INTRODUCTION OF SPATE IRRIGATION IN SOMALIA/SOMALILAND

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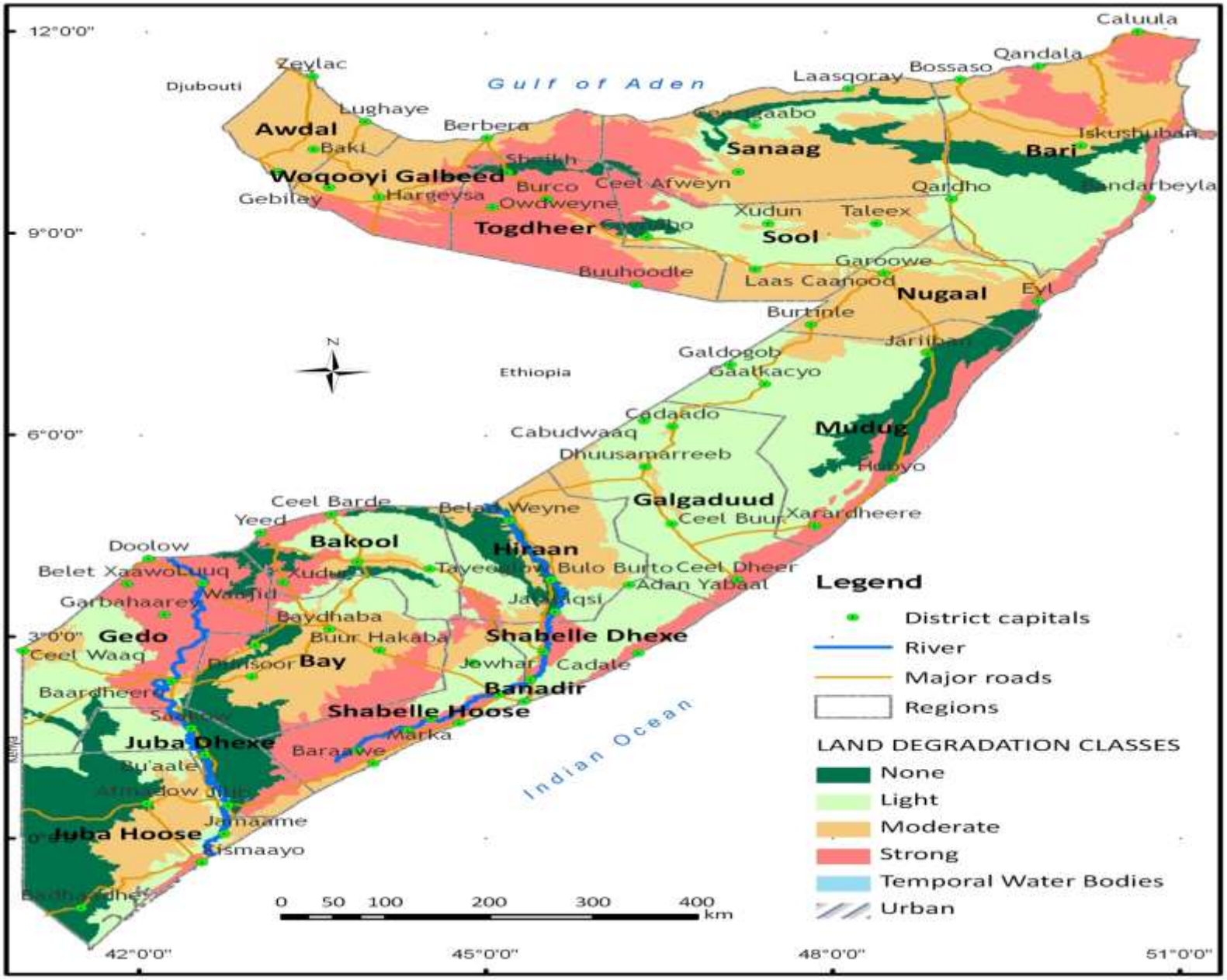
Outline of presentation

- Status of climatic conditions of Somalia
- Ground water conditions
- Drainage systems in Somalia
- Potential areas and projects in FBFS
- Spate irrigation in Burao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Caluula
Qandala
Bossaso
Laasqoray
Zeylac
Djubouti
Gulf of Aden
Lughaye
Awdal
Baki
Berbera
Sanaag
Bari
Iskushuban
Sheikh
Woqooyi Galbeed
Burco
Ceel Afweyn
Qardho
Bandarbeyla
Gebilay
Hargeysa
Owdweyne
Xudun
Taleex
Togdheer
Sool
Garoowe
Buuhoodle
Laas Caanood
Nugaal
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Ethiopia
Gaalkacyo
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Ceel Buur
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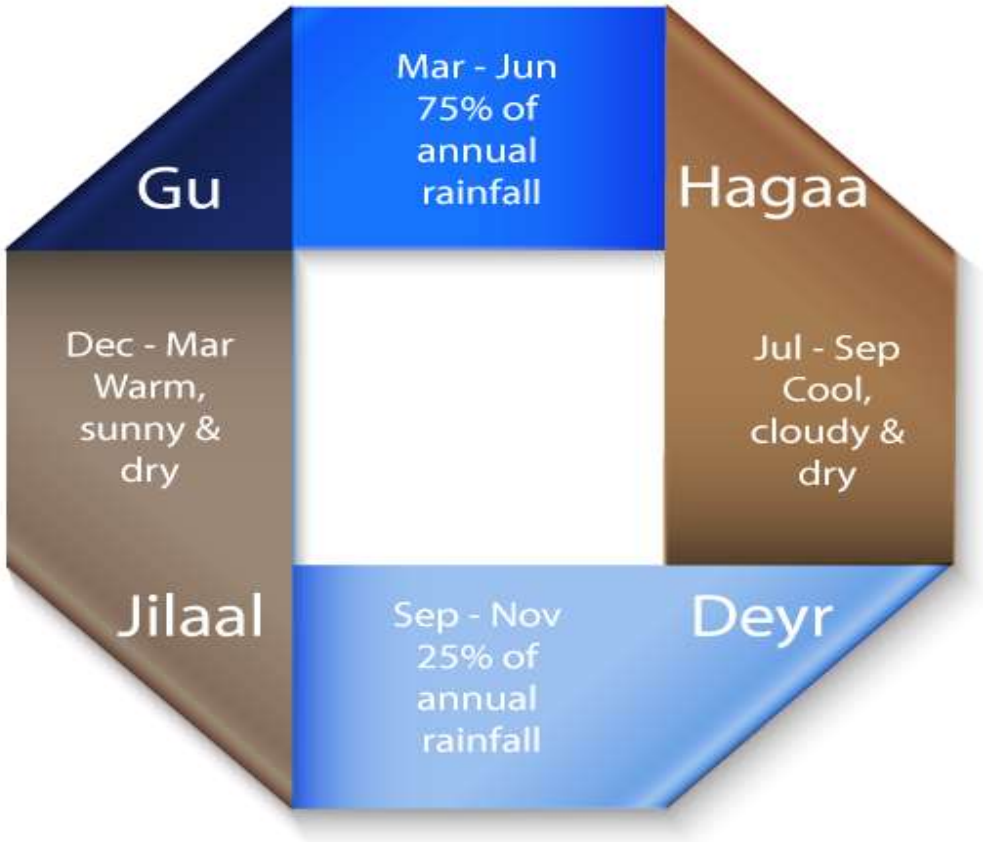
Bakool
Hiraan
Doolow
Belet Xaawo
Tayeeglow
Bulo Burto
Ceel Dheer
Adan Yabaal
Garbahaarey
Baydhaba
Gedo
Buur Hakaba
Shabelle Dhexe
Ceel Waaq
Bay
Jowhar
Cadale
Baardheere
Banadir
Shabelle Hoose
Juba Dhexe
Marka
Baraawe
Indian Ocean
Kenya
Juba Hoose
Jamaame
Kismaayo
0 50 100 200 300 400 km
Legend
District capitals
River
Major roads
Regions
LAND DEGRADATION CLASSES
None
Light
Moderate
Strong
Temporal Water Bodies
Urban

Climatic conditions

- Somalia generally has a semi-arid to arid climate. The main climatic features are the existence of distinct wet and dry seasons and the absence of any large seasonal temperature change. Rainfall is the most important meteorological element affecting life in Somalia.
- Annual precipitation range b/w 250 to 600mm

- The year is divided into four seasons as follows:
- ***Jilaal***: a warm, sunny and dry season from December to mid-March.
- ***Gu***: the main rainy season starting in mid-March and running to June.
- ***Haggai***: a cool, dry and rather cloudy season starting in July and lasting until mid-September; some weather stations along the southern coast and in the northwestern regions receive significant amounts of rainfall.
- ***Deyr***: the secondary rain season, from mid-September to November.

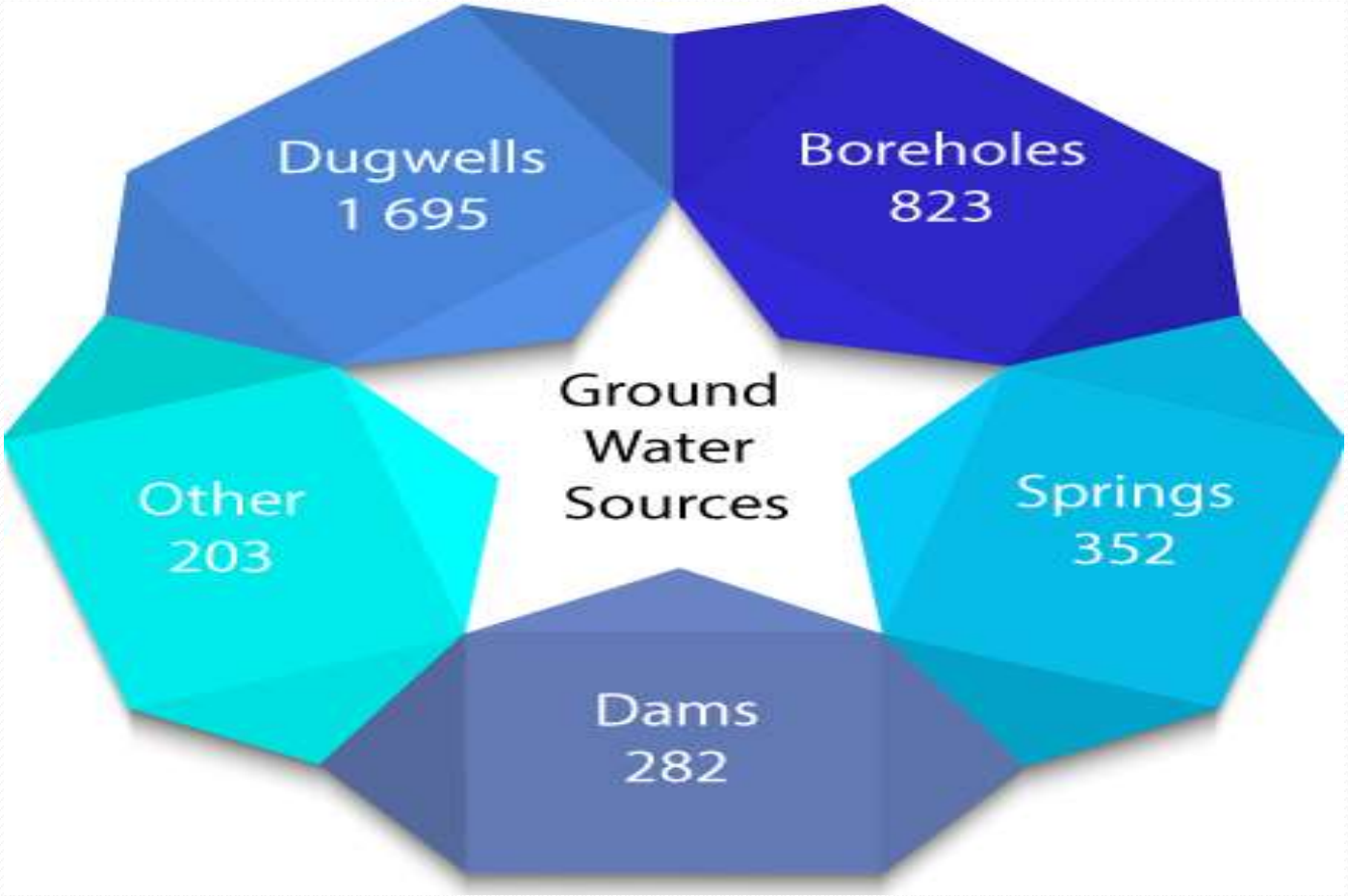
Seasons of Somalia



Ground water

- The main groundwater sources of Somalia are boreholes, shallow wells and springs.
- The depth of most boreholes in the country is in the range of 90m to 250m; but few some areas about 400m deep.
- The majority of the shallow wells are less than 20m deep. The water yield of these sources varies from one area to another, depending on the aquifer. Most shallow wells yield between 2.5 and 10m^3/hr, compared to the yield for most boreholes which ranges between 5 to 20m^3/hr.

Ground water cover



FBFS projects in Somaliland

- Soil conservation project (IFAD)
- Water shed management project (GIZ)
- Spate irrigation project (FAO)
- Irrigation consolidation and better farming sytem project (GAA)
- Promoting small scale irrigation systems (Islamic Relief)

Proposed hosting FBFS Network in Somalia

- Candlelight (NGO's)
- Amoud University
- Spate Irrigation project in Beer community
- And possible partnership with capacity building
- Lobby irrigation policy and water harvesting systems

Spate Irrigation Project in Burao

- In most simple statement:

- Managing flash floods coming through ephemeral rivers to command areas through simple and economical ways.

AND

converting disasters into blessing.

Table: summary of farms information/data at Beer village, Tog Dheer region in Somaliland (Obtained from MOA, Burao office)

No:	Name of Canal	Area in ha	No of Family	Private / Cooperative	Time of Establishment	Crops Grown
1	Scheme(British one)	240, 400, 400	120, 39, 90	Cooperative	1957	Sorghum, maize, sesame, cowpeas, beans, water melon, some vegetables and fodder grass
2	Doctor's Canal	150	25	Cooperative	2009	
3	Janaale	300	70	Cooperative	1978	
4	Qadhiidha	300	70	Cooperative	1978	
5	Wadani	200	35	Cooperative	2010	
6	Labibulsho	250	25	Cooperative	1978	
7	Caabi	81	28	Cooperative	1992	
8	Libaaxle	120	30	Cooperative	1986	
9	Dhoolayare	100	20	Cooperative	1980	
10	Xassan Bande	60	13	Private	1985	
11	Odayo xun	210	31	Cooperative	1986	
12	Jabyaro	250	45	Private		
13	Qodax wayn	10000	500	Private	1959	
14	Ilmo siciid	60	5	Private	1959	
Total for Whole Area		13031	1126	4 private 10 Cooperative		
Total for present project		11241	712	4 Private 6 Cooperative		

Spate Irrigation benefits

- Low Cost, local material, pro poor, low inputs
- Environment friendly – organic farming, no chemical fertilizer or pesticide, local and indigenous varieties, drought resistant
- Easily manageable – participatory
- Recharging the ground water aquifer (Wells)
- Last hope in this country.

FIGURE 1.1

Area equipped for spate irrigation in selected countries *(FAO-AQUASTAT, 2010)*

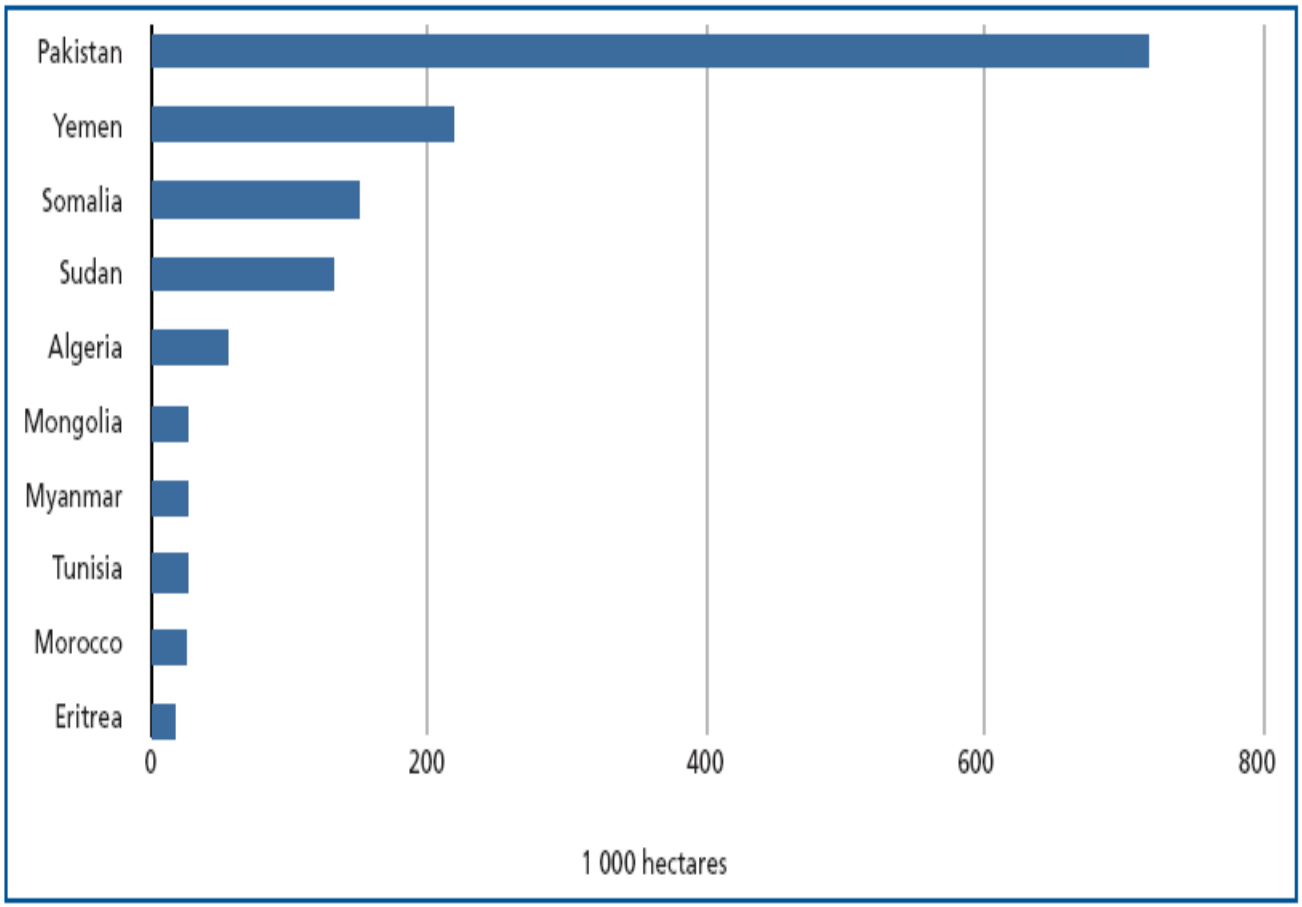
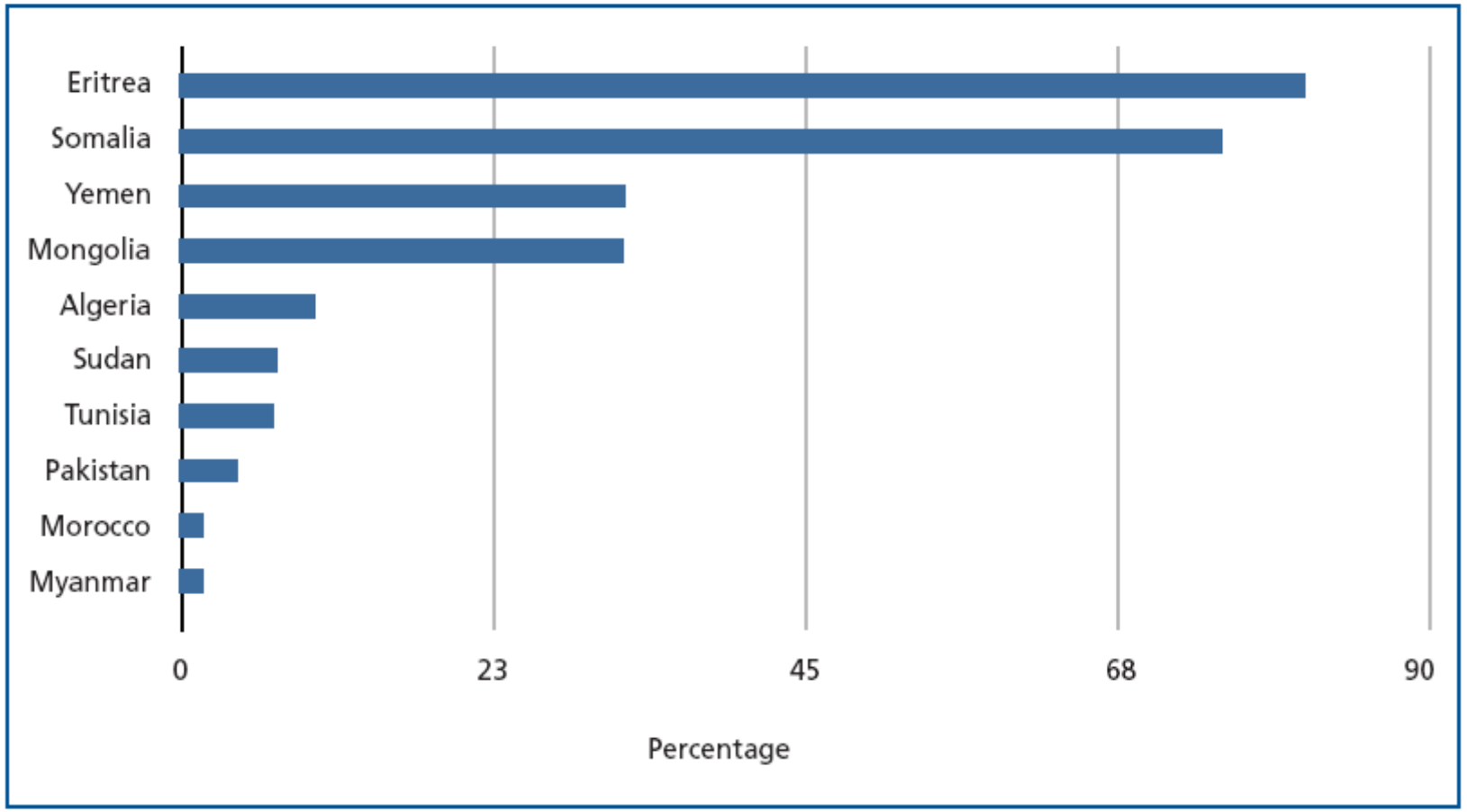
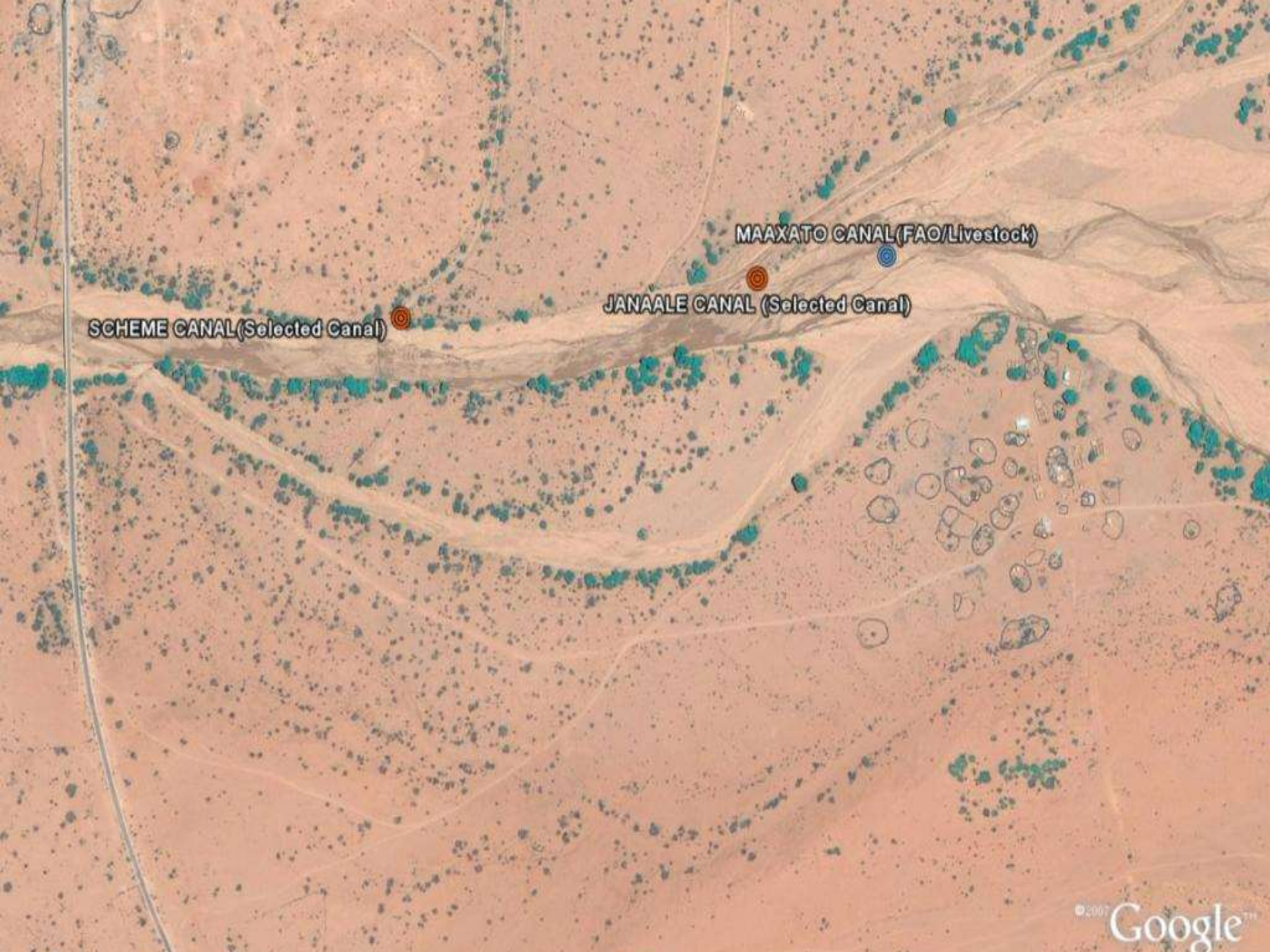


FIGURE 1.2
Spate irrigation as a percentage of total irrigation in selected countries
(FAO-AQUASTAT, 2010)




MAAXATO CANAL(FAO/Livestock)
JANAALE CANAL (Selected Canal)
SCHEME CANAL(Selected Canal)
Google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Togdheer/Burao

- ***In the Togdheer/Nugal drainage basin, some surface water records are available for Togdheer at Burao for six years during 1945 to 1950.***
- ***During this period, an average of about 33 spates was recorded per year. About 85% of these occurred during the five months from May to September. It is estimated that an average runoff of***

  33 million m3 ***(MCM) per year (SWALIM),***

  equivalent to about 22 mm in the 1500 km2 catchment, occurs in the area (runoff coefficient of 0.06) (Kammer,1989). The total catchment area of the drainage basin (Tog Dheer and Nugaal catchments) is about 112,231 km2'

Project

- 10 canals for improvements (according to criteria, consensus and commitment of community)
- Water ponds
- Watershed management
- Agriculture inputs
- Training and extension

Goal

- To contribute to economic growth through increased economic productivity from irrigated land by reducing uncertainties of water availability and improving sustainability by farmers participation.

Indicator:

Uncertainties associated with water availability are reduced, incidence of poor years reduces

Objectives of the Scheme

a) Improve existing traditional flood irrigation system to improve water availability to the scheme and allow more controlled use of the floods.

b) Encourage land users to actively participate in the development of their own land and contribute to the sustainability of the scheme

Cont.

- Improve the delivery of agricultural and irrigation inputs and services to farmers and land users, improve farm practices and economic efficiency of the scheme.
- Extension services for MOA, FO and farmers

Project Activities

- **Civil Work /Water diversion** – through structures – low cost and reliable.Through: Farmers awareness program, presentation of scheme, feedback and follow up

- **Sedimentation control/management** – supervising the flow, de-silting of channels through FO
- **Soil moisture conservation and agronomic practices** - training, demonstrations, experiments, innovative ideas, mix framing, marketing, value addition, pest and disease control etc.
- **Social organization** – establishment/strengthening of FO/WUA/Cooperative – operation and maintenance, dispute resolving, communication, capacity building, cost recovery and management, Gender Issues, WOs

- **Integrated approach**- watershed, livestock, pastoral, agriculture, farm forestry, fuel wood, cash crops

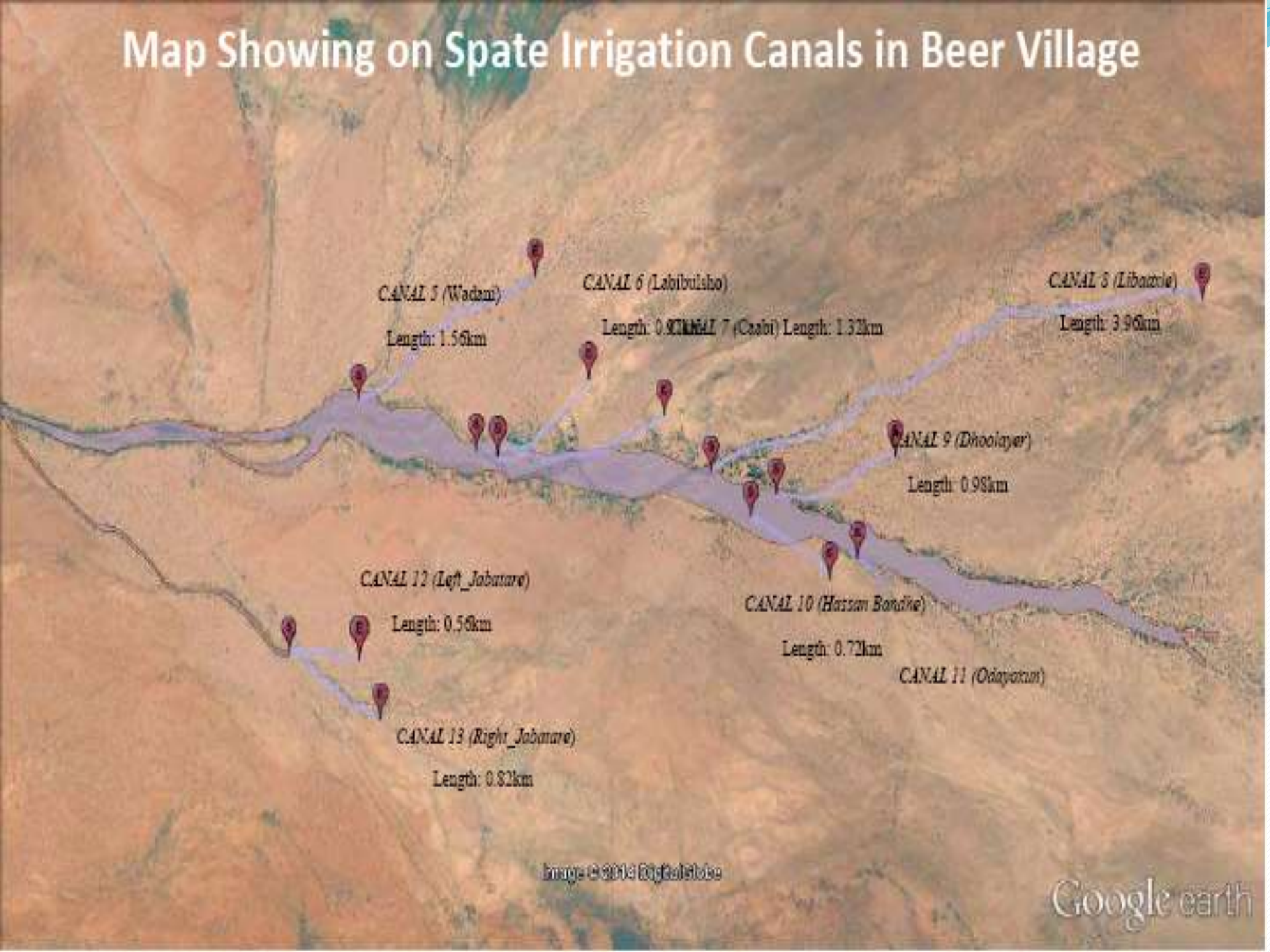
Project Strategy

- - Community consultation for project introduction
- Scheme design, permanent structure, no encroachment in river, water rights, turns, and consensus, their view point.
- Modification, agreement of implementation and rights and obligation- work plan
- Water diversion, farm activities, training

Components

- **Infrastructure:** that includes canal intake (stone masonry work), excavation of canals to desired length, filed outlet structures, grain storage, watershed management, and drinking water ponds.
- **Capacity Building:** Trainings, study tours, exposure visits capacity building, FFS
- Trainings – FO Strengthening, Agriculture, livestock, rangelands management
- Extension services – master trainers, MOA, FO members
- **Inputs provision:**Seeds, tools, equipment, experiment, demonstrations, and technology

Map Showing on Spate Irrigation Canals in Beer Village

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Channel Excavation

Channel Excavation


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Field Improvement


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Community Consultation


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Thank you for listening