

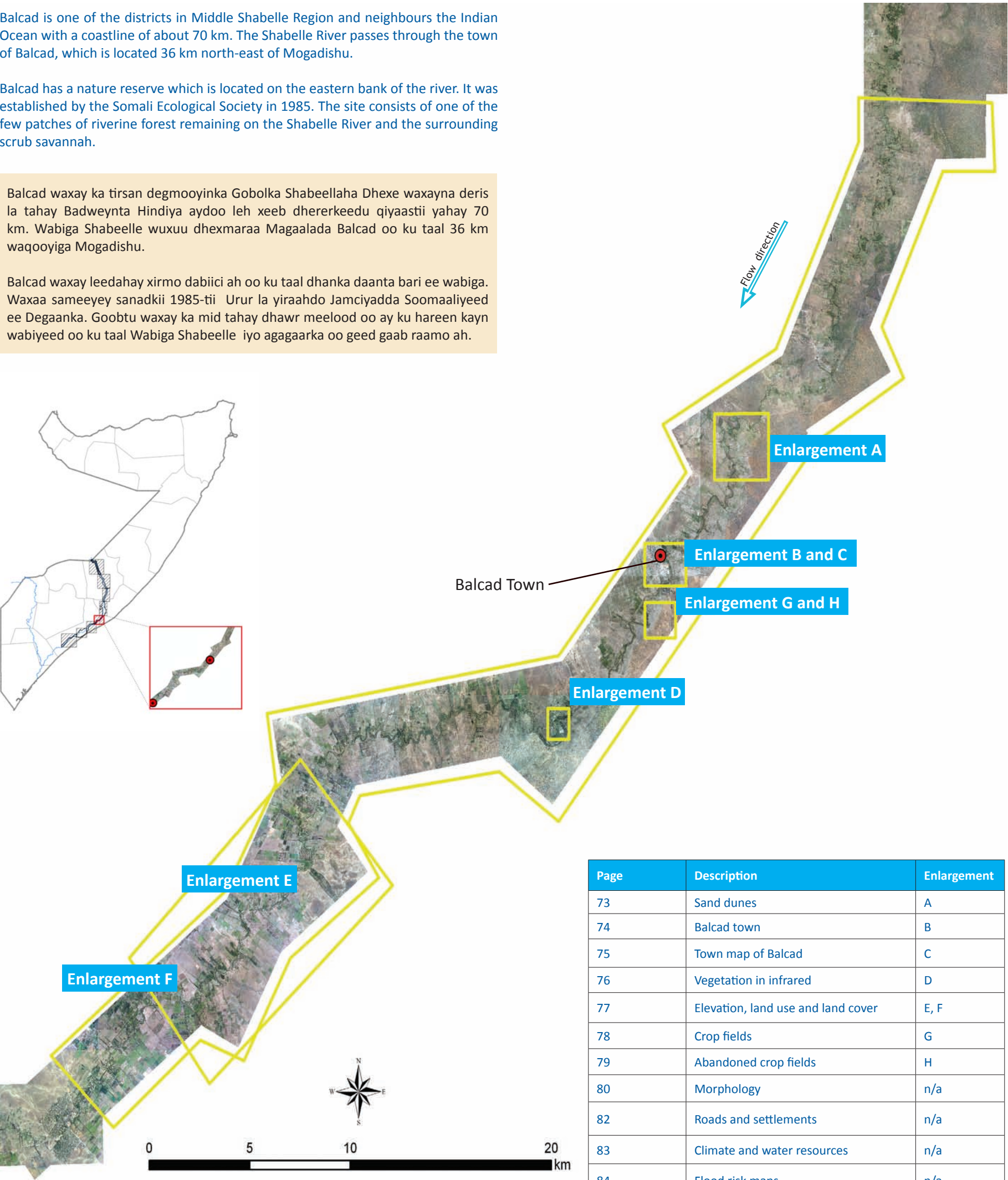
Balcad

Balcad is one of the districts in Middle Shabelle Region and neighbours the Indian Ocean with a coastline of about 70 km. The Shabelle River passes through the town of Balcad, which is located 36 km north-east of Mogadishu.

Balcad has a nature reserve which is located on the eastern bank of the river. It was established by the Somali Ecological Society in 1985. The site consists of one of the few patches of riverine forest remaining on the Shabelle River and the surrounding scrub savannah.

Balcad waxay ka tirsan degmooyinka Gobolka Shabeellaha Dhexe waxayna deris la tahay Badweynta Hindiya aydoo leh xeeb dhererkeedu qiyaastii yahay 70 km. Wabiga Shabeelle wuxuu dhexmaraa Magaalada Balcad oo ku taal 36 km waqooyiga Mogadishu.

Balcad waxay leedahay xirmo dabiici ah oo ku taal dhanka daanta bari ee wabiga. Waxaa sameeyey sanadkii 1985-tii Urur la yiraahdo Jamciyadda Soomaaliyeed ee Degaanka. Goobtu waxay ka mid tahay dhawr meelood oo ay ku hareen kayn wabiyeed oo ku taal Wabiga Shabeelle iyo agagaarka oo geed gaab raamo ah.



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Sand dunes Bacaadyo

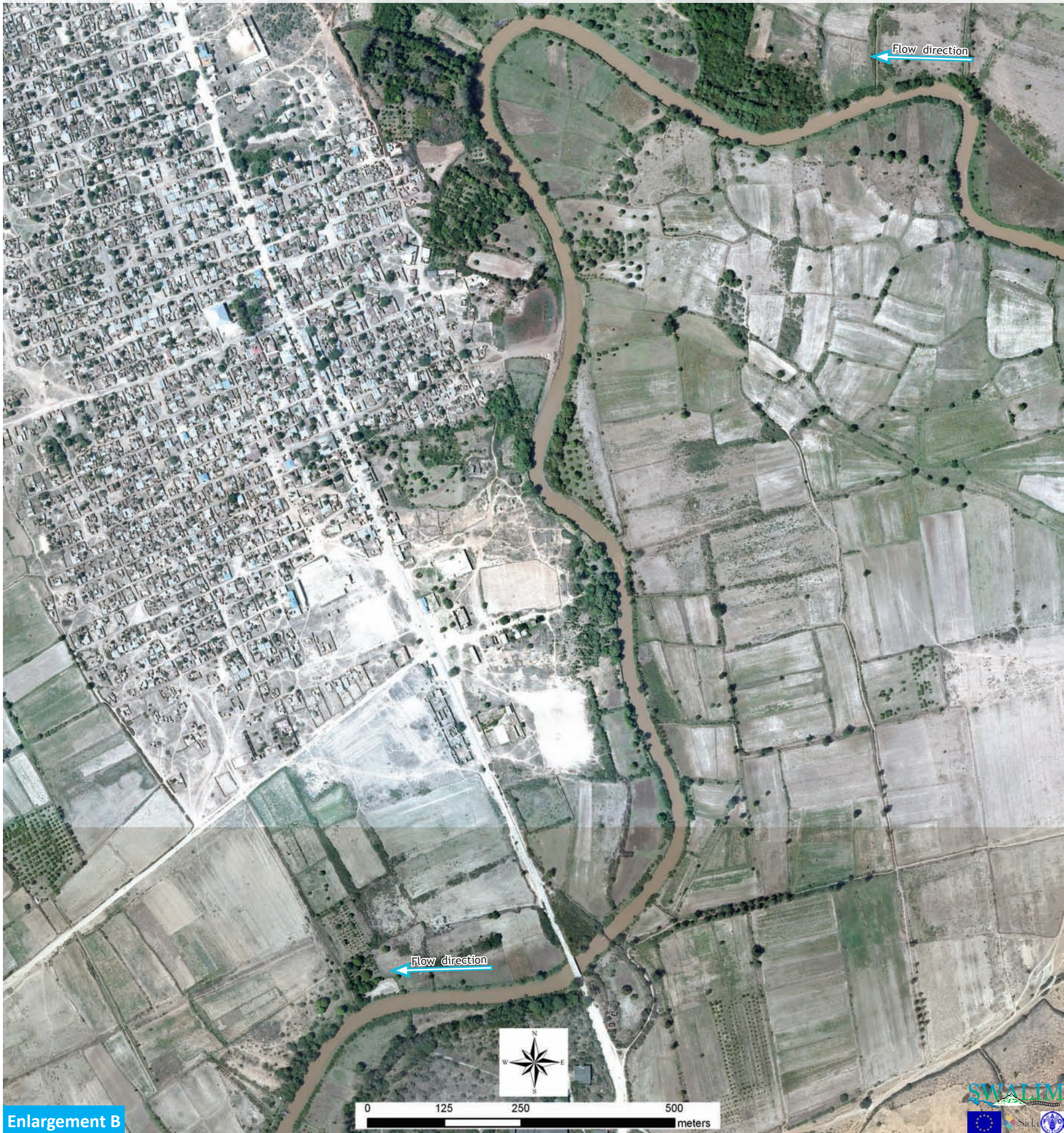


The river runs parallel to the sand dunes, which limit the area under cultivation. Observe the alluvial plain, covered with regularly shaped crop fields. The yellow dotted line marks the boundary between the flood plain and sand dunes.

Wabigu wuxuu barbar socdaa carrada bacaadka ah oo xadeysa dhulka wax laga beerto. Eeg bannaanka carrada biyo-keentayda ah oo ay ku dul taal beero dalagyo oo qaab caadi ah leh. Xariijinta hurdiga (jaale) ah waxay calaamad u tahay xadka bannaanka carrada daad-keentayda iyo bacaadka deexda.

Balcad town

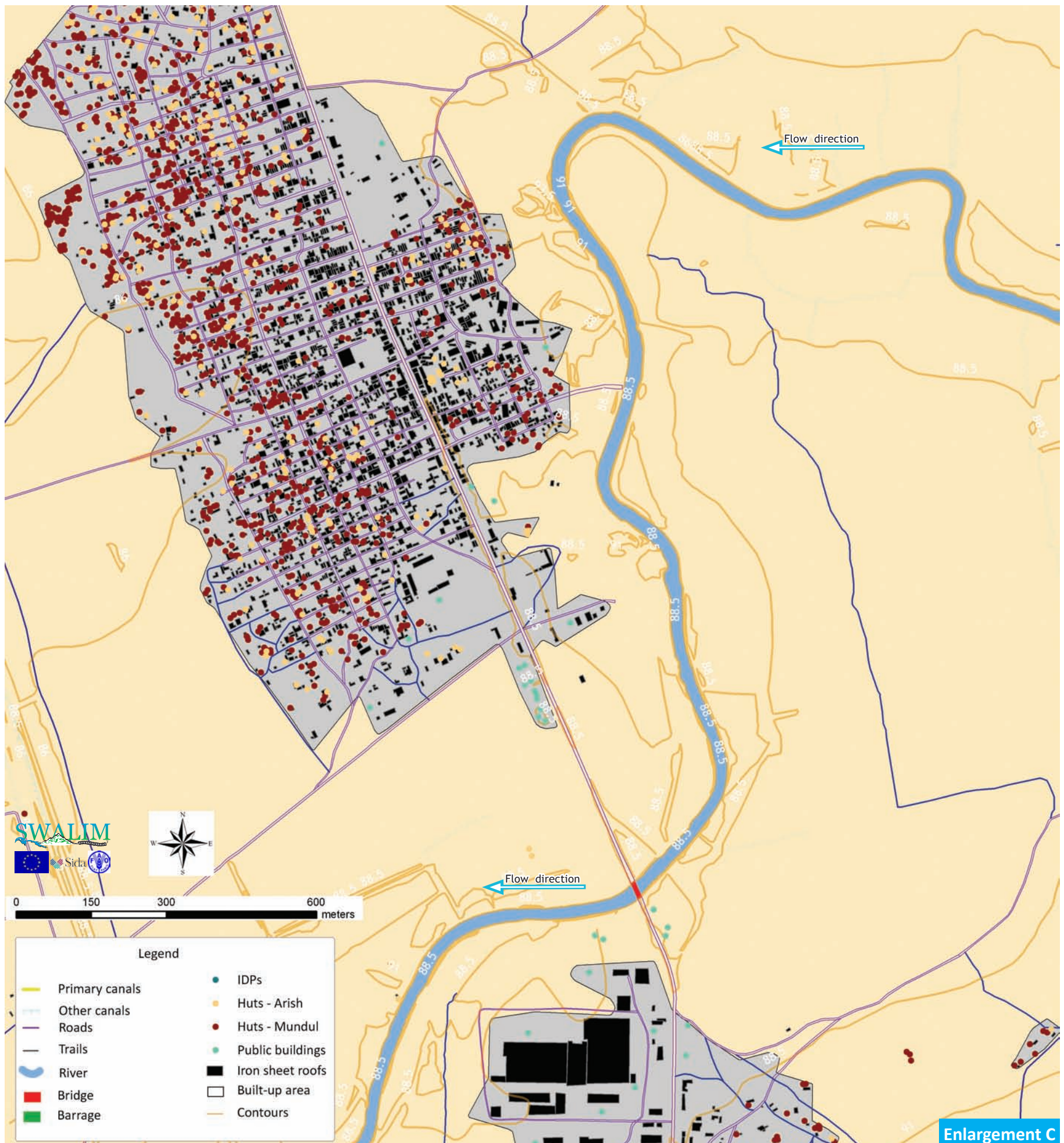
Magaalada Balcad



This image shows the main town with large crop fields to the east and south. The main road from Mogadishu runs through the town to the north. Balcad also has a textile factory.

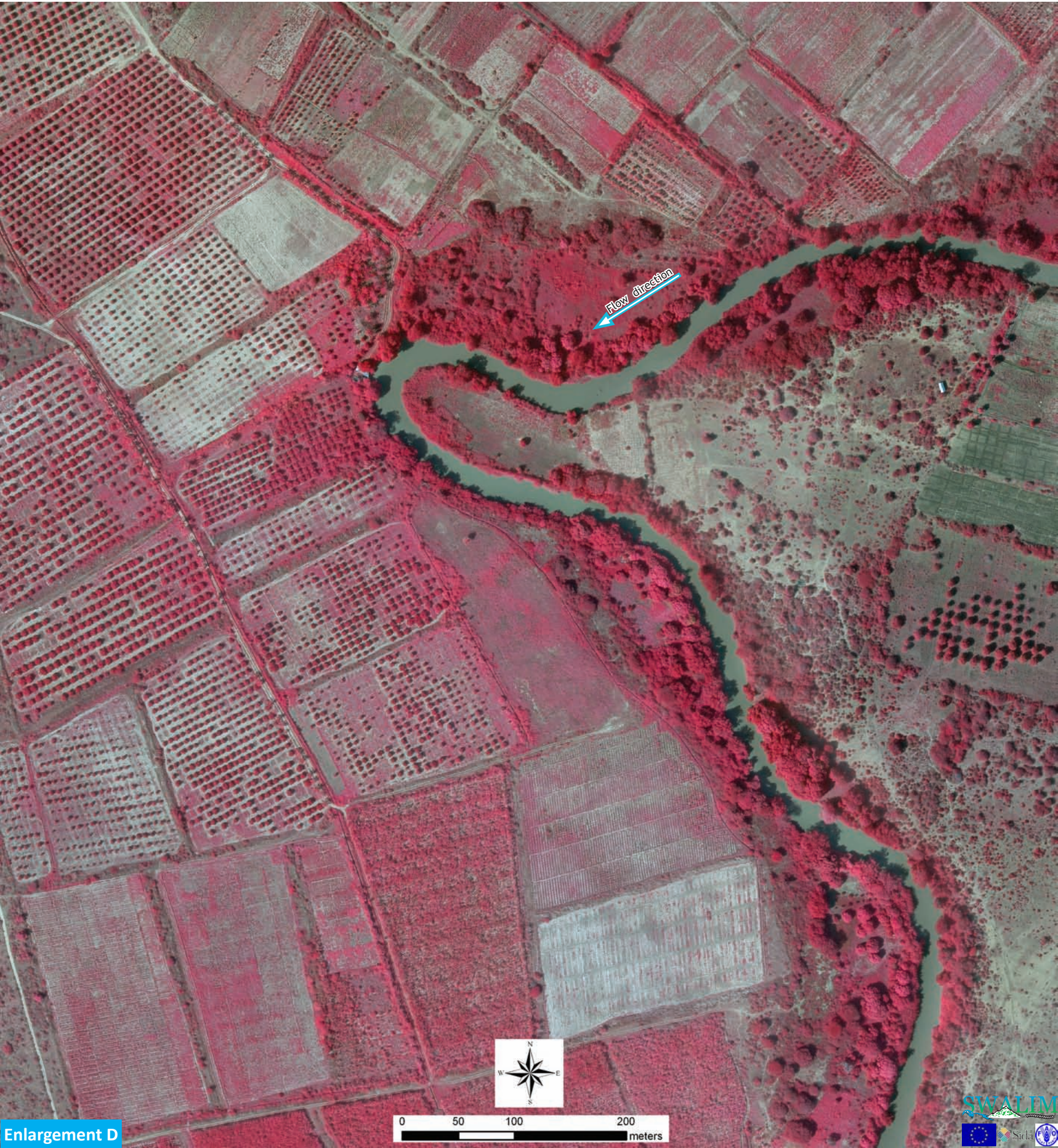
Muuqaalkaan wuxuu tusinayaa magaalada iyo beero dalageed waaweyn oo xagga bariga iyo koonfurba ka jira. Waddada muhiimka ah ee Mogadishu ka timaada ayaa sii dhexmarta magaalada oo sii aada xagga waqooyiga. Magaalada waxay leedahay warshad dhar.

Town map of Balcad Khariidadda Magaalada Balcad



Vegetation in infrared

Dhirta oo lagu muujiyey shucaaca caanka

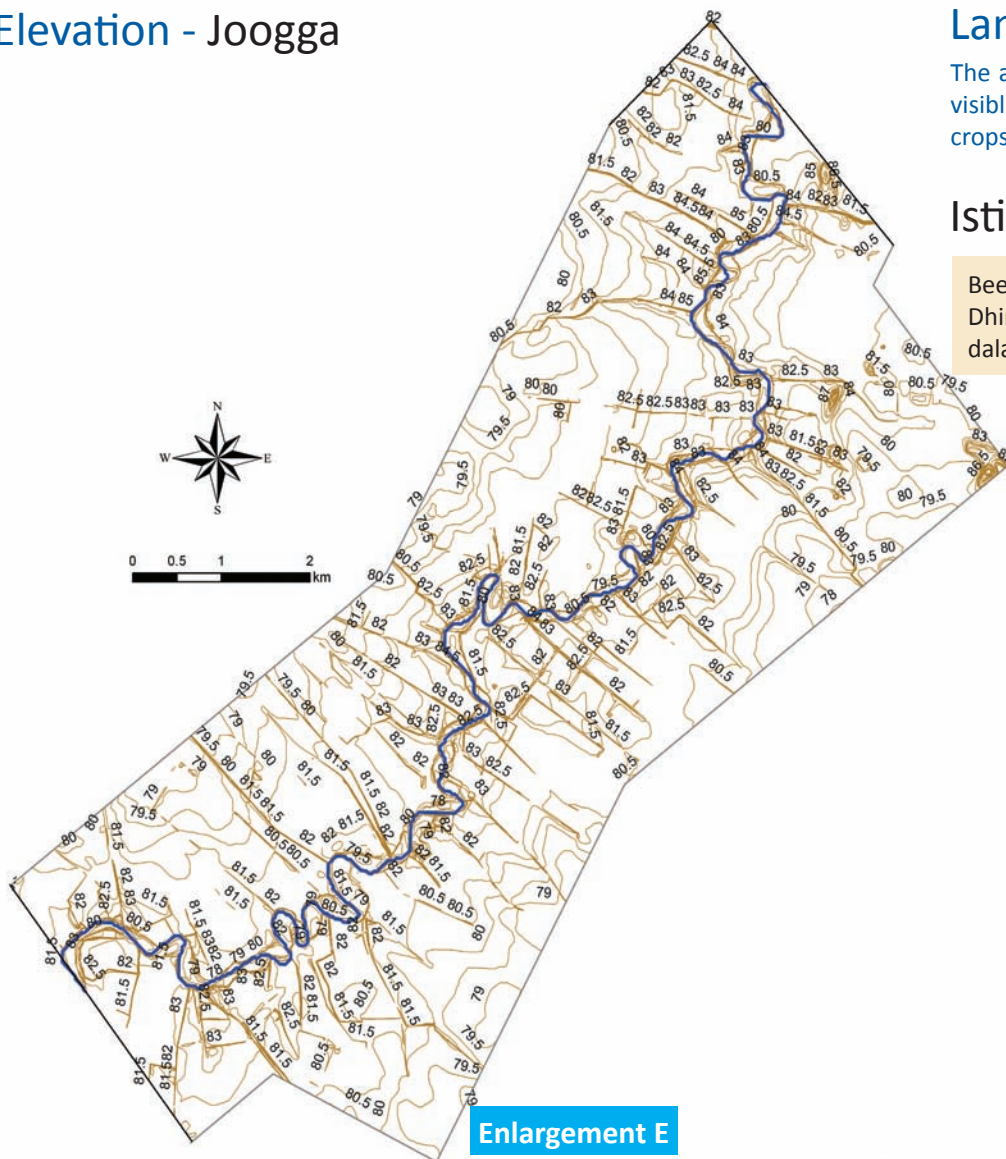


A false colour composite with near infrared bands shows the status of the vegetation downstream of Balcad. The bright red canopy in crop fields are citrus trees and the thick canopy of red along the river banks are mango trees. The river is shown in green colour.

Iskudhafka midabka aan dhabta ahayn oo uu weheliyo mid shucaaca casaanka waxay tusinayaan xaaladda dhirta ku taal dhanka biyoshubka hoos ka jira Balcad. Casaanka dhalaalaya ee dhakada dalagyada beeraha ka muuqanayaa waa geedaha Liin macaanta, casaanka qarada weynna ee ku dherersan dacallada wabiga waa geedo cambe. Wabiga waxaa lagu muujiyey midab cagaar ah.

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

Elevation - Joogga

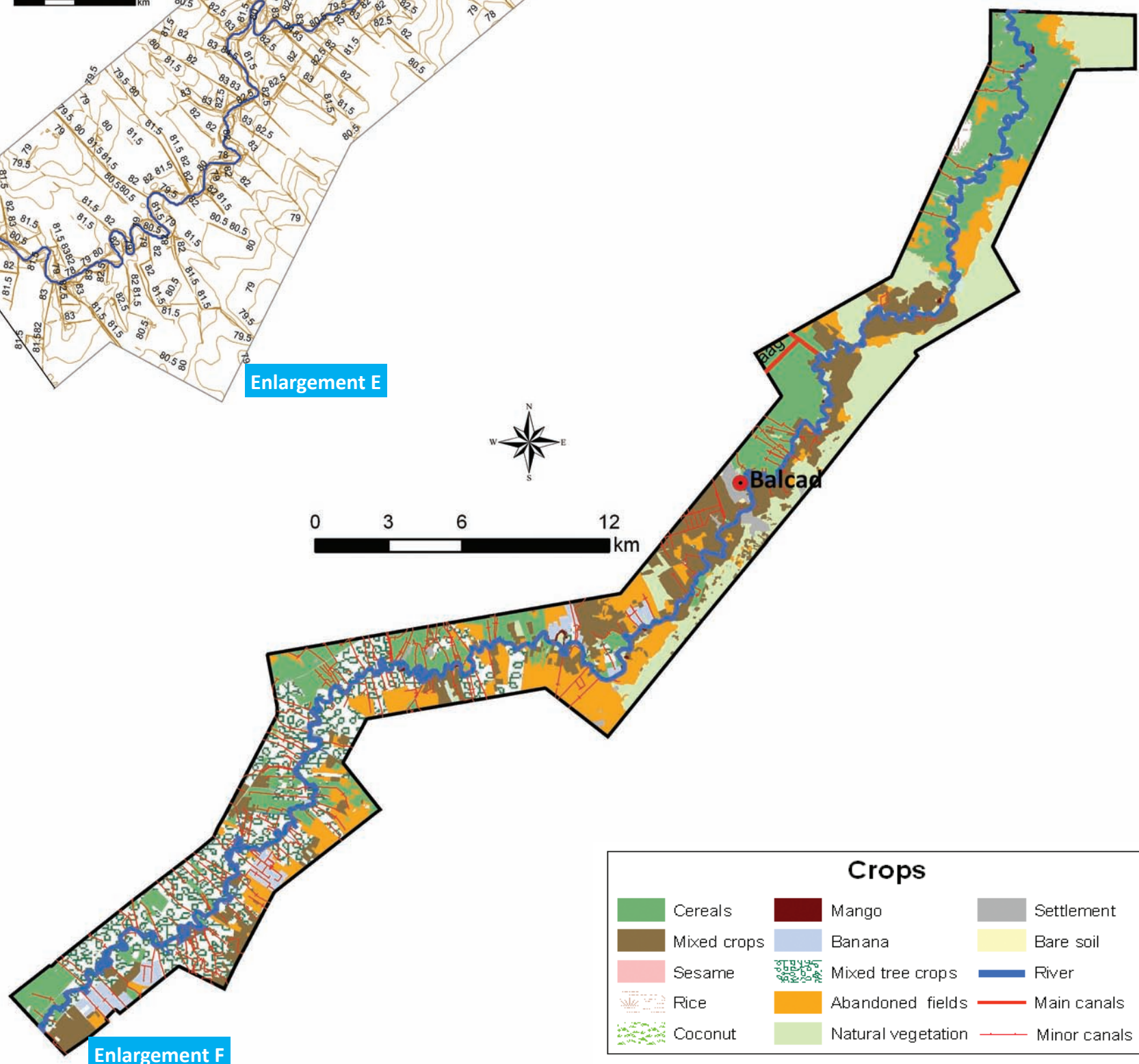


Land use and land cover

The abandoned crop fields in this area are conspicuous. Natural vegetation is visible in the upper western parts and the main crops grown are cereals, mixed crops and bananas.

Isticmaalka dhulka iyo hu'ga dhulka

Beeraha dalagyada laga tagay ee meeshaan waa wax aad il qabad u leh. Dhirta dabiiciga ah waxay lagu arki karaa qaybta sare ee galbeed, hadana dalagyada muhiimka ah waa badar, dalagyo isku jira iyo moos.



Crop fields

Beeraha dalagyada



This is an Ikonos image showing the area south of Balcad town in the year 2000. The black lines delineate crop fields that were active then, and were abandoned by 2008 as seen on the opposite page.

Kani masawir Ikonos ah oo tusinaya dhulka koonfur ka jira magaalada Balcad ee sanadkii 2000. xariijinta madow waxay deyraysaa beeraha dalagyada oo hawlgalka ahaa waqtigaas, waxaana laga tagay sanadkii 2008 sida lagu ku arki karo bogga ka soo horjeeda.

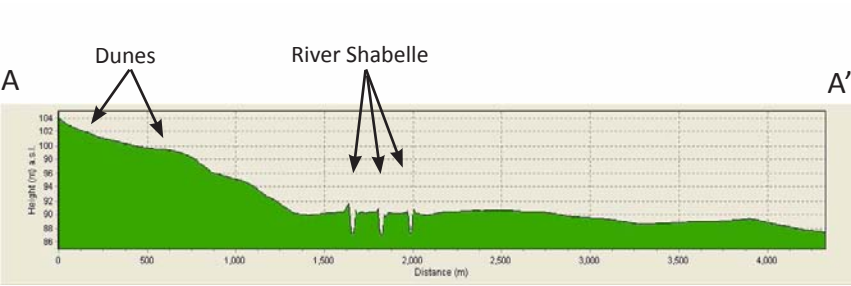
Abandoned crop fields Beeraha dalageed laga tagay



In January 2008 cropfields marked X, seem to have been abandoned between 2000 and 2008.

Bishii Jannaayo 2008 beeraha dalageedka lagu suntay X, waxay egtahay in laga tagay intii u dhaxaysay 2000 iyo 2008.

Morphology Qaab-dhismaha

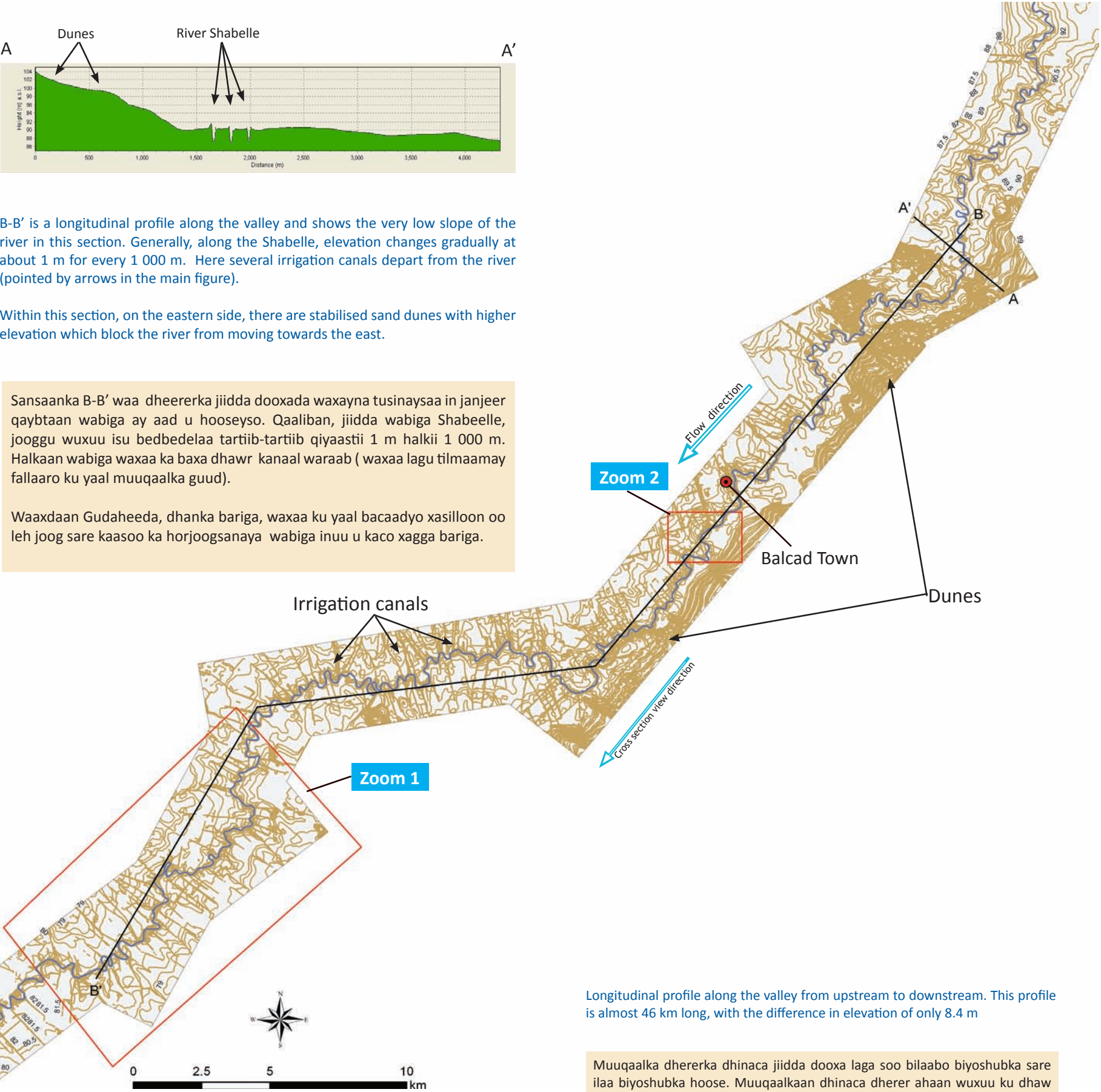


B-B' is a longitudinal profile along the valley and shows the very low slope of the river in this section. Generally, along the Shabelle, elevation changes gradually at about 1 m for every 1 000 m. Here several irrigation canals depart from the river (pointed by arrows in the main figure).

Within this section, on the eastern side, there are stabilised sand dunes with higher elevation which block the river from moving towards the east.

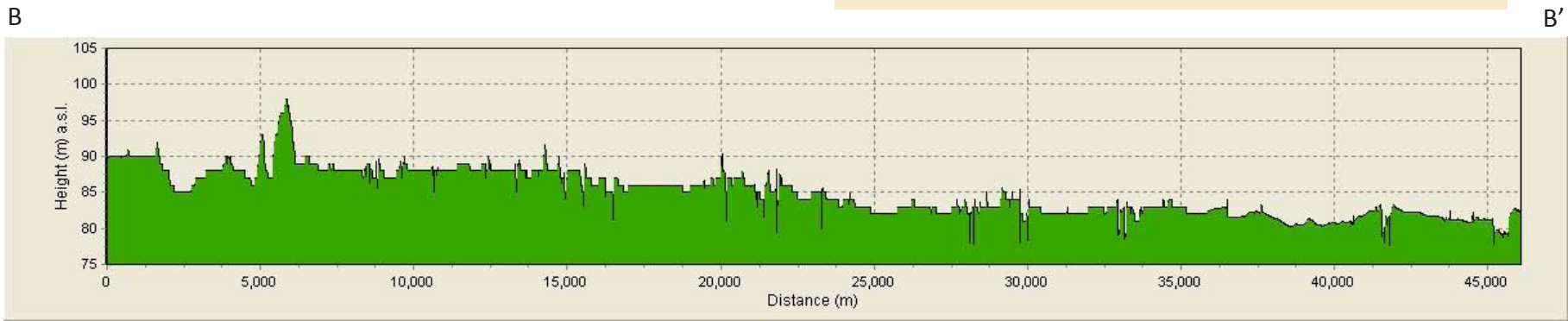
Sansaanka B-B' waa dheererka jiidda dooxada waxayna tusinaysaa in janjeer qaybtaan wabiga ay aad u hooseyso. Qaaliban, jiidda wabiga Shabeelle, jooggu wuxuu isu bedbedelaa tartiib-tartiib qiyaastii 1 m halkii 1 000 m. Halkaan wabiga waxaa ka baxa dhawr kanaal waraab (waxaa lagu tilmaamay fallaaro ku yaal muuqaalka guud).

Waaxdaan Gudaheeda, dhanka bariga, waxaa ku yaal bacaadyo xasiloon oo leh joog sare kaasoo ka horjoogsanaya wabiga inuu u kaco xagga bariga.

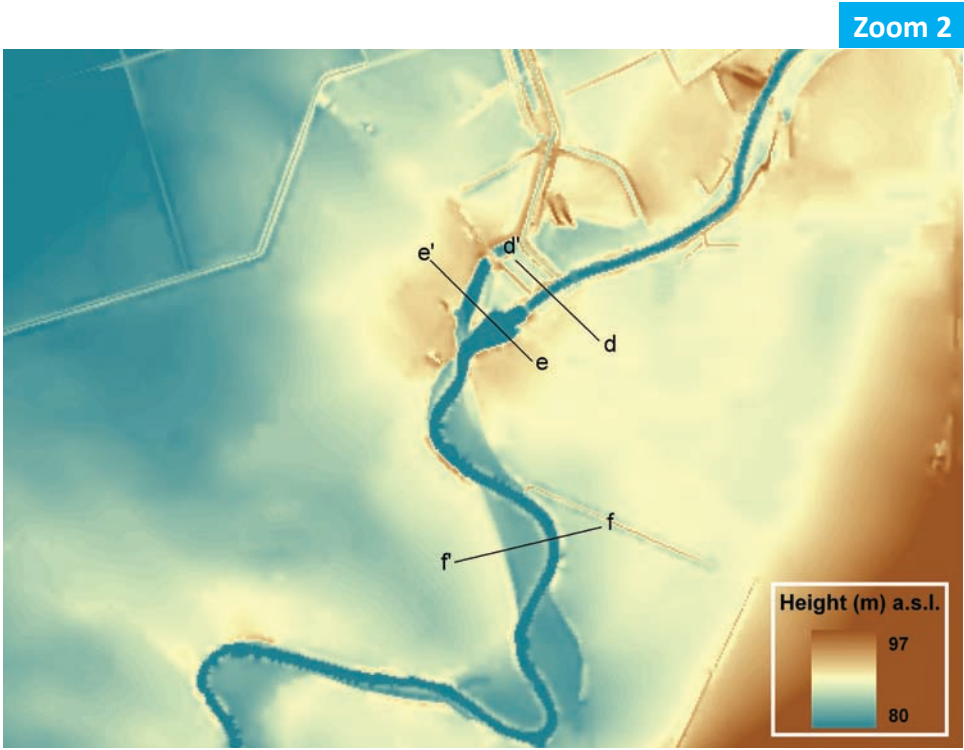
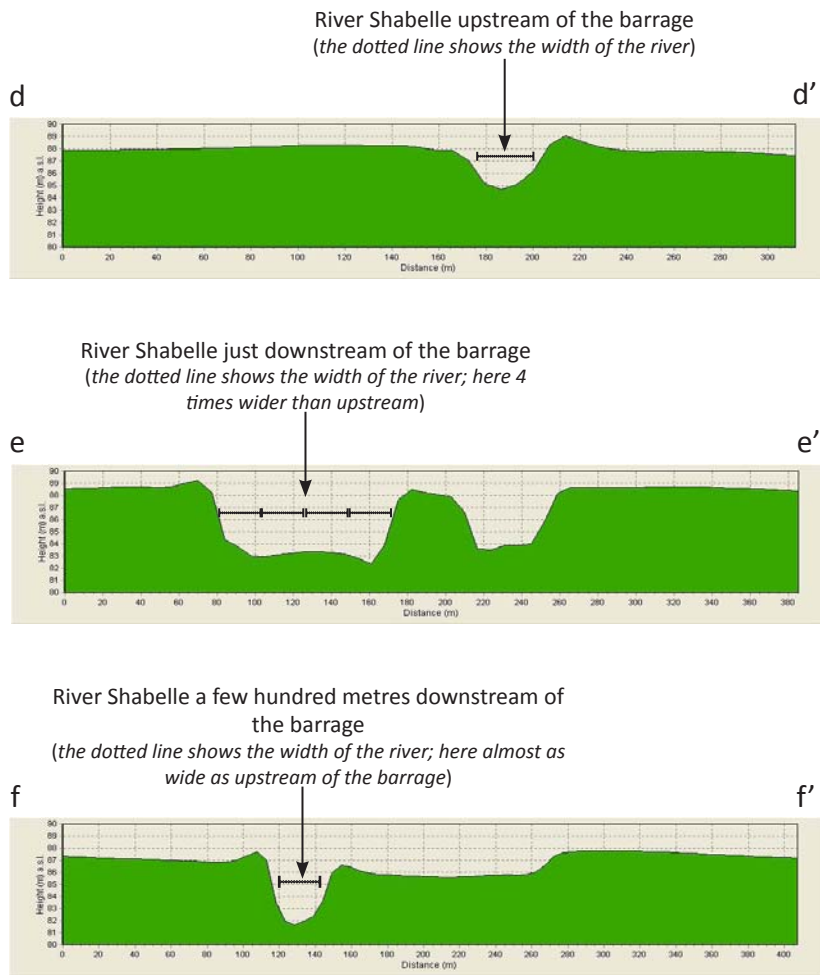
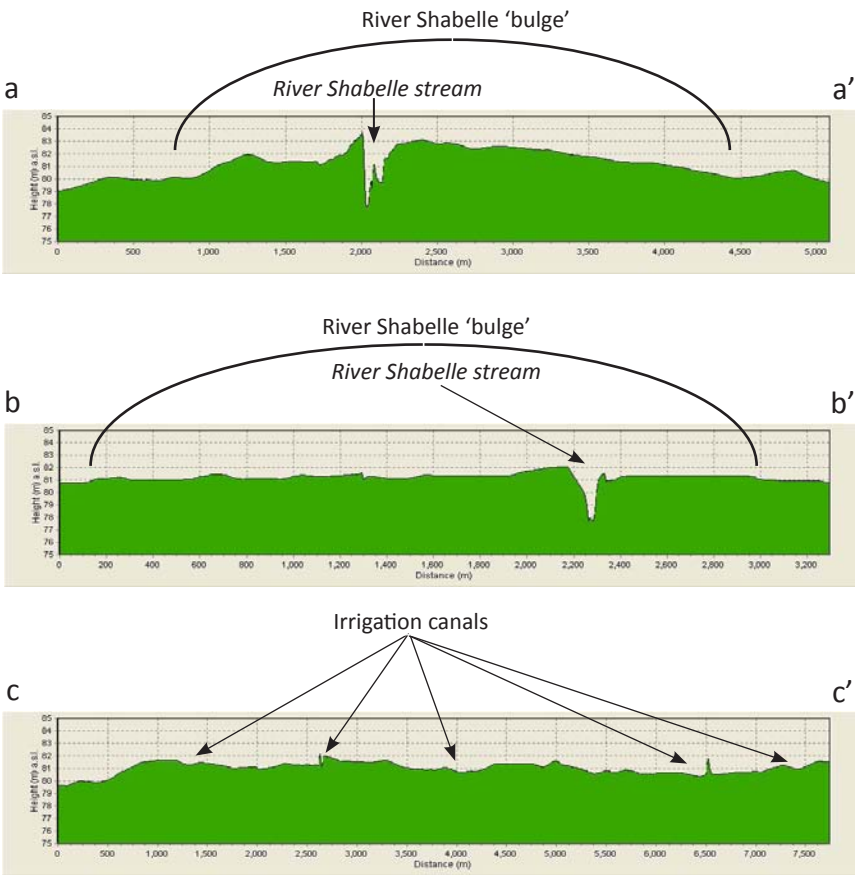
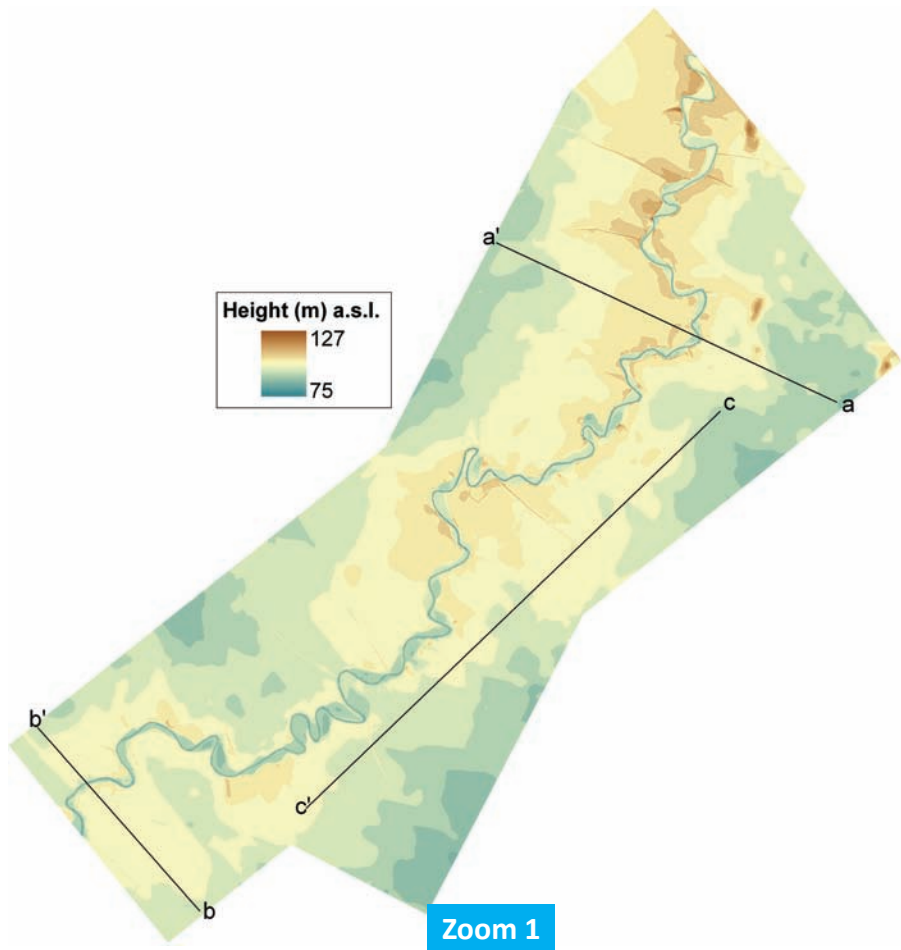


Longitudinal profile along the valley from upstream to downstream. This profile is almost 46 km long, with the difference in elevation of only 8.4 m

Muuqaalka dhererka dhinaca jiidda dooxa laga soo bilaabo biyoshubka sare ilaa biyoshubka hoose. Muuqaalkaan dhinaca dherer ahaan wuxuu ku dhaw yahay 46 km, ayadoo farqiga xagga joogu yahay 8.4 m oo keliya.



Morphology Qaab-dhismaha



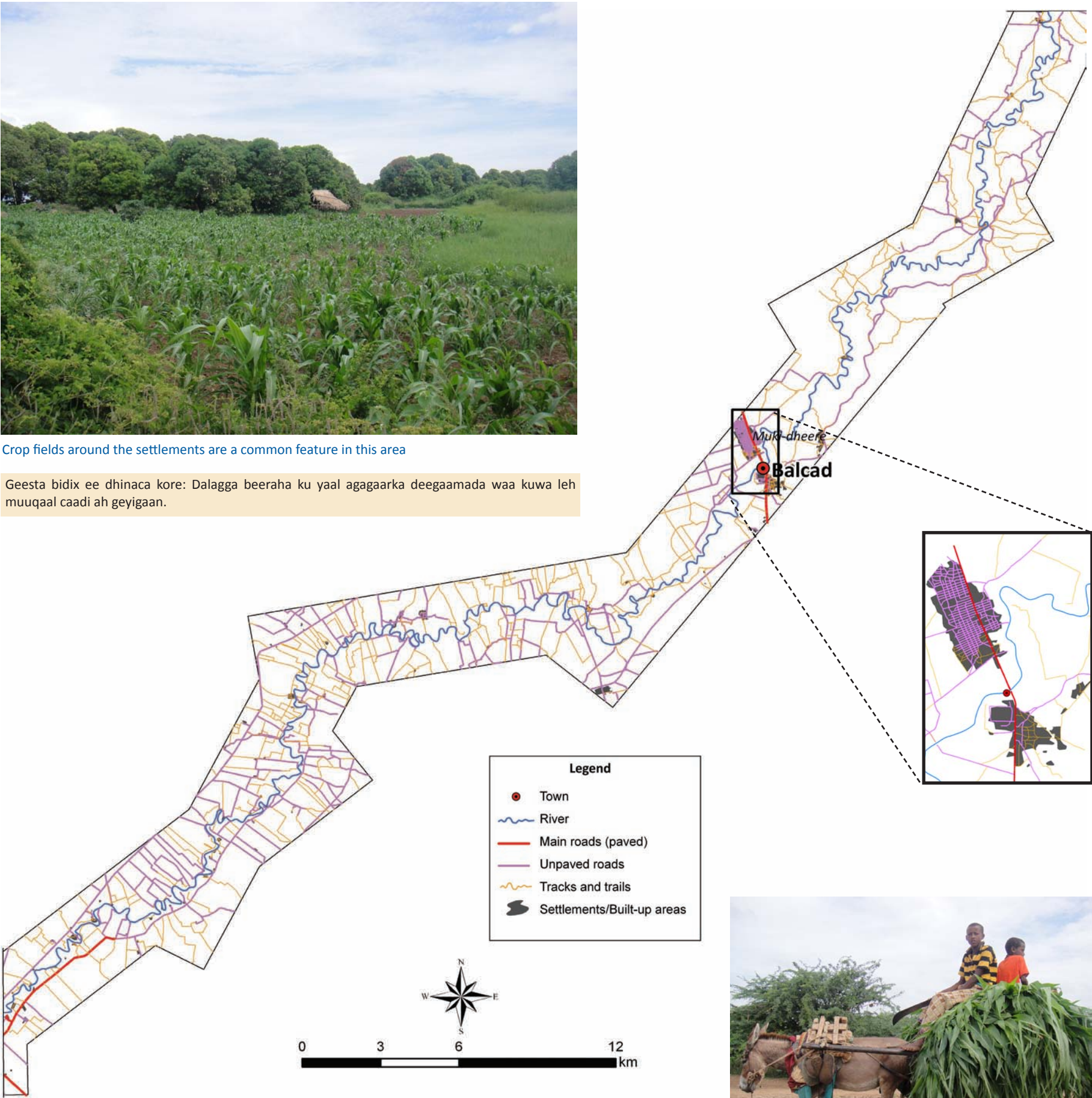
Roads and settlements

Waddooyinka iyo degmooyinka



Crop fields around the settlements are a common feature in this area

Geesta bidix ee dhinaca kore: Dalagga beeraha ku yaal agagaarka deegaamada waa kuwa leh muuqaal caadi ah geyigaan.



The road network is not well developed and is characterised mainly by tracks and feeder roads. The main road to Mogadishu passes through the town.

Isku xirka waddooyinka ma aha mid aad u hormarsan waxaana lagu yaqaan badanaa jidad iyo wadiiqooyin la maro. Waddada muhiimka ah ee Mogadishu ka timaada waxay dhexmartaa magaalada.



The roads are all earth roads and provide accessibility by non-motorized vehicles too

Geesta midig ee dhinaca hoose: Wadooyinku waa jid cade kuwaas oo siinaya marintaan fudud dadka kuwaas oo aanay isticmaalin baabuur.

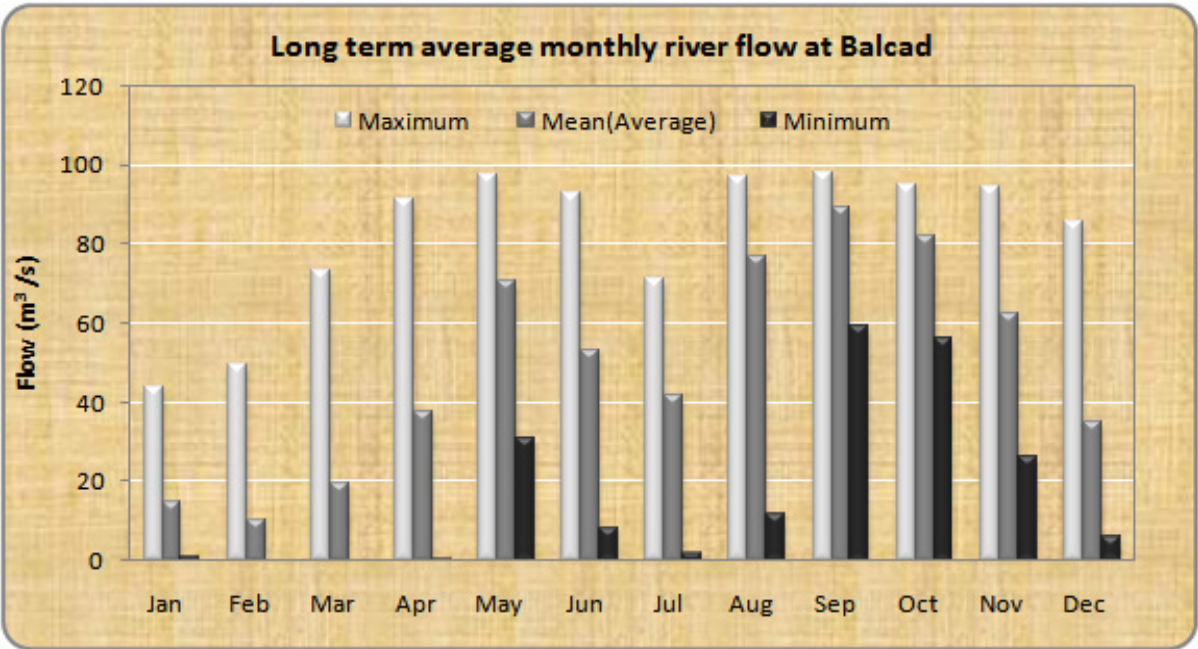
Climate and water resources

Cimilad iyo khayraadka biyaha

The area around Balcad receives about 545 mm of average annual rainfall, which is relatively high compared to many other areas of the country. The months with the highest rainfall are May (114 mm) and November (111 mm). Mean monthly temperature is in the range of 26 - 30 °C

Degaanka ku wareegsan Balcad wuxuu hela roobab lagu qiyaaso 545 mm sanadkiiba marka loo eego meelaha kale ee wadanka. Bilaha ugu roobka badan celcelis ahaan waa May (114 mm) iyo Nofambar (111 mm). Kulbeeggu celcelis ahaan wuxuu u dhaxeeyaa 26 - 30 °C.

Long term average monthly climatic values at Balcad												
Climatic variable	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainfall (mm)	0.0	1.0	10.0	92.0	114.0	71.0	17.0	21.0	13.0	65.0	111.0	30.0
Mean temperature (°C)	28.0	28.9	29.5	29.2	27.7	26.9	26.2	26.5	26.9	27.5	27.5	27.5
Minimum temperature (°C)	21.1	21.5	22.5	23.2	23.0	21.6	20.8	20.8	21.3	22.0	21.8	21.5
Maximum temperature (°C)	34.0	35.2	36.2	35.7	33.6	31.5	30.1	31.0	32.3	32.8	32.6	32.5
Potential evapotranspiration (mm)	167	168	189	150	139	120	124	136	147	148	144	158
Wind speed (km/hr)	7.2	7.6	6.8	4.7	4.7	5.4	5.8	5.4	5.4	7.2	7.2	9.0



River gauge station details

Grid reference: 2:21:00 N, 45:23:30 E
Altitude: 95.0 m a.s.l
Catchment area: 272 700 km²
Daily mean flow: 50.0 m³/s
Current status: Not operational

River flow is generally stable over the wet periods. The stability is however attained through bankfull levels which are easily attained due to the shallow and poorly defined river channel in many parts of the lower reaches of the Shabelle River.

Guud ahaan socodka biyaha wabigu waa mid degan xilliyada qoyaanka ah. Si kastaba ahaate, deganaashahaas waxa keenay in gebiyada wabigu oo gaaban iyo dooxa wabiga oo aan si fiican uu qeexnayn meelo badan oo dhanka hoose ee wabiga Shabeelle uu gaaro .

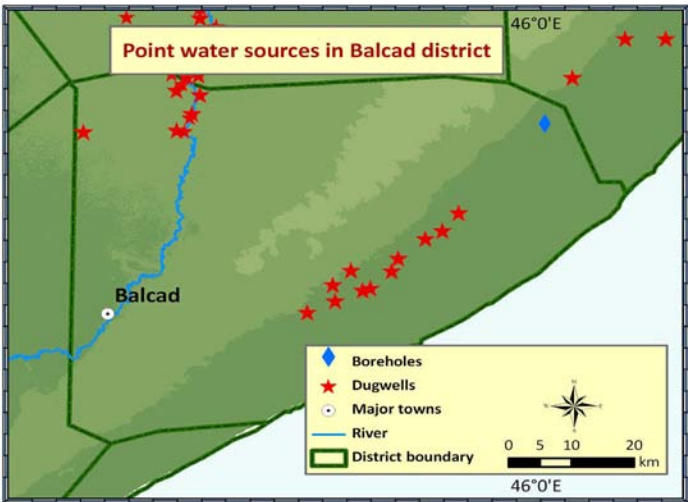


A Water supply centre in Balcad area

Rugta biyo qaybin oo ku taal dagaanka Balcad

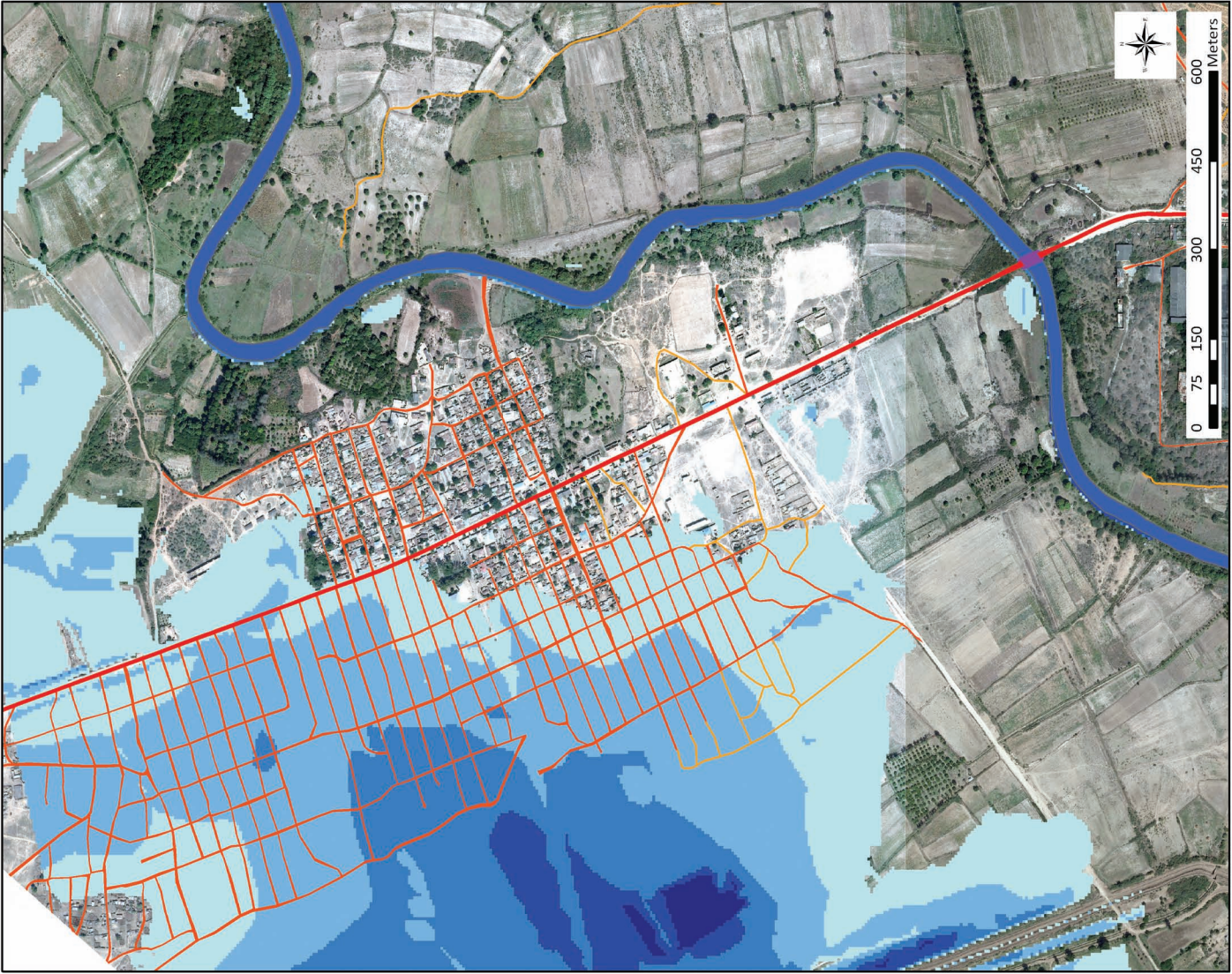
Shallow wells dominate the point water sources around the Balcad area. The shallow wells are concentrated in some areas, probably where there is shallow water table.

Agagaarka Balcad ceelasha gaagaaban waa ilaha biyaha laga helo kuwa ugu badan. Ceelasha gaagaaban waxay ku urursan yihiin meelaha qaarkood siiba meelaha gunta biyahu ay gaaban yihiin.



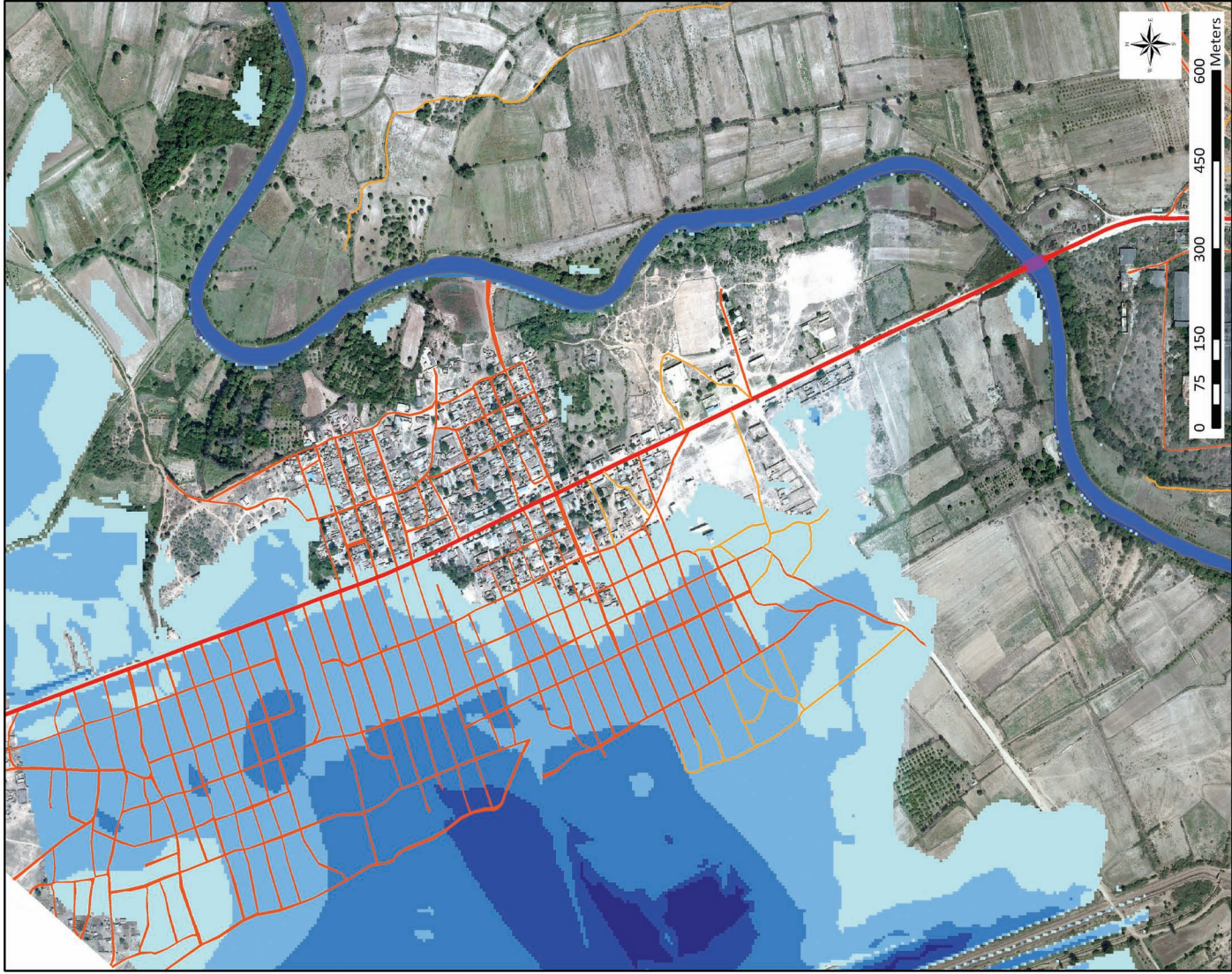
Flood risk map for Balcad - 5 year return period

Kharidadda halista fatahaadda ee Balcad
5 sanaba soo noqota mar



Flood risk map for Balcad - 20 year return period

Kharidadda halista fatahaadda ee Balcad
20 sanaba soo noqota mar

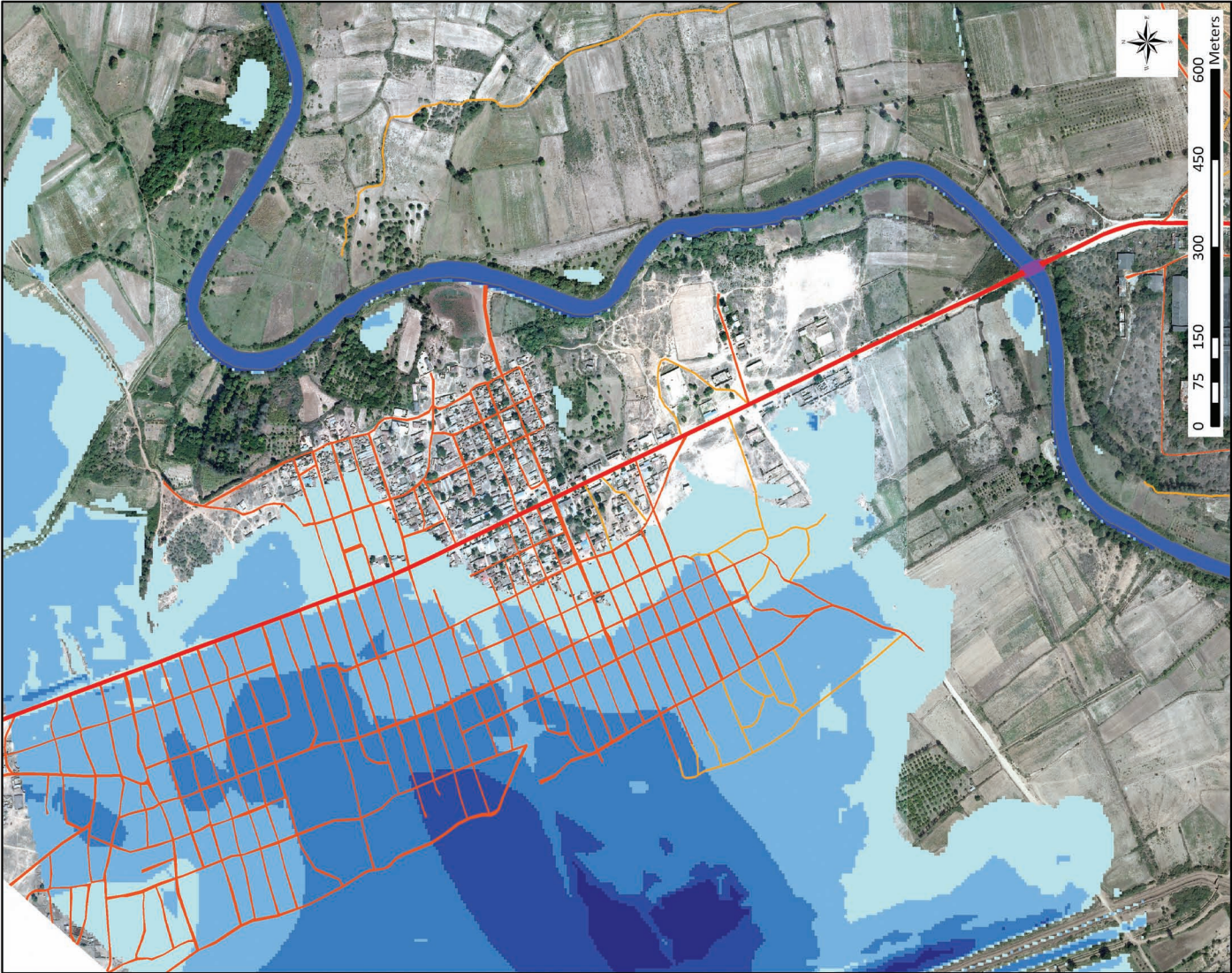


The flood risk scenarios (extent and depth) were generated using HEC-RAS hydrodynamic model. Inputs included observed flow data, river cross sections, DTM. For more information contact SWALIM (enquiries@faoswalim.org)

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 xogta socodka wabiga oo laga cabiray jeexyada gudban, DTM. Haddii aad macluumaad dheeraad ah aad u baahato SWALIM kala soo xiriir (enquiries@faoswalim.org)

Flood risk map for Balcad - 50 year return period

Kharidadda halista fatahaadda ee Balcad
50 sanaba soo noqota mar



Flood risk map for Balcad - 100 year return period

Kharidadda halista fatahaadda ee Balcad
100 sanaba soo noqota mar

