator is located at the back of the HCF main building, more than 100 meters away from residential buildings. Sharp pits Sharps waste is disposed of in a special unsealed pit, constructed with local materials. Organic waste pit: The three pits are situated offsite, approximately 10 meters away from adjacent residential buildings. The finish floor lacks PCC (Plain Cement Concrete), resulting in an uneven surface and poor drainage, leading to stagnant rainwater accumulation.  Furthermore, the disposal site lacks adequate restriction measures to deter irresponsible individuals from accessing the area. |
| **Technical solution in compliance with MoPH/WHO standards**  **راه حل تخنیکی مطابق ستندرد های وزارت صحت عامه وسازمان صحی جهان** | Water source **Quantity Perspective:** The Safid Chashma Sub Health Center (SHC) faces significant challenges due to a lack of water. To address this issue, ActionAid plans to dig a bore well with a depth of 40 meters and a diameter of 12 inches. Additionally, a stone valve box will be constructed on top of the bore well to provide protection and control.  **Borehole Design and Justification:** The bore well will be designed to ensure a sustainable and reliable water supply. Based on ActionAid's technical observations from dug wells in this area, it has been identified that the region contains a productive aquifer layer located between 15 and 40 meters below ground. This assessment informs our borehole design and expected yield:   * **Depth and Diameter:** The bore well will reach a depth of 40 meters with a diameter of 12 inches, sufficient to fully penetrate the aquifer layer and ensure a consistent water flow. * **Sanitary Seal:** A sanitary seal, extending at least 2 meters below the ground surface, will be implemented using cement grout to prevent contaminants from entering the well. * **Casing and Screen:** The well will be cased with high-quality PVC casing to support the well structure and prevent collapse * **Pumping Test Conditions:** To determine the well’s capacity and ensure its efficiency, a pumping test will be conducted under the following conditions: * **Duration:** The pumping test will be conducted over a 24-hour period to assess the well’s performance and sustainability. * **Discharge Rate:** The test will start at a low discharge rate, gradually increasing to determine the optimal yield without over-extracting the aquifer. * **Water Level Monitoring:** Continuous monitoring of the water levels during the test will help in understanding the aquifer’s recharge rate and the well’s impact on the water table.   **Expected Yield:** Given the favorable conditions of the aquifer layer between 15 and 40 meters underground, we anticipate that the bore well will yield approximately 3000 to 4,000 liters per hour. This yield is expected to meet the daily water requirements of the health center By incorporating these design features and conducting thorough testing, we aim to secure a clean, safe, and sustainable water source for the Safid Chashma Sub Health Center, ultimately improving the health and well-being of the community it serves.   * Quality Perspective: ActionAid is committed to ensuring that the water from the well meets the highest standard. As part of this effort, water quality testing will be conducted during the drilling process to ensure compliance with the WHO water quality standards. The results of the water analysis will be documented and included in the table below.  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Parameters | Turbidity (NTU | Color | Odor | Water Temperature | TTC (CFU/100ml | PH | TDS | Arsenic | | WHO Guideline | <5 NTU | None Detected | Not Offensive | 25C° - 30C° | 0/100ml | 6.5 to 8.5 | 1000 ppm | 10µg/l | | Lab Result |  |  |  |  |  |  |  |  |  Well Apron construction: Furthermore, to mitigate the risk of potential contamination to the underground water source, we have designed a proper protection stonemasonry box with RCC protection slab. This apron will not only protect the well but also effectively divert surface water away from the vicinity of the well, minimizing the risk of contamination. Water storage and distributionWater tank (water availability)  |  |  | | --- | --- | | **WHO suggested minimum water quantities in health care facilities** | | | Use | Guideline quantity | | Outpatients | 5 liters/consultation | | In patients | 40–60 liters/patient/day | | Operating theatre / maternity | 100 liters/intervention | | Dry or supplementary feeding center | 0.5–5 liters/consultation | | Wet supplementary feeding center | 15 liters/consultation | | Inpatient therapeutic feeding center | 30 liters/patient/day | | Cholera treatment center | 60 liters/patient/day | | Severe acute respiratory diseases isolation center | 100 liters/patient/day | | Viral hemorrhagic fever isolation center | 300–400 liters/patient/day |  |  |  |  |  | | --- | --- | --- | --- | | **Total daily water demand of Safid Chashma Health Care Center** | | | | | Type of user | # of user | Consumption norm (Liters /day) | Total daily demand | | Outpatients | 43 | 5 | 215 | | clinic personnel | 6 | 110 | 660 | | Total daily water need | | | 875 | | Required water for 48 hours to avoid any shortage | | | 1750 |   To ensure an uninterrupted water supply for at least 48 hours, it's imperative to have adequate water storage capacity. Based on our calculations, we recommend the installation of a single water tank with a storage capacity of 2000 liters. The water tank is factory-made from high-density polyethylene, ensuring durability, lightness, and ease of handling. It’s perfectly smooth inner surface allows for easy cleaning with traditional detergents. The tank is supplied with a top screwed lid and includes all necessary accessories and fittings.Solar System: Install the solar panels on the healthcare center’s rooftop, ensuring they are tightly secured against wind and theft. Position them for optimal sunlight and proper tilt. Although relocation is possible, consistent sunlight exposure is crucial for efficient energy production.  Fortunately, as far as there is enough space available on the roof Safid Chashma SHC building. Therefore, the solar will be installed there. And the solar will be protected by a fixed lockable frame.  Submersible pump: We need the PEDROLLO product the submersible model: (4SR2/13) because it is a suitable pump for our system it’s flowrate is (1.2m3/hour). the well probe should be installed to the system to prevent pump from running dry.  Total required pipe: only 130-m pipe is needed from well to the water tank.  Metallic box for protecting Inverter: To protect the Inverter, it needs to installed in the metallic box that could be a safe place for the inverter.  Solar Panels: Solar sizing calculation indicates that we should use 4 numbers of PVs (PROPSOLAR 270W Poly crystalline 37.9V 9.22A) for running the system. (for more details please have a look at the attached solar sizing calculation in PDF file).  Inverter: The Controller (PV580-2S-1.5) (China) is designed for this system and can control the fluctuation of the electrons and prevent the pump from most breakdown.  Note:  Remember!  Each solar pump item needs to be supplied by a registered customs license seller with the following standard certifications:  FCC C009911 Standard, ISO 0991:2000 Standard, UL Standard, TUV Standard Water supply network To optimize the new system and accommodate the addition of new facilities, it's imperative to connect it to the new borewell and extend it to the newly constructed toilets, handwashing sinks, and handwashing stations. This will ensure efficient water distribution throughout the facility. To achieve this, we will utilize PE pipes with a diameter size of 1 inch, PN 10-bar.  Moreover, to guarantee the longevity and reliability of the system, the pipes will be buried at a depth of at least 80 cm from the ground level. This strategic placement not only protects the pipes from external damage but also helps maintain consistent water flow, particularly during colder seasons when the risk of freezing is heightened.  With a total length of 100 meters, these PE pipes will seamlessly integrate with the existing distribution network, facilitating uninterrupted water supply to the newly established amenities. By preventing leakages and minimizing water wastage, this comprehensive approach not only enhances the functionality of the system but also promotes sustainability and responsible resource management. Hand washing sink The installation of handwashing sinks within healthcare facilities is paramount for effective infection control, adherence to hygiene standards, and the enhancement of overall health outcomes. By ensuring that healthcare workers, patients, and visitors have easy access to handwashing facilities, the spread of infections can be significantly reduced, thereby supporting compliance with protocols and minimizing health risks. This initiative ultimately results in lower infection rates, heightened staff productivity, improved patient care, and an overall safer environment within the healthcare setting.  Moreover, the presence of handwashing sinks fosters hygiene awareness, contributing to broader public health initiatives and promoting a culture of cleanliness and wellness. To address this critical need, ActionAid has outlined plans to install a total of 4 handwashing sinks in key sections of the building, including the (new toilet adjusted to the delivery room and the other to the guard room). Additionally, two of these sinks will be installed to the male and female toilets located behind the main building of the Safid Chashma Healthcare Facility (HCF).  Each handwashing sink will be equipped with essential amenities, including a shelf for soap and a mirror with shelves, ensuring convenience and practicality for users. These sinks will be securely fixed onto the walls, providing stability and durability for long-term use. Notably, the existing sinks, while functional, will receive enhancements in the form of supplied shelves for soap and mirrors with shelves, further elevating the hygiene standards within the facility.  Septic Tank, Toilets and latrines  At the clinic center, there are currently four latrines and two toilets. While the existing toilet within the Healthcare Facility (HCF) is not in satisfactory condition, with no functioning water supply system and sewerage, the latrines present several issues. These include structural vulnerability, inadequate roofing, and incomplete doors, compromising user privacy. Given the irreparable nature of these latrines, ActionAid has devised plans to change the latrines by installing WCs to two male and two female toilets equipped with flash tanks to replace them. Additionally, these new facilities will be designed to accommodate Peoples with Disabilities (PWDs), incorporating both ramp and stand toilets.  In terms of infrastructure, the water supply for these toilets will be connected to an existing 1000-liter water tank, ensuring consistent access to water. Furthermore, the sewer pipes will be connected to a septic tank to manage waste effectively. All construction and plumbing work will adhere closely to the specifications outlined in the relevant drawings, ensuring the durability and functionality of the new facilities. Septic Tank: ActionAid plans to rehabilitate the existing septic tank and construct a new septic tank with the following measures:   * Clean the interior of the septic tank thoroughly. * Plaster the walls to enhance durability and prevent leaks. * Construct an RCC slab to cover the septic tank securely. * Construct a pit for draining the liquid waste from the septic tank. * Install sewerage plumbing in accordance with the related drawings. * Construct a new septic tank for the toilets.  Waste managementAccording to WHO’s requirements, the perimeter of healthcare facilities must not only be protected against clinical hazardous waste but also be secure from domestic waste generated within these facilities. To achieve the desired optimal hygienic conditions, ActionAid intends to equip and upgrade the current solid waste management system at Safid Chashma Health Care Center. The planned enhancements are as follows:   * Incinerator Construction: The incinerator will be constructed with a pit made from reinforced cement concrete (RCC) and brick masonry, following the specified drawings. * Waste Disposal Pits: To secure and protect the organic waste disposal pit (for placental waste) and the hazardous waste disposal pit (for sharp wastes), the slabs should be repaired and reinforced to ensure they are impervious to rainwater infiltration. * Incineration Area Security: The incineration area will be protected by erecting a fence with GI pipe poles and fence gates to prevent unauthorized access. The floor will be made of 10 cm thick plain cement concrete (PCC). Proper surface sloping will be incorporated to ensure effective drainage of rainwater from the incineration area. |

## Period of workمدت زمان کار

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| **Start Dateتاریخ شروع** | The project shall be completed within 3 months |
| **End Dateتاریخ ختم** |  |