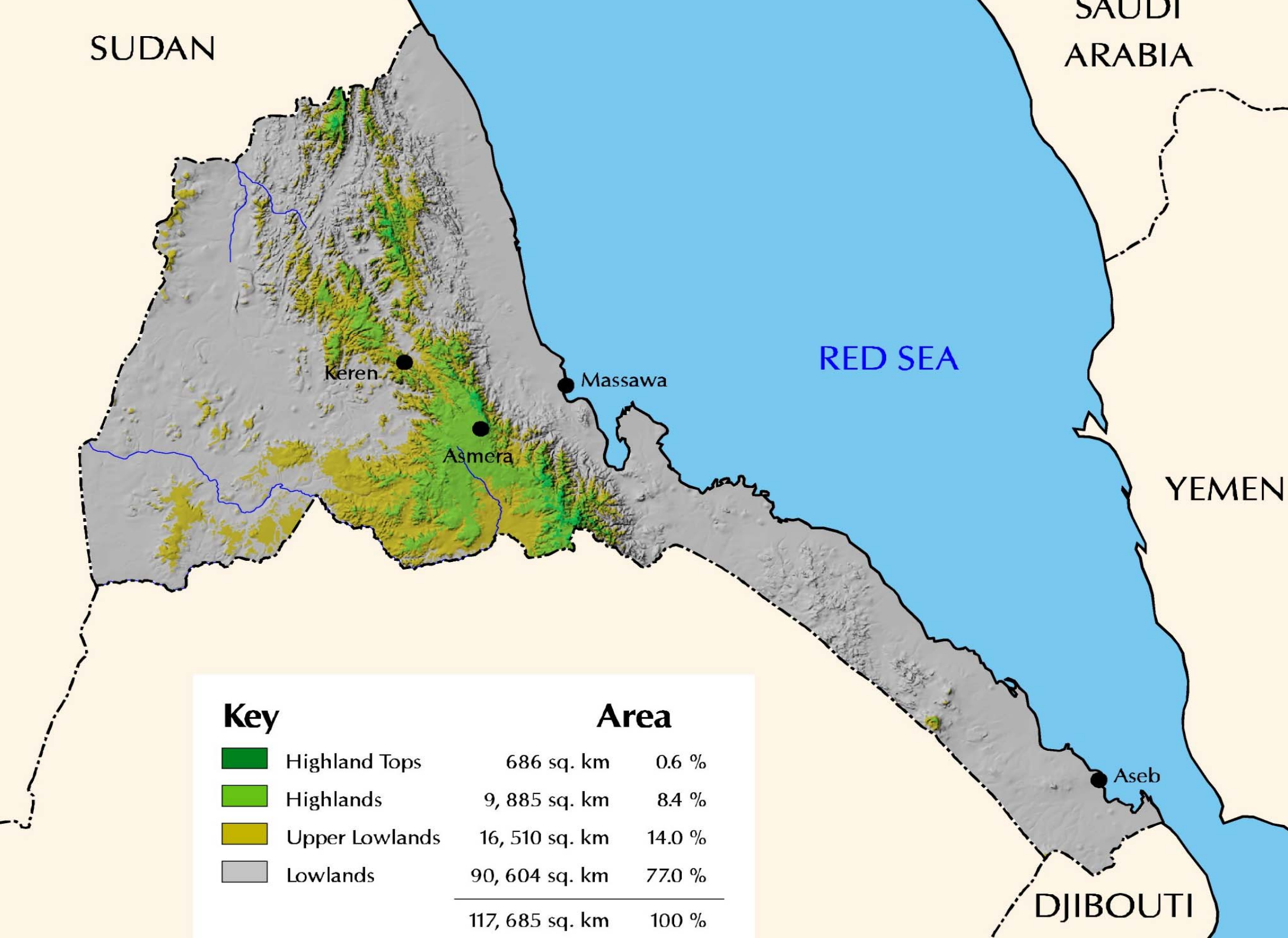


Implementation
of affordable
micro irrigation systems in Eritrea

(not only) a marketing approach



SUDAN

SAUDI
ARABIA

RED SEA

YEMEN

DJIBOUTI

Keren





Massawa

Asmera

Aseb

Key

Area

	Highland Tops	686 sq. km	0.6 %
	Highlands	9,885 sq. km	8.4 %
	Upper Lowlands	16,510 sq. km	14.0 %
	Lowlands	90,604 sq. km	77.0 %
		117,685 sq. km	100 %

Agro-ecobgicalzones ,area coverage and m ean annual rainfall

Agro-ecobgicalzone	Area coverage (%)
M oist to sem i-arid highland zone (> 400 – 500 m m rainfall / year)	7 . 4
M oist to sem i-arid bw land zone (> 400 – 500 m m rainfall / year)	16 . 2
Sub-hum id escarpm ent zone (300 – 500 m m rainfall / year)	0 . 8
Arid highland zone (< 300 m m / year)	2 . 5
Arid bw land zone (< 300 m m / year)	32 . 3
Sem i-desert zone	38 . 8
Total area	100



Sub humid Escarpment (0.8 % of total Area)



Semi arid highland (7.4 % of total area)



Aims of the Project

- To evaluate the potential of micro-irrigation for small farmers in Eritrea
- To study the technical performance of DE - irrigation equipment produced in India
- To assess farmers' needs, wishes and constraints concerning small scale irrigation
- To evaluate the chances of a private market for irrigation equipment in Eritrea















Calculation of subsidised prices to sell kits to test persons

	Bucket Kit	Drum Kit (veget and horticult.)	Sprinkler Kit
Price (in \$) at manufacturers door	5	16	21
Plus service charge in India, 10% of net price	0.5	1.6	2.1
Plus shipment costs (in the actual case with air freight) 60% of net price	3	9.6	12.6
Plus custom clearing in Eritrea, including transport costs etc., 10% of net price	0.5	1.6	2.1
Total costs per set (in \$)	9	28.6	37.6
Full costs per set in Nakfa (exchange rate = 1 : 13.5 in October 2001)	121.5	386.1	507.6
Subsidised price per set in Nakfa (higher initial risk = +/- half price)	60	200	250

Price comparison for different products available in Eritrea

Producer / type of drip irrigation kit	Area under irrigation	Price / unit (Nakfa)	Price per 0.1 hectare
DE bucket kit*	20 m ²	135 Nakfa	6750 Nakfa
DE vegetable kit*	100 m ²	445 Nakfa	4450 Nakfa
Netafm *	500 m ²	3726 Nakfa	7450 Nakfa
Phaesum (Chapin W atern atics) (selling price in offer)	500 m ²	3500 Nakfa	7000 Nakfa

* Price ex factory x 2 (service charge , shipment costs , custom clearing) plus 15 % retailer's margin)

All prices are partially based on estimations and approaches.

Exchange rate Nakfa : US\$ = 13.5 : 1 in October 2001

Additional equipment (like buckets or barrels) is not included in the calculation

Description of distributed kits and some problems met

Features	Kitchen garden kit	Vegetable garden kit	Horticulture garden kit	Micro-sprinkler kit
Major components	Main line, lateral lines, micro-tubes, filter, pegs, T-joints, fittings	Main line, lateral lines, micro-tubes, filter, pegs, T-joints, fittings	Main line, lateral lines, micro-tubes, filter, pegs, T-joints, fittings	Main line, lateral lines, micro-sprinklers, filter, pegs, fittings
Area under irrigation	40 m ²	100 m ²	130 m ²	160 m ²
Number of emitters	36	150	50	15
Approximate number of plants	36 to 144 for spaced crops, also used for row crops	36 to 600 for spaced crops, also used for row crops	50	Mainly used for non-spaced crops
Required minimum height of water source	1 meter	1 meter	1 meter	10 meter
Discharge per emitter	2 litre per hour	2 litre per hour	2 litre per hour	50 litre per hour
Required content of water storage bin	Bucket with 20 l	Barrel with 200 l	Barrel with 200 l	Barrel with 500 l or connect to tap
Type of crops	Vegetable crops, flowers	Vegetable crops, flowers	Perennial fruit crops	Vegetables, flowers, pulses, cereals, etc



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