## 10General 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: | Herat |
| Name of district: | Farsi |
| Name of health center | Arkh |
| Health Center Type: please select one ( H3, CHC,BHC,SHC) | SHC |
| Building ownership (private or governmental) | Government |
| Number of clinic personnel | 5 |
| Number of patients visited in clinic (daily basis) | 80 |
| Number of hospitalized patients (the max capacity) |  |
| Name of surveyor(s) | Eng Ismael Fajad, Layeq Zalal, Barktullah Samim |
| DATE of survey | 29-July-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: 33,89364787 | | E: 63,52910779 |
| 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: The SHC Clinic of Arkh is constructed 12 years ago by government. In this clinic there are five Staff, one Nurse (male), one midwife (female), one vaccinator (female), one nutritionist (female), one guard (Male). So totally there are 5 Staff at this clinic center. The clinic center has one main clinic building, it also has got laboratory, doctor room, drug store, This Sub health care facility is located 35 Km far from Center of Farsi District  This HCF serves to the whole people living in Arkh area. The clinic center can serve for 80 outpatients on diurnal basis with 30 males and 50 females.  The main challenge facing this health center is the lack of clean water inside the clinic building and sanitation services, which leads to the spread of diseases. Currently, the water of the clinic is transferred from a distance of 500 m far from SHC by using buckets,  Therefore, the ActionAid office technical team had a technical survey during the observation and technical survey the main problems found in this HFC are as follows:  -Lack of any water source for this clinic  -Lack of wash floor drain in (kitchen, OPD room and clinic hall)  -Absence of hand washing facilities (sink) in (OPD room, hall) and clinic area.  -Need to new water Tanks (the existing water tank volume is not enough with low quality need to change) and insulation storage tanks  -Need to provide garbage containers inside the Clinic building  -Need to create a ramp and stair for the entrance gate of existing male and female toilets  -Absence of an electricity system for the clinic (all rooms of the clinic is without electricity)  -Some parts of the building ( OPD room, new mix bath & toilet for delivery room and Hall) have no water supply system and sewerage system  -Existed Waste management is without any boundary protection  -The delivery room has no bath and toilet adjacent to it.  -The existing mix bath and toilet need upgrading. Water source For drinking purposes, Currently, the water for this health center is being transferred from a distance of 500m far away from the clinic (inside of Arkh bazaar from a bore well) 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 water provided from a hand well with a depth of 12 meters and a diameter of 1.2 meters without a concrete ring, which is very salty and cannot be drunk, also the discharge of this well is low according to observation from existing deep wells of this area the freshwater is located between 60-90m underground Water storage and distributionWater Tanks one metallic water tank with low quality (inside the tank is full of rust) was installed at Arkh clinic with a capacity of 1000 liters, the existing water tank volume is not enough, it is rusted inside and the quality is poor. Hand washing Absence of a hand washing sink inside the OPD room. hall and clinic area  In total 5 hand washing sinks are installed inside the clinic building and 4 hand washing sinks in the toilet building over all 4 new hand washing sinks in the hall and OPD room of clinic will be installed and one Handwashing tap station in the clinic area will construct. Bathroom There is one bathroom inside the clinic building that needs to be repaired and become useable for staff of clinic, existing bath does not hase bath fixtures such as a shower or floor drain. There is not any bath for delivery room. Kitchen The kitchen consists of a single room that lacks some facilities.   * The floor drain and sewerage system of this kitchen is close need fundamentally repairing. * Cermic tiles of this kitchen has many crack need to change  Latrines & toilets There are six single toilets for outpatient in this clinic (three for male patients and three for female patients) this toilet works functionally, the only problem is there is not a ramp and railing in the entrance door of this toilets  Also there is one mix toilet & bath inside the building for clinic staff need to upgrading Septic Tank: The Healthcare Facility (SHC) has a stone masonry septic tank with dimensions (6.3x3). Although the stone masonry work has been completed, this septic tank needs evacuation and cleaning.  Also need an absorption well for existing septic tank. Waste management The following process and system for solid waste collection and disposal are in place at the Arkh Healthcare Center: Waste collection and separation: The waste management system at this healthcare facility is fully functional. An incinerator with two pits for sharp waste and organic waste has been newly constructed by one of the NGOs. It meets the minimum requirements of the WHO for clinical waste management and protects the environment from clinical hazardous waste as well as domestic waste generated within healthcare facilities. The incineration area is not secured by a fence to prevent unauthorized access. The floor is constructed with 5cm thick plain cement concrete (PCC) and proper surface sloping is incorporated for drainage of rainwater from the incineration area.  In general, the incinerator structure is functional, but it needs a 15-meter fence boundary around it. |
| **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 Arkh 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 90 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 pure aquifer layer located between 60 and 90 meters below ground. This assessment informs our borehole design and expected yield:   * **Depth and Diameter:** The bore well will reach a depth of 90 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 60 and 90 meters underground, we anticipate that the bore well will yield approximately 4000 to 5,000 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 Arkh 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 bore-well 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 sub health center 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 Arkh Health Care Center** | | | | | Type of user | # of user | Consumption norm (Liters /day) | Total daily demand | | Outpatients | 80 | 5 | 400 | | clinic personnel | 5 | 110 | 550 | | Total daily water need | | | 950 | | Required water for 48 hours to avoid any shortage | | | 1900 |   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 1500 liters for clinic building and one 500liter tank with stand for new 200litsun-boiler.  The water tank should be factory-made from high-density polyethylene, ensuring durability, lightness, and ease of handling. The inner surface should be perfectly smooth to allow easy cleaning with traditional detergents. The tank should be supplied with a top screwed lid with all necessary accessories and fittings.  The water tanks shall be connected to the new and existing water supply system inside the building and toilets. 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 Arkh 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: 4SR1.5/25 because it is a suitable pump for our system Its flow rate is 1.5m3/hour. the well probe should be installed in the system to prevent the pump from running dry.  Total required pipe: only 150-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 8 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 Vacon IP66 2.2kw 220V made in Itlay 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 within the Arkh SHC: To establish a new water supply system in the Arkh 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, tap-station, and toilets. The new bore-well 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 0.5 inch and a pressure rating of 16 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 150 meters, these PE pipes will be connected to the water tanks and distribution network, facilitating uninterrupted water supply to the existing and 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 4 new ceramic handwashing sinks in key sections of the building, and one handwashing facility station will construct in the Arkh SHC and the other existing hand washing sink shall be conned to the building water supply system and sewerage. Septic Tank: ActionAid plans to rehabilitate the existing septic tank with the following measures:   * evacuation and cleaning of the existing septic tank * Connection sewerage system to septic tank * Excavation of an absorption well for the existing septic tank  Toilets and latrines At the Arkh sub health center There are six single toilets for outpatient at the clinic, three for male and three for female and one toilet for clinic staff inside the clinic problems of exciting toilets are as fallows  ActionAid has devised a comprehensive plan to upgrade the existing latrines into fully equipped toilets.  For the delivery room there is not any bath & toilet so we planned to construct one mix Bath & toilet adjoining to the delivery room also we upgrade the existing mix toilet & bath.  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 Arkh SHC, providing a more hygienic and inclusive environment for all users.  In terms of infrastructure, the water supply for these toilets will be connected from new 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.  following actions are planned for upgrading the existing and new toilets.   * For new and existing mix bath & toilet Plumbing work such connection of water closet to main sewer and connection of cold-water pipes to pipe network should be done. * Installation railings, ramps for people with disabilities in entrance door of existing male and female 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.The waste management system at this healthcare facility is fully functional. An incinerator with two pits for sharp waste and organic waste has been newly constructed by one of the NGOs. It meets the minimum requirements of the WHO for clinical waste management and protects the environment from clinical hazardous waste as well as domestic waste generated within healthcare facilities.Incineration Area Security: The existing incineration area is not secured by a fence, this incinerator located at the corner of clinic’s boundary wall two side of this structure is secured by this boundary wall so need to install fence in two other side by installation a fence with galvanized iron (GI) pipe poles and gates to prevent unauthorized access.These measures will ensure a safe, secure, and hygienic environment for waste management at the Arkh Sub Health Care Center. |
|  | Note: An allocation of 3% 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** |  |

## Summary of BoQ

## Signatoriesامضا کننده گان

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| --- | --- | --- | --- | --- | --- |
| ActionAidاکشن اید | | | DopH and HCF agents نماینده ریاست صحت عامه ومرکزصحی | | |
| Name and position  نام و وظیفه | Date  تاریخ | Signature  امضا | Name and position  نام و وظیفه | Date  تاریخ | Signature  امضا |
| Project Coordinator  کوردیناتور پروژه |  |  |  |  |  |
| WASH Specialist  متخصص واش |  |  |  |  |  |
| Program Manager  مدیر پروگرام |  |  |  |  |  |