Novel approaches to desalination for enhanced food security, afforestation and drinking water

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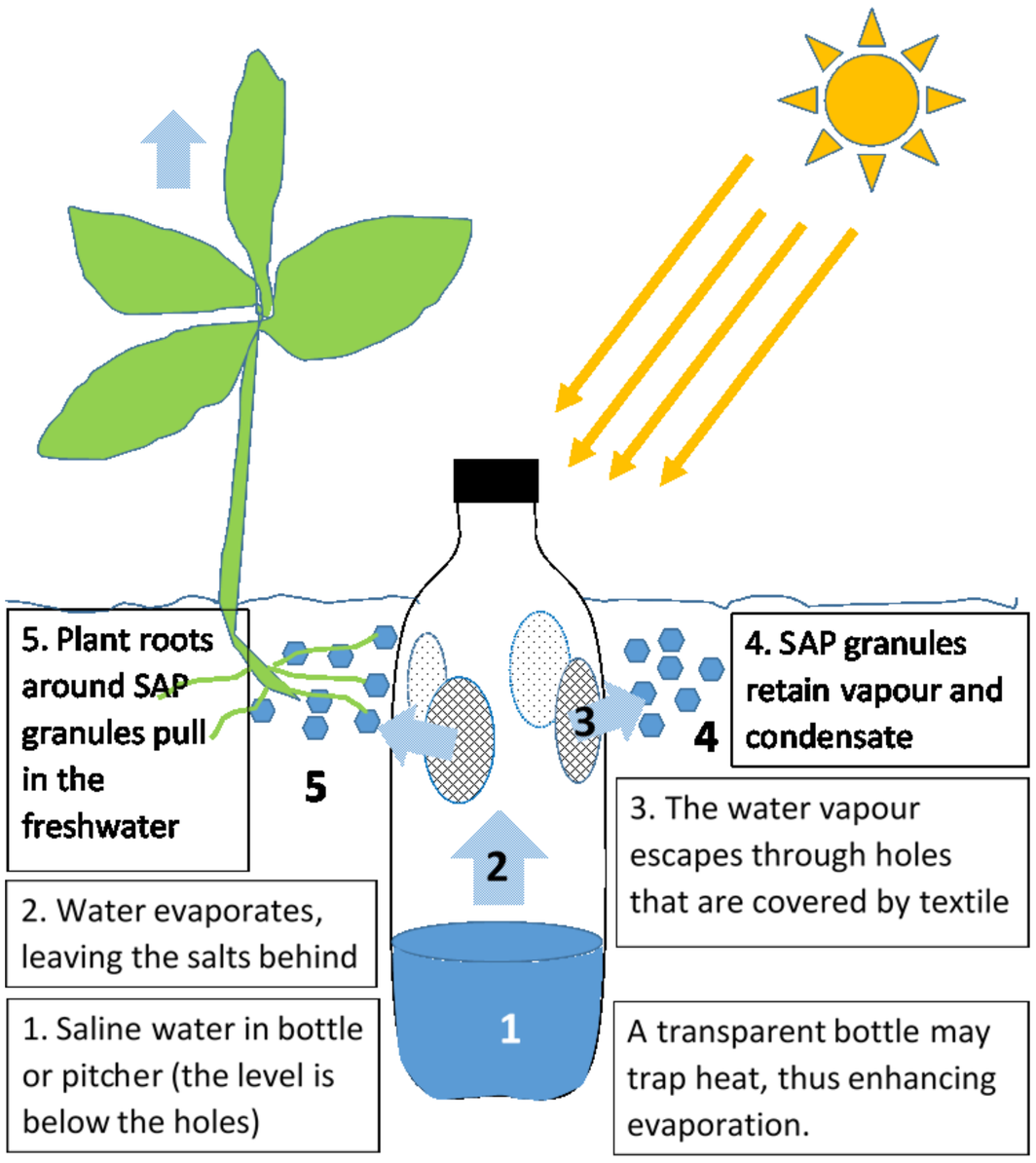
'Appropriable' technology: A 'Made in Kenya' desalination prototype for rural households

Many areas in Kenya are dependent on boreholes for their water supplies. However, this water is often unfit for plants, animal and people when it is too rich in salts, or if it contains an excess of natural contaminants that are damaging to health, like fluoride.

The team built a proof-of-concept desalinator for rural households in Lodwar, Turkana (NW Kenya). The device could be built using local skills and readily available components, hence "appropriable" by the rural poor. It was tested in Dec 2018, achieving an initial production rate > 1litre / hour of desalinated water.

Novel method for irrigation that protects soils from salinization



The sun evaporates the water, leaving the salts behind. SuperAbsorbent Polymers (SAP) in the soil prevent this water from escaping, making it available for the plants.

The technique was tested in Lodwar on dual-purpose sorghum (food and fodder for pastoralists), and on tree saplings of *Acacia sp.*, Moringa, Guava, Mango.

For dual-purpose Sorghum, **SAP treatment performed 34% better than the control** (> 95 % likelihood).

Survival and growth rates of Acacia, Guava and Mango were comparable to direct watering, even without SAP.

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