



Qorshaha iyo Hannaanka Maareynta Badqabka Deegaanka (OQMMD) ee Laasadawaco

Wasaarada Degaanka, Duurjoogta iyo Dalxiiska iyadoo Taakulayn dhaqaale ka helaya Baanka Aduunka waxa ay hirgelinaysaa mashruuc la yiraahdo "Mashruuca Biyaha ee Hormarinta Habnololeedka Xoolodhaqatada iyo Beeralayda" Ujeedada mashruuca ayaa ah in kor loo qaado helista adeega biyaha iyo heerka aqooneed ee maamulista ilaha biyaha, kor u qaadista awooda dawladda ee hirgelinta mashaariic yar-yar oo dhanka biyaha oo laga fulinayo Qaybo kamid ah dhulka oomanaha ah ee kuyaal Puntland. Mashruuca wuxuu ku salaysanyahay 3 dan qaybood ee soo socda:

Qaybta 1aad: Horumarinta farsamada casriga ah (Technology) ee aan laga faa'iidsan ee Waraabka Xooladhaqatada iyo Beeralayda .

Biyaha toga (Wadi) ee laga heli karo meelaha mashruuca waxaa ay Muhiim u noqon doonaan Xoolo-Beeralayda iyo Xoola dhaqatada siiba waqtiga abaarta oo ay dhamaadaan biyaha goobaha kaydka sida berkadaha, balliyada IWM.

Hirgelinta hanaankan lagu kaydiyo biyaha togaga Sida Biyo Xireenadda waxay kor u qaadayaan mugga biyaha Toggu kayd in karo taas oo lagu daboolo baahida biyaha Guryaha, Xoolaha iyo Beeraha xilliyada abaarta. Biyo xireenadu waxay kaydiyaan Biyaha kusoo dhacaya togga xilli roobaadka.

Xayndaabka darbiga biyaxireenka badanaa waxaa agtiisa laga qodaa ceelasha gaa-gaaban kuwaas oo noqda biyo-kaydiye looga faa'ideysan karo biyo gaarsiinta dadka iyo duunyada ba.

Qaybtan waxay maal galinisa horumarinta

ENVIRONMENTAL SAFEGUARDS MONITORING PLAN –LAASA DAWACO

Financed by the World Bank, the Ministry of Environment, Wildlife and Tourism is implementing a rural development project entitled the **Water for Agro Pastoralist Livelihoods Project (WALP)**. The Project Development Objectives are *to improve the pastoral and agro-pastoral communities' access to, and management of, small-scale water sources and to enhance the capacity of the government to implement small-scale water interventions in targeted arid lands of Puntland*. The project is articulated around 3 components:

Component 1: Developing under-utilized agro-pastoral water supply technologies.

The sand rivers (wadis) in the project areas have potential to become key resource patches for agro-pastoralists and pastoralists, especially during the long dry season when surface water storage (in berkads and balli/hafir dams) is exhausted.

Development of wadis using rainwater harvesting technologies such as sub-surface or sand dam technology increases water stored in wadis during dry period sand can be used for domestic, livestock and agricultural purposes. Sub-surface or sand dams capture water flowing down sand rivers during and after rains. Behind the retaining wall of the sand or subsurface dam, shallow wells sunk with cassion rings serve as reservoirs from which water is distributed for domestic water supply and for livestock. This component is financing the development of sand and/or subsurface dams or weirs along with the infrastructure needed to provide multiple-use water services (standpipes or shallow wells with hand pumps and water troughs or tanks).

Tignoolojiyadda Biyo Xidheenadda iyo kaabayaasha fududeeya isticmaalkooda sida kaagag laga cabo, ceel gacmeedyo, darka xoolaha iyo haamaha biyaha).

Shaqadan waxa loodoortay in laga qabto afar goobood oo ka mid ah Putnland, iyada oo la isticmaalayo hannaan tayaysan oo laysla qaatay lana adeegsanayo awoodda iyo khibrada shaqaalaha. Goobkasta waxa laga hirgaliniyaa Tababaro ku saabsan Qaab dhismeedyada biyo xidheenada iyo hababka looga heli karo Biyo tayo iyo tiro leh leh oo haqab tiri kara baahida dadka ah, beeraaha iyo Waraabka xoolaha.

Qaybta 2aad: Kobcinta Awoodda Dalwada iyo awood siinta Bulshada.

Qaybtan waxa ay maalgelinisaa tababarida iyo taageerida farsamo ee:

- (i) kor u qaadista adeegyada Wasaaradduhu bixiyaan iyo maamul baahinta fidinta beeraha iyo deegaanka (Extension staff).
- (ii) awood siinta bulshada si ay u maareeyaan kheyraadka biyaha ee heer Degno/tuulo, taas oo waafaqsan habka horumarinta reer miyiga iyo in la helo qaab muujinaya sida ay biyaha, daaqa, xoolaha iyo waxsoosaarka beeraha, caafimaadka bulshada iyo ka hortaga khilaafaadka ay isugu dhafan yihiin hab nololeedka ree miyiga.

Qaybtani waxay ka koobantahay laba qaybood oo hoose:

2.1) Taageerida dawladda heer maamul dhexe iyo dawladdaha hoose:

Qaybtani Waxay maalgelinisaa tababaro loo qabanayo shaqaalaha dawladda ee heerarka kala duwan kuwaas oo si toosa ula xidhiidha marxaladaha adeeg gudbinta (*Wasaaraddaha la xiriira iyo meelaha qaar dowladdaha hoose ay dhisan yihiin*) si loo xoojiyo Wada shaqaynta iyo in adeega loo gudbiyo bushlada. Tababaradda iyo kormeerka waxay ka koobnaan doonaan sadex qaybood oo muhiim u ah horumarinta xirfaddaha:

This is being done at four (4) sites Puntland deploying standard designs and labor-intensive methods. Each site will involve a series of sand dams and river training structures and will include a means of extracting high quality water for domestic use as well as mechanisms to ensure sufficient quantity for livestock and agricultural uses.

Component 2: Government capacity building and community empowerment.

This component is financing training and technical support to (i) enhance provision of services by ministries and their decentralized extension staff, and,

(ii) empower communities to sustainably manage water supply systems and water resources at the local level, **in** line with rural development management principles, and, bringing a cross-sectorial “landscape” approach showing how water, pasture, livestock and agriculture production, public health and conflict prevention are fully integrated in rural livelihoods.

This component has two sub-components:

Sub-component 2.1 - Support central and local government:

is financing training for staff at all levels of government directly involved in the service delivery chain (relevant central ministries and where it exists local government) to strengthen the ability to interact with and deliver services to communities. The training and mentoring will cover three key areas of skills development: -

- *technical,*
- *administrative, and*
- *community mobilization.*

- Farsamo (Technical)
- maamulka, iyo
- wacyigalinta bulshada.

Qaybta 2.2 Maareynta Bulshadu Gundhigga U tahay:

Qaybtan waxaa ay maalgelinaysaa hirgelinta iyo kobcinta hay'adaha/ururada bulshada (*Kooxaha Haweenka, iskaashatada biyaha iyo Hay'adaha Maareeya Deegaanka*), si ay u maareeyaan biyaha iyo khayraadka dabiiciga ah ee ku hareeraysan oo dhul-daaqsimeedku ka mid yahay.

Qaybta 3-aad: Maareynta mashruuca, dabagalka iyo qiimayntiisa.

Wasaarada Degaanka, Duurjoogta iyo Dalxiiska (MOEWT) waxa ay samaysey/hirgelisay kooxda Isku xirka mashruuca iyo gudi heer-wasaaradeed oo qaabilsan hagista mashruuca.

Qaybtani waxa ay gacan ka geysanaysaa:

- i) Kordhinta kharashka adeega loo sameeyo shaqaalaha Wasaaradda si loo helo maarayn/maamul iyo xirfadaha iyo aqoonta ay tahay in ay geliyaan cida mashruuca khusayso sida wasaaraddaha, waaxaha iyo hay'adaha dawliga ah, (biyaha, beeraha, xanaanada xoolaha)
- ii) Kharashka khabiiradda iibka iyo maamulka xisaabaadka.
- iii) Gaarsiinta iyo wacyigelinta bulshada doorkooda mashruuca iyo doorka hogaamineed ay dawladu ku leedahay mashruuca. (tan ayaa qayb ka ah adkeynta nabadda iyo dhisida qorshaha dawladdimo).
- iv) Daraasadaha muhiimka ah oo looga golleeyahay diyaarinta mashaariicda la fulinayo (Sahaminta Saameynta Saba-deegaanka ee goobkasta, sahaminta injineerada, daraasad suura-galnimada), iyo
- v) Kormeerka iyo Qiimeynta

Sub-component 2.2 - Community-based management: This sub-component will finance the establishment and strengthening of community-based institutions (women's groups, water user associations, environment management institutions etc.) to manage water and surrounding natural resources, including rangelands.

Component 3: Project Management, Monitoring & Evaluation.

The ministry in charge of rural development in Puntland, The Ministry of Environment, Wildlife and Tourism (MOEWT) has established a Project Coordination Unit and Inter-ministerial Steering Committee. This component is supporting

- i) The incremental operating costs for ministry staff managing the project and inputs from other technical Ministries, Departments, Agencies (MDAs - water, livestock and agriculture).
- ii) The cost of procurement and financial management specialists.
- iii) Outreach and communications on the governments' role and leadership on the project to the broader Somali community (as part of the peace and state building agenda).
- iv) key feasibility studies aimed at preparing project interventions (site specific EIAs, engineers surveys, feasibility studies), and.
- v) Project M&E including the monitoring of safeguards, conflict and gender. The M&E activities will provide the basis for central and local government to document progress against milestones and generate the lessons learned from the interventions.

mashruuca oo ay kujirto dabagalka badqabka, khilaafaadka iyo doorka jinsiga. Kormeerida iyo qiimeynta shaqada waxaa uu siinayaa dawlada heer maamul dhexe iyo tan hoose awoodda ay ku ururiyaan xog qoran oo lagu ogaado hirgelinta hor- usocod ka iyo hiigisga mashruuca isla markaana la ogaado casharada/khibrada laga helay shaqada la qabtay.

Qorshaha iyo Hannaanka Maareynta & Badqabka Deegaanka (QQMMD)

Ujeedada QHMBD waxaa weeye iney samayso qaab-dhismeed deegaan iyo bulsho si loo hago qorshaynta, naqshadaynta iyo fulinta mashruuca isla markaasna laysku dhafo xogtii ka soo baxday baaritanadii hore ee la sameeyay. Taasina waxay fududeynaysaa in laga hortago qaladaad dhaca iyo saamayntoodaba intaan mashruuca la gudagelin iyo yaraynta qaladaad dhici lahaa wakhtiga dadaalada fulinta mashruucu socoto.

Sida ku xusan siyaasadda shaqo ee Baanka Aduunka ee **OP4.01** ee kusalyan Maareynta Deegaanka iyo qiimeynta, Mashruuca Biyaha ee Hormarinta Habnololeedka Xoolodhaqatada iyo Beeralyda ayaa waxyeeladiisa Deegaan/Bulsho laga dhigay mid xadidan (Ilaalinta Deegaanka Qaybta “B”),

Wakhtiga la diyaarinayey mashruuca, lama garanayn goobaha dhabta ah ee mashruucu ka fuli doono, (kaliya waxaa la cayimay heerka biyo-dhaca). Nooca iyo baaxada saamaynta ee maalgelina la qorsheeyey ayaa ah mid aad u cad. Guud ahaana xogta asaasiga ah ee laga hayay ayaa ah mid ay ka simanyihiin meelaha laga fulinayo maalgalintan (Goobahan ayaa ah kuwo ka siman dabeecadaha ay ka midyihiin kala-saraynta dhulka, cimilada, biyaha, noloha ku nool iyo dhaqaalaha bulshada degaanka) Taasi waxay fududaysay in lala qabsado QHMBD oo lagu cayimay goobaha QHMBD .

Sida ku qeexan QHMBD waxaa uu tilmaamay dhowr khatarood oo la xiriira (**Badqabka**

Environmental Safeguards Management Framework and Plan

An ESMF has the purpose to provide a basic environmental and social framework to guide project planning, design and implementation, and integrate and operationalize key findings from preceding studies. A major part of potential impacts will thus be avoided and minimized as early as during site identification and selection, and remaining impacts mitigated and managed to acceptable levels during project implementation (i.e. the construction and operation of the planned structures / investments).

Under the World Bank’s operational policy OP4.01 on environmental management and assessment, the WALP project has been deemed to have limited impacts (category “B”), warranting a limited environmental and social assessment and the production of an management instrument.

As during project preparation the exact location of the project sites was not yet known (only watershed level identified) an ESMF (environmental and social management framework) as opposed to an ESMP (ESM Plan) was developed. The nature and range of impacts of the planned investments were well known, and the overall baseline conditions relatively uniform over the entire project area (meaning that all potential sites would experience similar conditions in terms of topography, climate, hydrography, biology and socio-economic conditions etc.). This has facilitated an easy adaptation of the ESMF into location-specific ESMPs as sites have been identified.

As described in the ESMF, the baseline conditions in the project areas are generally not of high sensitivity. Nevertheless the ESMF identified a number of risks and negative impacts, and the location specific ESMP presented below proposes corresponding preventive, mitigation and management

Deegaanka) iyo saamayntooda. Qorshaha Maareynta Bulashdda iyo Deegaanka(QHMBD) ee Goobtan la cayimay wuxuu muujiniyaa dhawr siyaabood oo looga hortagi karo ama gudbi karo caqabadaha imankara, iyadoo la qaadayo talaabooyin maamul/maarayn oo lagu kordhinayo habsami usocodka mashruuca.

Khataraha iyo saamaynta ayaa loo kala saaray wejiyada soo socda:

1. In la asteeyo goobaha laga fulinayo biyo xireenadda.
2. Samaynta marin loo marayo goobaha.
3. Gaarsiinta/Raridda iyo kaydinta alaabta.
4. Hawlaha dhismaha.
5. Hawlaha shaqo gaar ahaan saamaynta toga salkiisa, jenbigii sa, qulqulka biyaha iyo kala duwanaanshaha noolaha
6. Khatar bulsho iyo Saamayn gaar ahaan waqtiga dhismah iyo marka la isticmaaliyo Biyo Xireenka.

Qorshaha iyo Hannaanka Maareynta & Badqabka Deegaanka (QHMBD) waxaa loo soo bandhigay daneeya-yaasha ay saameynt karto halista ka iman karta shaqada mashruuca la qabanayo. Waxaa bandhigaas lagu sameeyay magaalada Garowe taariikhdu markay ahayd 25 kii Maarso 2015 si jawaab/falcelis looga helo baaxada iyo waxa uu ku salaysanyahay qorshuhu.

Talasojeedintii la helay ayaa lagu dharay oo lawaafajiyay nuqulkii u dambeeyey ee QMBD. QMBD Waxaa lagu baahiyey Shakada ka rasmiga ah ee Wasaaradda Deegaanka, Warbaahinaha Maxaliga ah iyo Shabakada ka Baanka Aduunka 14kii Abriil 2015 kii. Si looga u daalacdo Nuqulka QMBD oo dhamaystiran Fadlan Booqo Shabakada ee Wasaaradda Deegaanka, www.moewtpl.com

Mashruuca Biyaha ee Hormarinta Habnololeedka Xoolo dhaqato, Beeralayda

measures designed to minimize and enhance the overall environmental and social performance of the project.

The risks and impacts were differentiated into the following phases:

1. Identification of sites for sand dam construction
2. Creating access to sites,
3. transport and storage of materials
4. Construction activities
5. Operation, esp. impacts on river bed, banks, hydrology and local biodiversity
6. Social risks and impacts during construction and operation

The draft ESMP was disclosed in Garowe to the potentially affected stakeholders, and a public meeting was held on 25 March 2015 to receive feedback on the ESMF scope and contents. The comments received were incorporated into the final version of the ESMF. The ESMF was further disclosed via the MOEWT website and local media in Puntland, and World Bank Infoshop on 14 April 2015. To view the full ESMF please visit www.moewtpl.com

The WALP project mobilized in January 2016. Guided by the macro study on the development potential of Wadi's and the Wadi Evaluation Tool (WET) the MOEWT identified eight (8) potential sites for wadi development (wadi development potential studies and the WET are available on the MOEWT website). The eight sites were assessed and four (4) sites were chosen as feasible for wadi development. These sites are in the vicinities of:-LaasaDawaco, Meledeen(Dharoor), XamXamaa and Raydable. Geophysical surveying was undertaken and four pre-feasibility studies completed. The ESMF was used and applied during the site selection process and design phase, as it contains a number of both environmental and socio-economic criteria that are important to consider maximizing positive

waxa uu bilowday Janaayo 2016. Iyadoo ay hagayso daraasad guud oo lagu sameeyay ku haboonaanta togga iyo Habka qiimaynta togaga, Wasaarada Degaanka waxaa ay cayintay 8 meelood oo laga fulinkaro biyo xireeno (Daraasadihii iyo Agabkii la isticmaalay waxaa laga daalacan karaa Bogga rasmiga ah ee Wasaaradda Degaanka). waxaa la qiimeeyay 8 goobood halka 4 ka mid ahi loo doortay goobo laga hirgelinkaro togaga. Kuwan waxay ku yaalaan Laasa Dawaco, Dharoor, Xamxamaa iyo Raydable. Sahan ayaa lagu sameeyay Lakabyada dhulka, waxaa ladhamaystiray 4 daraasadood oo hor dhadhac ah. Waxaa la isticmaalay QMBD wakhtigii lagu guda jiray doorashada goobaha laga shaqaynayo iyo naqshadayntooda, maadaama QMBD ka koobanyahay shuruudo isugu jira ilaalinta degaanka iyo dhaqaalaha bulshada taas oo muhiim u ah kordhinta faa'iidada maalgashiga mashruucu keeni karo iyo yaraynta khataraha iyo saamayntiisa.

Fulinta iyo Kormeerka habsami usocdka arimaha la xiriira QMBD waxaa lagu soo koobay qorshahan soo socda ee goobta XamXama

Goobta shaqada ee Laasadawaco Jujuraafi ahaan waxay dhacdaa (Loolka, 10.4735° dhigaha saacada dhulka, 49.1116°, dhigaha cabirka dhulka) oo ku taal 95 km koonfur galbeed ee magaalada Boosaso. Waxaa Laasadawaco ka mid tahay 4 meelood oo dawladda Puntland u dooratay in laga fuliyo/dhiso biyo xireeno lagu kaydiyo biyaha si ay uga faa'iidaystaan xoolo dhaqatada iyo beeralayduba.

Figure 1: Laasadawaco- Location map



impacts and the investments' sustainability, and minimizing risks and negative impacts.

How the implementation of environmental and social measures will be monitored is summarized in the location specific monitoring plan below for Xamxama site.

The LaasaDawaco site, (Latitude: 10.4735° - Longitude: 49.1116°, see Figure 1) located 95km southwest of the capital city of Boosaaso, is one of four sites the government of Puntland has considered for the construction of a small dam for Wadi water harvesting for agro-pastoral use.

Figure 1: Laasadawaco- Location map



The pre-feasibility study concludes that a weir dam with a reservoir filled by sand is feasible for the proposed site and would benefit the local community.

Daraasada Hordhac ah oo la dhamaystiray ayaa tilmaamaysa in ay Laasodawaco ku haboontahay samaynta Biyo Xireen kaas oo ayka faa'iidaysan doonaan Bulshada ku nool.

Waxyaabaha kasoo baxay daraasadan waxaa ka mida:

- J) Goobta la doortay waxay buuxisay sharuudaha u dagan dawladda Puntland ee ku saabsan xulushada dhismaha Biyo Xireenada. Goobtu waxaa ku hareeraysan degaamo badan oo leh ceelal gacmeedyo. Sidoo kale Qiimayn la sameeyay iyadoo la isticmaalayo agabka lagu qiimeeyo togaga (Wadi Evaluation Tool) ayaa cadeeyay in goobtu tahay goob ku haboon biyo xireen.
- J) Goobtu waxaa ay ku taal meel ku sifaysan biyo badnaan, biyaha/daadka soo maraana sanadkoo dhan waxaa lagu qiyaasa tiro 3 ilaa 4 jeer. Sanadka intiisa kale ayaa biyo badan maraan togga guntiisa hoose cabir dhan 2 ilaa 4 meter.
- J) Goobtu waxay ku dhowdahay degaan ilaa boqol qoys deganyihiin, beero waraabyo iyo meelo xooluhu ka cabaanna leh. Biyoxireen laga dhiso goobtan wuxuu isu dheeli tirayaa ilo biyoodka ka jira goobtan isla markaasna wuxuu suurto galinayaa helida biyo joogta ah. Waxaa la qiyaasayaa in biyo xireenka la samaynaayo laga heli doono cadad biyo ah oo dhan 58,500m³, khaasatan marka lagu guda jiro xiliga biyo yaraanta. Biyahan ayaa 100% ahaan doona kuwa qanciya baahida bulshada (qiyaas ahaan 250 qoys iyo xoolahooda) sidoo kale biyahan ayaa

The key findings of this study are as follows:

- J) The proposed site satisfies many of the broader criteria set forth by the Government of Puntland for supporting the construction of either a sand or subsurface dam. Specifically, the site is located near many settlements, known existing wells and cattle routes. The site is among the farthest from the capital city and existing markets. Furthermore, an evaluation performed with the aid of the Wadi Evaluation Tool (WET) evidenced potential good suitability for the proposed site¹.
- J) The site is positioned on a Wadi characterized by abundant presence of water all year-round with – on average – three to four floods filling the Wadi's banks during the rainy seasons. During the rest of the year, water runs abundantly via a subsurface aquifer located 2 to 4 meters under the Wadi's bed.
- J) The site is located near hundreds of households and some irrigated farms and near a strategic watering ground for livestock. A dam built at the proposed site would stabilize the existing aquifer and make water available for a longer period. More specifically, it would be possible to access at least 58,800m³ of water during the driest season. Such an amount alone could satisfy 100% of the drinking needs for the entire local community (approximately 250 households including their livestock) while also providing water for those farms located in the immediate proximity of the dam.

¹For additional details refer to "D.1 - Inception Report on Setting Site Parameters", dated September 2016

waxaa ka faa'iidaysan doona beeralayda ku hareeraysan ama u dhow goobta biya xireenka laga samaynayo.

) Marka laga eego Farsamo ahaan Waxaa lasoo jeediyey in xalku yahay Samaynta biyo-xireen marka la arkay qaabka dhulku u samaysanyahay, waxaa dhici karta marka uu yimaado daadka u horeeya dhismaha ka dib in biyo xireenku buuxsamo uuna noqdo mid si wanagsan u shaqeeya,

) Biyo xireenka waxa la dhisadonaa inta u dhaxaysa bilaha Janaayo iyo Maarso si looga hortago waqti roobaadka. Daadad badan oo isku xig xiga aya dhaca waqtiga roobka in biyo xidheen la sameeyaana waxay keeni kartaa khatar mashruuca ah iyo mid dhaqaale bur bur.

) Kahor intaan la bilaabin mashruuca, dawlada Puntland waxay si taxadar ku jirto u daraasaynisaa kala-saraynta dhulka ee Goobta, iyo in la ogaado cabirka uu qota ahaan noqonayo (depth) iyo balaca cagta biyo xireenka.

) Marka loo eego cadadka biyo ee biyo xireenku laga helaayo, waxaa , kharashka galay tusaale, lacagta ku baxaysa dhisida biyo xireenka loo qaybiyay inta Cubic meter ee ku dhacaysa biyo xireenka) , halkii cubic meter waxa qiimahiisu noqonayaa lacag yar oo ah (\$1.86). qiimaha halkii cubic meter biyaha (tusaale ahaan qiimaha ay ugu fadhido halkii cubic meter qofka goobta jooga)waa qiime jaban ama yar oo gaaraysa (0.67 USD). Tan waxay noqonaysaa in kharajka galay biyo xireenka uu isku soo celiyo wax ka yar 6 sano , Isagoo jiritaanka biyo xireenka lagu qiyaasay mudo 30 sano ah.

) From a more technical standpoint, a weir dam is recommended because the geological conditions are favourable and sandy material runs abundant along this section of the Wadi. It is likely that the first flood occurring after construction ends could rapidly fill the reservoir and render the newly build dam fully functional.

) The proposed dam should be built between the months of January and March in order to avoid the rainy season: severe floods occur frequently and building a dam during the rainy season would be dangerous and noneconomic.

) Prior to the start of construction, the Government of Puntland should carefully measure the topography of the site as well as understand the precise depth and lateral extent of the bedrock lying underneath the dam.

) Considering the relatively low volume of water that the new dam will be able to generate compared to the high cost of the proposed solution, the raw cost (i.e. the cost of the dam divided by the number of cubic meters of water generated by the dam) of one cubic meter of water is high (1.86 US\$) if compared, for example, to the cost estimated for other sites in Puntland. Nonetheless, the cost of water per cubic meter (i.e. the cost that is attributed to each person in the village to use that cubic meter of water) is low (US\$0.67/m³) and local beneficiaries, if the Government would ask them to do so, could pay back the investment in less than 6 years for a structure that is supposed to remain in operation for the next 30.

Qorshaha iyo Hannaanka Maareynta & Badqabka Deegaanka (QQMMD)-Laasadawaco

Waji	Waa maxay halbeegyada la kormeerayo?	Xagee loo adeegsanayahalbeegyada la kormeerayo	Waa side halbeegyada la kormeeri?/Nooca Qalabka loo adeegsanayo kormeerka?	Goormay tahay in halbeegyadan la kormeero? (Soo noqnoqoshada cabirka ama joogtayntisa)	Talaaboyinka Yareenaya	Maxaa halbeegyadan loo kormeeraya? (optional)	Kharash		Mas'uuliyada Hay'adeed	
							Xirid/Rakibid	Shaqo	Xirid/Rakibid	Shaqada leh
<u>Naqshadda</u>	Shuruuda lagu xulanaayo goobta	Dhamaan goobaha laga hirgalin karo biyo xireen ciid ah	Iyado lagu dabaqayo aqoon Degaan & injineernimo	Inta lagu gudo jiro wajiga naqshada ama cayimadida goobta	In tixgalin lasiiyo qalan injineered ee ku haboon	In la kordhiyo gudashada E&S eegoobahii la doortay	nil	nil	Injineerka naqshada/Isticmaalaha	Injineer Kormeer
<u>Dhismaha</u> } Wadada iyo diyaarinta Goobta	Doorid jidka goobta tagaya, In la yareeyo jarida dhirta iyo geedaha, In la xadido Socodka dadka, xolaha iyo ugaadha	Jidad ku haboon in lamaro	Iyado lagu dabaqayo aqoon Degaan & injineernimo	Inta lagu gudo jiro wajiga naqshada ama cayimadida goobta iyo diyaargarowga	In la yareeyo jarida dhirta, dorashada jidka iyado la tixgalinayo meelaha xasaasiga ah (Tuuloyinka, guryaha, berkadaha iyo wadooyinka socotada)	In la kordhiyo gudashada E&S eegoobahii la doortay	nil	Ugu yaraan	Injineerka naqshada/ Injineer Kormeer , Qandaraasle	Injineer Kormeer /Qandaraasle
<u>Keenida Alaabta</u> Dhagax qodid/jabin	QQMDD iyo tixgalinta bulshada	Goobta dhagaxa laga qodayo	Baarida dukumintiga,	Shaqada intayna	Nil	In loo ilaaliyo shuruucda caafimaadka	Inta ugu yar	NA	Injineer Kormeer /Qandaraasle	Injineer Kormeer /Qandaraasle

	oo la helo		faaqidaad	bilaaban ka hore		iyo ilaalada shaqaalaha				
Waji	Waa maxay halbeegyada la kormeerayo?	Xagee loo adeegsanayahalbeegyada la kormeerayo	Waa side halbeegyada la kormeeri?/Nooca Qalabka loo adeegsanayo kormeerka?	Goormay tahay in halbeegyadan la kormeero? (Soo noqnoqoshada cabirka ama joogtayntisa)	Talaaboyinka Yareenaya	Maxaa halbeegyadan loo kormeeraya	Kharash		Mas'uuliyada Hay'adeed	
							Xirid/Rakibid	Shaqo	Xirid/Rakibid	Shaqada leh
Gododka ciida iyo jayga lagu buuxinayo	QQMDD iyo tixgalinta bulshada oo la helo	Gododka ciida iyo jayga lagu guraayo	In la baaro dukumintiga, faaqidaad	Shaqada intayna bilaaban ka hor	Nil	In loo ilaaliyo shuruucda caafimaadka iyo ilaalada shaqaalaha	Inta ugu yar	NA	Injineer Kormeer /Qandaraasle	Injineer Kormeer /Qandaraasle
<u>Qaadida alaabta</u> Sibir	Gaariga xamuulko shiraacan	Goobta shaqada	kormeer arag ah.	Baaritaano kadis ah inta shaqado lagu jiro.	Gaariga xamuulko shiraacan	In loo ilaaliyo shuruucda caafimaadka iyo ilaalada shaqaalaha iyo shuruucda wado marida	xz NxxzxxA	nil	Qandaraasle	Injineer Kormeer
Dhagax	Lowr	Jidka gaadidka, goobta shaqada	Kontorol	Baaritaano kadibs ah shaqado lagu jiro.	Gaariga xamuulko shiraacan		NA	Inta ugu Yar	Qandaraasle	Injineer Kormeer

<i>Ciid iyo Jeey</i>	Lowr	Jidka gaadidka, goobta shaqada	Kontorol	Baaritaano kadibs ah shaqado lagu jiro.			NA	Inta Ugu yar	Qandaraasle	Injineer Kormeer
) Shaqada dhismaha										
<i>Guuxa mashiinada inuusan ahayn mid dhibaaya dadka iyo xoolaha ku nool aaga iyo shaqaalaha</i>	Guux/sharaqanta intuu le'egyahay; Inu yahay qalab aan aad ugu guux-dheerayn	Goobta Shaqada; Meesha ugu dhow ee reer guura ku meel gaara iyo xoolahodu udeganyihiin	, Baarid	Mashiin walaba in mar la isticmaalo markay shaqadu bilaabato, hadayna cabasho imaan	In lagu xadeeyo shaqada maalin, saacadaah shaqada oo kaliya	In loo Hogaamsano shuruucda caafimaadka iyo ilaalada shaqaalaha;	NA	Inta Ugu yar	Qandaraasle	Injineer Kormeer

Waji	Waa maxay halbeegyada la kormeerayo?	Xagee loo adeegsanayahalbeegyada la kormeerayo	Waa side halbeegyada la kormeeri?/Nooca Qalabka loo adeegsanayo kormeerka?	Goormay tahay in halbeegyadan la kormeero? (Soo noqnoqoshada cabirka ama joogtayntisa)	Talaaboyinka Yareenaya	Maxaa halbeegyadan loo kormeeraya	Kharashka		Masuuliyada hay'adeed	
							Xirid/Rakibid	Shaqo	Rakibid/xirid	Shaqada leh
<i>Wasakhaynta hawada</i>	Qaybaha adkaha ah ee dhaska/boorka	Meel u dhow Goobta shaqada	kormeer arag ah.	Xiliga/wakhtiga la geynayo qalabka iyo wakhtiga dhismaha socdo	Goobta Dhisme biyo iyo kaydka qalabka, in la dayactiro mashiinada, laga digtoonaado in aan qalab laga fa'iidayasan, aan la gubin washin,	In loo Hogaamsano shuruucda caafimaadka iyo ilaalada shaqaalaha	Xog lagama hayo	Qiimaha u yar	Qandaraasle	Engineer ka kormeeraya shaqada
<i>Gariirka ka imanaya machiinada iyo qalabka lagu shaqaynayo</i>	Iyadoo ay xadidantahay Wakhtiga Shaqada lagu qabankaro	Goobta shaqada	Kormeerid	U kuurgal la sameeyo xiliga Shaqada iyo marka cabasho timaado	In saacadaha shaqo ku koobnaadaan maalinimada	In loo ilaaliyo shuruucda caafimaadka iyo ilaalada shaqaalaha	Xog lagama hayo	Qiimaha u yar	Xog lagama hayo	Engineer ka kormeeraya shaqada
<i>Wadada tagta/gasha Goobta shaqada</i>	Tabeelaha muujinaya jihada loo leexanayo	Jidka wayn ina laga leexdo	Kormeer arag ah.	Xiliga shaqadu bilaabanto iyo bille daba socotah		In loo ilaaliyo shuruucda caafimaadka iyo ilaalada shaqaalahaaha	Xog lagama hayo	Qiimaha u yar	Qandaraasle	Engineer ka kormeeraya shaqada

<i>Wasakhaynta biyaha iyo ciida ay sababaan meelaha kaydka, maa-mulidooda iyoisticmaal koodaba</i>	Tayada biyaha iyo ciida	Meelaha ku xiga Goobta shaqada, weelka biyaha lagu kaydiyo, iyo meelaha biyahu ka degaan ee qalabka yaal,		Wakhtiga la geynayo qalabka iyo marka dhismahu socdo, weliga la tixgeinayo xiliga roobab ku da'o.	In la isku dubarido saboolis meelaha qalabka lagu kaydiyo, in la go'doomiyo meelaha ad adag, in sidoo kale la go'doomiyo/xiro meelaha biyaha kasoo rogmadaan oo	Ka hortegida wasakhaynta degaanka; Bulshada iyoIn loo ilaaliyo shuruucda caafimaadka iyo ilaalada shaqaalaha	Xog lagama hayo	Qiimaha u yar	Qandaraasle	Engineer ka kormeeraya shaqada
<i>Wasakhaynta biyaha iyo ciida oo ay sababto u aasida si aan haboonayn.</i>	Tayada biyaha iyo ciida iyadoo laga qabanayo, shayada, saliida, caagaga/bacaha, iyo khashinka kale	Gooobta lagu ururiyo oo lagu kaydiyo qashinka.	U kuurgelid indhayn ah; Cufka dhulka	Hadayba dhacdo in ay taal qashin kumeel si ku meel gaar ah loo dhigay goobta shaqadu ka socoto, isla markaana cabasho darted	In lagu asturo qashinka meelaha ay ku haboonyahiin	In loo ilaaliyo shuruucda caafimaadka iyo ilaalada shaqaalaha	NA	Qiimaha u yar	Qandaraasle	Engineer ka kormeeraya shaqada
Weji	Waa maxay cabirka shaqo ee la kormeeri?	Halkee ayaa cabirka shaqo lagu kormeeri?	Sida lagu helincabirka xiliga kormeerka	Markee ayaa cabirka shaqo la kormeeri (inta jeer ee la kormeeri iyo in a tahay mid socoto ah)	Maxaa cabirka shaqo loogu kormeeri	<i>Talaabooyinkalagu Lagu yaraynayo caqabadaha iyo halista shaqo</i>	Kharashka		Masuuliyada hay'adeed	
							Rakibid/xirid	shaqada	Rakibid/xirid	shaqada

<i>Nabad guur ku yimaada assaska dhisme ee biyo xireenka oo ka imanaya dhaawac ama dumis</i>	Sifada/saan saanka nabad guurka, sida dhulka oo dildilaaca, dhirta isu dhow ama dhagxaan waawayn oo noqota caqabad daadka, a	Biyo xireen, abutements, suulka, iyo jenbiga bito xireenka si looga hortago in biyo ka baxaan	Kormeer indhayn oo injineer dhisme sameeyo	Labo jeer sanadkii oo noqonaysa labada sano ee ugu horeeya	In la galo hagid iyo nidaam lagu hagayo dayac tirka iyo dibu habaynta qalabka si shaqadu si habsami u socoto	In la helo awood injineeriyad iyo nadaafad degaan	Xog lagama hayo	Kormeerid idha indhayn ahi waxaa ay keentaa kharashka ugu yar, in la sameeyo miisaaniyad loogu talo galay dyac tir iyo ribeer gareen	Xog lagama hayo	Shaqaale
Weji	Waa maxay cabirka shaqo ee la kormeeri?	Halkee ayaa cabirka shaqo lagu kormeeri?	Sida lagu helincabirka xiliga kormeerka	Markee ayaa cabirka shaqo la kormeeri (inta jeer ee la kormeeri iyo in a tahay mid socoto ah)	Maxaa cabirka shaqo loogu kormeeri	<i>Talaabooyinkalagu Lagu yaraynayo caqabadaha iyo halista shaqo</i>	Kharashka		Masuuliyada hay'adeed	
							Rakibid/xirid	shaqada	Rakibid/xirid	shaqada
<u>Hadii la helo Aather Taarikhi ah</u>	Helista walxo muhiimad u leh muhiimad haraadigii taariikhiga ahaa.	Goobta shaqada	Kormeer indha indhayn ah	Ilaa iyo inta uu socdo dadaalka dhismaha	Ilaalinta iyo xafidida walxaha muhiimad u leh dhaqankii hore	Shaqada jooji oo ogaysii cida ay khusayso ama wax ka qaban kara	Xog lagama hayo	Qiiimaha ugu yar	Qandaraasle	Injineer Kormeer

<p><u>Wada tashi bulsho</u></p> <p><u>Awooda helida biyo</u></p> <p><u>Khilaaf ka biyaha</u></p>	<p>Caqabadaha imankara in loo yeesho awoo helida biyaha kor iyo hoos u dhacaya</p>	<p>Goobta Shaqada iyo dadka degaanka ee aaga, weliba kuwa ah halista dhibaataada</p>	<p>Wada tashi bulsho</p>	<p>Bilowyada dhismayaasha, xiliga Shaqada socodkeedu noqdo mid isku duba dhaca iyo labo jeer sanadkii marka mashruuca dhismahu hirgalo</p>	<p>In la fahansiiyo bulshada in biyo togo afkiisa kore ineey biyo qarin karaan, biyaha toga hoosena ku yaala ay yaraan karaan. yaraan karaan.</p>	<p>Qoraal laga sameeyo wada tashi bulsho iyo biyaha raaca oo lagu sameeyo kormeeris</p>	<p>Xog lagama hayo</p>	<p>Qiimaha ugu yar</p>	<p>Injineer ka dabagalka iyo kormeerka/Qandaraasle</p>	<p>Injineer Kormeer</p>
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