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EAST AFRICAN COMMUNITY  
LAKE VICTORIA  
BASIN COMMISSION

One people,  
One Destiny

# East Africa Scenario RESULTS

## TRAINING

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Towards Innovative Solutions through  
Integrative Water Futures Analysis

WFaS Workshop, Entebbe, 4-6 Dec 2018



IIASA, International Institute for Applied Systems Analysis



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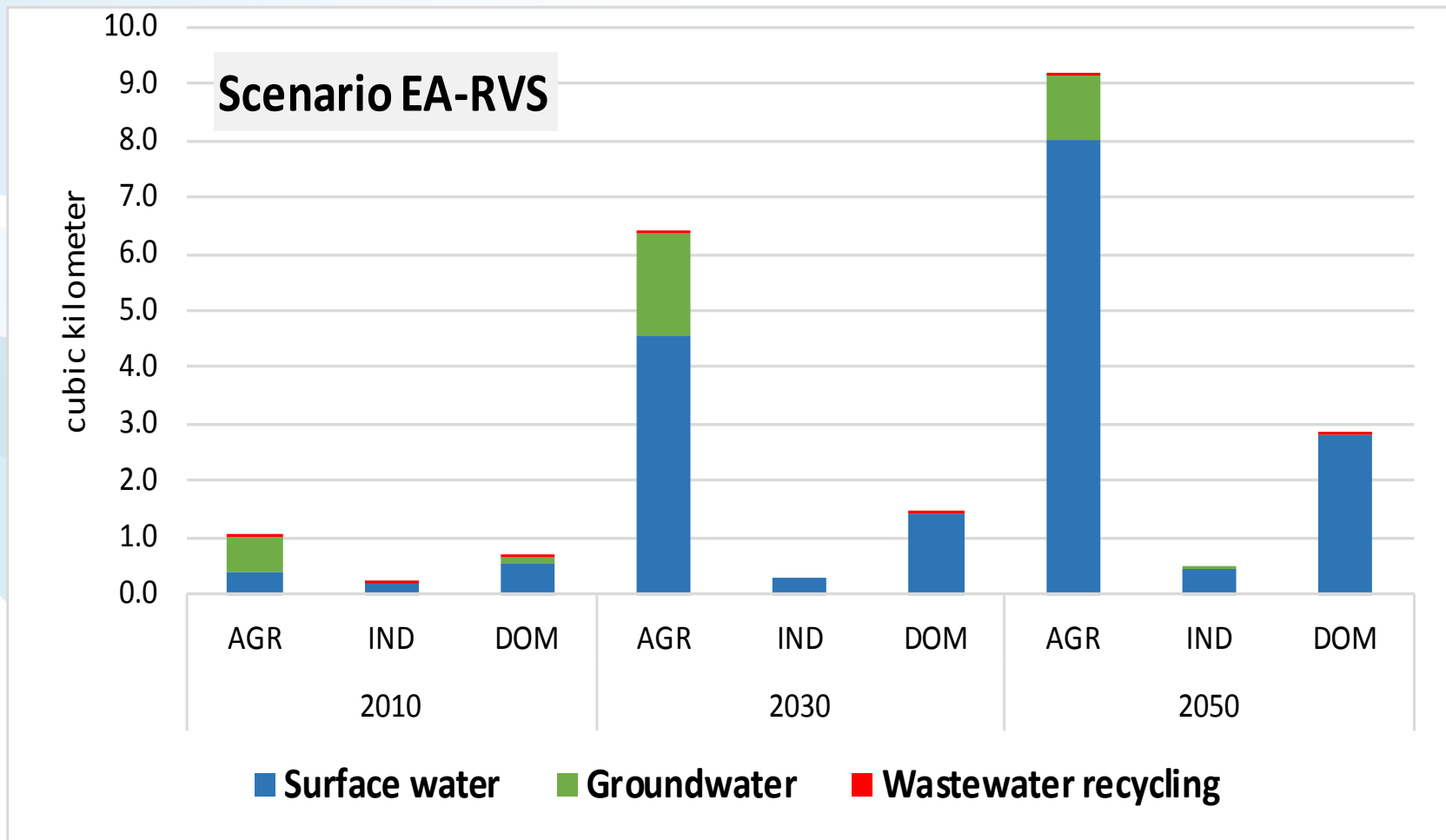
*What can models tell us?*

# **SOCIO-ECOLOGICAL WATER SYSTEM CHARACTERISTICS**

Combining the  
biophysical, human and  
**economic** dimension

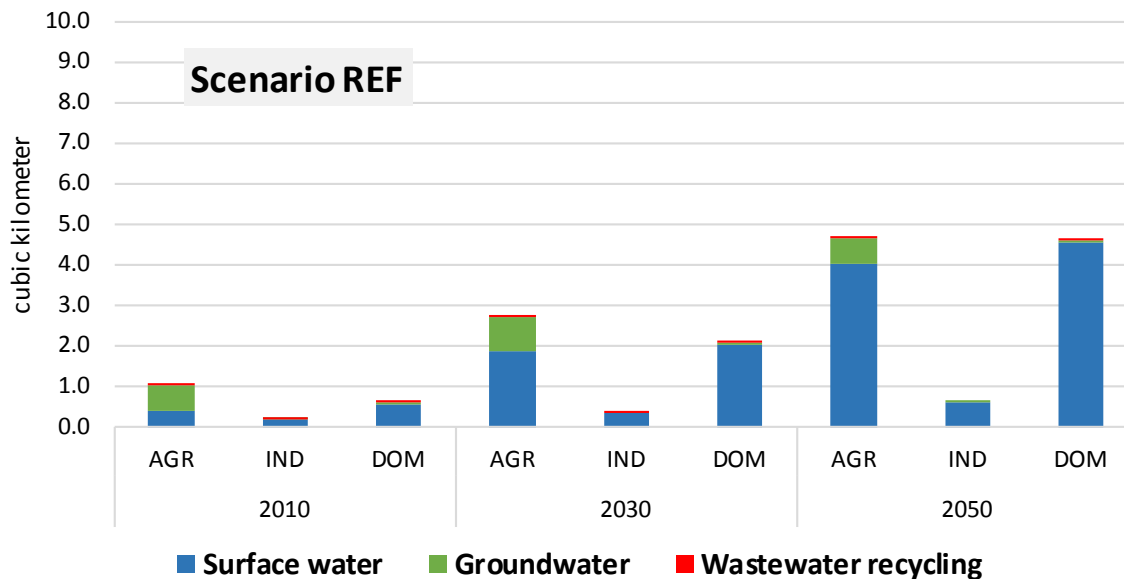
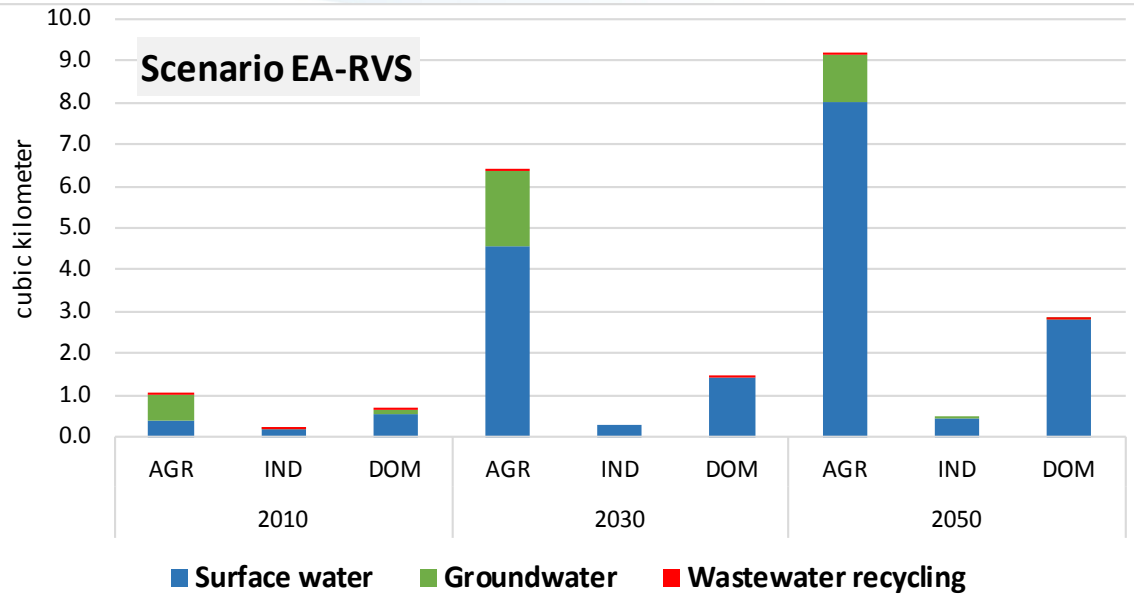
# Cost-efficient water withdrawals, EA-RVS

Water withdrawal development in the eLVB, by use sector and source



Source: IIASA WFaS East Africa (CWAT-ECHO model system)

# Cost-effective water withdrawal to meet people's water needs



# Training question

- 1. Where does **wastewater recycling** emerge as an option to satisfy human water demand? In which month? What could be the reason that the most expensive option is required to meet human water needs? How does it change until the 2050s.*
- 2. The same analysis for pumping **groundwater**.*

# COSTS

How much will it cost  
to meet people's water needs?

# Annual costs, Scenario EA-RVS

million \$ / year	2010	2030	2050
ENERGY costs	27	74	126
OPERATIONAL & MANAGEMENT costs			
Surface water reservoirs	0	3	3
Waste water treatment (Recycling)	3	30	82
Surface water withdrawal (diversion)	343	842	1469
Groundwater withdrawal (pumping)	60	16	32
Wastewater re-use	11	10	10
<b>TOTAL</b>	<b>444</b>	<b>975</b>	<b>1721</b>

# Investment costs, Scenario EA-RVS

## Investment costs over 10-year periods in the eLVB

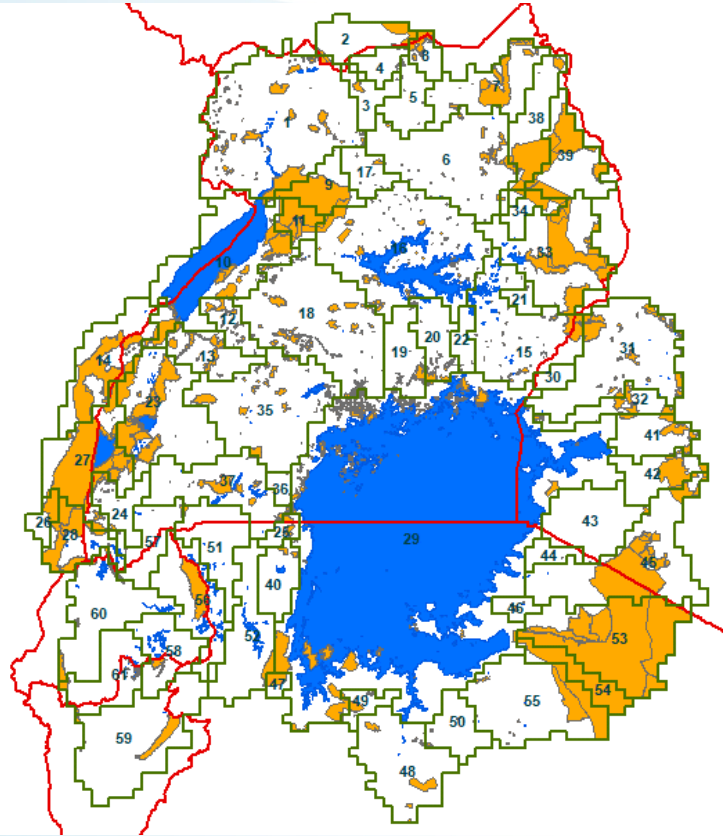
million \$ / year	2010	2020	2030	2040	2050	TOTAL
Domestic / Industry sector	0	86	82	78	234	481
Reservoirs	0	28	2	0	4	33
Irrigation systems	30	98	165	182	231	706
Water supply	0	261	574	784	1054	2672
<b>TOTAL</b>	<b>30</b>	<b>473</b>	<b>822</b>	<b>1044</b>	<b>1522</b>	<b>3892</b>



# Potential further analysis

***Where in the eLVB will the costs for the water sector be incurred, in which sub-basins, in which countries?***

# Potential further analysis



Yellow areas show regions of high environmental value as designated in the World Database of Protected Areas (WDPA).

[download from Oct 2018]

*How would water allocation change if more emphasis were given to environmental flows?*