



**JAMHURI YA MUUNGANO WA TANZANIA
OFISI YA RAIS
TAWALA ZA MIKOA NA SERIKALI ZA MITAA**



**WAKALA WA BARABARA ZA VIJINI NA MIJINI
(TARURA)**

**TATHMINI YA ATHARI ZA KIMAZINGIRA NA KIJAMII ZA
UJENZI WA BARABARA YA WENDA – MGAMA (Km. 19)
KATIKA KIWANGO CHA LAMI WILAYA YA IRINGA –
MKOA WA IRINGA-KONGANO YA IHEMI**

MUKTASARI-KISWAHILI NA KINGEREZA

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Jengo la TARURA
Mji wa Serikali wa Mtumba, Dodoma
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**TAREHE YA KUPOKELEWA 18th
DECEMBER, 2020**

Muhtasari wa Kitendaji

i. Jina na Eneo la Mradi Uliopendekzwa

Tathmini ya Athari za Kimazingira na Kijamii za Ujenzi wa Barabara ya Wenda – Mgama (Km. 19) kwa Kiwango cha Lami katika Wilaya ya Iringa – Kongano ya Ihemi

ii. Jina la Mwenye Mradi na Anwani

Wakala wa Barabara za Vijijini na Mijini (TARURA)

Jengo la TARURA

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iii. Jina la Mhandisi Mshauri

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iv. Muhtasari na Urazini wa Mradi

Hivi sasa Benki ya Dunia kwa kushirikiana na Serikali ya Tanzania kupitia mawakala wake wa barabara, yaani Wakala wa Barabara za Vijijini na Mijini (TARURA) na Wakala wa Barabara nchini Tanzania (TANROADS), inaandaa Mpango wa Maendeleo ya Barabara kwa Ushirikishaji wa Jamii na Ufunguaji wa Fursa za Kijamii na Kiuchumi (Mpango wa Barabara na Jamii). Lengo la Mpango huo ni **“kuboresha ujenzi na upatikanaji wa barabara ili kusaidia kuinua kipato cha watu wanaoishi vijijini, wanaume kwa wanawake, katika maeneo yaliyoteuliwa na kujenga uwezo wa usimamizi endelevu wa barabara za vijijini”** kupitia ujenzi na ukarabati, na utoaji wa msaada endelevu kwa TARURA.

Mpango wa Barabara na Jamii unahusisha maeneo yote ya nchi na umeandaliwa kwa ajili ya kukarabati na kuboresha maeneo mahususi ya mtandao wa barabara za vijijini. Mpango huu utanzia katika Kongano ya Ihemi katika Mpango wa SAGCOT unaojumuisha wilaya za Iringa ambazo ni Iringa Vijijini, Mufindi na Kilolo. Si tu kwamba Kongano ya IHEMI ni miongoni mwa maeneo yenye fursa nzuri za kilimo nchini Tanzania, bali pia ni eneo lenye umasikini uliokithiri.

Barabara ya Wenda – Mgama itasanifiwa kwa kuzingatia dhana ya “Usanifu wa Barabara kwa Manufaa ya Binadamu” ambayo inalenga kuwashirikisha na kuwalinda watumiaji wa barabara. Usanifu wa Barabara kwa Manufaa ya Binadamu unazingatia mahitaji ya watumiaji wote wa barabara huku ikiweka msisitizo wake kwa watembea kwa miguu na makundi yaliyo katika hali hatarishi ili kuhakikisha kuwa makundi yote ya watumiaji wa barabara yanakuwa katika hali ya usalama, kinyume kabisa na mtazamo wa usanifu wa barabara wa kijadi unaotoa kipaumbele kwa magari.

v. Mkabala na Mbinu

Mbinu zilizotumiwa katika tathmini hii ni zile zilizopendekezwa na kukubaliwa katika Taaluma ya Tathmini ya Athari za Kimazingira na Kijamii na zinazingatia Sheria ndogondogo za Ukaguzi za mwaka 2005 (na marekebisho yake ya Mwaka 2018) na Viwango vya Kimazingira na Kijamii vinavyokubaliwa na Benki ya Dunia, ambapo mbinu zote za kitaamuli na kitakwimu zilitumika katika kukusanya na kuchambua data kwa ajili ya Tathmini hii. Mikabala mikuu iliyotumika ni pamoja na ziara za uwandani na ukaguzi, ushirikishaji wa wadau, uchunguzi wa taarifa zilizoandaliwa na hali kadhalika ubainishaji wa athari na tathmini yake.

Ushirikishaji na mashauriano mapana na wadau vilifanyika kama ilivyopangwa. Mashaurino ya mara kwa mara yalifanyika kwa kuhusisha pande zote zinazohusika na zile zinazofuatilia mchakato huu kama inavyoshauriwa na Benki ya Dunia. Kwa kutumia matokeo yaliyopatikana, athari za kimazingira na kijamii zinazohusiana na shughuli za mradi zilibainishwa kwa kutumia mbinu ya Solo la Leopold na kutathminiwa kwa kuzingatia mwongozo wa tathmini ya athari uliondaliwa na mhandishi mshauri.

vi. Mwongozo wa Kisera, Kisheria na Kitaasisi

Sera na sheria mbalimbali za kitaifa, sheria ndogondogo ikiwa ni pamoja na Viwango vya Kimazingira na Kijamii vya Benki ya Dunia 1-10 vinavyofaa kutumiwa katika mradi huu vimebainishwa na kupitiwa ili kuhakikisha kuwa mradi huu unatimiza masharti yaliyopo. Masharti hayo yanalenga kuhakikisha uendeleu wa mradi kwa kuzingatia vigezo vya kimazingira na kijamii. Vilevile, mapitio ya kisheria yaliweka mwongozo wa kitaasisi unaohusiana na mamlaka za kitaalamu na kiutawala zilizomo katika Mradi.

vii. Ufafanuzi Mfupi wa Mazingira ya Mradi

Barabara ya Wenda – Mgama ni barabara kusanyi ya wilaya iliyopo katika Halmashauri ya Wilaya ya Iringa mkoani Iringa. Inaunda tao kutoka katika Barabara Kuu ya TANZAM kwa sababu inaungana na Barabara ya Mkoa ya Kilolo – Ihemi ambayo inaungana na Barabara Kuu ya TANZAM Ihemi. Barabara hii inapita katika maeneo zinamofanywa shughuli za kilimo cha mahindi, njegere, viazi mviringo, maharage, nyanya, ufuta na shayiri. Eneo hili ni maarufu pia kwa bidhaa za misitu, hasa mbao laini.

Katika eneo la mradi huu, kuna kipande kidogo cha hifadhi ya misitu katika Kijiji cha Lyamungwe. Msitu huo upo chini ya usimamizi wa mamlaka za mitaa kwa mujibu wa Sheria ya Misitu ya mwaka 2002 na hutumiwa na jamii kwa ajili ya kuni. Hifadhi za aina hii zinakosa sifa kwa sababu ya matumizi mabaya yasiyo endelevu ya kuni za kupikia, mbao, nguzo na mkaa. Hata hivyo, katika kijiji hiki kuna sheria ndogondogo zinazosaidia kusimamia na kudhibiti matumizi holela ya rasilimali za miti zinazolenga kuhuisha hali nzuri ya misitu. Mbinu inayotumika katika usimamizi wa msitu huu ni shirikishi, yaani inahusisha jamii nzima (kupitia kamati yao ya mazingira) ambapo utoaji wa taarifa kuhusu wawindaji haramu/watu wanaoingia msituni ni wajibu wa jamii nzima.

Kuna mito miwili ya kudumu inayoitwa Mlolo (wenye urefu wa kilometa 5 na mita 700) na Lyangungwe (wenye urefu wa kilometa 10 na mita 400 unaopita katika eneo la Mradi). Maji yanayopatikana katika mito hiyo yanafaa kwa shughuli za ujenzi.

Katika Awamu ya Ujenzi, malighafi zitakazotumika ni pamoja na changarawe asilia, kokoto (mawe magumu) na mchanga kama inavyofafanuliwa hapa chini:

- Mawe magumu: Machimbo mawili ya mawe magumu kwa ajili ya kokoto katika Barabara ya Wenda – Mgama yalibainishwa katika eneo la Isimila (kilometa 0 na mita 00) na kilima cha Lyamungwe (kilometa 9 na mita 300). Malighafi za mawe magumu zinahitajika kwa ajili ya kokoto za kutengenezea zege na kuwekea lami pale inapohitajika. Hakuna machimbo ndani ya eneo la Mradi; hata hivyo, mhandisi mshauri atafanya uchunguzi wa kina ili kupata chanzo chenye sifa na chenye uhakika. Miamba itachunguzwa ili kujua sifa za uimara wake, uzito na uwezo wake wa kusharabu maji ili kuwa na uhakika wa matumizi yake katika ujenzi.
- Malighafi za changarawe: Vyanzo vinne vya changarawe vimeshabainishwa katika Kijiji cha Wenda (kilometa 1 na mita 300), Kijiji cha Lyamungwe (kilometa 11 na mita 200) na Kibungulumutu (19km+000m)
- Vyanzo vya Mchanga: Kuna maeneo mawili ya vyanzo vya mchanga yaliyobainishwa katika Kijiji cha Wenda (kilometa 0 na mita 00) na Kijiji cha Mlolo (kilometa 6 na mita 700). Mchanga

utahitajika kwa ajili ya uandaaji wa zege na uimarishaji wa udongo dhaifu. Matokeo ya vipimo yanaonesha kwamba mchanga huo unafaa kwa zege na shughuli za ujenzi wa barabara.

Ubora wa vyanzo vya miamba, mchanga na maji katika maeneo ya Mradi unatimiza mahitaji ya zege na shughuli za ujenzi wa barabara kama inavyobainishwa katika Vigezo na Viwango vya Wizara ya Ujenzi vya Ujenzi wa Barabara vya Mwaka 2000. Hata hivyo, ijulikane kuwa suhula zilizo nje ya eneo la Mradi (kwa mfano, machimbo/mawe, mashimo ya changarawe na mchanga) hazijafanyiwa kazi katika hatua hii. Kabla ya ujenzi, mkandarasi atabaini vyanzo vingine vya malighafi za ujenzi nje ya zile zilizobainishwa na Taarifa ya Tathmini ya Athari za Kimazingira na Kijamii.

Sheria ya Misitu Na. 14 ya Mwaka 2002 inaelekeza leseni au vibali vya baadhi ya shughuli viombwe kwa ajili ya shughuli hizo, kama vile kufyeka au kuondoa miti au kuvuna mazao ya miti, zinapofanywa ndani ya hifadhi za misitu za kitaifa au za kieneo. Hata hivyo, katika Mradi huu, hakutarajiwi zoezi lolote la kukata miti katika hifadhi ya misitu kwa ajili ya ujenzi wa barabara kwa sababu hifadhi ya misitu iko mbali na haki ya njia ya barabara.

Kilometa zote 19 za Barabara ya Wenda – Mgama zina hali mbaya huku kukiwa na mashimo na mipando na mishuko inayosababishwa na magurudumu ya magari; njia inapitika tu wakati wa kiangazi na wakati wa masika upitikaji wake ni mgumu sana. Kwa kawaida, barabara hii hufanyiwa ukarabati mara kwa mara kama vile maboresho ya maeneo mahususi, ukarabati katika vipindi fulani, ukarabati wa kukinga madaraja na ukarabati mkubwa wa madaraja.

Ujenzi wa Barabara ya Wilaya ya Wenda – Mgama (Km 19) utahamasisha maendeleo ya kiuchumi kwa sababu utapunguza gharama za usafiri na kurahisisha usafirishaji wa bidhaa kutoka maeneo ya Mradi kwenda katika masoko mbalimbali ndani na nje ya Mkoa wa Iringa.

Sehemu Muhimu za Mradi Huu wa Barabara ni:

Jedwali 0-1 Sehemu Muhimu za Mradi Huu wa Barabara

Sehemu Muhimu	Hali Ilivyo (Haijajengwa)	Kilichopendekezwa katika Usanifu
<ul style="list-style-type: none"> Sehemu ya kupita magari 	Mita 3-5	Mita 6 (Ujenzi wa matabaka mawili ya lami: msingi wa mm 150 80G)
<ul style="list-style-type: none"> Maegesho ya dharura 	Hakuna	Mita 1 kila upande
<ul style="list-style-type: none"> Njia za watembea kwa miguu 	Hakuna	Mita 1.2-2 kwa kila upande, lakini zikitofautiana
<ul style="list-style-type: none"> Madaraja 	<ul style="list-style-type: none"> Kuna madaraja mawili Madaraja haya yalijengwa kwa kutumia zege na katika hatua za mwisho yalijengwa kwa mawe. 	<ul style="list-style-type: none"> Madaraja mapya 2 yatajengwa Urefu (tao 1 la urefu wa mita 20) Ulalo wa kivuko cha daraja upana mita 12 Njia ya magari katika daraja lililopendekezwa ni mita 7.0. Kila njia itakuwa na mita 3.5 na mita 2.0 za watembea kwa miguu kila upande
<ul style="list-style-type: none"> Mifereji inayotoa maji nje ya barabara 	Ukubwa usioridhisha wa mifereji inayotoa maji nje ya barabara	Kujenga mifereji mingi iwezekanavyo (kwa kuwa itabeba vyote vilivyomo katika mifereji na kumwaga katika maeneo yaliyoandaliwa)

<ul style="list-style-type: none"> Mifereji ya pembezoni mwa barabara 	<p>Ukubwa usioridhisha wa mifereji ya pembezoni mwa barabara</p> <p>Kujaa kwa baadhi ya mirefereji</p>	<p>Kujenga mifereji mingi iwezekanavyo (kwa kuwa itabeba vyote vilivyomo katika mifereji na kumwaga katika maeneo yaliyoandaliwa)</p>
<ul style="list-style-type: none"> Makalvati 	<ul style="list-style-type: none"> Mradi huu wa barabara una miundombinu 74 ya maji ambayo inajumuisha makalvati ya aina zote mbili, yaani yale ya bomba ya zege na ya bati na yale ya pembe nne. Makalvati ya bomba yalijengwa kwa kutumia zege na mabati 	<ul style="list-style-type: none"> Imependekezwa kuwe na makalvati 23 (makalvati mapya ya kisasa yanayokidhi masuala yanayohusiana na maji na muundo kwa ujumla) Urefu wa mita 4-6
<ul style="list-style-type: none"> Njiapanda T na njia-mizunguko 	<p>Hakuna</p>	<p>3 Wenda, Kikombwe na Mgama</p>
<ul style="list-style-type: none"> Maegesho ya mabasi katika vituo vya mabasi 	<p>Karibu na makazi ya watu</p>	<p>Sehemu nne katika kila kituo cha kijiji</p>
<ul style="list-style-type: none"> Alama za Barabarani na Vivuko 	<p>Hakuna</p>	<p>Imependekezwa viwepo katika kila kitovu cha kijiji, karibu na shule, karibu na madaraja na kona kali</p>
<ul style="list-style-type: none"> Taa za Barabarani 	<p>Hakuna</p>	<p>Ziwekwe katika njiapanda T iliyopendekezwa katika Kijiji cha Wenda</p>
<ul style="list-style-type: none"> Maegesho pembeni mwa barabara 	<p>Hakuna</p>	<p>Imependekezwa yawepo katika Kijiji cha Kikombwe</p>

viii. Ushirikishwaji wa Wadau katika Tathmini ya Athari za Kimazingira na Kijamii

Kulifanyika mashauriano ya kina kupitia mikutano, majadiliano na usaili wa kina kwa kushirikiana na wadau mbalimbali waliobainishwa kama wafuatiliaji wa Mradi huu na wale walioathiriwa na Mradi ili kushughulikia masuala, mitazamo, maoni na mapendekezo yao. Mashauriano yalifanyika katika ngazi tofauti kama inavyooneshwa kwa muhtasari hapa chini:

- > Sekretarieti ya Mkoa: Mkuu wa Mkoa wa Iringa
- > Ngazi ya Taasisi
 - TARURA
 - TANROADS
 - TANESCO
 - TTCL
- > Ofisi ya Mkuu wa Wilaya
- > Ofisi za Serikali za Mitaa
 - Afisa Mtendaji wa Mtaa
 - Idara ya Mazingira na Usafi
 - Idara ya Ardhi na Mipango-miji
 - Idara ya Maendeleo ya Jamii
- > Ngazi ya Kata: Kata ya Kikombwe, Kata ya Lyamgungwe na Kata ya Mgama

› Vijiji: Wenda, Lyamungwe, Kikombwe and Mgama

› Jamii:

- Wazee (Kuanzia miaka 60) – wanawake
- Wazee (Kuanzia miaka 60) – wanaume
- Wanafunzi wa shule ya msingi – wa kike
- Wanafunzi wa shule ya msingi – wa kiume
- Wanafunzi wa shule ya sekondari – wa kike
- Wanafunzi wa shule ya sekondari – wa kiume
- Watu wenye ulemavu
- Vijana (miaka 18 hadi 35) – wa kike
- Vijana (miaka 18 hadi 35) – wa kiume
- Wanawake (miaka 35 hadi 60)
- Wanaume (miaka 35 hadi 60)
- Waendesha-bodaboda

ix. Matokeo ya Mashauriano ya Wazi

Mashauriano na wadau yalifanyika katika miezi ya Mei, Oktoba na Novemba, 2019.

Masuala ya msingi na mapendekezo yaliyokusanywa kutoka katika mikutano ya mashauriano na wadau ni pamoja na:

- Barabara itakayoboreshwa itapunguza gharama za matengenezo ya pikipiki
- Ukataji wa uoto katika eneo la mradi unapaswa kufanywa kwa kiwango kidogo katika ujenzi wa barabara hii.
- Uchafuzi wa mazingira kwa vumbi linalotokana na shughuli za ujenzi
- Maeneo ya ardhi yanayotarajiwa kutwaliwa na upotevu wa maeneo ya biashara wakati wa ujenzi wa barabara.
- Fursa za ajira, ambapo wenyeji wa maeneo haya watapewa kipaumbele, hasa kazi ambazo hazihitaji utaalamu maalumu.
- Ulazima wa kutoa tahadhari kuhusu hatari za maambukizi ya UKIMWI na magonjwa mengine ya ngono na kupendekeza njia za kupunguza au kuepuka kabisa tatizo hilo kutoka mwanzo hadi mwisho wa Mradi.
- Kuwepo ama kuwezekana kuwepo ajira za watoto zitakazoweza kusababisha utoro wa shule.
- Ujio wa idadi kubwa ya wafanyakazi ambayo inaweza kuongeza mahitaji katika huduma za afya, upatikanaji wa bidhaa na huduma, ambavyo kwa pamoja vinachangia vitu kupanda bei zitakazowashinda wenyeji wa maeneo hayo.

x. Machaguo Mbadala Yaliyozingatiwa

Uchambuzi wa kijamii na kiuchumi ulifanyika katika machaguo manne kama inavyofafanuliwa hapa chini:

- Chaguo la 0: Hakuna cha kufanya
- Chaguo la 1: Kukarabati barabara kwa kiwango cha changarawe kwa kutumia Msingi Uliopo bila Kuzingatia Urazini wa Mradi
- Chaguo la 2: Kujenga barabara kwa kiwango cha lami (matabaka mawili): Msingi wa mm 150 G 80 kwa kuzingatia Urazini wa Mradi
- Chaguo la 3: Kujenga barabara kwa kiwango cha lami (matabaka mawili): Msingi wa mm 150mm C1 kwa kuzingatia Urazini wa Mradi

Kwa mujibu wa uchambuzi ambao wastani wa matokeo yake ya msingi wa makisio yanaonesha kwamba kuboresha barabara kwa Chaguo la 2 (kujenga katika kiwango cha lami: kwa msingi wa mm 150 G80 ulikuwa na thamani halisi ya kiwango cha juu cha Dola za Kimarekani ambacho ni milioni 8.407 ikilinganishwa na Chaguo la 1 (ukarabati wa kiwango cha changarawe) ambao ulikuwa na thamani halisi ya Dola za Kimarekani milioni 1.458 na Chaguo la 3 (kujenga kwa kiwango cha lami: msingi wa mm 150 C1) uliokuwa na thamani halisi ya Dola za Kimarekani milioni 7.859. Kwa hiyo, Chaguo la 2 litatekelezwa kwa ajili ya Mpango wa Maendeleo ya Barabara kwa Ushirikishaji wa Jamii na Ufunguaji wa Fursa za Kijamii na Kiuchumi. Uteuzi wa machaguo haya ya miradi umejadiliwa kwa kina katika sehemu ya 2.9 ya Ripoti hii ya Tathmini ya Athari za Kimazingira na Kijamii.

xi. Athari Kuu na Umuhimu Wake

Matokeo yanayotarajiwa katika awamu zote za mradi huu yameorodheshwa hapa chini:

Athari Mahususi katika Eneo la Ujenzi

- Uzuiaji wa kuyafikia maeneo yenye rasilimali, biashara au huduma, na mali
- Mashimo ya machimbo yaliyoachwa yanayoweza kusababisha madimbwi ya maji yenye uwezo wa kusababisha malaria na homa ya matumbo kushamiri
- Uchafuzi wa hewa na sauti kutokana na kulipua miamba katika maeneo ya machimbo
- Uchafuzi wa hewa safi kutokana na vumbi linalosababishwa na usafirishaji wa malighafi katika malori yasiyofunikwa/au wakati wa kupakua mzigo katika eneo la mradi
- Uchafuzi wa maji yanayotiririka (au/na vijito na mito) kutokana na kushindwa kudhibiti kemikali (kama vile mafuta, vilainishi, viovu vya haidroliki, vipozeshi).
- Kubadilika kwa ubora wa maji na kutibua mito
- Kupotea kwa makaburi
- Uwezekano wa kutokea kwa ajali kwa watumiaji wa barabara na watoto wa shule
- Ajali kwa mifugo
- Upotevu wa mimea
- Athari katika udongo
- Athari katika rasimali maji

Athari katika Awamu ya Utekelezaji

- Kupungua kwa gharama za usafiri;
- Ukuaji wa uchumi unaochochewa na kukua kwa shughuli za kibiashara;
- Kupotea kwa ajira
- Kuongezeka kwa ajali kwa watu na mifugo

Athari Mbalimbali kwa Ujumla

- Ajira za watoto zinazoweza kusababisha utoro wa shule
- Ajali za barabarani
- Unyanyasaji wa kijinsia
- Kuenea kwa UKIMWI na magonjwa mengine ya ngono

Athari Chanya:

- Fursa za ajira
- Kupungua kwa gharama za usafiri

xii. Mpango wa Usimamizi na Upunguzaji wa Athari za Kimazingira na Kijamii Hatua za upunguzaji wa athari zinajumuisha:

- Miundombinu ya maji lazima izingatie makadirio ya juu ya mafuriko na uwezekano wa kutokea kwa mabadiliko katika utiririshaji wa maji ya mito katika wakati ujao kutokana na mabadiliko ya tabianchi
- Utekelezaji wa hatua za kudhibiti mmomonyoko wa udongo ili kupunguza uingiaji wa mashapo na kusababisha kutibuliwa kwa mito wakati wa ujenzi wa madaraja (kwa mfano, ujenzi wa kuta zinazodhibiti mmomonyoko, upandaji wa nyasi na kuimarisha kingo za mito kwa kujaza mawe).
- Mkandarasi anapaswa kupata kibali cha mazingira kutoka katika taasisi inayohusika na mazingira kabla ya kufungua machimbo ya mchanga na kokoto.
- Kuhakikisha kuwa watu wa maeneo ya mradi, hasa watoto, wanakaa mbali na eneo la ujenzi, maeneo ya kulipua miamba na maghala ya vifaa hatarishi.
- Kufuata maelekezo na hatua za kushughulikia malighafi taka za kemikali; lazima kuwe na Mpango wa Usimamizi unaoelezea vihatarishi na hatua za kupunguza ukali wa vihatarishi hivyo kwa kila mto au kijito kikubwa
- Matumizi ya maji lazima yazingatie Sheria ya Usimamizi wa Rasilimali za Maji ya Mwaka 2009 ambapo matumizi ya binadamu yanapewa kipaumbele; na
- Hatua za kuhakikisha usalama barabarani kama vile kuweka matuta, vivuko vya milia, alama za tahadhari ziwekwe katika maeneo yote yenye watu wengi, maeneo yaliyoendelezwa na maeneo ya shule katika vijiji vyote.

Wanaohusika na Utekelezaji wa Mpango wa Usimamizi na Upunguzaji wa Athari za Kimazingira na Kijamii ni hawa wafuatao:

- TARURA
- Mkandarasi
- Mhandisi Msimamizi
- Halmashauri ya Wilaya ya Iringa kupitia Idara ya Jamii, Mazingira na Rasilimali
- Serikali za vijiji

xiii. Mpango wa Ufuatiliaji wa Mazingira na Jamii

Utaratibu wa ufuatiliaji uliandaliwa na kuwasilishwa katika Mpango wa Usimamizi na Upunguzaji wa Athari za Kimazingira na Kijamii ambapo shughuli na viashiria vilivyopendekezwa kwa ajili ya ufuatiliaji vimewasilishwa. Mpango wa Usimamizi na Upunguzaji wa Athari za Kimazingira na Kijamii unajumuisha mambo mbalimbali yanayotakiwa kuzingatiwa wakati wa ufuatiliaji na katika awamu tofauti ya mradi, ikiwa ni pamoja hatua za upunguzaji wa athari za Mradi, vigezo vinavyopaswa kufuatiliwa, mdafao, usampulishaji na kiwango kinachotarajiwa kufanyiwa kazi. Ufuatiliaji wa masuala yanayohusiana na mazingira utafanywa ili kuhakikisha kuwa shughuli zote za utekelezaji zinaendana na kufuata masharti ya mazingira na vigezo. Wakala wa Barabara za Vijijini na Mijini (TARURA) atakuwa msimamizi mkuu wa utekelezaji wa Mradi huu.

xiv. Tathmini ya Rasilimali/Uchambuzi wa Gharama na Faida

Kwa ujumla, TARURA inaunga mkono sana utekelezaji wa mradi wa kujenga Barabara ya Wenda-Mgama (Km 19) katika Wilaya ya Iringa – Kongano ya Ihemi katika kiwango cha lami. Faida zake ni kuwa na barabara nzuri, kupunguza muda wa safari, kuongeza watumiaji wa barabara, kuchochea maendeleo ya kilimo yanayochangiwa na watumiaji wa barabara na faida zinazotoka nje ambazo zinahusiana na mazao ya ziada ya kilimo.

Kwa malengo ya uchambuzi kwa kutumia kiolezo cha RED V4.0, machaguo matatu (3) mbadala yalichambuliwa kama ifuatavyo:

- Chaguo la 0: Kufanya kwa kiwango cha chini ama kutofanya kabisa
- Chaguo la 1: Kukarabati barabara kwa kiwango cha changarawe kwa kutumia Msingi Uliopo bila Kuzingatia Urazini wa Mradi
- Chaguo la 2: Kujenga barabara kwa kiwango cha lami (matabaka mawili): Msingi wa mm 150 G 80 kwa kuzingatia Urazini wa Mradi
- Chaguo la 3: Kujenga barabara kwa kiwango cha lami (matabaka mawili): Msingi wa mm 150mm C1 kwa kuzingatia Urazini wa Mradi

Utafiti huu ulishughulikia uchambuzi wa kiuchumi wa kipande cha barabara kinachohusika, na matokeo yake ni haya yafuatayo:

- Matokeo ya wastani wa msingi wa makisio yanaonesha kwamba kuboresha barabara kwa Chaguo la 2 (kujenga katika kiwango cha lami: kwa msingi wa mm 150 G80 ulikuwa na thamani halisi ya kiwango cha juu cha Dola za Kimarekani milioni 8.407 ikilinganishwa na Chaguo la 1 (ukarabati wa changarawe) ambao ulikuwa na thamani halisi ya Dola za Kimarekani milioni 1.458 na Chaguo la 3 (kujenga kwa kiwango cha lami: msingi wa mm 150 C1) ulikuwa na thamani halisi ya Dola za Kimarekani milioni 7.859.
- Kwa kuzingatia gharama, kuongeza gharama kwa 20% na kupunguza faida kwa 20% kulionesha kuwa Chaguo la 2 lilikuwa na ongezeko la thamani halisi la Dola za Kimarekani milioni 4.159 ikilinganishwa na Chaguo la 1 na Chaguo la 3 ambayo yalikuwa na thamani halisi ya Dola za Kimarekani milioni 0.883 na 3.258 mtawalia.
- Kwa kuzingatia vihatarishi, uwezekano wa kuwa na thamani halisi chini ya sifuri ulikuwa chini kwa Chaguo la 2 ambayo ni 0.2% ikilinganishwa na Chaguo la 1 lenye 21.2% na Chaguo la 3 lenye asilimia 1.3%.

Kwa hiyo, kutokana na uchambuzi huo hapo juu, ilionekana wazi kwamba Chaguo la 2 kwa ujenzi wa Barabara ya Wenda – Mgama (Km 19) lilikuwa bora kabisa kiuchumi likilinganishwa na machaguo mengine matatu yaliyosalia.

Gharama za utekelezaji wa Mpango wa Usimamizi na Upunguzaji wa Athari za Kimazingira na Kijamii na Mpango wa Ufuatiliaji wa Mazingira na Jamii zinakadiriwa kuwa Shilingi za Kitanzania 221,000,000 na 230,000,000 mtawalia. Kwa ujumla, athari zote za kimazingira zilizobainishwa ni ndogo zikilinganishwa na faida ya uwekezaji huu wenye manufaa makubwa kwani zinaweza kupunguzwa au kudhibitiwa na rasilimali fedha zinazohitajika kupunguza athari hizo.

xv. Uondoaji wa Mitambo katika Eneo la Mradi

Kwa ujumla, shughuli kubwa za kuondoa mitambo katika eneo la mradi, pamoja na shughuli nyingine, ni kufungua mitambo iliyotumiwa katika mradi, kurejesha hali asilia ya ardhi, uoto wa mimea, kurejesha maisha katika hali ya kawaida, kurejesha utiririkaji wa mito na vijito katika hali yake ya asili.

xvi. Hitimisho na Mapendekezo

Taarifa ya Tathmini ya Athari za Kimazingira na Kijamii iliyowasilishwa haikuona vihatarishi vya msingi au athari zinazozuia mazingira kurejeshwa katika hali yake ya awali ambazo zingeweza kuzuia utekelezaji wa mradi huu. Athari kubwa za kimazingira na za kijamii ambazo zinaweza kujitokeza kutokana na utekelezaji wa mradi huu zimebainishwa sambamba na hatua zake za kupunguza ukali wa athari hizo.

Athari kubwa zilizobainishwa katika mradi huu kwa kiasi kikubwa zinatokana na shughuli za ujenzi kama vile vumbi, kelele, machimbo ya mchanga na changarawe, uchafuzi wa maji, uwezekano wakutokea ajali, uzalishaji wa taka, na uhamishaji wa watu na makazi. Athari za kijamii zinazotokana na mradi zilizobainishwa ni pamoja na maambukizi ya UKIMWI, Afya na Usalama Kazini, na fursa za ajira.

Kulingana na hali na eneo la mradi, ripoti hii inahitimisha kwamba shughuli za mradi unaopendekezwa zitakuwa na athari hasi za kibiomaumbile katika mazingira na zile za kijamii na kiuchumi zinazodhibitika, ikiwa tu Mpango wa Usimamizi na Upunguzaji wa Athari za Kimazingira na Kijamii na Mpango wa Ufuatiliaji inatekelezwa kama ilivyowasilishwa katika Tathmini hii. Kwa hiyo, inapendekezwa kuwa mradi uendelee kwa masharti ya TARURA kukubaliana na Mpango wa Usimamizi na Upunguzaji wa Athari za Kimazingira na Kijamii na Mpango wa Ufuatiliaji uliopendekezwa na Tathmini ya Athari za Kimazingira na Kijamii kuwa ni sahihi na masharti mengine yoyote yatakayotolewa na Baraza la Usimamizi wa Mazingira (NEMC) baada ya kushauriana na mamlaka za usimamizi na wadau wengine.

EXECUTIVE SUMMARY

i. Title and Location of the Proposed Project

Environmental Impact Statement [EIS] for Upgrading of Wenda - Mgama Road (19 km) to Appropriate Sealing Standard in Iringa District - Ithemi Cluster.

ii. Name of the Developer and Contact Details

Tanzania Rural and Urban Roads Agency (TARURA)

TARURA House

Mtumba Government City

Vice President Road

Mtumba Dodoma

Telephone: +255 26 29638443

Contact Person: Eng. Victor H. Seff

Chief Executive Officer

iii. Name of the Consultant

MHANDISI Consultancy Ltd

Plot No. 305B, Mikochoeni

P. O. Box 12965,

Dar es Salaam, Tanzania

Contact Person: Eng Patrick Kasera

Mobile: 0715 260 418

iv. Brief Outline and Justification of the Project

The World Bank is currently preparing the RISE Program, in collaboration with the Government of Tanzania (GoT) through its executive agencies, the Tanzania Rural and Urban Roads Agency (TARURA) and Tanzania National Roads Agency (TANROADS), whose objective is **“to improve road connectivity and access in support of livelihoods of rural population, both male and female, in selected rural areas, and build capacity in the sustainable management of rural roads”** through the upgrading and maintenance of rural roads and providing sustained support to TARURA.

The RISE project is a nationwide one in scope and is earmarked for maintenance and spot improvements for the rural network, despite the fact that initially it will concentrate on the IHEMI Cluster within the SAGCOT framework which includes Iringa (Rural), Mufindi and Kilolo districts in Iringa Region. The IHEMI cluster not only presents one among the highly agricultural potential area in Tanzania but also presents an area with high level of poverty.

The Wenda - Mgama Road will be designed around the concept of “People Centered Road Design” that involves engaging, including and protecting the road users. The People Centred Road Design considers the requirement of all road users with preference to pedestrian and vulnerable groups so as to ensure safety to all types of the road users in contrast to the traditional approach of road design which mostly considers motor vehicles.

v. Approach and Methodology

Recommended standard methods for conducting ESIA studies (in compliance with ESIA and Audit (Amended) Regulations 2005 and World Bank Environmental and Social Standard (ESS) were used in this study, whereby both qualitative and quantitative methodologies were employed in collecting and analyzing data for the ESIA. The main approaches included field visit and inspections, stakeholder’s engagement, specialist desk surveys and identification and evaluation of impacts.

Extensive stakeholder engagement and consultations were conducted. Multiple rounds of consultation were done with interested and affected parties as recommended by WB. Based on the findings the environmental and social impacts associated with the project activities were identified using a Leopold Matrix and evaluated per the Consultant's impact assessment framework.

vi. Policy, Legal and Institutional Framework

Various national policies, legislation, regulations including WB ESS 1-10 relevant to the project have been identified and reviewed to ensure that the project complies with their requirements. The requirements aim at ensuring project sustainability through appropriate consideration and integration of environmental and social parameters. Furthermore, the legal review exercise also established the institutional framework relative to the various technical and administrative jurisdictions involved in the Project.

vii. Brief Description of the Project Environment

The Wenda - Mgama road is a District collector road located in Iringa District Council in Iringa region. It forms an arch to TANZAM Highway as it connects to Kilolo - Ihemi regional road which connects with TANZAM highway at Ihemi. The road passes through agriculture potential areas which produce maize, green peas, irish potatoes, beans, tomatoes, sesame and barley. The area is also potential of forest products particularly softwood timber.

Along the project area, a small segment of Forest Reserves (FRs) is noted at Lyamungwe village. The forest is subject to local authority management according to the Forest Act (2002) and used for production of wood for consumption by the communities. These FRs are relatively degraded due to unsustainable resource use for firewood for cooking, timber, poles, charcoal materials. There are by laws within the village to enforce the management and control of resources use with the objective of restoring good state of the forests. The management approach is community based (through their environmental committee) where of reporting poachers/people who encroach the forests is the responsibility of the community concerned.

There are two perennial rivers namely Mlolo (Chainage 5km+700m) and Lyamungwe (Chainage 10km+ 400m) which traverses in the project area. The water in the mentioned rivers is suitable for construction.

During the Construction Phase, materials to be used shall; include natural gravel (borrow materials), crushed aggregate (hardstones) and sand as explained below;

- **Hardstones:** Two potential quarries/hardstone for crushed aggregate along Wenda- Mgama road were identified at Isimila (Km 0+000m) and Lyamungwe Hill (km 9+300m). Hard stone materials are required for production of aggregates for concrete works and bituminous surfacing where necessary. There is no existing quarry site at the vicinity of the project area, however the consultant will do thorough investigation to obtain the qualified and reliable source. Rocks will be investigated for their strength characteristics, densities and water absorptions so as to ascertain their use in construction
- **Gravel materials:** Four gravel sources were identified at Wenda village (1km +300m), Lyamungwe village (9km +700m), Lyamungwe (11km+200m) and Kibungulumutu (19km+000m)
- **Sand sources:** Two potential sand sources were identified at Wenda Village (0km+100m) and Mlolo village (6km +700m). Sand materials will be required for concrete works and stabilization of weak soils. The test results show that, the sand is suitable for concrete and roadworks.

The quality of local rock sources, sand sources and water sources are also compliant with the requirements for concrete and road works as specified in the MOW Standard Specification for Road Works 2000. However, it should be noted that offsite facilities (e.g. quarry, borrow pit and

sand) are not determined at this stage. Before construction, the contractor will identify other sources for construction materials apart from those identified in this ESIA report.

The Forest Act No 14 of 2002 requires that a license or permits for certain activities has to be requested for activities undertaken within the national or local forest reserves, such as, among others, felling or removing trees or harvesting forest produce. However, for this project, cutting down of trees within the forest reserve to pave way for road construction is not envisaged as the forest reserve is far from the road RoW.

The whole 19km of the Wenda - Mgama road is in poor condition and characterized by presence of potholes and ruts; the road is passable only during dry season and passability becomes difficult during rainy season. The maintenance operations carried out on this road section at the moment are Routine and Recurrent, Spot Improvement, Periodic Maintenance, Bridge Preventive and Bridge Major Repair.

The upgrading of Wenda –Mgama District Road (19km), will stimulate economic growth as it will reduce transport costs and facilitate the transportation of products from the project areas to the market centers in Iringa and outside the region.

Key components of the project road are:

Table 0-1 Key Component of the project road

Key component	Existing Situation (unpaved)	Proposed into the design
• Carriage Way	3-5m	6m (Upgrade to DBSD: Base 150mm G80)
• Shoulders	None	1m each side
• Pedestrian Walkways	None	1.2-2m either side but varies
• Bridges	<ul style="list-style-type: none"> Two existing Bridges Bridges were constructed using concrete material while their end structures were constructed using concrete and stone-masonry work 	<ul style="list-style-type: none"> 2 new bridges will be constructed Length (1 span of 20m) Bridge deck width is 12m The carriageway width for the proposed new Bridges is 7.0m to cater 2-Lane traffic. Each lane shall be 3.5m and a 2.0m walkway on each side
• Outlet Ditches	Inadequate size of outlet ditches	As many as possible (as they carry run-off and sediment to properly designed discharge point)
• Side Ditches	Inadequate size of side ditches Siltling of some side ditches	As many as possible (as they carry run-off and sediment to properly designed discharge point)
• Culverts	<ul style="list-style-type: none"> Project road have a total of 74 existing drainage structures, which includes pipe culvert both corrugated metal pipe and concrete pipe culvert and box culverts Pipe culverts were mainly constructed using concrete and corrugated metal 	<ul style="list-style-type: none"> Proposed 23 culverts (with new hydraulically and structurally sound culverts) 4-6meter span

• T- Junctions/round about	None	3 Wenda, Kikombwe and Mgama
• Bus Bays	Near the settlements	4 at each village center
• Road Signs and Crossings	None	Proposed at all village centers, near school, near bridges and sharp corners
• Road Lights	None	At the proposed T junction at Wenda village
• Road Side Parking Lot	None	Proposed at Kikombwe village

viii. Stakeholders Involvement in the ESIA

Detailed consultations through meetings, in-depth discussions and interviews were held with various identified stakeholders as interested and affected parties of the proposed project in order to solicit their concerns, views, opinions and suggestions. Consultations were conducted at different levels as summarized below.

- > Regional secretariat: Iringa Regional Commissioner
- > Institutional level
 - TARURA
 - TANROADS
 - TANESCO
 - TTCL
- > District Commissioner Office
- > Local Government Offices
 - District Executive Director
 - Environment and sanitation department
 - Land and Town planning department
 - Community development department
- > Ward level: Kikombwe ward, Lyamungwe ward and Mgama ward
- > Villages: Wenda, Lyamungwe, Kikombwe and Mgama
- > Communities:
 - Elderly people (60+ years) – female
 - Elderly people (60+ years) – male
 - Primary school pupils – female
 - Primary school pupils – male
 - Secondary school pupils – female
 - Secondary school pupils – male
 - Disabled people
 - Youth (18 to 35 years) – female
 - Youth (18 to 35 years) – male
 - Women (35 to 60 years) – female
 - Men (35 to 60 years) – male
 - Motorized transports-boda boda

ix. Results of Public Consultations

Stakeholders consultations were held in May, October and November, 2019.

The major concerns, issues and recommendations gathered from stakeholder consultations include:

- Improved road will reduce the costs for maintenance and repairs of motorcycles
- Vegetation clearance in the area should be minimized during construction activities
- Dust pollution from construction activities
- Potential land take and loss of business premises during road construction

- Employment opportunities, preferably to locals, especially those jobs/opportunities that do not require specialized skills should be optimized
- The risks of spread of HIV/AIDS and other sexually transmitted diseases has to be given due considerations during project life cycle and propose proper mitigation to alleviate/reduce the problem
- Child labor and associated school truancy
- Labour influx that could potentially lead to increased demand and competition for local social and health services, as well as for goods and services, which can lead to price hikes and crowding out of local consumers.

x. Alternatives Considered

The Socio-Economic analysis was done around four alternatives as stipulated below:

- Alternative 0: Do Nothing
- Alternative 1: Base Case or Without Project Case/Gravel Road Rehabilitation/Maintenance
- Alternative 2: With Project Case –Upgrade to DBSD: Base 150mm G80
- Alternative 3: With Project - Upgrading to DBSD: Base 150mm C1

According to the analysis whose standard base case results showed that improving the project road to Alternative 2 (Upgrade to DBSD: Base 150mm G80) had the highest NPV of USD 8.407 Mln compared to Alternative 1 (Gravel Road Rehabilitation) which had an NPV of USD 1.458 mln and Alternative 3 (Upgrade to DBSD: Base 150mm C1) which had an NPV of USD 7.859 Mln. Hence, alternative 2 will be implemented for the RISE project. The selection of projects alternatives is discussed in detail in section 2.9 of this ESIA report

xi. Major Impacts and their Significance

The impacts predicted for all of the phases of the project are outlined below:

Construction Site specific impact

Involuntary restrictions of access to resources, business or services; property or asset

- Un-rehabilitated borrow pits can create opportunities for pools of water to gather making diseases like malaria and typhoid to exacerbate.
- Air and noise pollution due to blasting of rocks at the identified potential quarry sites
- Pollution of ambient air by dust from transportation of materials in uncovered trucks/or being offloaded at sites
- Loss of graves
- Accidents to livestock
- Loss of vegetation
- Impact on soil
- Impact on water resources

Operational phase impact

- Reduction of transport costs;
- Economic growth will be stimulated through increased business activities;
- Loss of employment;
- Increased accidents to livestock and human being.

General Impacts

- Child labor and associated school truancy
- Traffic Accidents
- Gender Based Violence
- Spread of HIV/AIDS and other Sexually Transmitted Diseases (STDs)

Positive impacts:

- Employment opportunities
- Reduction of transport costs

xii. Environmental and Social Mitigation and Management Plan

Key mitigation measures include:

- The design of the drainage structures must take account of projected maximum flood events and potential changes in future flow regimes due to climate change
- Implementation of erosion control measures to minimize sediment influx and resulting in-stream turbidity upon the construction of bridges (e.g. retaining barriers, grassing and consolidation with rock fill);
- Contractor should obtain an environmental clearance from institution responsible for environment before opening borrow pits and quarry sites.
- Ensure that local people, especially children, are kept at a safe distance of construction activities, explosion sites and hazardous materials storage
- Observation of proper handling practices and procedures for chemical input materials and wastes; Each river or large stream must have a specific Management Plan defining the risks and mitigation measures to be applied;
- Water abstraction shall be according to the Water Resources Management Act of 2009 whereby; the first priority should respectively be given to human use; and
- Traffic calming measures such as road humps, zebra, warning signs will be installed in all populated areas, developed areas and school zones in all the villages

Those responsible for the implementation of the ESMP are as follows:

- TARURA
- Contractor
- Supervising consultant
- Iringa District Council through Community, Environment and Natural Resources Department
- Ward and Village government

xiii. Environmental and Social Monitoring

A monitoring regime was established and presented in the Environmental and Social Management Plan (ESMP) whereby activities and indicators that have been recommended for monitoring are presented. The ESMP consists of a set of mitigation measures, parameters to be monitored, frequency, sampling and desired target level to be undertaken during monitoring and at different phases of the proposed project. Environmental monitoring will be carried out to ensure that all operation activities comply and adhere to environmental provisions and standard specifications. TARURA will be overall responsible for the implementation of the project.

xiv. Resource Evaluation/Cost Benefit Analysis

In general, the project to Upgrading of Wenda - Mgama Road (19 km) in Iringa District – Ihemi Cluster to Appropriate Sealing Standard for TARURA is strongly recommended.

The benefits are likely to accrue from roughness improvement, travel time savings, generated traffic, induced agricultural development traffic and exogenous benefits which relate to Agricultural Surplus Benefits.

For purposes of RED Model V4.0 analysis, three (3) alternatives were analyzed which were as follows:

- Alternative 0: Do Minimum

- Alternative 1: Base Case or Without Project Case/Gravel Road Rehabilitation/Maintenance
- Alternative 2: With Project Case –Upgrade to DBSD: Base 150mm G80
- Alternative 3: With Project – Upgrading to DBSD: Base 150mm C1

The study carried out economic analysis of the roads section and the results are presented below:

- The standard base case results showed that improving the project road to Alternative 2 (Upgrade to DBSD: Base 150mm G80) had the highest NPV of USD 8.407 Mln compared to Alternative 1 (Gravel Road Rehabilitation) which had an NPV of USD 1.458 mln and Alternative 3 (Upgrade to DBSD: Base 150mm C1) which had an NPV of USD 7.859 Mln.
- In terms of sensitivity, increasing the project Costs by 20% and Decreasing Benefits by 20% showed that Alternative 2 had higher NPV of USD 4.159 Mln compared to Alternative 1 and Alternative 3 which had NPVs of USD 0.883 mln and USD 3.258 Mln respectively.
- In terms of Risk analysis, the probability that the NPV is less than zero ($NPV < 0$) was lowest for Alternative 2 (0.2%) compared to Alternative 1 (21.2%) and Alternative 3 (1.3%).

Therefore, from the above analysis it showed that for the case of Wenda - Mgama Road (19 km) in Iringa District, Alternative 2 was economically the best option among the three options considered.

The costs for implementing Environmental and Social Management Plan (ESMP) and Environmental and Social Monitoring Plan (EMP) are estimated to be TSH 221,000,000 and 230,000,00 respectively. Most importantly, all of the identified environmental (and social) impacts can be reasonably mitigated or managed and the financial resources needed to mitigate negative impacts, when compared to the required investment, are relatively small, or cost effective.

xv. Demobilization

Demobilization activities are largely related to equipment disassembling, restoration of natural ground, vegetation growth, restoration of different life forms, drainage flow and natural regressing among others. In general, demobilization activities are largely related to equipment disassembling, restoration of natural ground, vegetation growth and restoration of different life forms, drainage flow and natural regressing among others.

xvi. Conclusion and Recommendations

The Environmental and Social Impact Assessment report presented herein found no substantial risks or irreversible impacts that would preclude project implementation. Major potential environmental and social impacts that may arise due to project implementation have been provided with corresponding mitigation measures.

Major impacts identified for the project are mainly related to civil construction works such as dust, noise, exploitation of materials sources, water pollution, potential accidents, waste generation, resettlement, to mention a few. Social impacts identified are also related to construction such as HIV/AIDS, Occupational Health and Safety, Employment Opportunities etc.

Given the nature and location of the project, the conclusion is that the proposed project activities will have manageable negative impacts on the biophysical and social-economic environments, provided that the proposed ESMP and Monitoring Plan are appropriately implemented as presented in this ESIA. It is therefore recommended that the project be allowed to proceed on condition that TARURA commits to the ESMP and Monitoring Plan proposed in this ESIA as appropriate and to any further conditions that may be imposed by NEMC following consultations with lead agencies and other stakeholders.