

# Groundwater 4 Ethiopia

Update ongoing drilling supervision of 20 climate resilient boreholes in complex hydrogeological environments in Ethiopia's arid and semi-arid regions

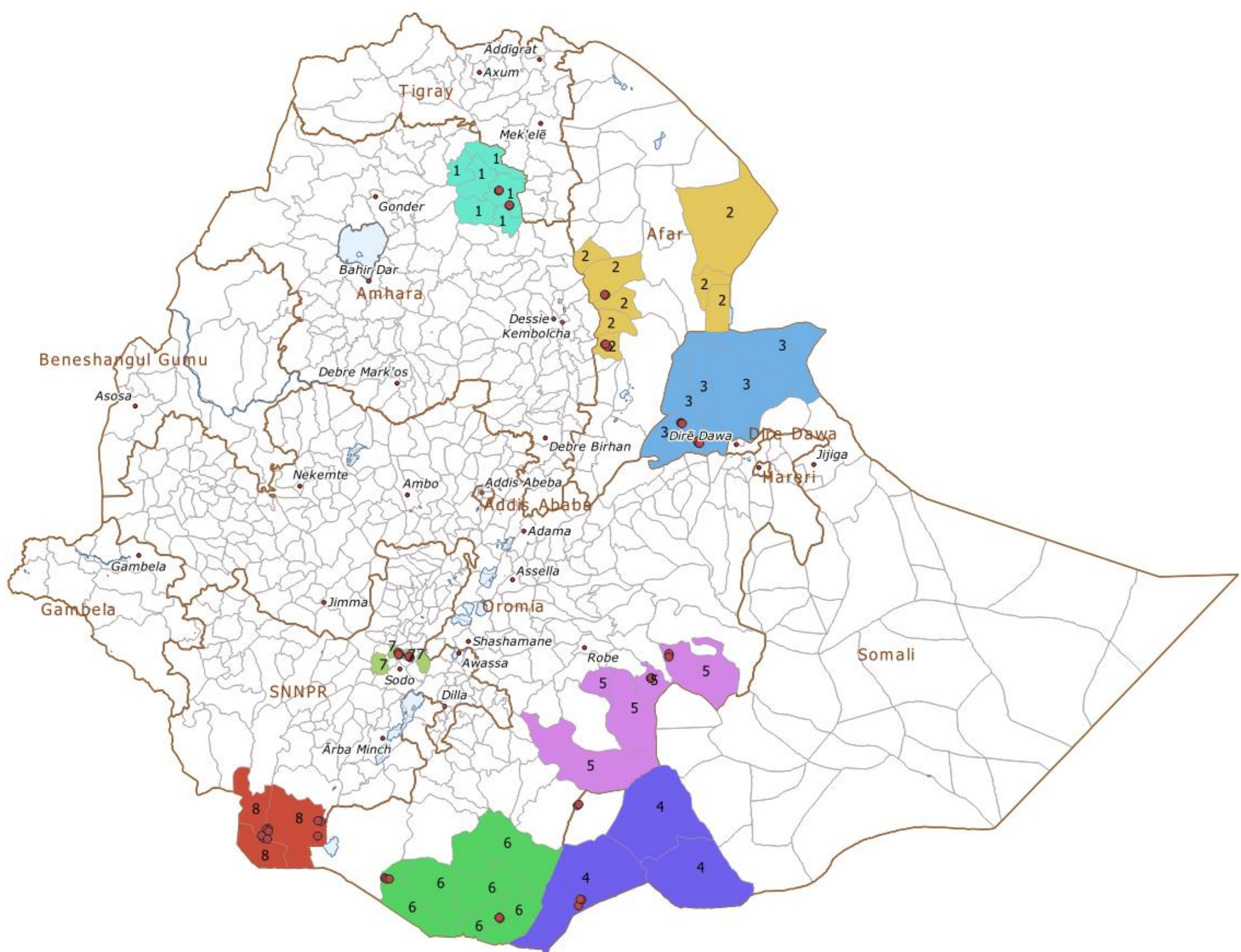
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## Background

Following the conclusion of the Groundwater Mapping project in Ethiopia - GW4E, Acacia Water is tasked to carry out the boreholes drilling supervision work for drilling up to 20 (twenty) climate resilient boreholes in 8 (eight) EU-RESET clusters in arid and semi-arid regions of Ethiopia. The work presented here gives an update of the ongoing implementing activities, its successes, and challenges aiming at finding enough and safe groundwater for fragile communities.

Supervision tasks consisted of developing protocols, coordinate mobilization, inspecting materials, monitor drilling, construction of the boreholes and pumping tests, develop capacity among local experts, calculate sustainable yield and ensure quality of drilling report.



EU-RESET II priority clusters (1-8) and location of the proposed drilling sites (red dots)

Summary Table ongoing implementation EU-RESET II - update borehole data (April 30, 2022)																	
S/N	Cluster	Region	Zone	Woreda	BH Site location / Kebble Name	Socio-economic aspect/ expected beneficiaries	Drilled BH Data										Remarks
							Year	Depth planned/ drilled (m)	Productive casing		SWL (m)	DWL (m)	Q (l/s)	EC (µS/cm)	GPS Coordinates		
									Type	Diameter					X	Y	
1	2	Afar	Zone 1	Adear	Hado	domestic supply and livestock	2021	350			50				638119	1262345	Drilling ongoing
2	2	Afar	Zone 1	Dewe	Halbina /Silindaho	domestic supply and livestock	2021	350							637211	1195484	Not started
3	3	Somali	Siti	Erer	Erer	domestic supply and livestock	2021	400	Steel	8"	8	166	8	3.260	762810	1063480	Moderatly saline
4	3	Somali	Siti	Mieso	Hawanile	domestic supply and livestock	2022	400?							738950	1090795	Drilling ongoing
5	4	Somali	Liben	Moyale	Mubarek	domestic supply and livestock	2021	113	Steel	8"	61	69	7	6.470	603825	440610	Completed
6	4	Somali	Liben	Liben	Deka Suftu1	domestic supply and livestock	2021	257			72		-	-	595180	576055	Abandoned well - collapsed
7	4	Somali	Liben	Liben	Deka Suftu2	domestic supply and livestock	2021	230	Steel	8"	66	75	13,6	1.090	595190	576058	Drilled as a replacment to the collapsed well
8	8	SNNP	South Omo	Dasenech	Omorate	domestic supply	2021	123	Steel	8"	22	53	8	26.000	176166	535506	Highly saline - wat is not suitable for human consumption
9	8	SNNPR	South Omo	Dasenech	Oldemo	domestic supply	2021	105	Steel	8"	20	44	12	1.441	184097	530877	Slightly saline, water needs treatment
10	8	SNNPR	South Omo	Hammer	Erbore	domestic supply	2021	198	Steel	8"	22	64	25	2.420	257095	554804	Moderatly saline
11	7	SNNPR	Wolayita	Damot Pulsa	Warite Balaka	domestic supply	2022	400	Steel	10" & 6"	50	66	33	470	377228	774346	Good water quality
12	7	SNNPR	Wolayita	Boloso Sore	Legama	domestic supply	2022	400							363242	778520	Drilling ongoing
13	6	Oromia	Borena	Guchi	Guchi 1	domestic supply and livestock	2022	-	-	-	-	-	-	-	496916	424688	Drilling stopped at 45m depth
14	6	Oromia	Borena	Guchi	Guchi 2	domestic supply and livestock	2022	86	PVC	6"	56	64	1,6		497889	423263	Slightly elevated sodium and chloride
15	5	Oromia	East Bale	Dawe Kachen	Dibe Mole	domestic supply and livestock	2022	400							700282	746695	Site handed over, contractor ready for mobilization
16	5	Oromia	East Bale	Rayitu	Kere Tule	domestic supply and livestock	2022	400							725266	778555	Site handed over, contractor ready for mobilization
17	1	Amhara	Waghimra	Sekota	Feya	domestic supply	2121	100							496153	1402301	Awaiting security issues to be resolved
18	1	Amhara	Waghimra	Sekota	Feya	domestic supply	2121	100							496024	1401819	Awaiting security issues to be resolved
19	1	Amhara	Waghimra	Sekota	Faya	domestic supply	2121	100							496944	1402628	Awaiting security issues to be resolved
20	1	Amhara	Waghimra	Sekota	Tiya	domestic supply	2121	250							510635	1382304	Awaiting security issues to be resolved

## Challenges and constraints

The implementation is going on for nearly 15 months, as of May 2022. Some of the difficulties encountered are:

- ❑ Security problem influenced the planned job, causing delays;
- ❑ Capacity of the contractors differs enormously from international standards and at domestic level if compared among regions;
- ❑ Limited skills of contractors on the technical, machinery and managerial aspects - e.g. to avoid well collapsing after drilling;
- ❑ Lack of experience in drilling in difficult hydrogeological environments;
- ❑ Difficulty in communication among stakeholders and supervisor, due to language barrier and cultural differences at community level;
- ❑ Poor ability of contractors to solve technical issues during the drilling and implement alternative drilling methods;
- ❑ Critical decision making based not on technical reasons, but political motives;
- ❑ Poor project management practices and reporting skills.



Impressions from the field: (a) Resistivity logging, Warite Balaka (SNNPR); (b) Erer drilling site (Somali); (c) Pumping test Erbore (SNNPR); (d) Drilling site handing over mission in Dibe Mole (Oromia).

