

Falkenmark Symposium 2018

# Financing of African Water Revolution

**Green water security**

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# Background

**\*African smallholder farming situation focused for several years**

**- Call for Africal Water Revolution in 2016**

**\* African ownership recently disussed in SDG Unit for Africa**

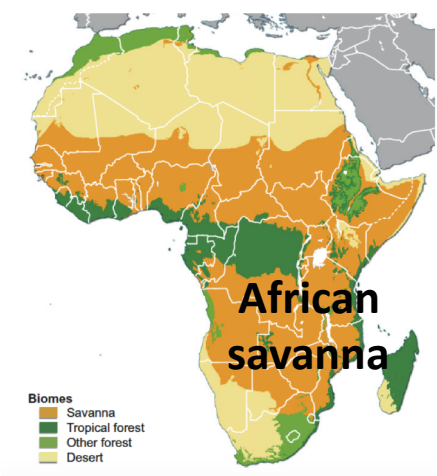
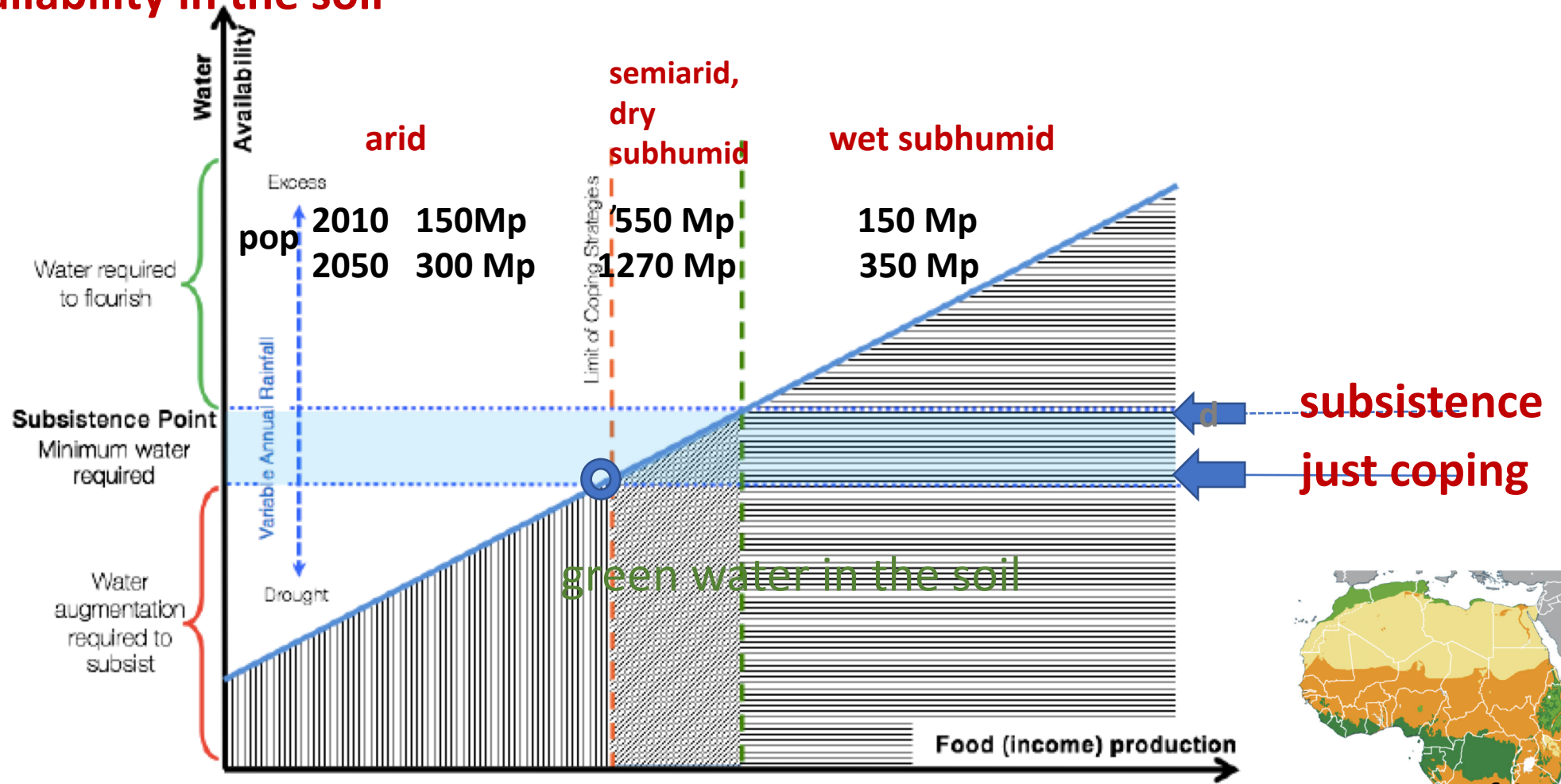
**- Kigale meeting June 2018**

**\*WWW 2018 Symposium:**

**-Challenges of finding financing**

# African dryland farming dilemma

## green water availability in the soil



Source:  
Len Abrams 2018

**crop productivity**

# Essential facts

- **plants can only use green water**

- **green water** taken up by the roots

- brings nutrients to plant growth

- leaves as transpiration when stomata open to take in CO<sub>2</sub> for the photosynthesis

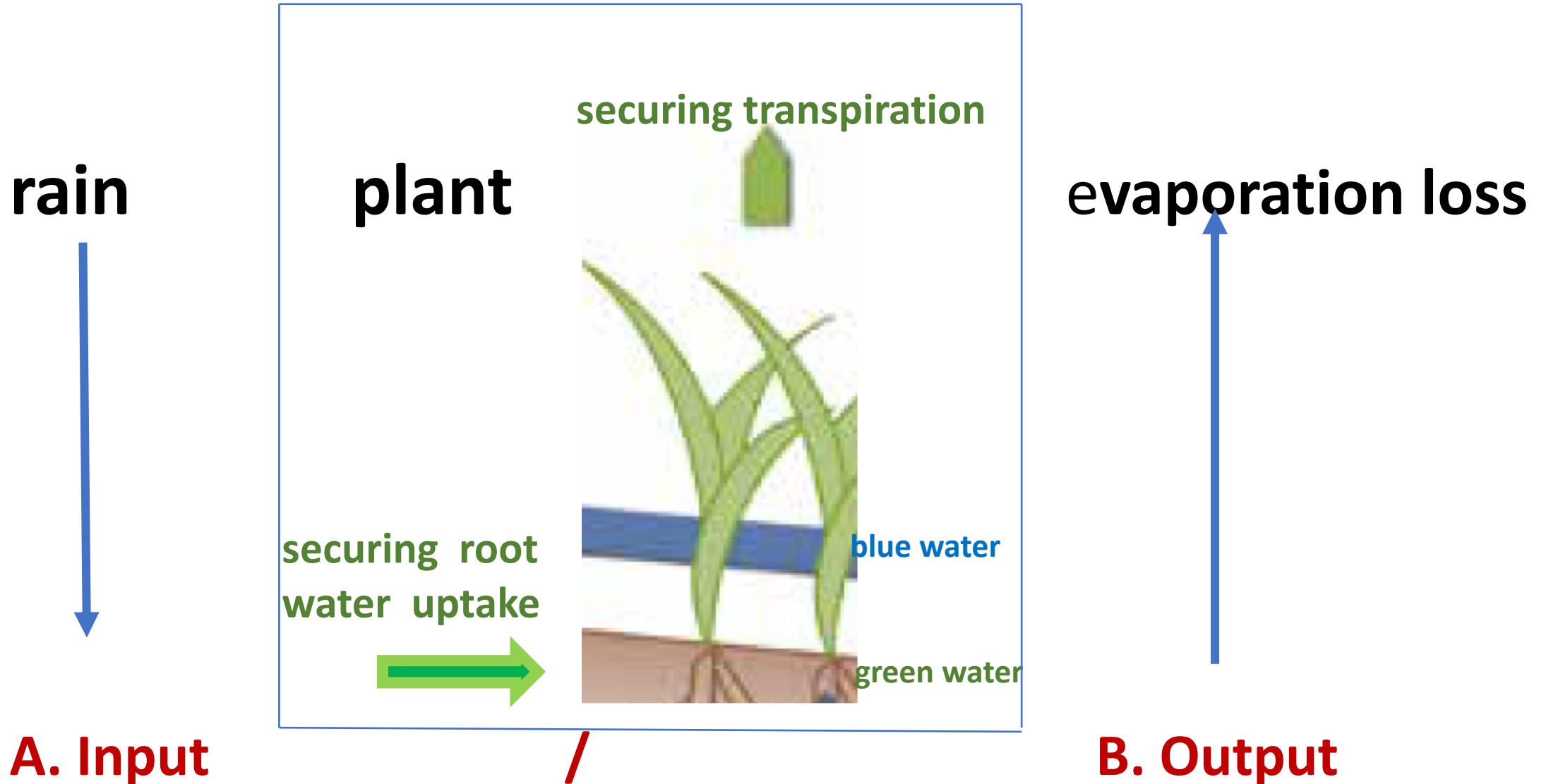
- **necessary distinction**

- **green water** in the soil vs. **blue water** in rivers and aquifers

- **irrigation**

- **blue water** transformed to artificial green water

# Sub-Saharan green water challenges



# A. Input problems

## problem

**\*too little rain**

**drought**

**\*rain does not  
infiltrate**

**soil permeability**

## solution

**\* supplementary irrigation to  
protect the roots from damage**

**\* soil management**

## B. Output problems

### problem

- **roots are damaged during dryspells**

- **root protection by supplementary irrigation**
- **local rain water harvesting**

- **large evaporation loss**

### solution

# Conclusions

- **Call for African Water Revolution**

- to secure subsistence agriculture for rapidly expanding population in African drylands

- **crucial: green water security**

- plants depend on water in the soil
- large yield losses can be coped with  
/supplementary irrigation/rain water harvesting
- tested way to compensate drought-generated productivity problems