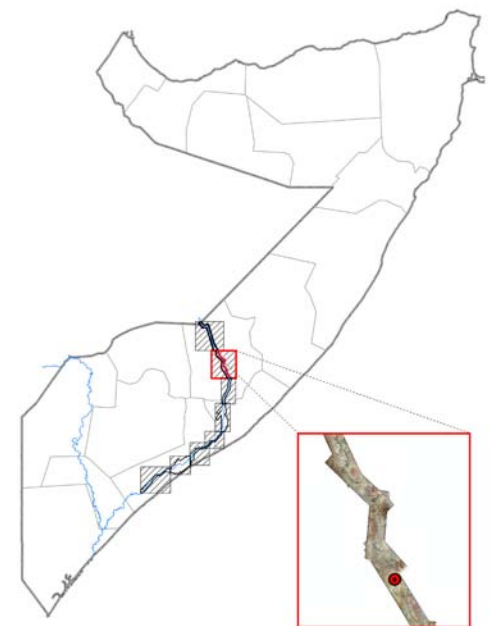
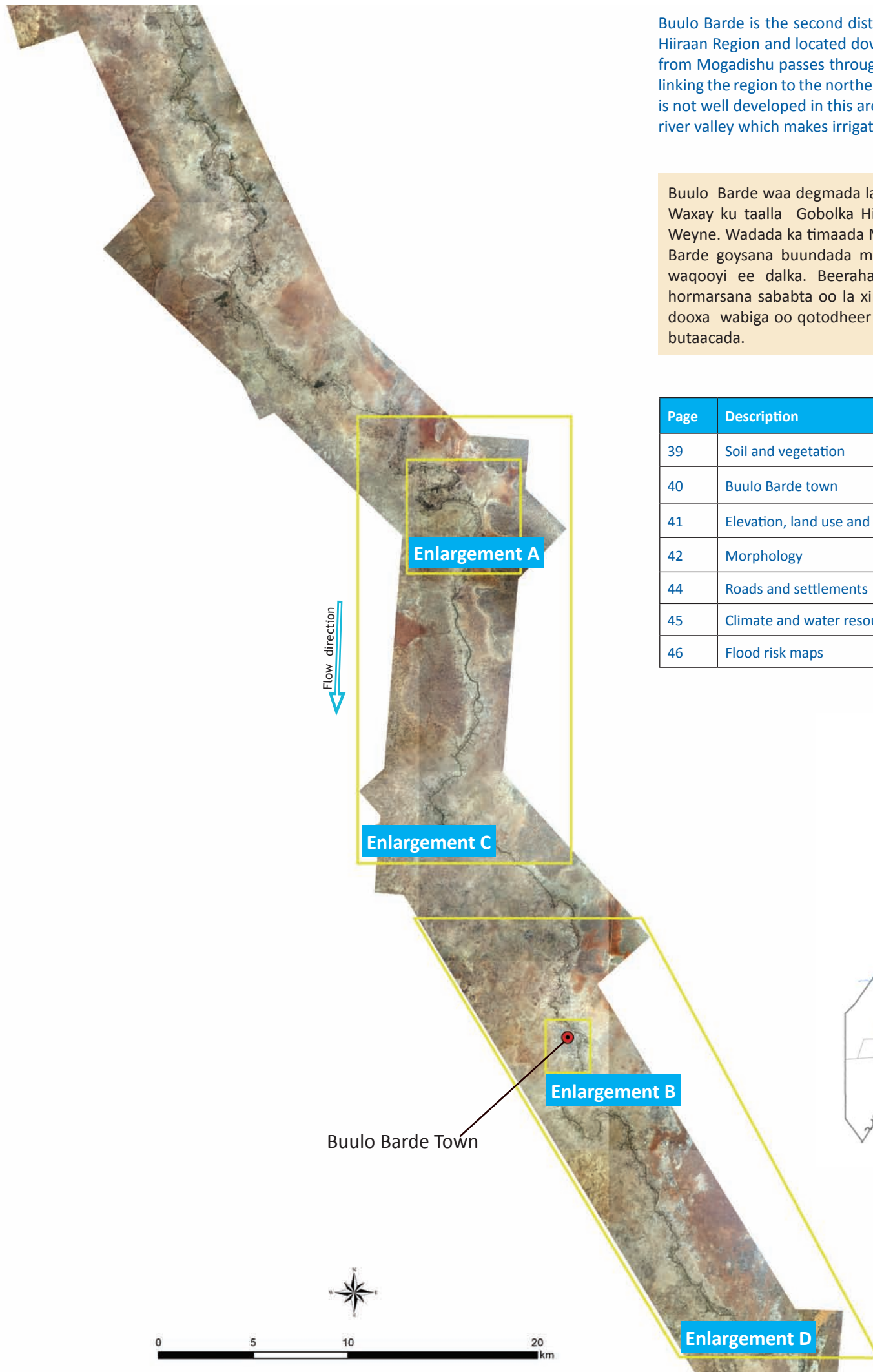


Buulo Barde

Buulo Barde is the second district town along the Shabelle River. It is in Hiiraan Region and located downstream of Belad Weyne. The main road from Mogadishu passes through the town crossing an important bridge, linking the region to the northern part of the country. Irrigated agriculture is not well developed in this area partly because of poor soils and a deep river valley which makes irrigation by gravity difficult.

Buulo Barde waa degmada labaad ee ku taala jidda Wabi Shabeelle. Waxay ku taalla Gobolka Hiiraan biyo shubka ka hooseeya Belad Weyne. Wadada ka timaada Mogadishu ayaa marta Degmada Buulo Barde goysana buundada muhiimka ee ku xirta gobolka qaybaha waqooyi ee dalka. Beeraha waraabka deegaankan ah aad uma hormarsana sababta oo la xiriirta ciida xun (oo nafaqo daran) iyo dooxa wabiga oo qotodheer taasoo adkaynaysa waraabka cuf-jiidka butaacada.

Page	Description	Enlargement
39	Soil and vegetation	A
40	Buulo Barde town	B </td
41	Elevation, land use and land cover	C, D
42	Morphology	n/a
44	Roads and settlements	n/a
45	Climate and water resources	n/a
46	Flood risk maps	n/a



Soil and vegetation Ciida iyo dhirta



The photo depicts different landscape with soil and vegetation being variable. Only a narrow strip along the river shows presence of crop fields. The remaining areas remain suitable for grazing.

Goobaha sida kala duwan loogu hareeyey midabka casaan ah (guduudan) waxay ku tusaysaa noocyada ciida iyo dhirkta kala duwan. Hal marin oo dhuuban oo hareer mara wabiga ayaa leh ciid ku haboon beerashada. Ciida inta kale waxay kaliya oo ku haboon tahay daaqa.

Buulo Barde town Magaalada Buulo Barde



Although Buulo Barde town lies on both sides of the river, it is rarely affected by floods as the river flows through a deeply incised valley. The bridge (inset) links the southern part of the country to the north.

Inkastoo Magaalada Buulo Barde ay wabiga labadiisa danba ku taal, in yar ayaa fatahaada wabigu saameysay maadaama wabigu uu maro tog (wadi) hoos u qotodheer. Buundada (gudaha) waxay ku xirtaa qaybaha koonfureed ee dalka kuwa waqooyi.

Elevation, land use and land cover Joogga, isticmaalka dhulka iyo hu'ga dhulka

Elevation

As in the upstream area, the valley is asymmetrical with hills on both sides of the river. The hills on the east of the valley (right hand side of the map) are relatively steep.

Joogga

Si la mid ah deeganada biya shubka sare (upstream), dooxu ma laha sinaan isle'eg oo buuro ayaa ku teedsan wabiga labadiisa daan. Buuraha ku yaal daanta bari ee dooxa (khariidadda dhinaca midig) waxaa janjeerku yahay hoobad.

Land use and land cover

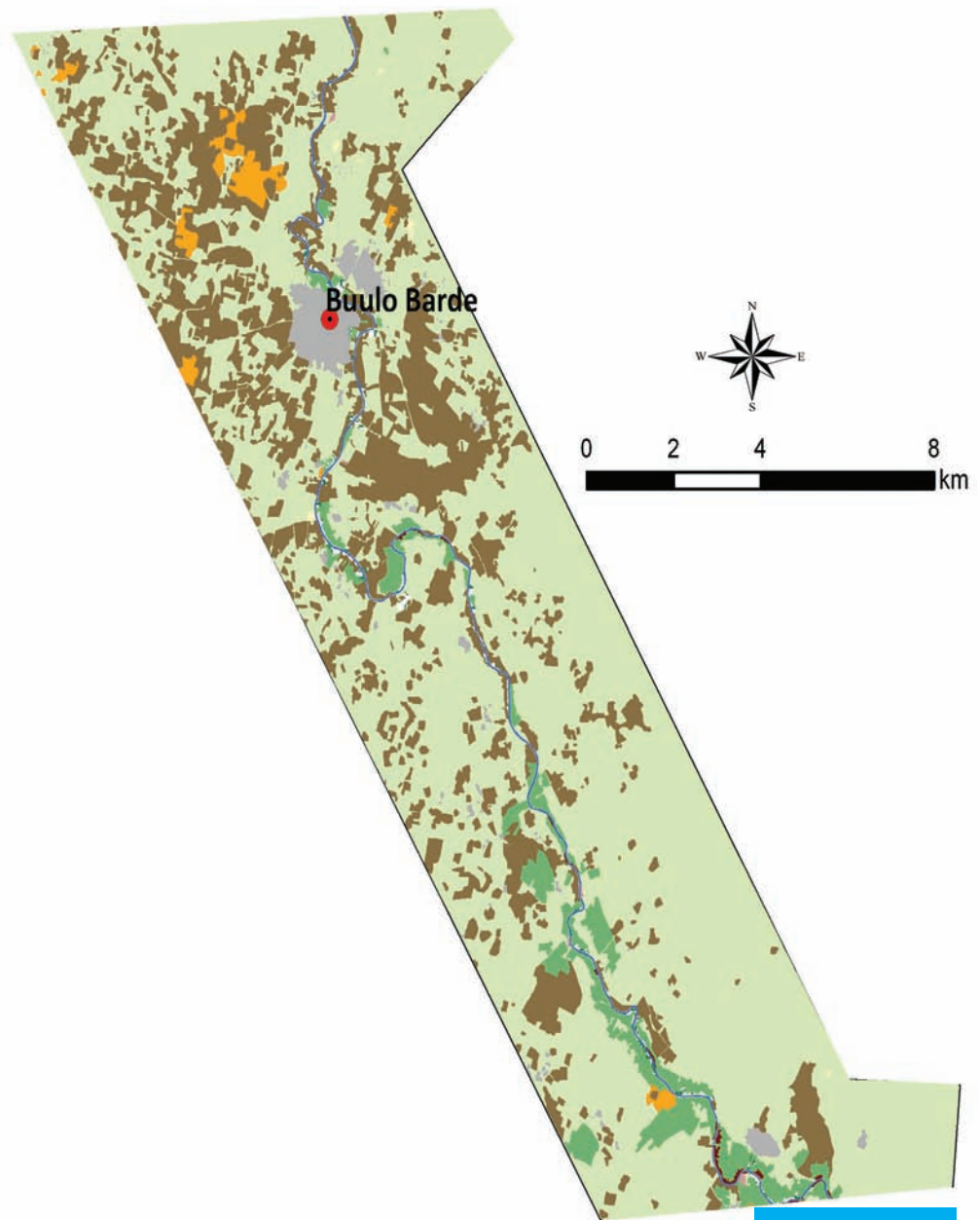
The crop fields are scattered and vary in size. Sesame, a commercial crop, is grown close to the river for ease of access to irrigation water. Abandoned fields are present, despite the fact that water for pump irrigation is available from the river.

Isticmaalka dhulka iyo hu'ga dhulka

Beeraha dalagyada waa ay kala dhantaalan yihiin wayna kala baaxad wayn yihiin. Sisin, oo ah dalag ganacsi ayaa inta badan lagu beeraa meelaha u dhow wabiga maadaama si sifudud ay biyo uga helaan wabiga.



Enlargement C



Enlargement D

Crops		
Cereals	Mixed tree crops	Settlement
Mixed crops	Abandoned fields	River
Mango	Natural vegetation	Main canals
Sesame	Bare soil	Minor canals

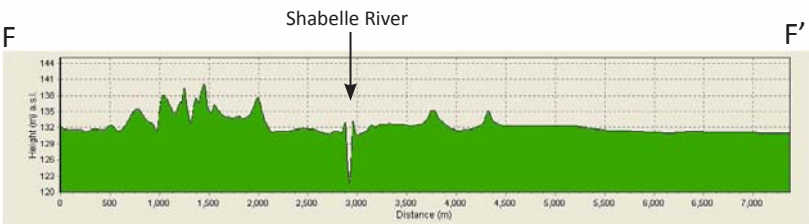
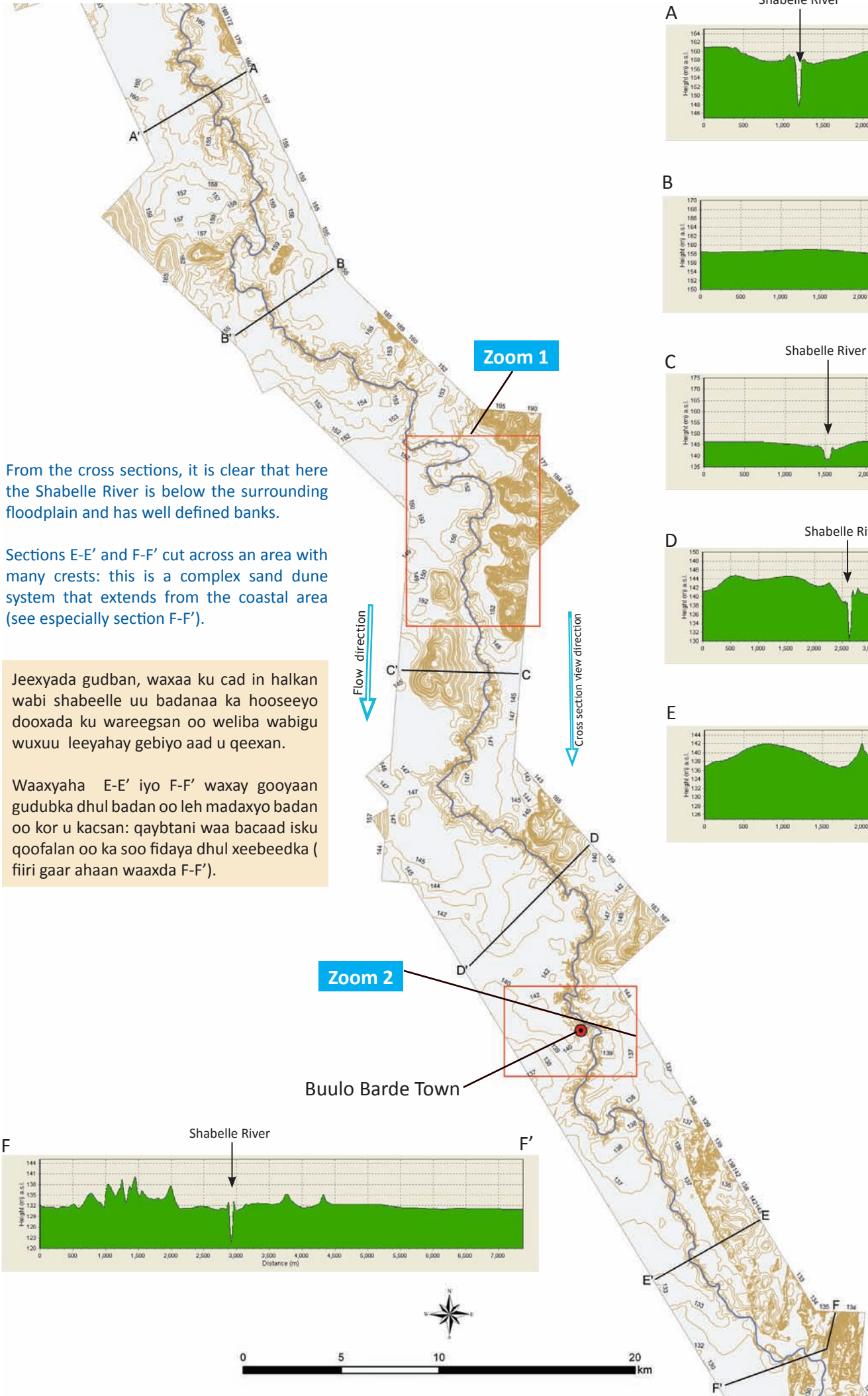
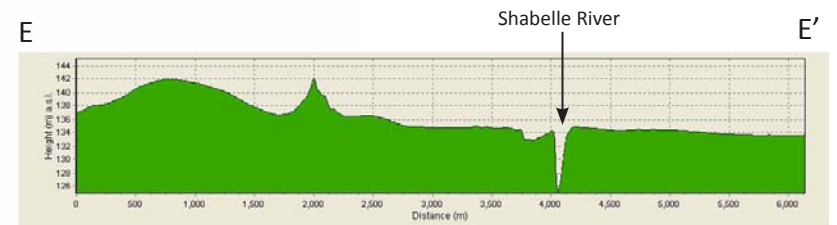
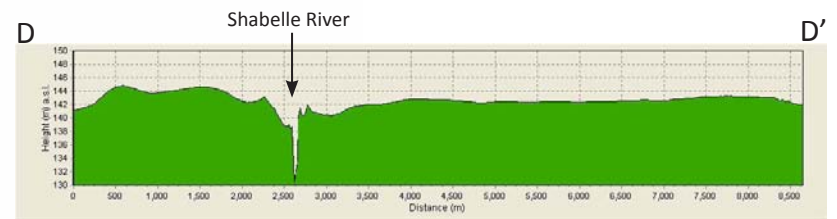
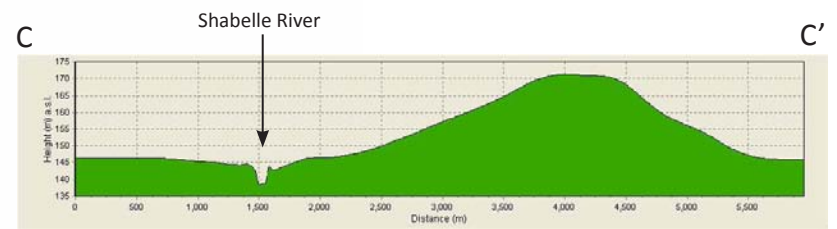
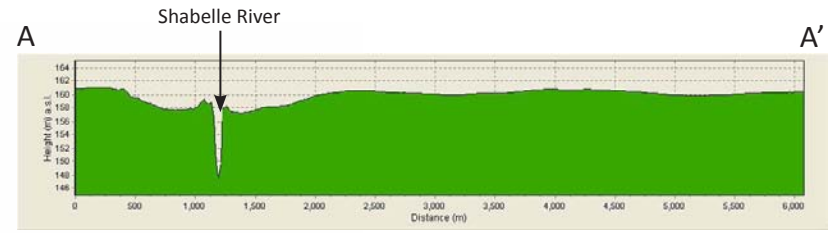
Morphology Qaab-dhismaha

From the cross sections, it is clear that here the Shabelle River is below the surrounding floodplain and has well defined banks.

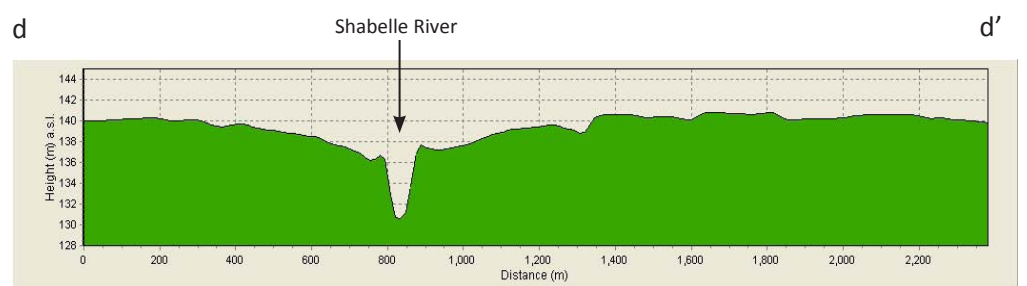
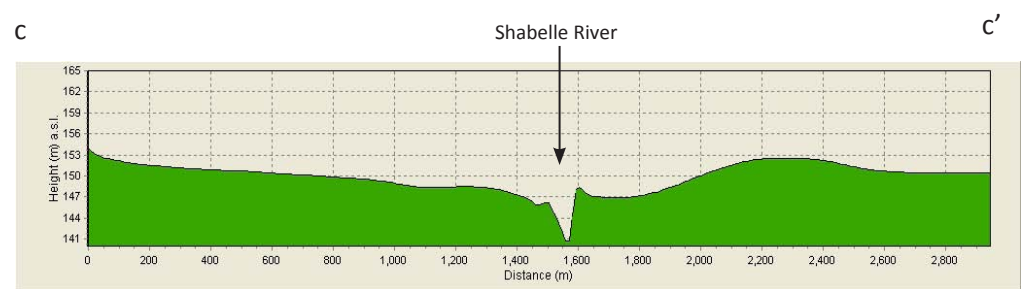
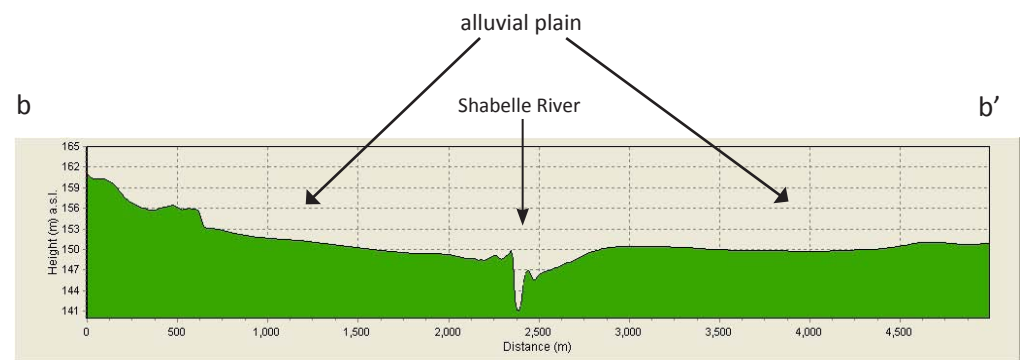
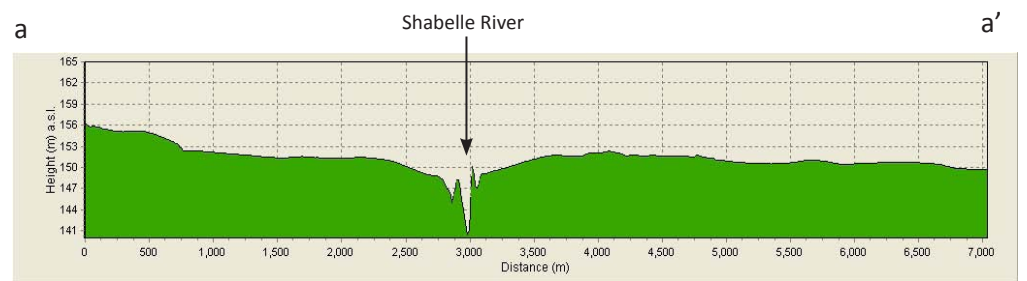
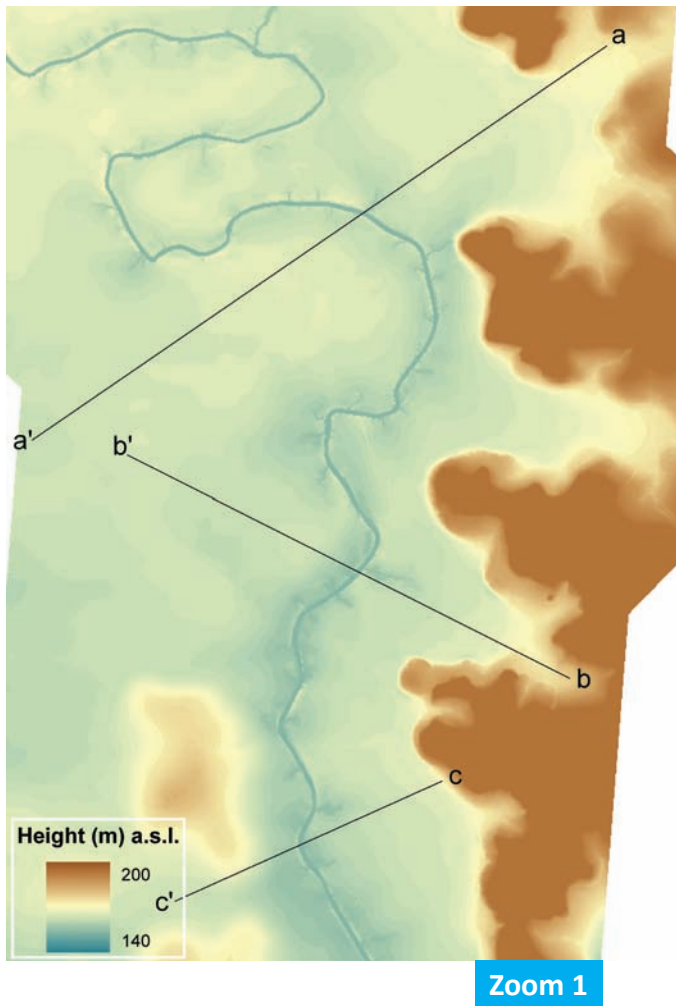
Sections E-E' and F-F' cut across an area with many crests: this is a complex sand dune system that extends from the coastal area (see especially section F-F').

Jeexyada gudban, waxaa ku cad in halkan wabi shabeelle uu badanaa ka hooseeyo dooxada ku wareegsan oo weliba wabigu wuxuu leeyahay gebiyo aad u qeexan.

Waaxyaha E-E' iyo F-F' waxay gooyaan gudubka dhul badan oo leh madaxyo badan oo kor u kacsan: qaybtani waa bacaad isku qoofalan oo ka soo fidaya dhul xeebeedka (fiiri gaar ahaan waaxda F-F').



Morphology Qaab-dhismaha



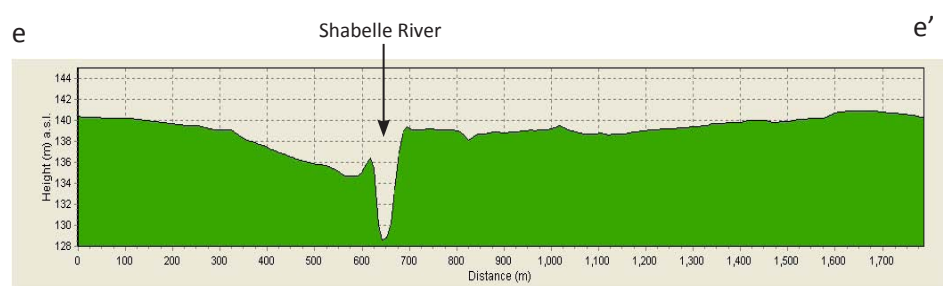
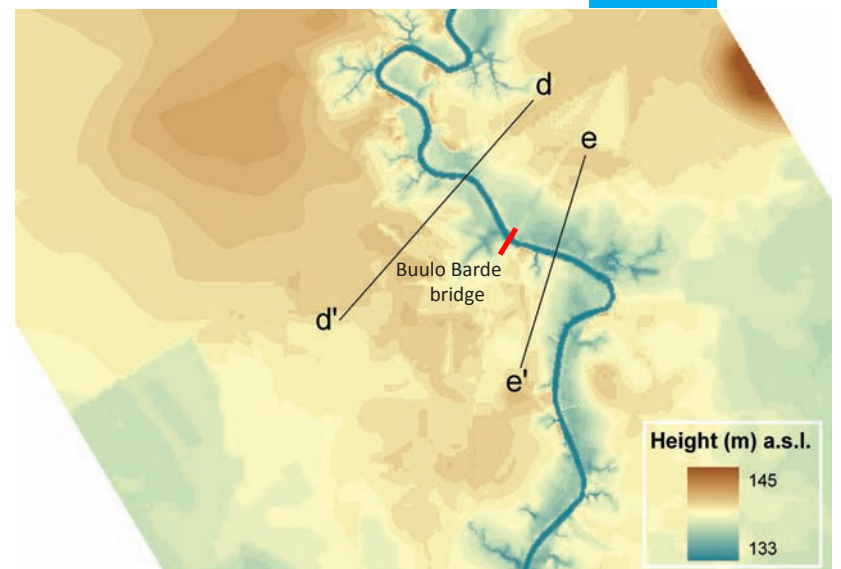
The morphology in this part of the river is characterised by small hills and the absence of meanders. There are many small but incised tributaries flowing into the main river course.

In the lower part of the page cross sections d-d' and e-e' are drawn upstream and downstream the bridge in Buulo Barde and show that there is no major change in the river morphology due to this structure.

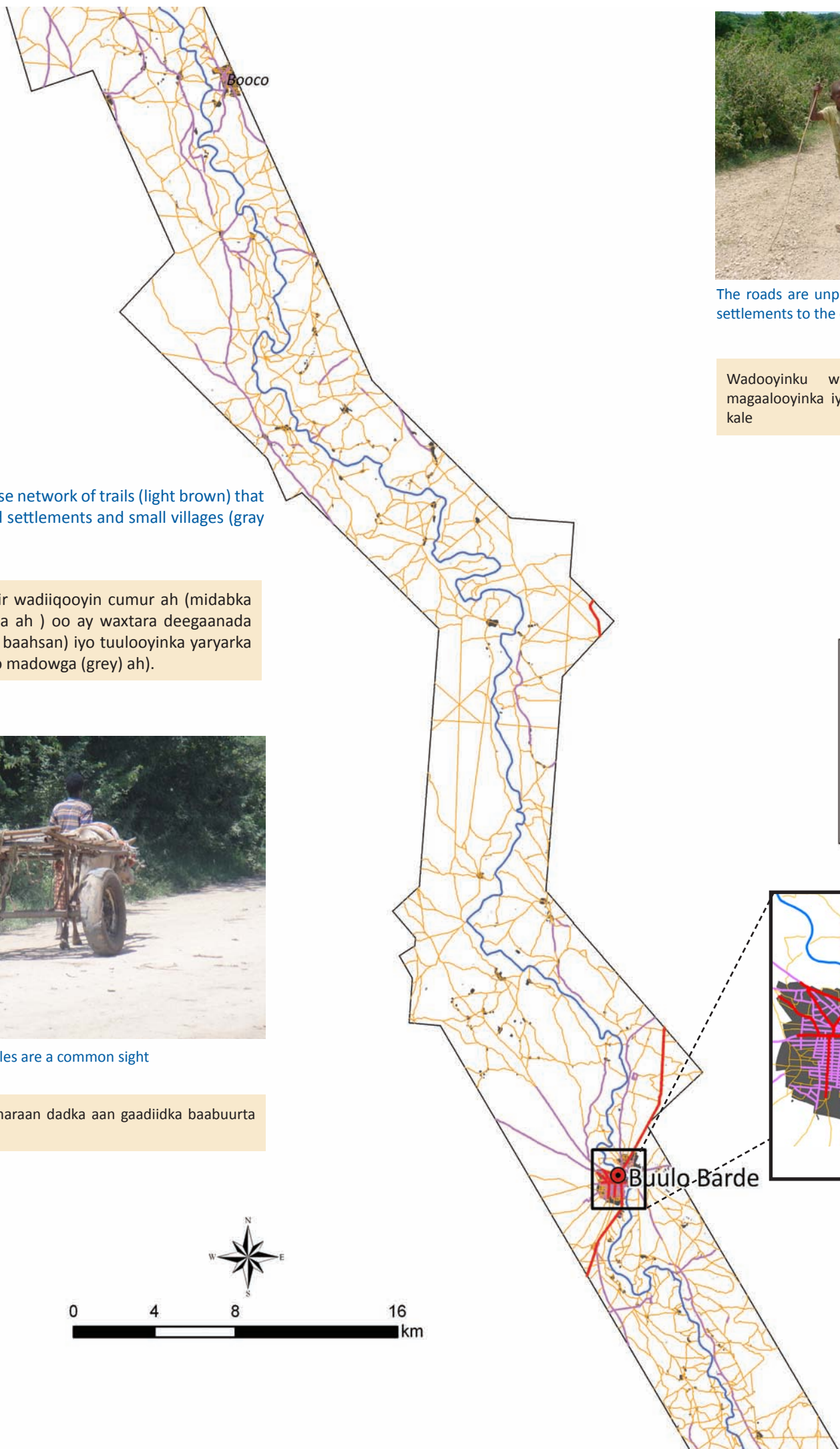
Qaab-dhismaha dhulka qaybtan ee wabiga waxaa ay leedahay buuro (taagag) yaryar mana laha leexleexyo. Waxaa jira biyo-mareeno yaryar oo tiro badan lakiin leh dooxyo qotodheer oo ku biyoshuba marinka wabiga.

Qaybta hoose ee bogga, waxaa lagu sawiray Jeexyada gudban d-d' iyo e-e' ee biyoshubka sare iyo biyoshubka oo kor iyo hoos ka jira buundada Buulo Barde waxayna ku tusaysaa inuusan jirin isbadal wayn oo ku dhacay qaab-dhismeed wabiga ayadoo ay ugu wacan tahay baxaalikan.

Zoom 2



Roads and settlements Waddooyinka iyo degmooyinka



The roads are unpaved, wide and link the towns and settlements to the other regions

Waddooyinku waa jid cade, balaaran oo magaalooyinka iyo degaamada ku xira gobolada kale

There is a very dense network of trails (light brown) that serve the scattered settlements and small villages (gray colour).

Waxaa jira isku-xir wadiiqooyin cumur ah (midabka xareedda khafiifka ah) oo ay waxtara deegaanada kala firisan (kala baahsan) iyo tuulooyinka yaryarka ah (midabka ciiro madowga (grey) ah).



Non-motorized vehicles are a common sight

Meel caadi u ay maraan dadka aan gaadiidka baabuurta isticmaaleyn.

Legend

- Town
- ~ River
- Main roads (paved)
- Unpaved roads
- Tracks and trails
- Settlements/Built-up areas



Buulo-Barde

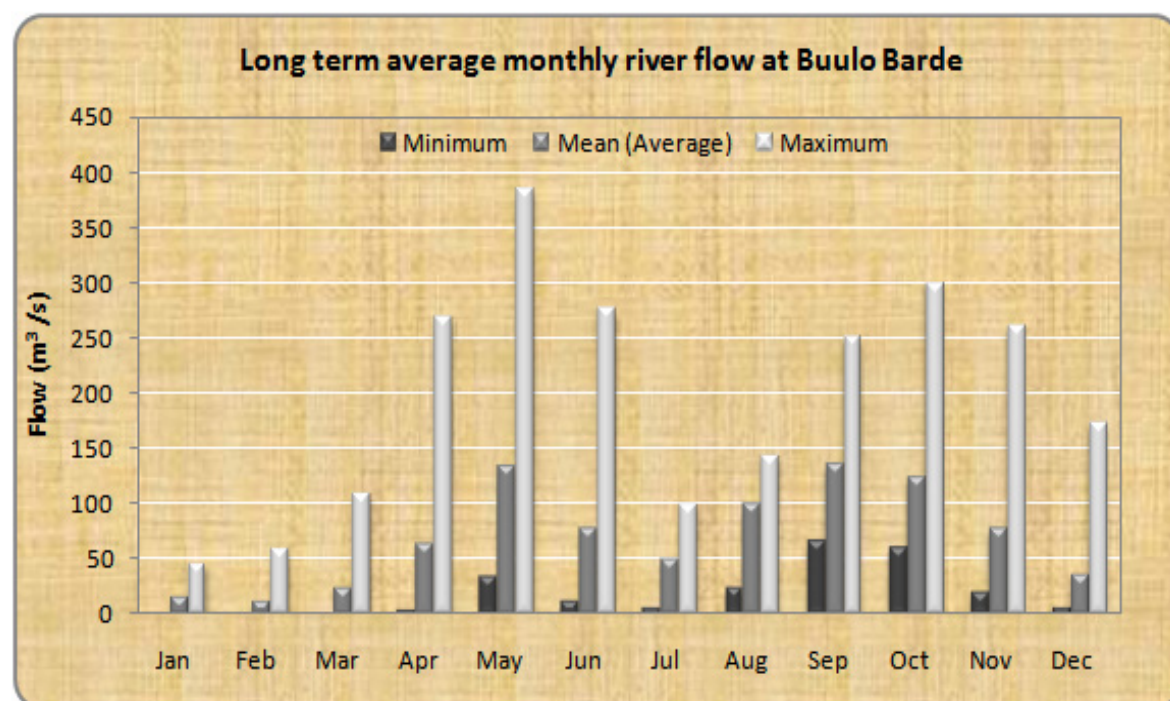


Climate and water resources Cimilad iyo khayraadka biyaha

The mean annual rainfall at Buulo Barde is 328 mm, far less than the annual potential evapotranspiration, which is in excess of 1 800 mm. Like many others parts in Somalia, the area has moisture deficit in most months of the year. Temperatures are high through out the year, ranging between 21 - 34 °C.

Roobabka sanadle ee ay Buulo Barde hesho celcelis ahaan waa 328 mm, kaas oo aad uga yar uumi baxa sanadle oo ka badan 1 800 mm. Meeshan sida meelo kale oo Soomaaliya ku yaal waxay leedahay qoyaan yaraansho jirta inta badan ee bilaha sanadka. Kulbeeggu waa mid sare sanadka oo dhan kaas oo gaara inta u dhaxaysa 21 - 34 °C.

Long term average climatic values at Buulo Barde												
Climatic variable	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainfall (mm)	3.0	3.0	11.0	70.0	64.0	5.0	3.0	3.0	8.0	90.0	61.0	7.0
Mean temperature (°C)	31.1	32.3	28.0	33.1	31.3	29.4	28.6	29.0	30.4	30.8	31.3	30.9
Minimum temperature (°C)	21.8	21.7	23.0	23.5	23.3	22.3	21.8	21.6	22.3	22.5	22.3	22.0
Maximum temperature (°C)	35.5	37.3	30.3	37.6	35.0	32.8	31.8	32.5	34.2	34.8	35.5	35.1
Potential evapotranspiration (mm)	198	202	189	183	180	168	164	177	189	174	168	180
Wind speed (km/hr)	9.0	8.3	7.9	7.2	7.2	7.2	9.0	9.0	8.6	7.2	7.6	7.6



River gauge station details

Grid reference: 3:51:20 N, 45:34:20 E
Altitude: 133.0 m a.s.l
Catchment area: 166 000 km²
Daily mean flow: 70.0 m³/s
Current status: Operational

The mean annual flow volume at Buulo Barde is about 2 207 million cubic meters, which is much less than the flow at Belad Weyne. The significant loss of flow could be attributed to the diversion of river flows for irrigation and high evaporation losses. The river flow is lowest in the months of January to March.

Celceliska sanadle ee mugga socodka biyaha Buulo Barde qiyaas ahaan waa 2 207 milyan kubik mitir. Taas oo aad ugu yar socodka Balad Weyne. Lumista badan ee socodka biyaha waxa keenta wabiga socodkiis oo leexda iyo uumi baxa sare leh. Socodka biyaha ee wabiga wuxu garaa heerka ugu hooseeya bilaha Janaayo ilaa Maarso.

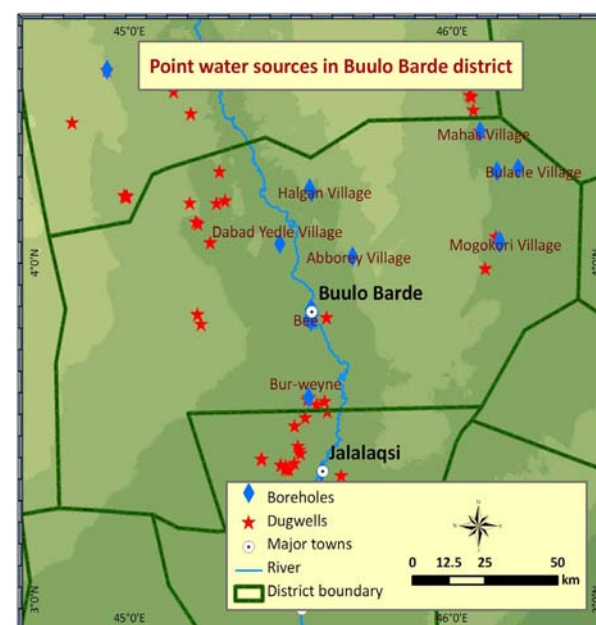


A shallow well located in the outskirts of Buulo Barde town

Ceel gaagaaban oo ku yaal meel ka baxsan magaalada Buulo Barde

The main underground strategic point water sources within Buulo Barde town and the entire district are shallow wells and boreholes. Populations living along the riverine areas of Shabelle rely on the river for domestic and agricultural water demands.

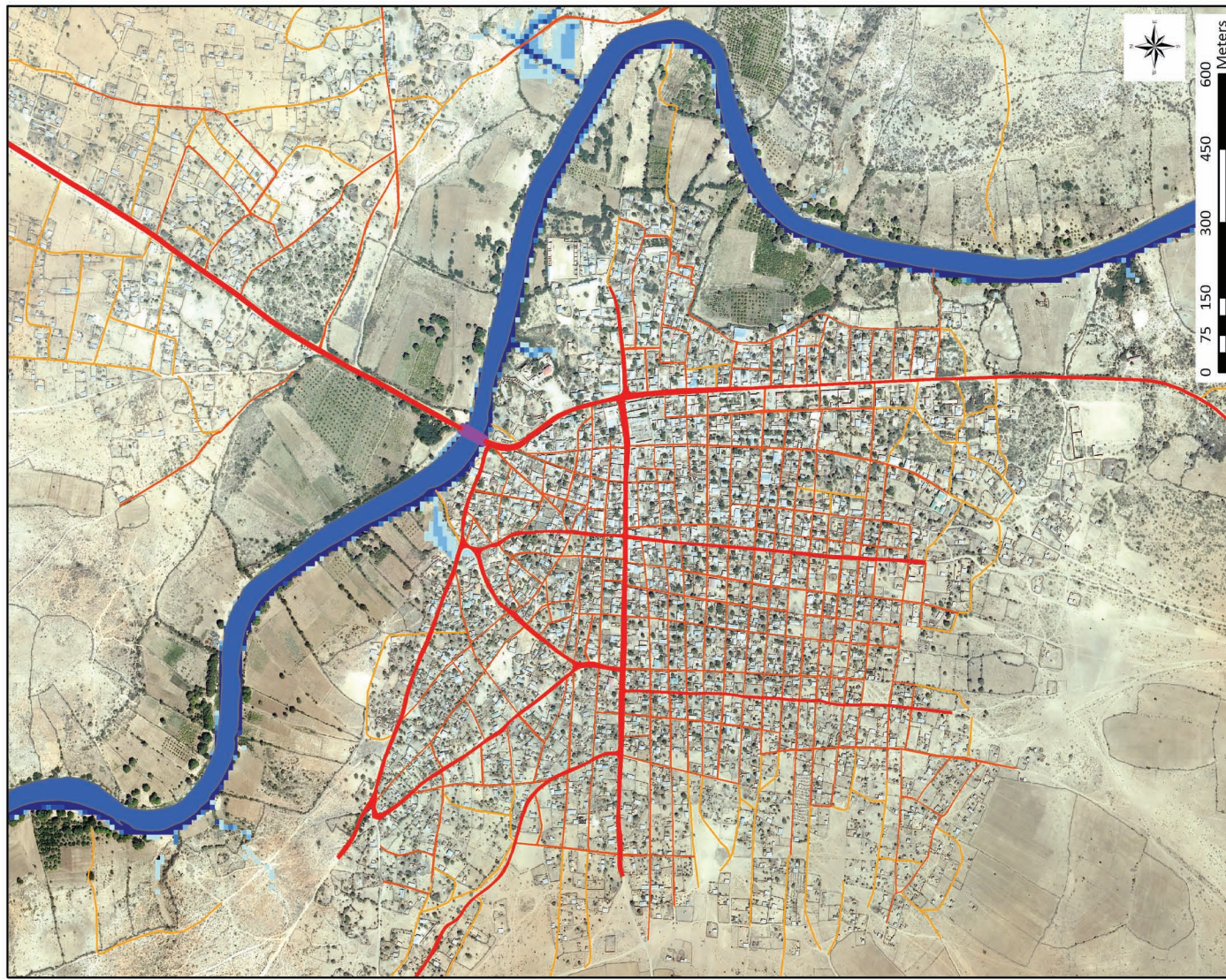
Ilaha biyaha muhiimka ah ee magaalada Buulo Barde iyo dhammaan degmooyinkeeda oo dhan waxay ka yimaadaan ceelasha gaagaaban iyo kuwa riig ah. Dadka ku nool agagaarka wabiga Shabeelle waxay noloshoodu ku tiirsan tahay isticmaalka biyaha oo ay u isticmaalaan noolasha guriga iyo baahida beeraha.



Flood risk map for Buulo Barde - 5 year return period

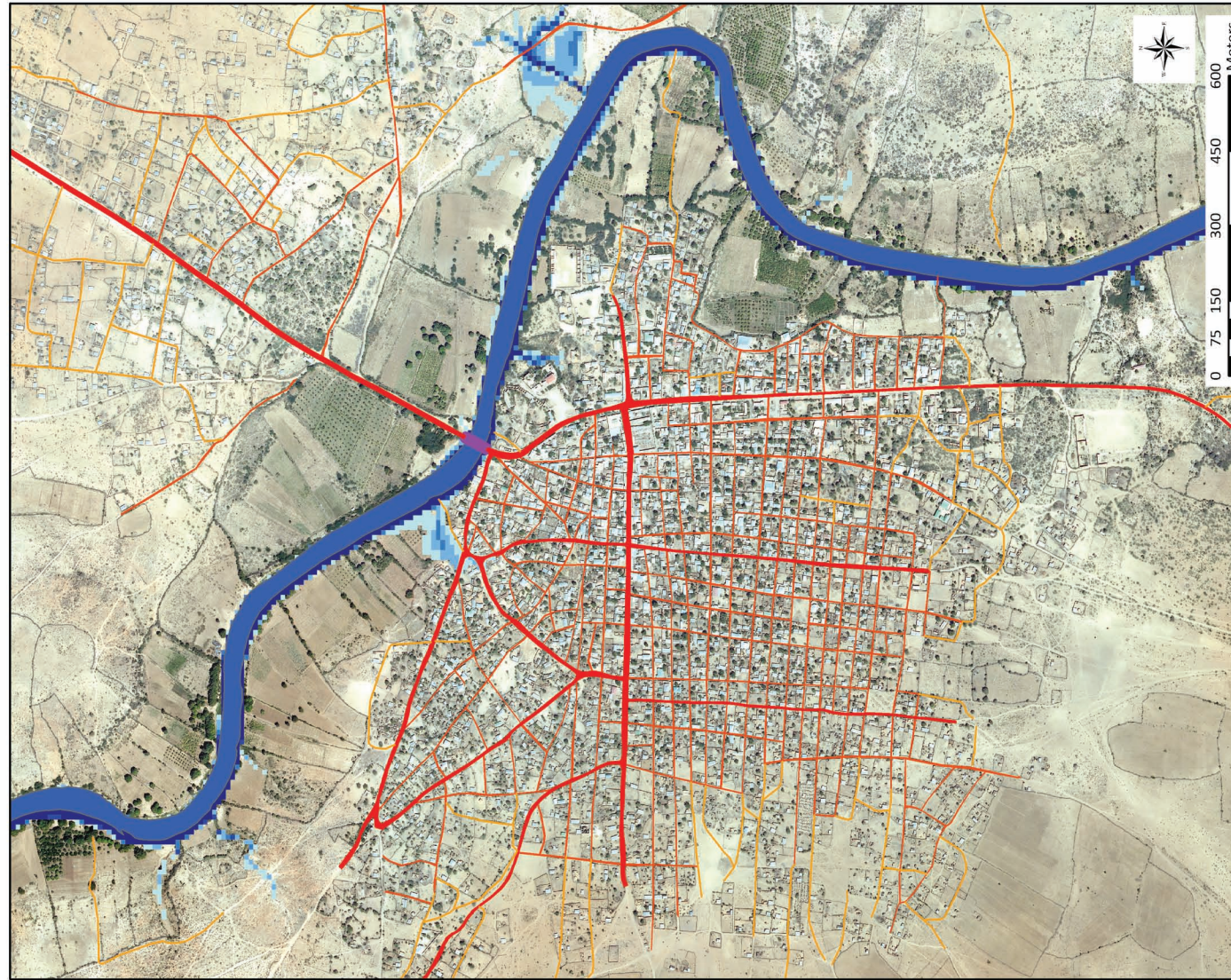
**Kharidadda halista fatahaadda ee Buulo Barde
 5 sanaba soo noqota mar**

The flood risk scenarios (extent and depth) were generated using HEC-RAS hydrodynamic model. Inputs included observed flow data, river cross sections, DTM. For more information contact SWALIM (enquiries@faoswalim.org)



Flood risk map for Buulo Barde - 20 year return period

**Kharidadda halista fatahaadda ee Buulo Barde
 20 sanaba soo noqota mar**



Flood risk map for Buulo Barde - 100 year return period

**Kharidadda halista fatahaadda ee Buulo Barde
 100 sanaba soo noqota mar**

Dacdooyinka fatahaadeed oo halis ah (baaxad iyo mool) waxaa la soo saaray ayadoo la adeegsanayo HEC-RAS qaabka biyosocodka lagu cabiro. Waxa ku jira meesha waa xoqta socodka wabiga oo laga cabiray jeexyada gudbar, DTM. Haddii aad macluumaad dheeraad ah aad u baahato SWALIM kala soo xiriir (enquiries@faoswalim.org)

