

Spate Profile of Sudan (The Case of Gash)

**FAO INTERNATIONAL EXPERT CONSULTATION MEETING
ON SPATE IRRIGATION**

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Country profile

- Sudan is the largest country in Africa with a total area of 2.5m km²
- It has a total population of 42.3million with a population growth rate of 2.5
- Agriculture, forestry, fishing 33.7 percent (2005)
- Sudan has huge potential for spate irrigation development. There are numerous Wadis that carry huge amount of flood which can irrigate millions of hectares in Sudan. There are also seasonal rivers that can be used for spate irrigation. Among these rivers Gash is the highly utilized and most developed one



Spate in Gash River

- River gash starts in Eritrea few kilometers south of Asmara. It runs generally westwards until it reaches the central plains of The Sudan. There it swings northwards and after passing Kessala town, fans out into an inland delta (gash die) where the water is finally lost by percolation and evaporation.
- The gash River normally flows during the months of July, August, and September. It is classified as an alluvial and braided river which carry heavy load of silt.



Location of Gash Scheme



The Gash Schemes



The Gash Schemes

المخطط	عدد مزارعي التفتيش	إسم التفتيش
18380	6397	كسلا
13775	3752	مكلي
20013	6671	دقين
28500	9814	تندلاي
10000	5520	متايب
7000	3211	هداليا
97668	35365	الجملة

Underground water

- The aquifer is unconfined, the water level in the aquifer rises during the river gash flow period and declines when the river is dry. Kassala drinking water depend on it. The percolation amount is 250 million cubic meters.



Agriculture in Gash

- The Gash Delta covers an area of 730,000 fd,
- The area under flood is 400,000 fd.
- 250,000 of these is under the command of six main canals of the Gash delta scheme. But only an average of 100,000 fd is annually irrigated and allocated according to rotation system.

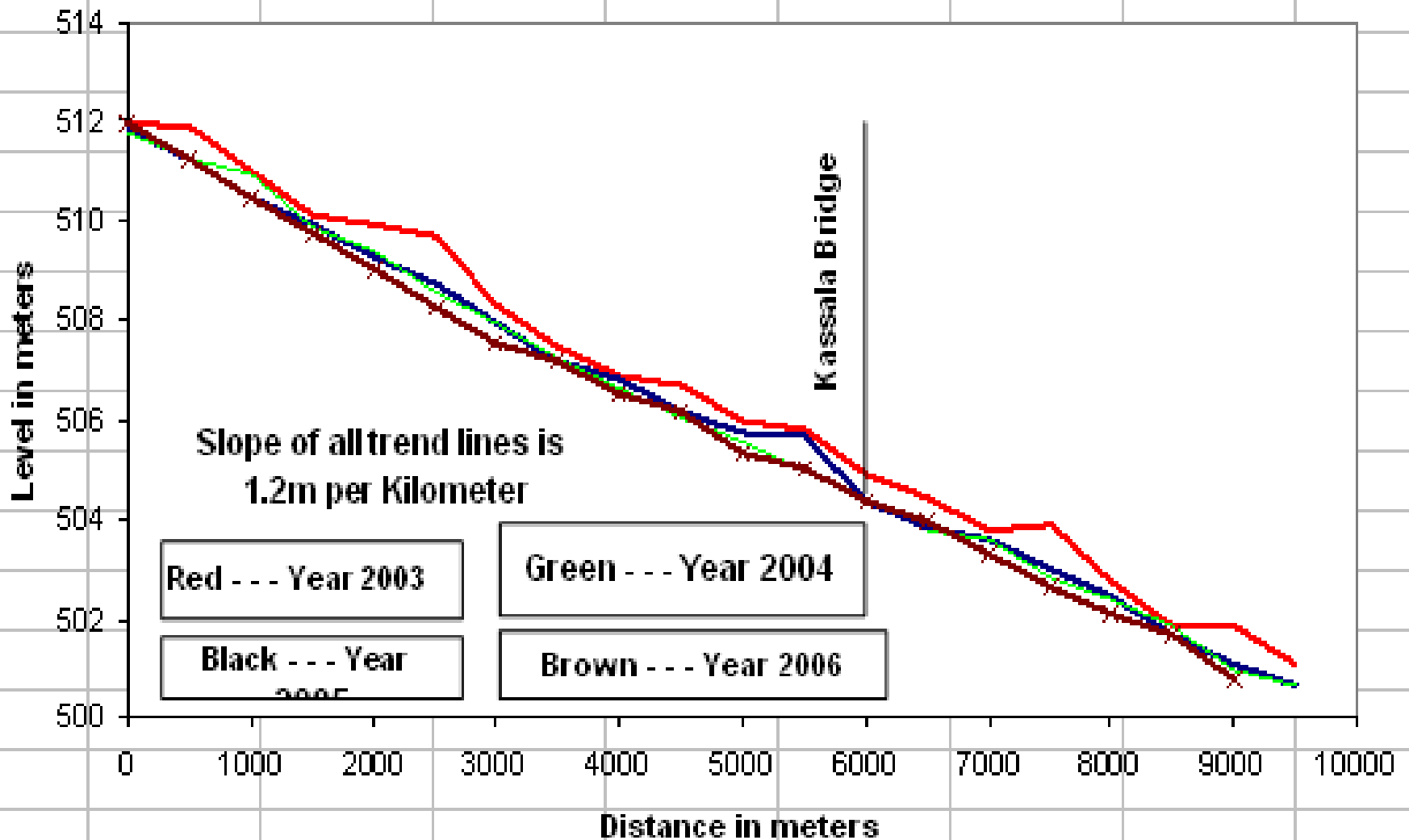


Agriculture in Gash

- Irrigation works started during the Turkish rule as early as 1870 for cotton plantation.
- The present canalization network established in 1925.
- The number of registered tenants in the scheme increased steadily from an average of 12,000 during 1980 to 22,000 in 1992 and after the rehabilitation by IFAD the number increased to 40,000.
- Cultivation in the area changed from cotton to sorghum as the need to produce more food crops increased. In addition to this vegetables like water melon are produced after harvesting sorghum.



Changes in River Bed Level in Kassala Reach













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