

Dry Valley Suitability Matrix – GIZ SDR

Rapid field appraisal (approx. 1 day) implemented by a small team (follows satellite identification):

- 1) The suitability matrix (filled in by a small team consisting of an engineer, productive use expert, participatory planning advisor, woreda expert NRM, and kebele leader)
- 2) The filled form has to be integrated into the Onstruc reporting which will be accompanied by photos of the area, completing an all-round overview of the potential.
- 3) If the indication of suitability is positive further in-depth Key Informant Interviews can follow.
- 4) Dry valleys having at least one of the following characteristics will not be considered for further assessment against the evaluation criteria of the dry valley suitability matrix:
 - If there is no flood at all.
 - If the nearest community settlement is too far to make use of rehabilitated land.
 - Gulley depth above 4 meters.
 - Gulley with stable conditions/ if erosion is not a problem.
 - If private land / individual land takes a large share of the dry valley.
 - The slope above 3%
 - V- shape topography with no command area.
 - Areas with suspects of conflict.
 - Areas nominated for contradicting projects (e.g., Earthen dam upstream).
 - Areas with unclear administrative set up e.g., boundaries.

In general, the assessment covers five aspects: physical, biological, social, construction cost, and stakeholder aspects.

Date:		Region:	
Woreda:		Kebele:	
Name, organization and position of participating evaluators:			
1. Engineer:			
2. Productive use expert:			
3. Participatory planning expert:			
4. Partner (Woreda)			
5. Partner (Kebele)			

Summary table				
	Total scores	Average scores	Weight	Weighted score
Physical Aspects		(= total/34) =	0.3	(=average score*weight) =
Biological Aspects		(= total/16) =	0.2	(=average score*weight) =
Social Aspects		(= total/23) =	0.2	(=average score*weight) =
Construction Cost Aspects		(= total/22) =	0.2	(=average score*weight) =
Stakeholders Aspects		(= total/8) =	0.1	(=average score*weight) =
Total score of Dry Valley: (=sum of weighted scores * 100) =				

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Physical aspects (12 questions)		
Gully Depth	Points	Score:
<2 meter	3	
2-3 meter	2	
4 meters	1	
Existing Soil Type	Points	Score:
Clay/Loam/Rocky	3	
Sand/Silt	2	
Black cotton	1	
Level of Erosion / Degradation	Points	Score:
Gully erosion must be stopped and inversed, to achieve sustainable management or at least the level of slow degradation.	3	
Erosion control and infiltration measures are possible with relatively simple measures,	2	
Different levels of production potential or biomass are possible	1	
Trend of Degradation	Points	Score:
Fast (within 5 years)	3	
Medium (5-10 years)	2	
Slow (>10 years)	1	
Site Level of Difficulty	Points	Score:
If the gully depth is below 1-meter, good vegetative cover, and no erosion downstream and on both sides of the gully	3	
If the gully depth is up to 2 meters and no side erosion problem, 2 and above side contributors	2	
If the gully depth is above 3 meters, meander, the high slope at the top to down or left to right, no vegetative cover, erosion problems at the upstream and downstream, and more than three side contributors	1	
Aggravating Factors (bush clearing, charcoal making, wrong plowing method, soil property, inappropriate water harvesting structure, and improper road)	Points	Score:
No	1	
Yes	0	
Average Slope	Points	Score:
0-2	3	
2-5	2	
>5	1	
Dry Valley Downstream Ending Place	Points	Score:
Rock place	3	
Flat land	2	
Big/ unmanageable gully or River	1	
Terrain Nature/Topography of the Area/	Points	Score:
Flat area with hills for WSW wing closing	3	
Flat area	2	
U shape at both sides of the gully	1	
Dry River Valleys Receiving Seasonal Floods	Points	Score:
From adjacent highlands and local rain	2	

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Only local rain	1	Score:
Height of Floods (m) Physical observations (trees, debris)	Points	
0.5 – 1 m	3	
1 – 2 m	2	
< 0.5 m or > 2 m	1	Score:
What Should be the Primary Effect of the WSW	Points	
Sedimentation, pastoral, or crop production	3	
Sedimentation, and temporary water source	2	
Sedimentation	1	
Total score physical aspects: (copy to the summary table)		

Biological Aspects (5 questions)

Predominant Soil Type	Points	Score:
Clay or loam	3	
Sand	2	
Rocky soil	1	Score:
Rangeland Status	Points	
Good potential	3	
Moderately degraded	2	Score:
Highly degraded	1	
Vegetation Cover	Points	
Good	3	Score:
Moderate	2	
Scattered bush and grass	1	
Not observed any vegetation	0	
Availability of Biological Conservation Plants	Points	Score:
Yes	1	
No	0	Score:
Presence of invasive species	Points	
No invasive	3	
Light (easily manageable)	2	
Moderate (needs integration)	1	
Heavy (Mechanization)	0	
Total score biological aspects: (copy to the summary table)		

Social aspects (9 questions)

Number of hamlets/villages in this dry valley	Points	Score:
1 _ 2	3	
3 _ 4	2	
>5	1	Score:
The average number of households per hamlet/village	Points	
>20	3	
10 _ 20	2	Score:
<10	1	
Community living in proximity of the selected dry valley	Points	
Within 1Km	3	Score:
1-3 KM	2	
>3KM	1	
Permanent Settlement in buffer zone (Less than 500 m)	Points	Score:

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No	1	
Yes	0	
Land Ownership	Points	Score:
Communal	3	
Mixed	2	
Private (if the number of plot owners is greater than 20)	1	
Agro-pastoralist population with knowledge of crop production	Points	Score:
Yes	1	
No	0	
Signs of Cultivation (e.g., maize, sorghum, grasses)	Points	Score:
Yes	1	
No	0	
Experience with Ploughing Methods	Points	Score:
Tractor	3	
Oxen and another draft animal	2	
Hand-tools	1	
Sign of Community efforts for rehabilitation	Points	Score:
Yes	1	
No	0	
Total score social aspects: (copy to the summary table)		

Construction Cost Aspects (7 questions)		
Sufficient construction inputs of stones, Sand, and Water available for construction	Points	Score:
<5 Km radius	3	
5- 15 Km radius	2	
15-25 Km radius	1	
> 25 Km radius	0	
Road access (all weather road for motorized vehicles/trucks)	Points	Score:
Yes	1	
No	0	
Distance from Woreda/Kebele/other town center (for site supervision, construction organization, and logistic)	Points	Score:
<5 Km radius	3	
5- 10 Km radius	2	
10-20 Km radius	1	
> 20 Km radius	0	
Number of WSW structures required for completing the dry valley	Points	Score:
< 5	3	
5- 15	2	
>15	1	
Potential command area (ha) to be rehabilitated for productive use (rangeland or crop land)	Points	Score:
>100 ha	3	
50- 100 ha	2	
< 50 ha	1	
Availability of masons and daily labours	Points	Score:
<1 KM Radius	3	
3-5 KM Radius	2	
>20 KM Radius	1	
Proximity to market town	Points	Score:

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5-10	3	
10-20	2	
>20	1	
Total score construction cost aspects: (copy to the summary table)		

Stakeholders Aspects (3 questions)		
Other NRM projects active in the area (implemented or planned)	Points	Score:
Yes	1	
No	0	
Future Development Plan in the area supporting DVRPU Approach	Points	Score:
Yes	1	
No	0	
Availability of Kebele institutions and their functionality	Points	Score:
Yes	1	
No	0	
Availability of DAs	Points	Score:
Yes	1	
No	0	
Total score stakeholders' aspects: (copy to the summary table)		

Additional Observations (Remarks) if any: