



Global Nature Fund MRLSD Ramsar Living Lakes

14th International Living Lakes Conference

Nanchang, China 2014



**GREEN FILTERS
COLOMBIA**

**LAKE FÚQUENE AND
LAKE TOTA**





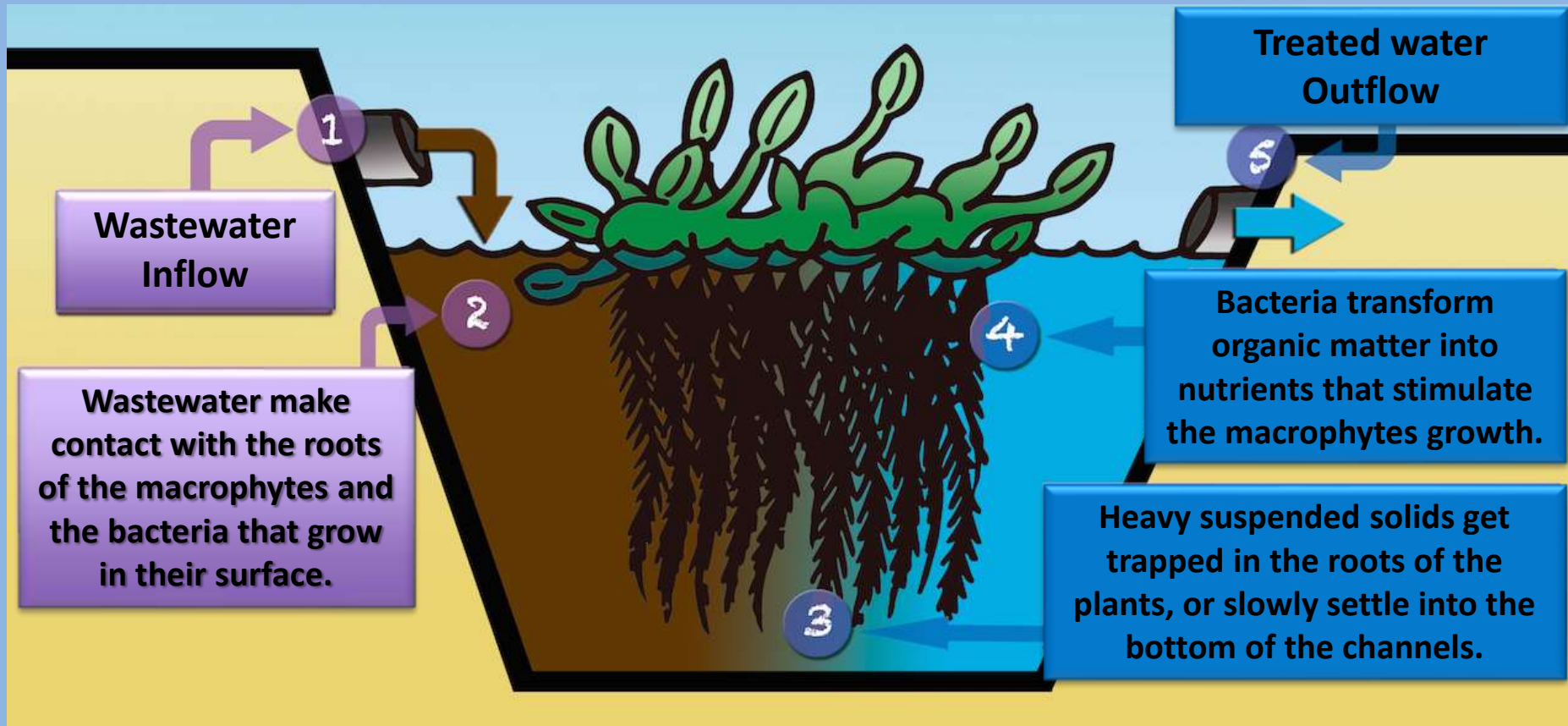
GREEN FILTERS

An strategy to achieve sustainable wastewater treatment



- What do Green Filters are?
- How does a Green Filters Project work?
- What are the components of a Green Filters System?
- Projects in Colombia
- What to expect from a Green Filters System?

What do Green Filters are?



... consists in using plant species, already established in the region, that are planted in long, narrow and shallow channels...

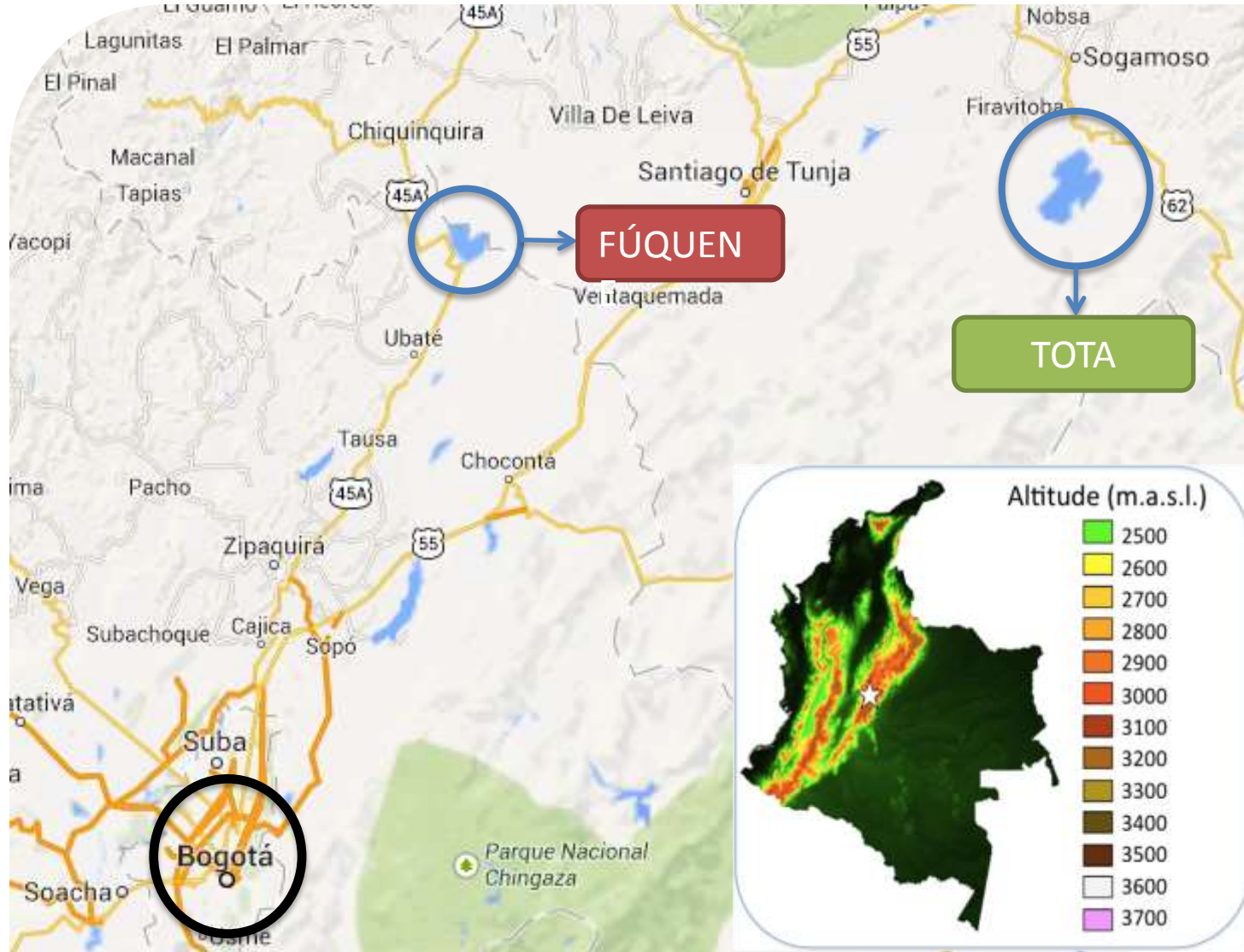
How does a Green Filters Project works?

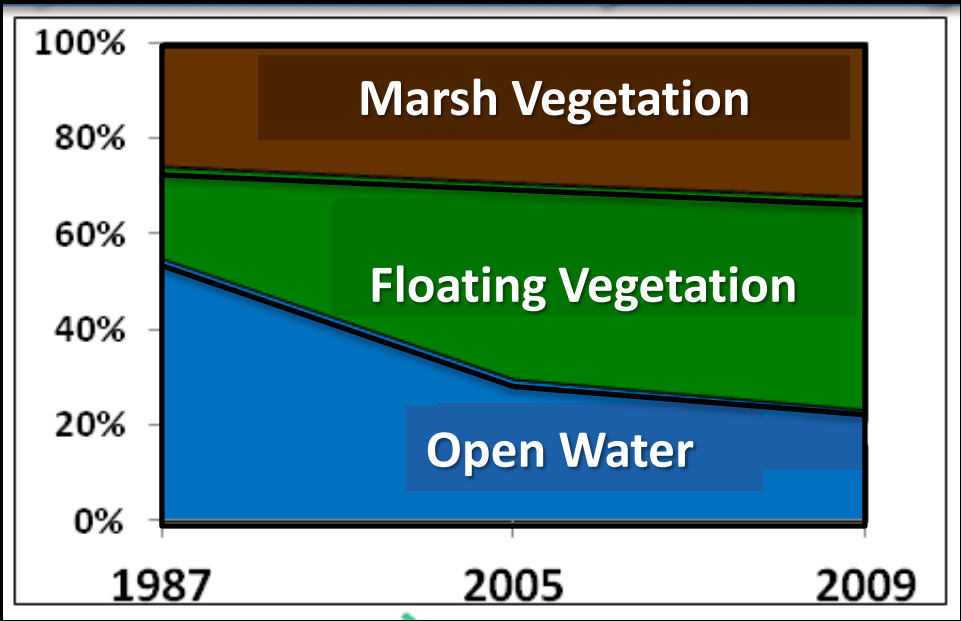
- **LOCATION** (Where can this technology be useful?)
- **VIABILITY ANALYSIS** (Is it suitable in terms of area availability?)
- **APPROACH TO THE COMMUNITY** (Are the people willing to participate in the project?)
- **DESIGN** (Primary treatment units and green filters channels)
- **CONSTRUCTION**
- **WORKSHOPS** (local technicians and community in general)
- **PERFORMANCE EVALUATION** (water quality analysis)

What are the components of a Green Filters System?



Projects in Colombia

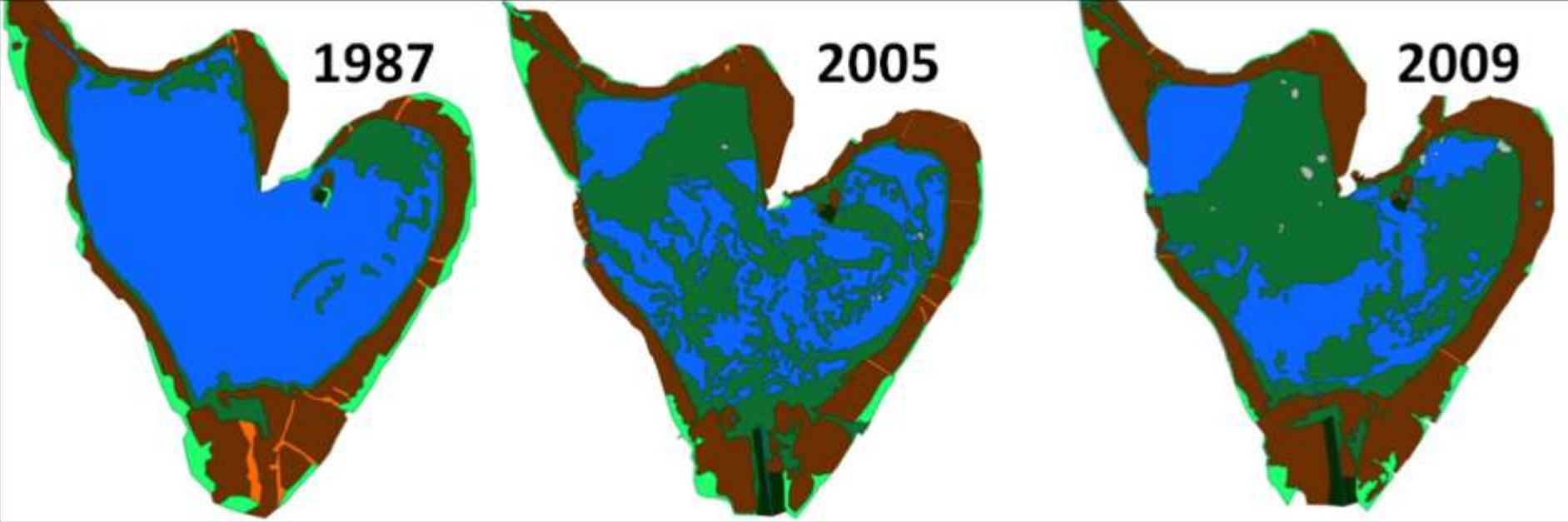




LAKE FÚQUENE

Area: 3.000Ha

Altitude: 2.550m.a.s.l.





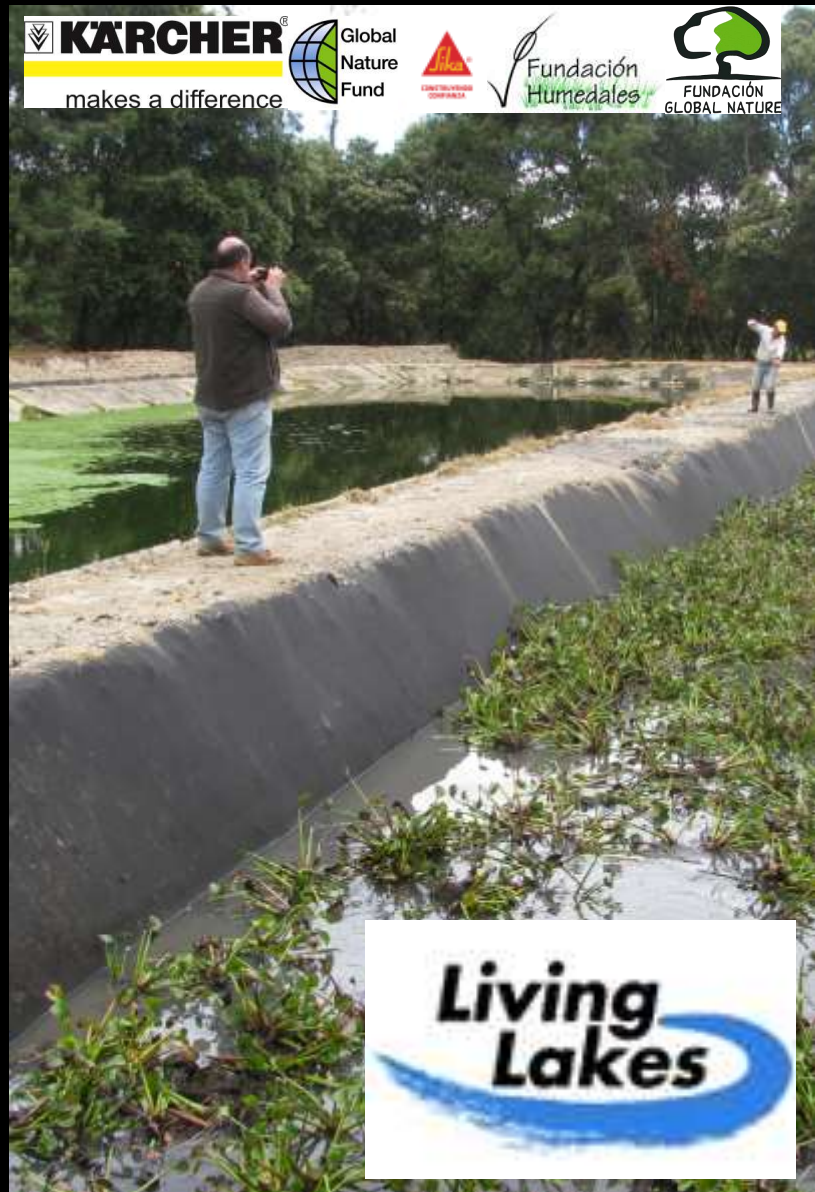
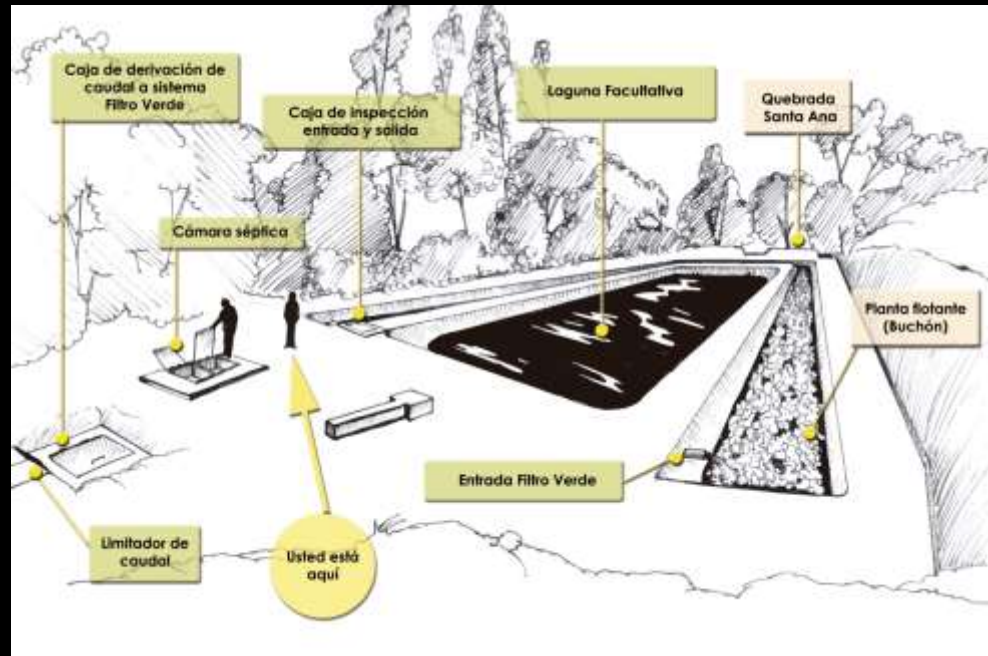
LAKE TOTA

AREA: 6.000Ha

ALTITUDE: 3.015 M.A.S.L.

SAN MIGUEL DE SEMA

Design Parameter	Value	Units
INFLOW	0,9	L/Sec
Length	140	M
Width	3,5	M
Depth	1	M
HRT	6	Days
EFFECTIVE TREATMENT AREA	490	M2
EFFECTIVE TREATMENT VOLUME	490	M3



SUSA – CUÍTIVA - FÚQUENE

Parameter	Value	Units
Inhabitants	1000	Inhabitants
Inflow	2,7	L/sec
Channels Length	625	M
Channels Width	4	M
Channels Depth	1,0	M
Hydraulic Retention Time	11	Days

Parameter	Value	Units
Inhabitants	200	Inhabitants
Inflow	0,7	L/sec
Channels length	155	M
Channels width	4	M
Channels depth	1,0	M
Hydraulic Retention Time	10	Days

Parameter	Value	Units
Inhabitants	378	Inhabitants
Inflow	1,1	L/sec
Channels Length	236	M
Channels Width	4	M
Channels Depth	1,0	M
Hydraulic Retention Time	10	Days



What to expect from a Green Filters System?

PARAMETER	Public Services Company San Miguel de Sema (dry season)			Provincial Water Plan of Boyacá (wet season)		
	Inlet (mg/L)	Outlet (mg/L)	Efficiency %	Inlet (mg/L)	Outlet (mg/L)	Efficiency %
BOD	261	11	96	19	2	89
COD	343	44	87	60	10	83
TSS	206	22	89	500	180	64
F&O	56	42	25	9	2	78

- New projects (BMZ-Kärcher , CAR, CAM, CB)
- National scale divulgation of the technology
- Support from the environmental authorities



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