

Intervention suitability map

Types of interventions

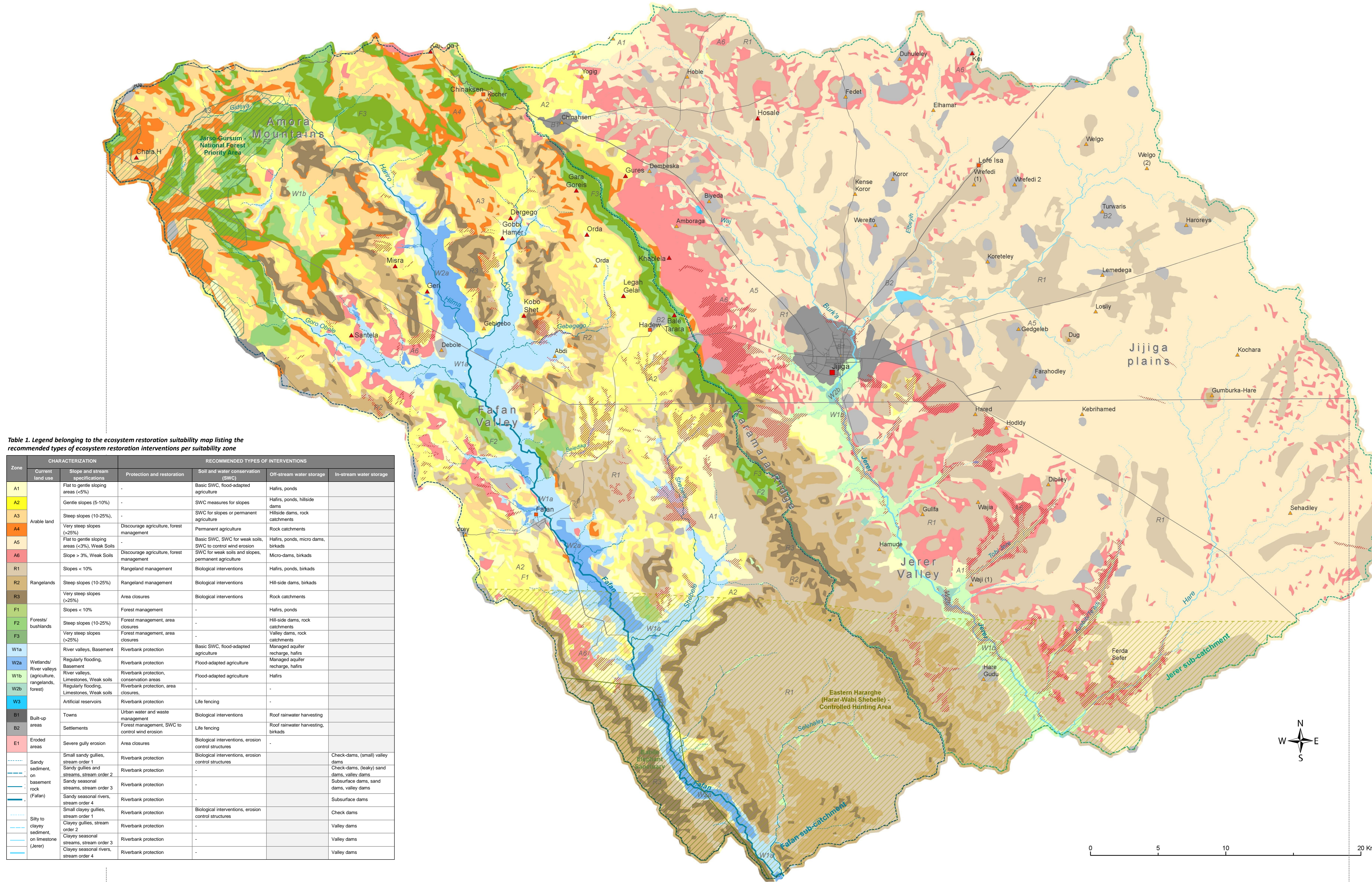


Table 1. Legend belonging to the ecosystem restoration suitability map listing the recommended types of ecosystem restoration interventions per suitability zone

Zone	CHARACTERIZATION		RECOMMENDED TYPES OF INTERVENTIONS			
	Current land use	Slope and stream functionalities	Protection and restoration	Soil and water conservation (SWC)	Off-stream water storage	In-stream water storage
A1	Flat to gentle slopes areas (<5%)	-	-	Basic SWC, flood-adapted agriculture	Hafts, ponds	
				SWC measures for slopes	Hafts, ponds, hillside dams	
				SWC for slopes or permanent agriculture	Hillside dams, rock catchments	
				Permanent agriculture	Rock catchments	
				Basic SWC, SWC for weak soils, SWC to control wind erosion	Hafts, ponds, micro dams, birikads	
A2	Gentle slopes (5-10%)	-	-	SWC for slopes or permanent agriculture	Hillside dams, rock catchments	
				Basic SWC, SWC for weak soils, SWC to control wind erosion	Hafts, ponds, micro dams, birikads	
A3	Steep slopes (10-25%)	-	-	SWC for slopes or permanent agriculture	Hillside dams, rock catchments	
				Basic SWC, SWC for weak soils, SWC to control wind erosion	Hafts, ponds, micro dams, birikads	
A4	Very steep slopes (>25%)	-	-	Permanent agriculture	Rock catchments	
				Basic SWC, SWC for weak soils, SWC to control wind erosion	Hafts, ponds, micro dams, birikads	
A5	Flat to gentle slopes areas (<5%), Weak Soils	-	-	Basic SWC, SWC for weak soils, SWC to control wind erosion	Hafts, ponds, micro dams, birikads	
				SWC for slopes or permanent agriculture	Hillside dams, rock catchments	
A6	Slope > 3%, Weak Soils	-	-	Basic SWC, SWC for weak soils, SWC to control wind erosion	Hafts, ponds, micro dams, birikads	
				SWC for slopes or permanent agriculture	Hillside dams, rock catchments	
R1	Slopes < 10%	-	-	Rangeland management	Hafts, ponds, birikads	
				Biological interventions	Hafts, ponds, birikads	
R2	Steep slopes (10-25%)	-	-	Rangeland management	Hafts, ponds, birikads	
				Biological interventions	Hafts, ponds, birikads	
R3	Very steep slopes (>25%)	-	-	Area closures	Rock catchments	
				Biological interventions	Rock catchments	
F1	Slopes < 10%	-	-	Forest management	Hafts, ponds	
				Biological interventions	Hafts, ponds	
F2	Steep slopes (10-25%)	-	-	Forest management, area closures	Hillside dams, rock catchments	
				Biological interventions	Hillside dams, rock catchments	
F3	Very steep slopes (>25%)	-	-	Forest management, area closures	Valley dams, rock catchments	
				Biological interventions	Valley dams, rock catchments	
W1a	River valleys, Basement	-	-	Riverbank protection	Managed aquifer recharge, hafts	
				Biological interventions	Managed aquifer recharge, hafts	
W2a	Regularly flooding, Basement	-	-	Riverbank protection	Flood-adapted agriculture	
				Biological interventions	Flood-adapted agriculture	
W1b	River valleys, agriculture, rangelands, forest	-	-	Riverbank protection, conservation areas	Hafts	
				Biological interventions	Hafts	
W2b	Regularly flooding, limestone, weak soils	-	-	Riverbank protection, area closures	-	
				Biological interventions	-	
W3	Artificial reservoirs	-	-	Riverbank protection	Life fencing	
				Biological interventions	Life fencing	
B1	Built-up areas	-	-	Urban water and waste management	Roof rainwater harvesting	
				Biological interventions	Roof rainwater harvesting	
E1	Eroded areas	-	-	Forest management, SWC to control wind erosion	Life fencing	
				Biological interventions, erosion control structures	Life fencing	
S1	Small sandy gullies, stream order 1	-	-	Riverbank protection	Biological interventions, erosion control structures	
				Biological interventions	Biological interventions, erosion control structures	
S2	Sandy sediment, on basement rock	-	-	Riverbank protection	Check-dams, (small) valley dams	
				Biological interventions	Check-dams, (small) valley dams	
S3	Sandy sediment, on limestone (Mere)	-	-	Riverbank protection	Check-dams, (small) valley dams	
				Biological interventions	Check-dams, (small) valley dams	

Table 2. Overview of types of ecosystem restoration interventions including examples, benefits to users and ecosystems, and contribution to SCRSE project goals

Types of interventions	Categories of interventions	Explanation and examples	Benefits		Contribution to SCRSE project goals		
			Direct to users	To ecosystem restoration	Water security	Food Security	Disa
Protection and restoration	Riverbank protection	Protection of riverbanks and flooding areas against overgrazing, cattle farming, tree cutting and water erosion. In the case of artificial reservoirs also protect the inflow area.					
	Area closure	Protection of an area against degrading activities, such as grazing, agriculture and/or tree cutting. Often out-and-out systems and fruit harvesting are allowed. Sometimes closures function as back-up grazing area for emergencies. The closures can be realized by fencing or (community) agreements					
	Forest management	Agreements on sustainable use of forested areas, including controlled harvesting of wood and other natural products. Increasing the ecological and socio-economic value through tree planting, wildlife management, control of invasive species, etc.					
	Rangeland management	Agreements on grazing patterns, assignment of wet/dry season and emergency grazing areas, sustainable wood harvesting, wildlife management					
	Urban water and waste management	Collection and safe disposal of waste(water)					
Soil and water conservation	Basic SWC	Mulching, grass strips, soil bunds					
	SWC to control wind erosion	Tree planting, tree strips (wind breaks), life fencing, agroforestry					
	SWC for slopes	Terracing, contour bunds, contour ploughing, tied ridges, grass-strips, contour treeing					
	SWC for very steep slopes	Stone structures above ground such as stone bunds, trenches, hillside terracing, check dams, tree strips					
	SWC for weak soils	Soil moisture management, mulching					
Off-stream water storage	Conservation agriculture (CA)	The three main CA principles are: minimal soil disturbance, permanent soil cover and crop rotations					
	Permanent agriculture	Production of permanent crops such as fruit trees, tea, coffee, and nut					
	Flood-adapted agriculture	Produce crops outside the flooding period, or flood resistant crops. Apply spate irrigation or floodwater spreading					
	Biological interventions	Revegetation, afforestation, reforestation and protection of trees. Planting of species that promote soil stability. Controlled grazing					
	Erosion control structures	Small and larger scale structures constructed with manual labour to control erosion, such as gullies					
In-stream water storage	Haft dams	Also known as weirs/tanks. Larger excavations for water storage on flat to gently sloping lands					
	Ponds	Small natural depressions in which runoff concentrates made impervious to prevent leakage					
	Hill-side dams	Small hill-side half-moon shaped embankments on medium-slopes slopes used to promote infiltration and store water					
	Rock catchments	Open water reservoirs built to trap water coming off bare rock areas					
	Birikads	Underground systems dug out and lined to store water, keep it cool and (when covered) prevent evaporation					



Figure 1. Examples of ecosystem restoration interventions organized per type. All pictures taken in the SCRSE project area by Acacia Water.