

Haramaya University – Ethiopia

Special Lecture on 11 July 2008

Knowledge for Sustainable Development in Ethiopia

Hans Hurni (Prof. Dr.)

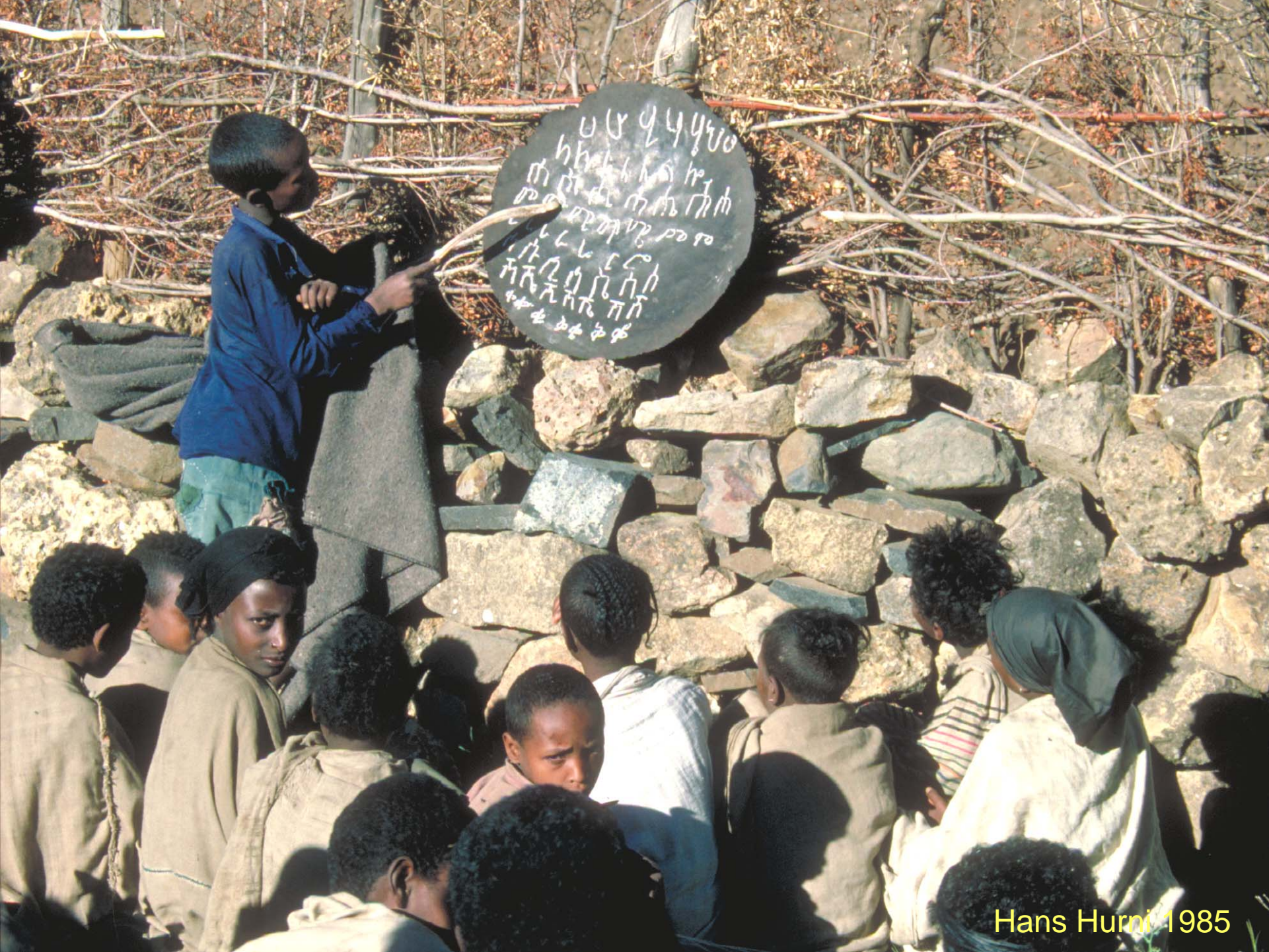
Director, Centre for Development and Environment

University of Bern, and

Swiss National Centre of Competence in Research NCCR North-South













Hans Hurni 1982



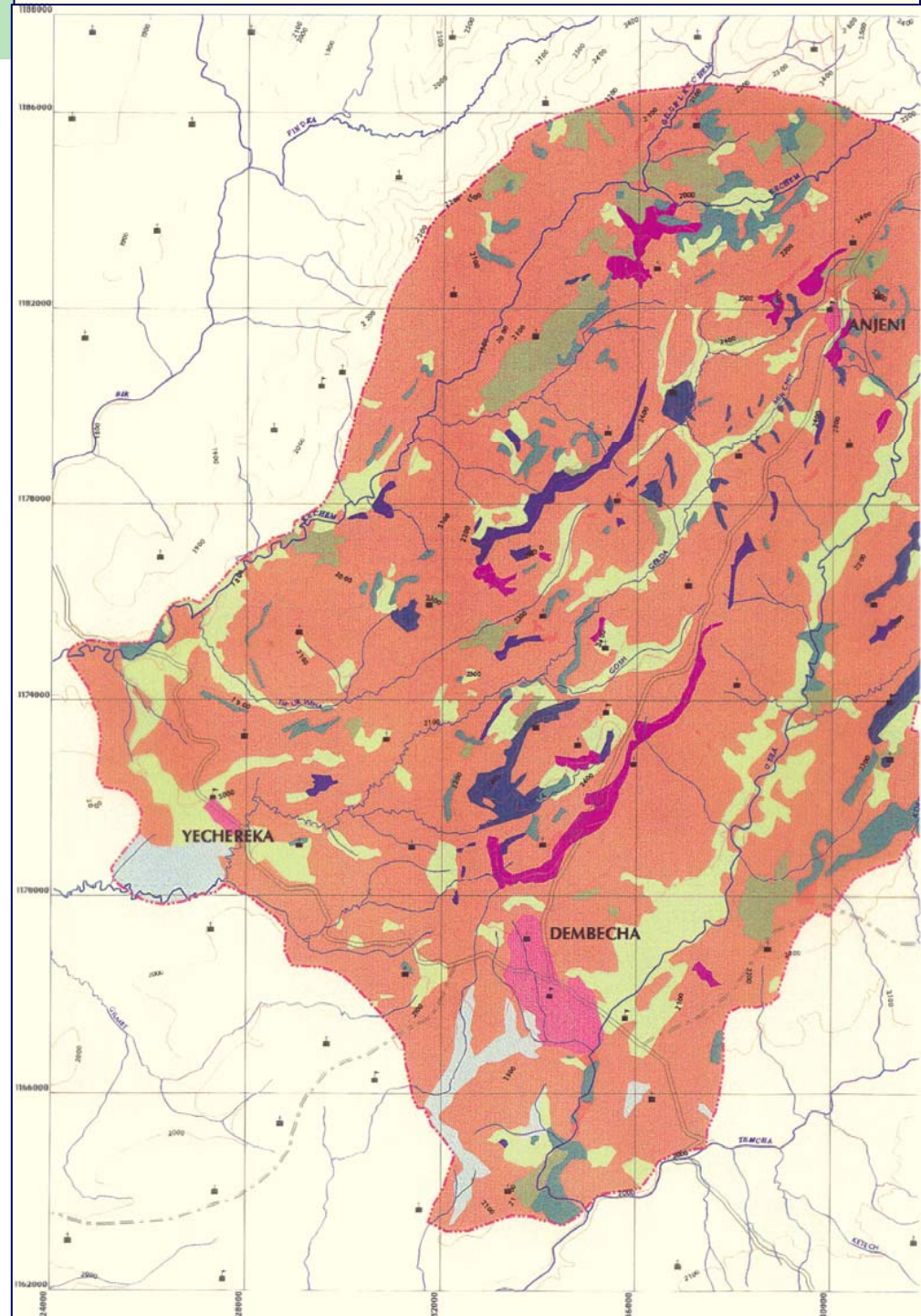


Urs Bosshart 1997

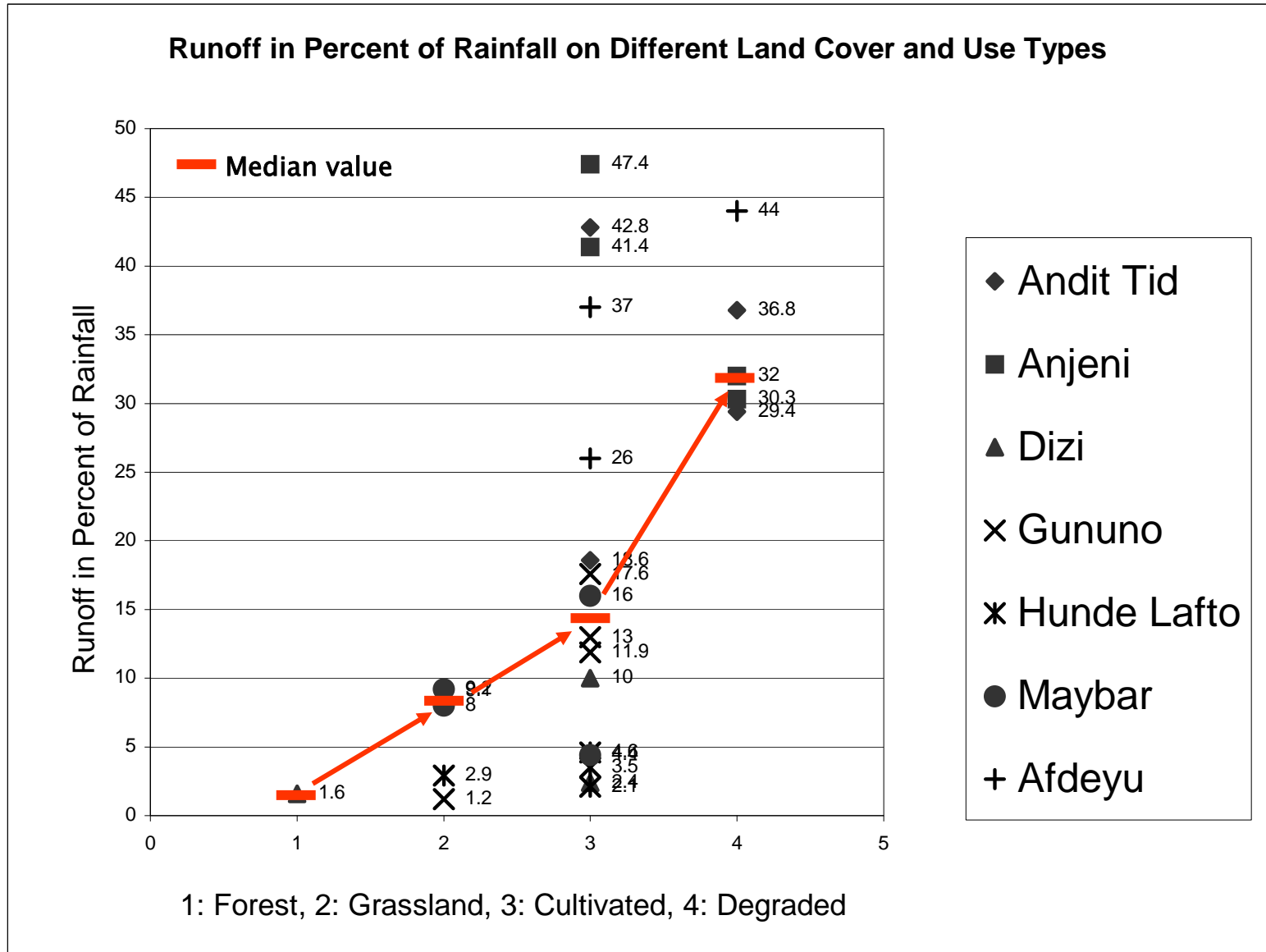
SCRP research unit	Catchment area (ha)	Population density (per km ²)	Woodland (%)	Grassland (%)	Cultivated land (%)	Annual rainfall (mm)	Catchment runoff (in % of rainfall)
Andit Tid (Shewa)	477	45	15	70	15	1417	55
Anjeni (Gojam)	110	80	5	15	80	1690	43
Maybar (Wello)	113	80	20	20	60	1211	27
Gununo (Sidamo)	94 and 73	180	10	50	40	1340	19 and 11
Hunde Lafto (Harerge)	236	70	15	25	60	860	9
Afdeyu (Eritrea)	177	80	1	29	70	382	6
Dizi (Illubabor)	673	45	65	10	25	1536	5

Source: Hurni et al. 2005

Land Cover in Dembecha Area, Ethiopia, in 1957 and 1995



Surface Runoff in Ethiopia (30m² test plot measurements)

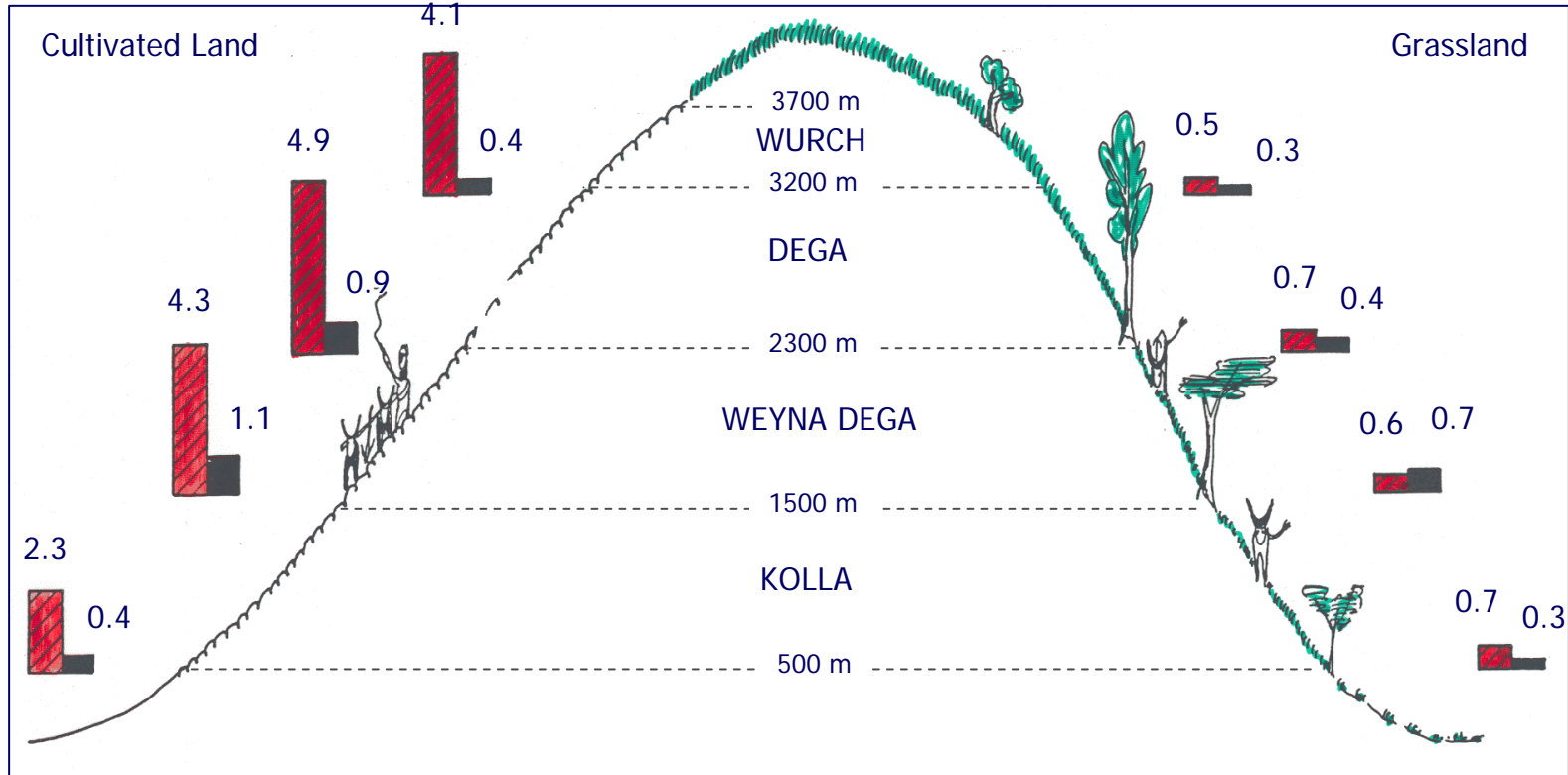


Land cover type (from LUPRD)	Area (%)	Estimated soil loss from slopes	
		t/ha/year	t/year
Cropland (cereals, pulses, tubers)	13.1	42	672,000,000
Perennial crops (inset, coffee, etc.)	1.7	8	17,000,000
Grazing and browsing land	51.0	5	312,000,000
Totally degraded land (badlands)	3.8	70	325,000,000
Currently uncultivable (steep lands)	18.7	5	114,000,000
Forests (natural and afforested)	3.6	1	4,000,000
Wood and bush land (mostly grazed)	8.1	5	49,000,000
Total country	100.0	12	1,493,000,000

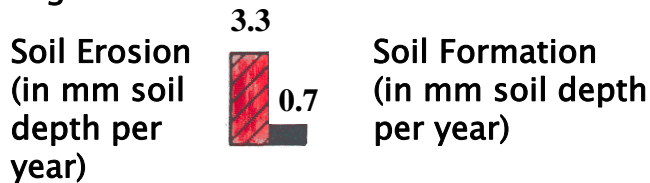
Source: Hurni 1987

Soil erosion and soil formation in Ethiopia

Dependent on altitudinal belt and landuse



Legend:



1 mm soil depth = 10 tons per hectare



Hans Hurni 1975



Georg Gerster 1974





Castle of
Emperor
Fasilides in
Gonder

Hans Helfritz
(before 1966)



Eva Ludi 2001



Alamata - Korem
Road with church

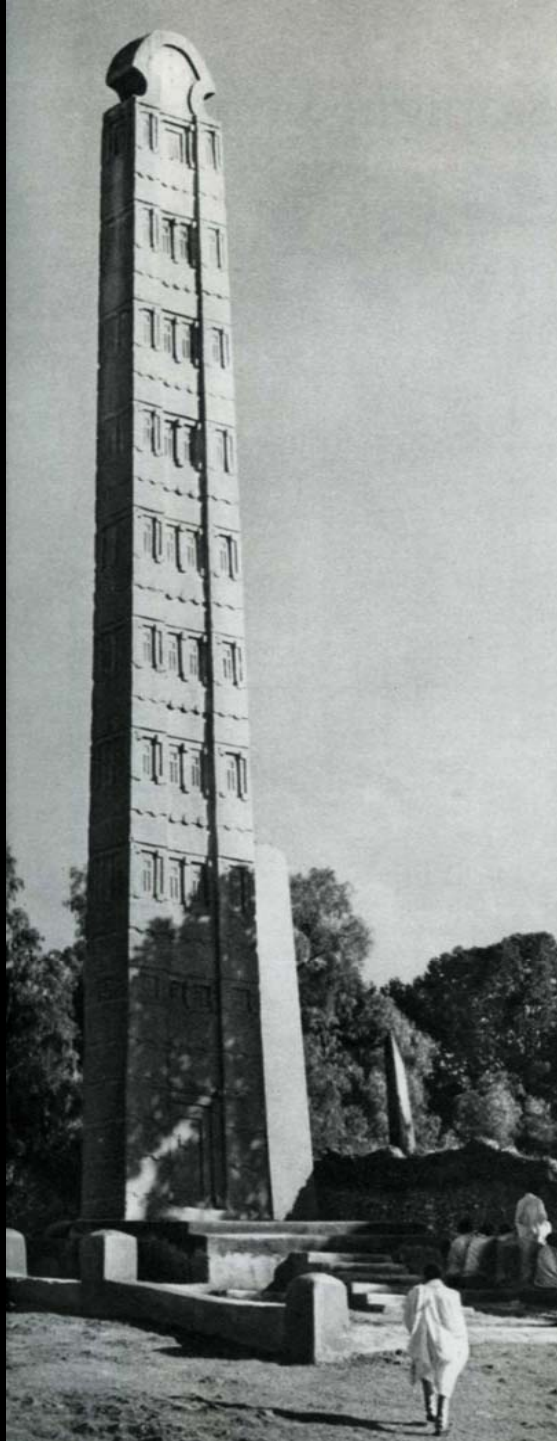
Georg Gerster 1974





Eva Ludi 2001





Monolith stele
in Aksum

Paul Almasy
(before 1966)



Eva Ludi, 2004





Josef Werdecker, 1954







Eva Ludi 1994



Georg Gerster 1974

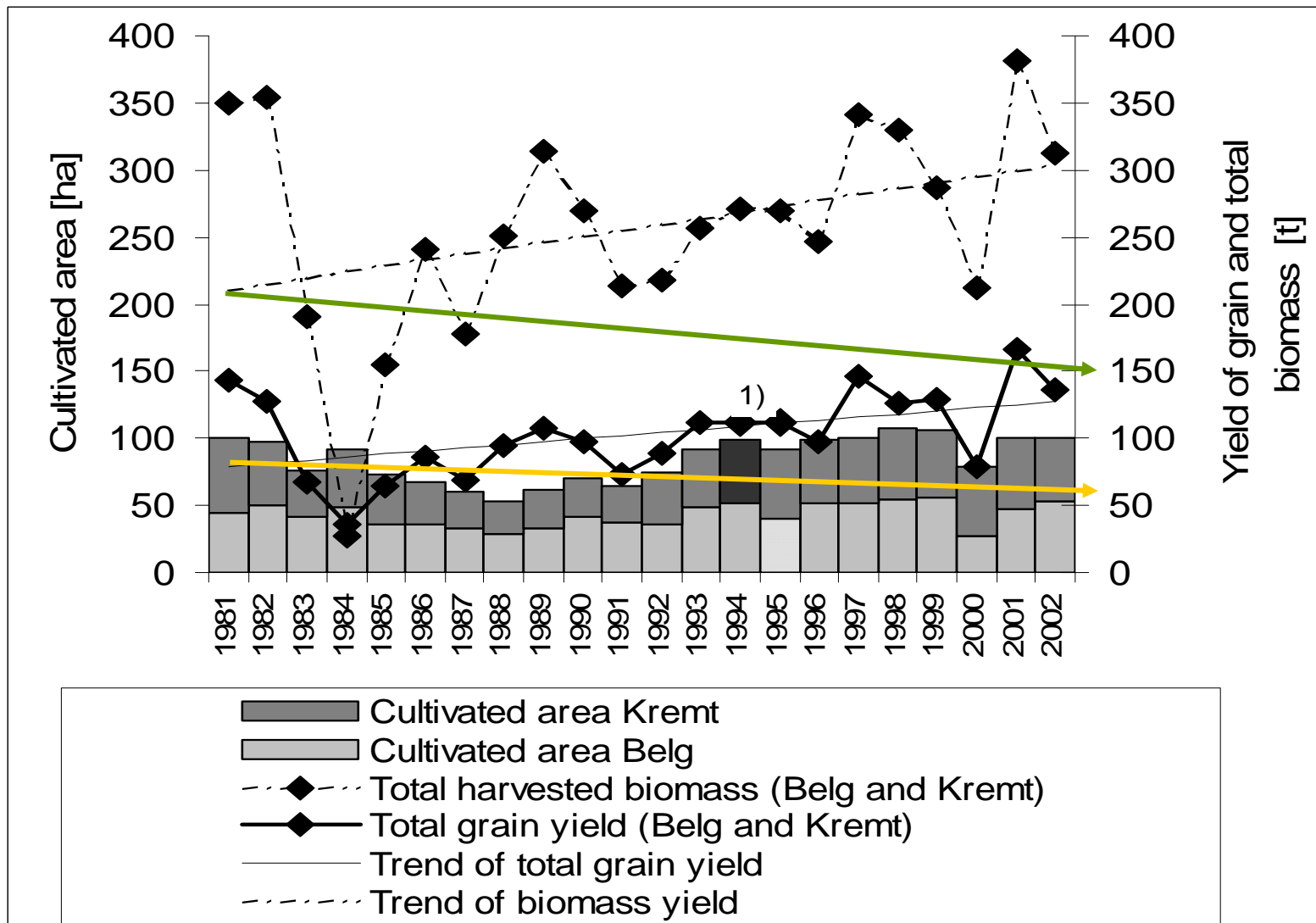




Sabina Erny 2003

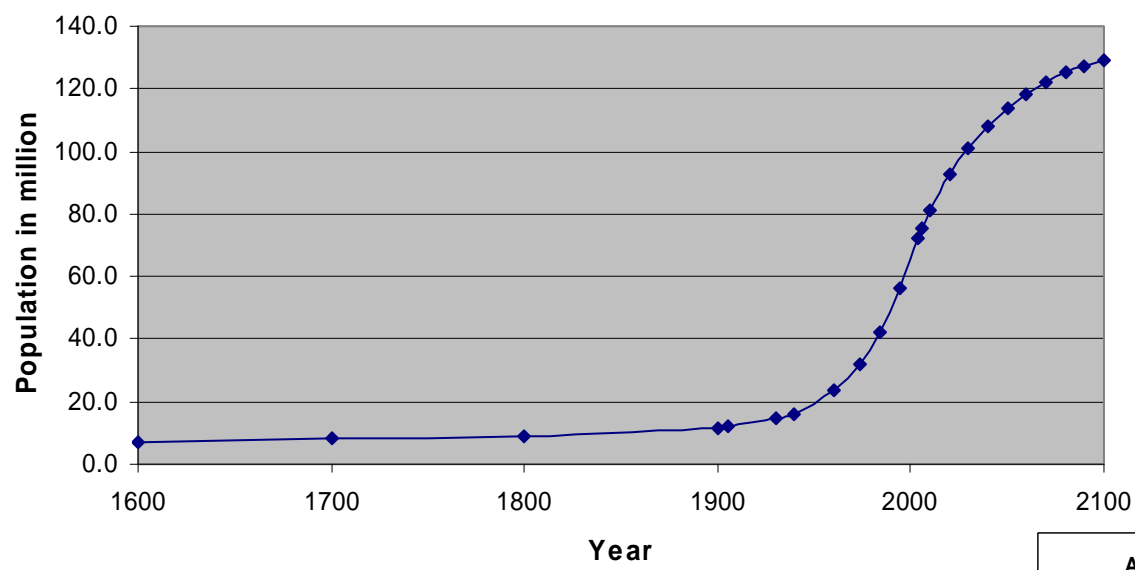
Changes in Cultivated Biomass and Grain Yield an Ethiopian Catchment (110 ha) Conserved in 1983

Source: Loetscher 2003



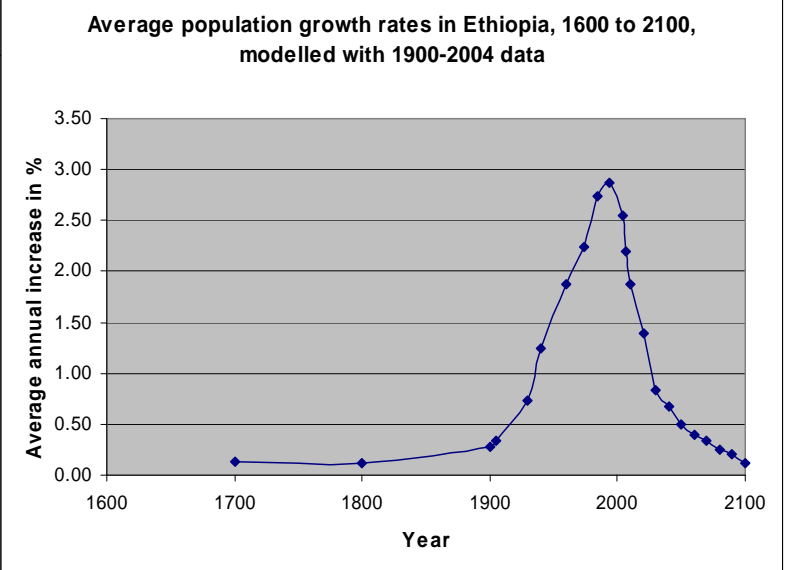


Population in Ethiopia from 1900 to 2006, with projections backward to 1600, and forward to 2100, respectively



Evolution and projection of population of Ethiopia from 1600 to 2100 using various sources (historic, CSA, and own assessment)

Rate of change of population in percent per year (estimation and projection)





Hans Hurni 2004



(unknown
photographer)