## 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 | Takaghal |
| Health Center Type: please select one ( H3, CHC,BHC,SHC) | SHC |
| Building ownership (private or governmental) | Government |
| Number of clinic personnel | 7 |
| Number of patients visited in clinic (daily basis) | 50 |
| Number of hospitalized patients (the max capacity) | N/A |
| Name of surveyor(s) | Farid Ahmad Qaderi |
| DATE of survey | 26-Feb-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°32'14.094" | | E: 66°07'57.344" |
| 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 Takaghal faced difficulties due to the far distance from the center of Lal&Sarjangal district. Thanks to the collaboration and contribution of the people, a healthcare facility building was constructed in Takaghal in 2023 using locally available materials, such as mud.  The healthcare facility (HCF) is staffed by two nurses (male and female), a midwife doctor, a vaccinator, a nutrition consultant, a distributor for nutrition items, and one male guard, totaling 7 personnel.  The healthcare facility is located in the Takaghal Valley, 17 kilometers away from Lal district. This facility serves the people living in this area. The clinic can serve about 50 outpatients on a daily basis, with 20 males and 30 females.  The main challenge facing this health center is the lack of clean water and sanitation services, which leads to the spread of diseases. Currently, the water for the health center is being transported from a distance of 3 kilometers using buckets, and this is only enough for the staff to drink.  Therefore, the ActionAid office technical team had a technical survey during the observation and technical survey the main problems found in this Sub Health Center (SHC)are as follows:  -  - The building lacks access to a water source.  - The building does not have water supply, wastewater system, or septic tank.  - The dry latrines need to be replaced with a toilet system that includes a flush tank.  - There is no hand washing facility in the clinic rooms.  - The Sub Health Center (SHC) does not have an incinerator.  - The OPD room, vaccination room, nutrition room, hall, and all baths and toilets do not have floor drains, tiles, or ceramic. Additionally, the delivery room lacks an adjacent bath and toilet. The building does not have any available water source.  -The building does not have a water supply, wastewater system, and septic tank.  - The existing dry latrines need to be replaced with a toilet system that includes a flush tank.  - The building has no hand washing facility in the clinic rooms.  -the Sub Health Center (SHC) does not have an incinerator.  - OPD room, vaccination room, Nutrition room, Hal, all baths and toilets have no floor drain, tile, and ceramic also the delivery room has no bath and toilet adjacent to it. Water source For drinking purposes, Currently, the water for this health center is being transferred from a distance of 3 kilometers far from SHC by using buckets, which is only sufficient for drinking by the staff of this Sub Health Center (SHC) also during the winter due to snow it is hard to bring water from that distance, for clinical use there is not any water source.  The sub-health center's biggest issue is the lack of water, severely impacting operations and the well-being of staff and patients. Water storage and distributionWater TanksAt this sub-health center, there is currently no water storage tank available. As a result, clinic staff must store drinking water in 20-liter jerry cans, which are inadequate and unsuitable for their needs.Water reticulation outside the compoundsHand washing There are no washing sinks or other facilities available in the HCF due to the lack of water; the Portable metallic sinks are not functional. Bathroom There are two bathrooms inside the building. However, they do not have bath fixtures such as a shower or floor drain. They were built locally and during bathing, clinic staff use a jerry can. Additionally, these bathrooms are not connected to a septic tank. The drain water from the bathrooms falls close to the wall, which can cause damage to the wall. Latrines There are currently two single latrines at the clinic, but no proper toilets available.   * The latrines are locally constructed and lack modern toilet facilities. * The interior surfaces of the latrines, including the walls and floors, are neither washable nor easy to clean. * There is no access to water in the latrines. * The latrines are not equipped with facilities to accommodate persons with disabilities (PWDs).  Kitchen The kitchen consists of a single room that lacks essential facilities.   * There are no dishwashing sinks, cabinets, or floor drains. * The floor is not covered with ceramic tiles, making it difficult to clean.  Septic Tank: The sub-health center has no septic tank because the existed latrines are dry pit latrines. Waste management The following process and system for solid waste collection and disposal are in place at the Takaghal Healthcare Center: Waste collection and separation: Takaghal HCF doesn’t have an incinerator and pits to dispose of the waste in separate pits they burn the waste traditionally a bit far from the HCF building in the hell which is not safe and sometimes the wind and rain bring the ashes close to the clinic. They excavate the hell 50cm to 1m depth then they bury the sharp waste and organic waste together in this pit and then for new waste they do the same which is not safe and this practice is very harmful.  According to WHO’s requirements, the environment must be protected against clinical hazardous waste and also should be secure from domestic waste generated within healthcare facilities. For the safe disposal of the waste, we should have a proper waste disposal system which should have an incinerator with three pits (for sharp waste and organic waste).  Although all types of solid waste are separately stored and collected, the available bins are of low quality and insufficient to handle the daily volume of disposed waste. |
| **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 Takaghal 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 Takaghal 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 borewell meets the highest standards of quality. 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 |  |  |  |  |  |  |  |  |  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 Zartali Health Care Center** | | | | | Type of user | # of user | Consumption norm (Liters /day) | Total daily demand | | Outpatients | 50 | 5 | 250 | | clinic personnel | 7 | 110 | 770 | | Total daily water need | | | 1020 | | Required water for 48 hours to avoid any shortage | | | 2040 |   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 should be factory-made from high-density polyethylene, ensuring durability, lightness, and ease of handling. Its perfectly smooth inner surface should allows for easy cleaning with traditional detergents. The tank should be supplied with a top screwed lid and includes all necessary accessories and fittings. The water tank is planned to be connected to the new water supply system inside the building and toilet. 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 Takaghal 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 Its flow rate is 1.2m3/hour. the well probe should be installed in the system to prevent the pump from running dry.  Total required pipe: only 130-m pipe is needed from the well to the water tank.  Metallic box for protecting Inverter: To protect the Inverter, it needs to be installed in a 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 made in China is designed for this system and can control the fluctuation of the electrons and prevent the pump from most breakdown.  Note : If the specified brand of solar panels or any other listed accessories are unavailable, the supplier must obtain written approval from the AAA WASH Specialist or an authorized technical team member for an alternative and changes. This ensures that any substitute meets the project's technical requirements and maintains quality standards  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 establish a new water supply system in the Takaghal Health Care Facility (HCF) and install the necessary plumbing, it is imperative to penetrate the walls and floors to connect the cold and hot water pipes to the hand-washing sinks, dishwashing sinks, and toilets. The new borewell will be integrated into this water supply system, and a float switch will be installed in the water tank to ensure efficient water distribution throughout the facility. High-quality plumbing work (inside the building and outside the building)will be carried out using durable PE pipes with a diameter of 1 inch and a pressure rating of PN 10 bar, ensuring reliability and longevity.  Moreover, to guarantee the longevity and reliability of the system, the pipes will be buried at a depth of at least 80 cm below ground level. For sections of the pipe that are exposed to the air, they will be covered with glass wool and plastic sheeting to provide additional protection. 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 130 meters, these PE pipes will be connected to the water tanks and distribution network, facilitating uninterrupted water supply to the newly established system. 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 9 ceramic handwashing sinks in key sections of the building, including the (OPD, Vaccination, New toilet &bath, Hall, Nutrition, Toilet & bath for Delivery, MCH, Delivery, Toilet).  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 Takaghal Health Care Facility (HCF), there are currently two dry pit latrines, which present several significant issues. These issues include the absence of hand washing facilities, non-washable surfaces, and small pits that fill up quickly. To address these problems, ActionAid has devised a comprehensive plan to upgrade the existing latrines into fully equipped toilets.  The new toilets will be equipped with flush tanks and adjacent hand washing sinks to ensure proper hygiene. Additionally, the facilities will be designed to accommodate People with Disabilities (PWDs), incorporating railings to the toilet stairs to enhance accessibility and safety.  This upgrade aims to improve sanitation, hygiene, and accessibility at the Takaghal HCF, providing a more hygienic and inclusive environment for all users.  In terms of infrastructure, the water supply for these toilets will be connected to the new 2000-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 construct a new septic tank with the following specifications and measures:  Volume and Dimensions: The septic tank will have a volume of 20 cubic meters, with dimensions of 5.9 meters in length, 3.1 meters in width, and 2.1 meters in depth.  Construction Materials: The tank's walls will be built using stone masonry, and it will be divided into two sections by an internal stone masonry wall.  Durability Enhancements: The walls will be plastered with anti-moisture powder (Pudlo powder) to enhance durability and prevent leaks.  Cover and Accessibility: An RCC (Reinforced Cement Concrete) slab with two manholes will securely cover the septic tank, allowing for maintenance access.  Liquid Waste Management: A dedicated pit will be constructed to drain liquid waste from the septic tank.  Ventilation and Plumbing: A vent pipe and sewerage plumbing will be installed according to the related technical drawings to ensure proper ventilation and waste management.  These measures will ensure the septic tank's functionality, durability, and ease of maintenance. Waste managementAccording to WHO’s requirements, the perimeter of healthcare facilities must be protected not only against clinical hazardous waste but also from domestic waste generated within these facilities. To achieve optimal hygienic conditions, ActionAid plans to construct a standard solid waste management system at the Takaghal Health Care Center. The planned construction includes the following:Incinerator Construction: The incinerator will be constructed with reinforced cement concrete (RCC), and its pit will be made of brick masonry, adhering to the specified drawings.Waste Disposal Pits: New pits will be constructed for the secure disposal of organic waste (such as placental waste) and hazardous waste (such as sharp objects). These pits will feature RCC rings, and the top slabs will be constructed with RCC caps to seal the pits effectively.Incineration Area Security: The incineration area will be secured by erecting a fence with galvanized iron (GI) pipe poles and gates to prevent unauthorized access. The floor will be made of 10 cm thick plain cement concrete (PCC), with proper surface sloping to ensure effective drainage of rainwater. These measures will ensure a safe, secure, and hygienic environment for waste management at the Takaghal Health Care Center. |
|  | Note: An allocation of 2% of the total cost has been designated for miscellaneous and unexpected expenses. Contractors may claim overspend only when changes in the definable feature of work are recommended and approved by the Action Aid superintendent and AAA budget holder. |

## Period of workمدت زمان کار

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| **Start Dateتاریخ شروع** |  |
| **End Dateتاریخ ختم** |  |