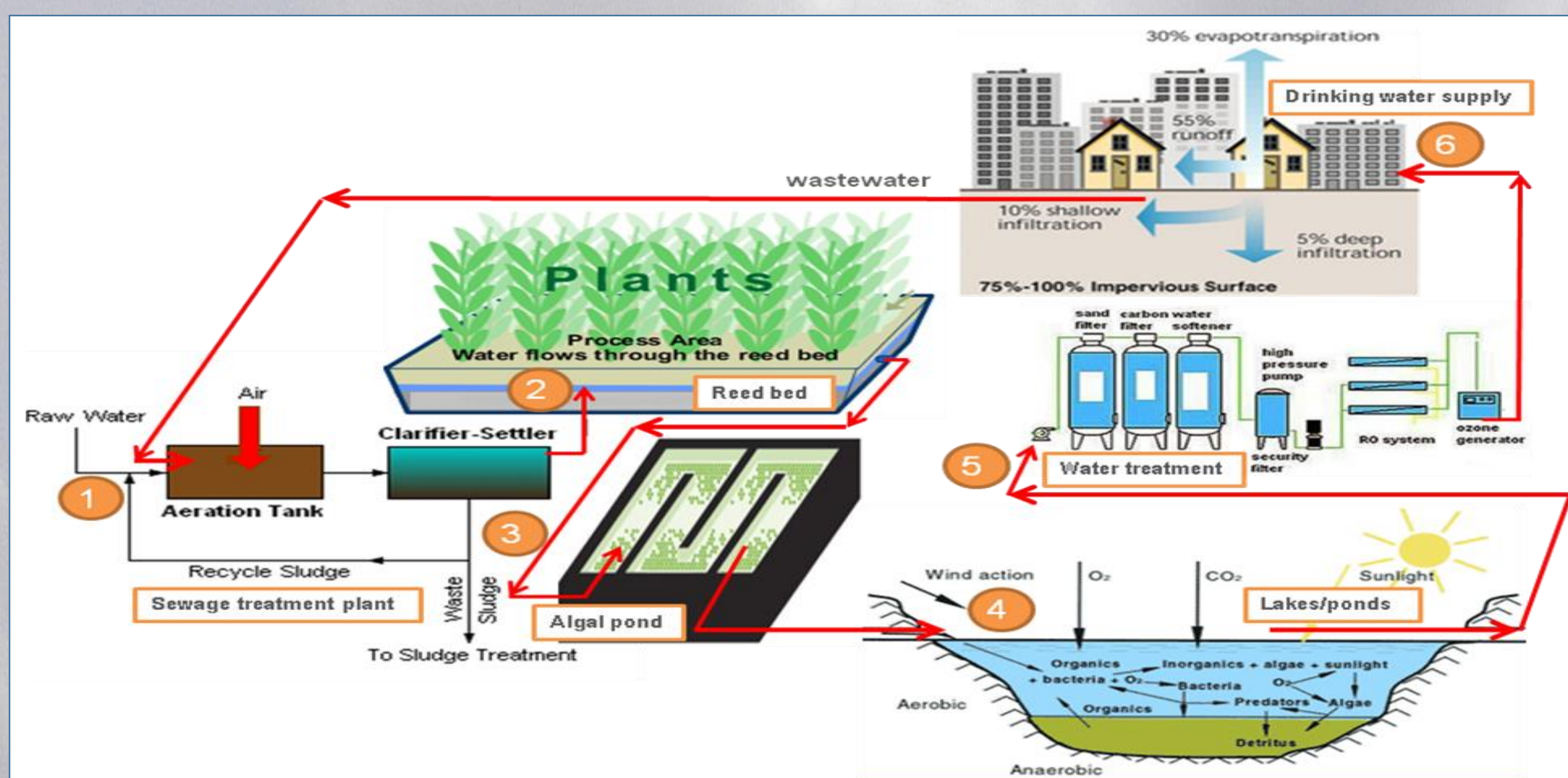


COST EFFECTIVE WASTEWATER TREATMENT SYSTEM INTEGRATED WETLAND ECOSYSTEM : JAKKUR LAKE

Energy and Wetland Research Group, Centre for Ecological Sciences,
Indian Institute of Science, Bangalore; Web: <http://wgbis.ces.iisc.ernet.in/energy/>

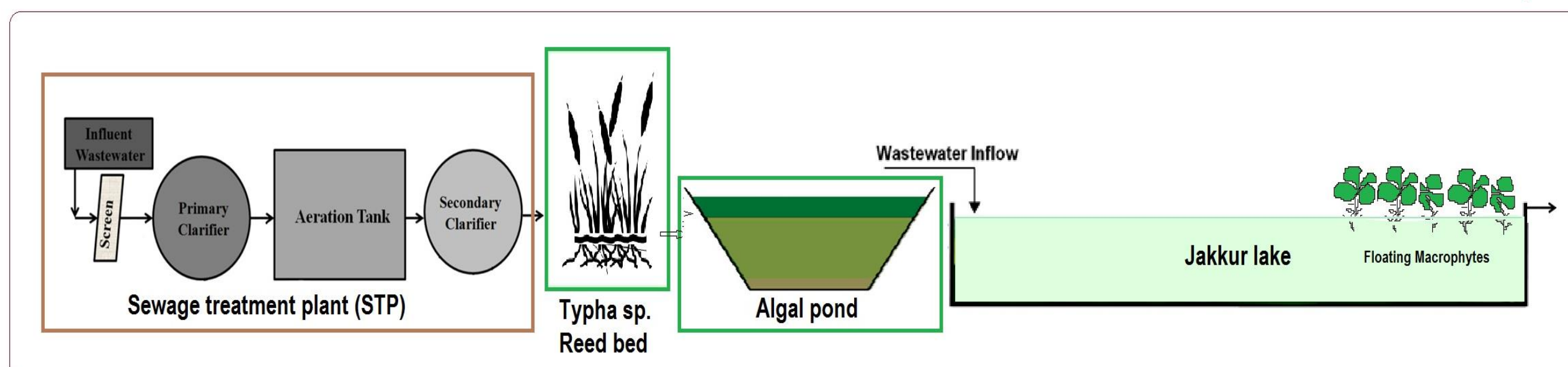


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Level of treatment at various stages of integrated wetland

Sewage treatment plant (STP)		Settling basin/algal pond	Lake Outfall
Inflow Characteristics	Outflow Characteristics	Outflow Characteristics	Outflow Characteristics
COD = 280-480 mg/l	COD = ~88 mg/l	COD = ~48 mg/l	COD = ~20 mg/l
BOD = 180-280 mg/l	BOD = ~47 mg/l	BOD = ~16 mg/l	BOD = ~5.04 mg/l
TOC = 80-120 mg/l	TOC = ~27 mg/l	TOC = ~8 mg/l	TOC = ~6 mg/l
NO _x = 1-3 mg/l	NO _x = 0.4 mg/l	NO _x = 0.27 mg/l	NO _x = 0.28 mg/l
PO ₄ = 6-8 mg/l	PO ₄ = 0.35 mg/l	PO ₄ = 0.21 mg/l	PO ₄ = 0.09 mg/l



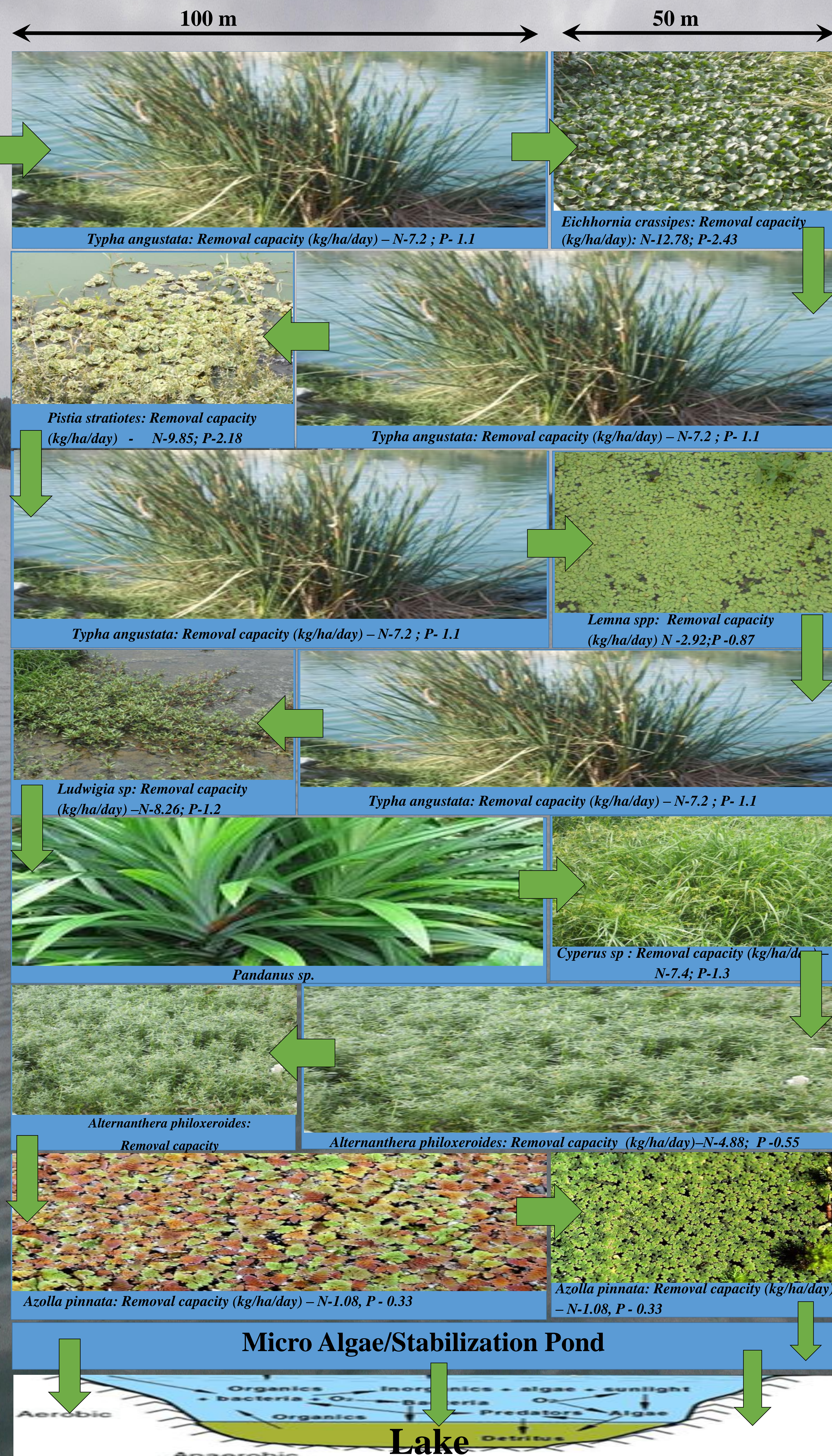
CONCEPTUAL DESIGN OF WETLAND

Area required to treat 1 MLD influent:

$$A = Q_d (\ln C_o - \ln C_t) / K_{BOD}$$

where A = Area; Q_d = average flow (m³/day);

C_o & C_t = Influent & Effluent BOD (mg/L); K_{BOD} = Constant (0.10)



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