

# Prioritizing Investments for Environmentally Sustainable Economic Growth



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# Uganda's NDP II Goals

Uganda's target is to attain a lower middle income status by 2020 with an annual per capita income of USD 1,033 according to the NDP II.



The country's GDP per capita stands at \$740. It will require a leap to \$1,000 for **Uganda** to achieve this **goal** in 2020.



# Stockholm Statement :

a rethinking of development strategies

Thirteen of the world's leading development economists — including four former chief economists of the World Bank, have released the [Stockholm Statement](#), in which they summarize what they see as the core principles for development policymaking going forward.

1. GDP growth is not an end in itself
2. Development has to be inclusive
3. Environmental sustainability is a requirement, not an option



# All countries are in need of Structural transformation

In all countries—need to address problems of climate change (both mitigation and adaptation)

In Africa there is a need to move from:

- traditional to modern agriculture,
- low to higher productivity services



All successful development has entailed government playing an important role

## – The Development State –

Providing enabling conditions for the market to work including **good physical and institutional infrastructure**



The role of infrastructure to enhance economic growth and how to finance it has resurfaced as a major topic among development economist. Nobel laureate Amarty Sen has made two key observation related to this:

- **“even the feasibility of high economic growth is threatened by the underdevelopment of social and physical infrastructure (Dreze & Sen ,2013)**  
and
- **“the challenge of sustainable and injustice-reducing development ... are complicated by ...climate change” (Sen, 2015)**



# MoFPED Priority Infrastructure Projects IEC

The Ministry of Finance has suggested that for Uganda to attain the middle income status, Government should Invest in the following priority Infrastructure Projects:

- a) Fast track the construction of the Standard Gauge Railway System
- b) Finalize the construction of strategic roads especially express Highways and Tourism roads
- c) Entebbe Airport rehabilitation and expansion and revival of the National Carrier
- d) Finalize construction of key Hydro Electricity Dams (Karuma, Isimba, Ayago) and extend the transmission lines
- e) Fast track the construction of the oil pipeline and oil refinery
- f) Extend the National Backbone Infrastructure (NBI) to all districts.

## WHERE IS WATER AND ENVIRONMENT?



We need methods and tools to demonstrate that the Environmental Sustainability is a requirement not an option for successful development:

- MWE has embarked on this goal with two recent project and to help them avoid the issues facing many Low Income Countries that sprinted to Middle Income Status



## **Pollution shrinks Viet Nam's GDP by 5%**

*Each year, environmental pollution causes Việt Nam an economic loss of 5 per cent of its gross domestic product (GDP) and the figure is expected to rise.*

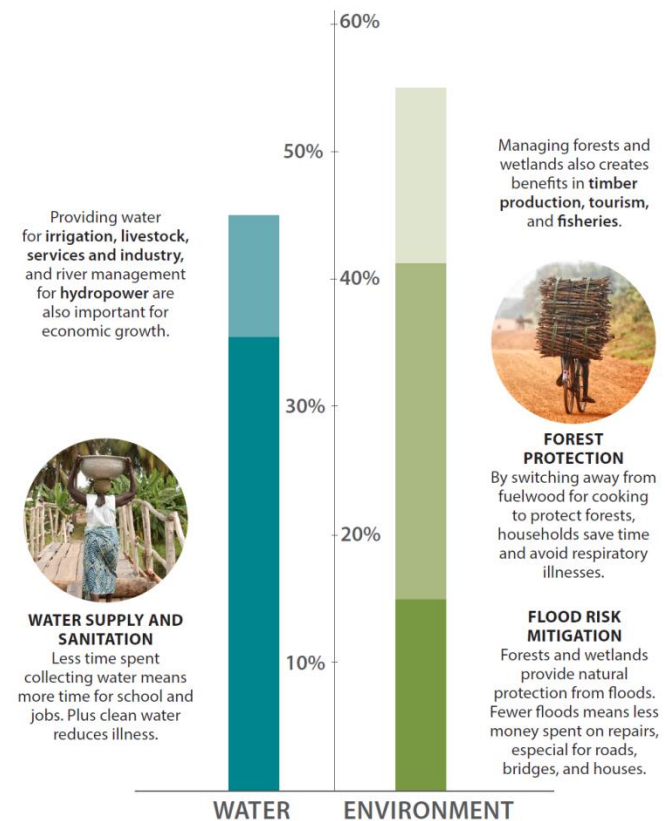
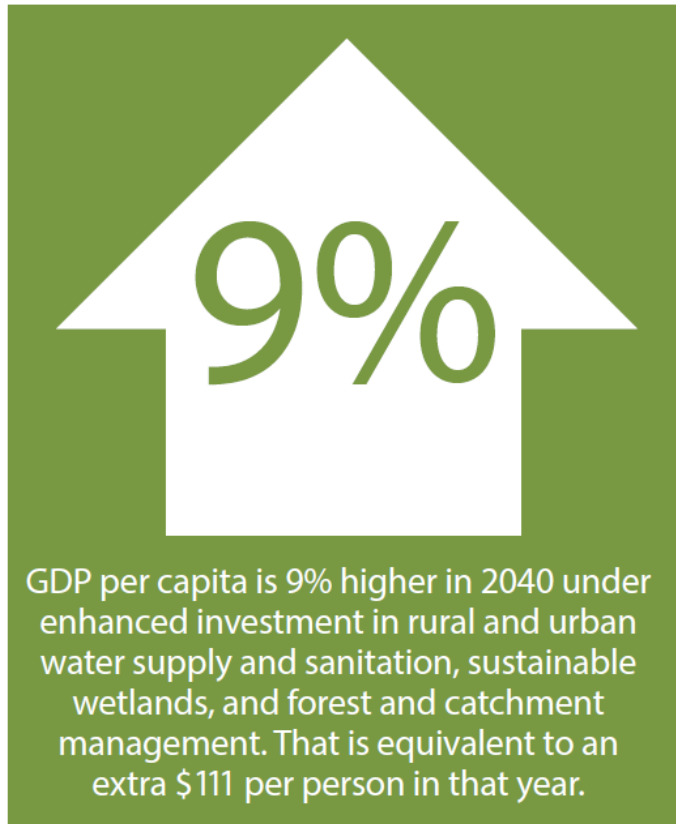




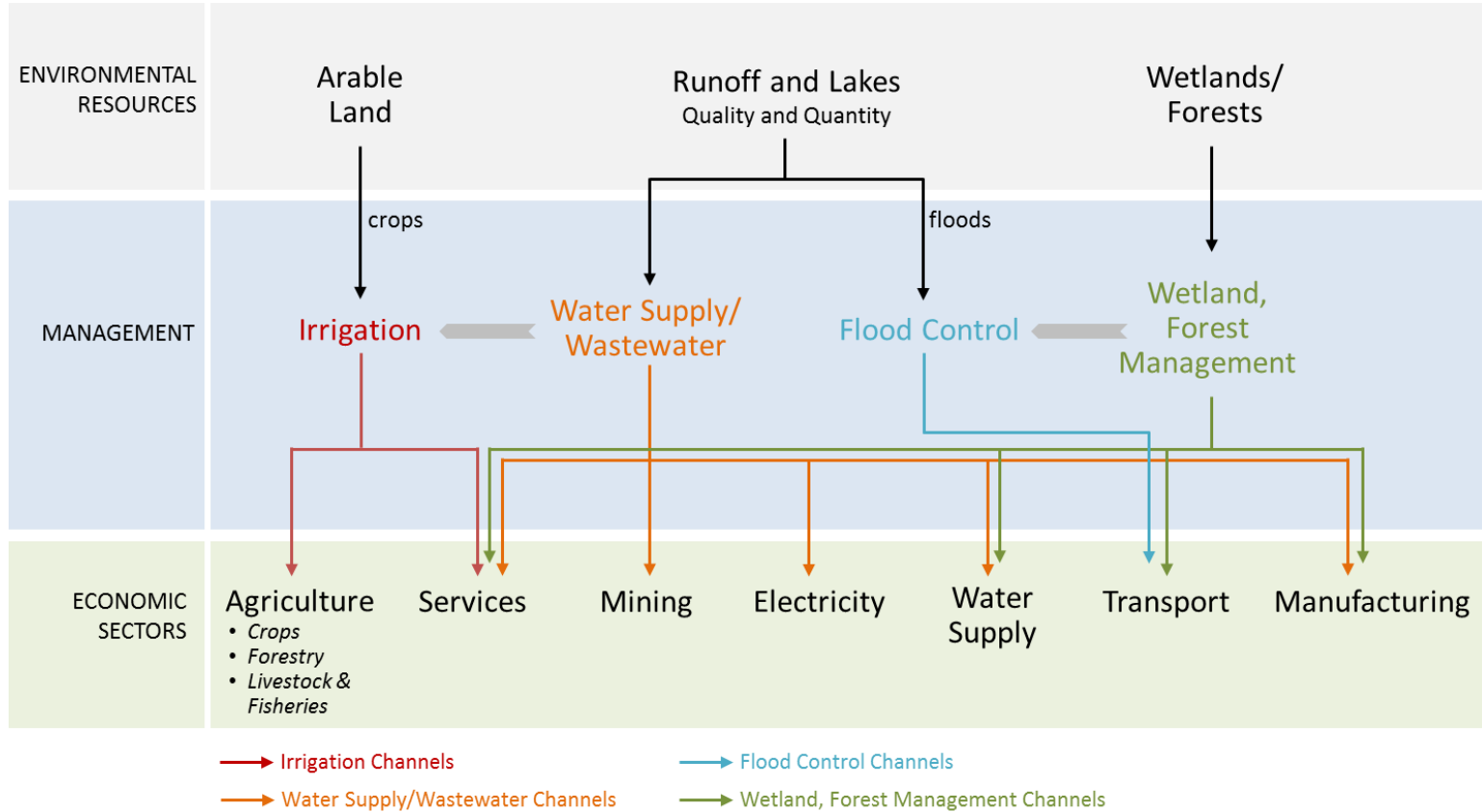
# Investment in water and environment will enhance Uganda's growth



**Brent Boehlert**  
Principal  
**IEc**

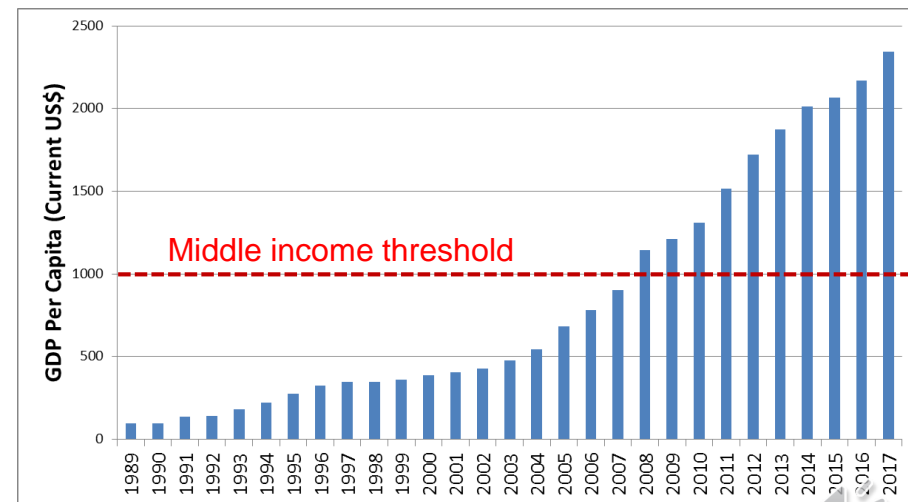


# What was included?



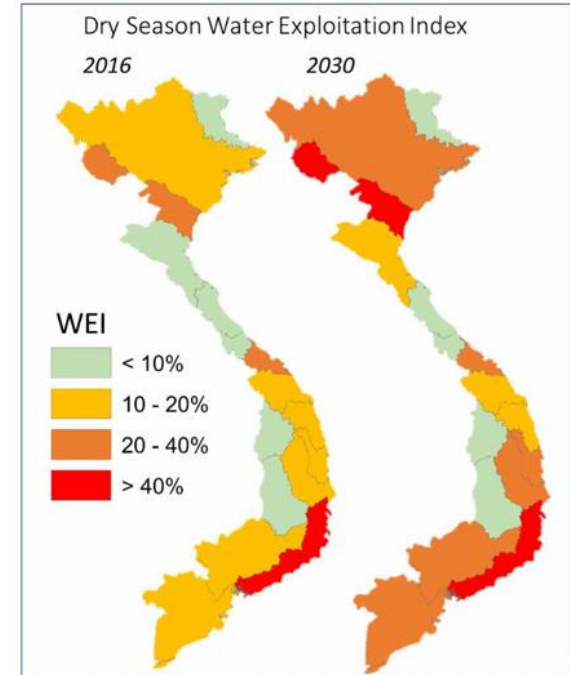
# A cautionary tale on unconstrained development: the case of Vietnam

- Vietnam is a humid country with abundant water resources
  - Temperatures 20-27 deg C
  - Precip 1200-2500mm/yr
- Achieved middle income status through growth of industrial sectors
- Clean and abundant water fueled economic growth



# Environment and water resources in Vietnam: extended recovery needed

- Resources are strained:
  - Major water quality issues
  - Overdrafting of groundwater
  - Major basins are stressed
- Growth has negatively affected rural populations and created a drain on the economy



THREAT	CHANGE BY SECTOR			
	AG	INDUST	SERVICE	TOTAL
Flooding of the Red River	0.64%	0.23%	0.37%	<b>0.34%</b>
Sea level rise and subsidence	1.67%	0.06%	0.29%	<b>0.36%</b>
(a) Development on water stress	5.37%	0.33%	1.01%	<b>1.25%</b>
(b) Temperature on rice yields	0.90%	0.00%	0.20%	<b>0.20%</b>
Pollution into Red and Mekong	3.60%	0.10%	0.60%	<b>0.80%</b>
Untreated water on health	5.80%	2.80%	3.60%	<b>3.50%</b>
Upstream Mekong development	3.28%	-0.18%	0.27%	<b>0.45%</b>
<b>Combined Threat (includes all of above except Threat A: Flooding)</b>	<b>19.34%</b>	<b>2.67%</b>	<b>5.55%</b>	<b>5.98%</b>



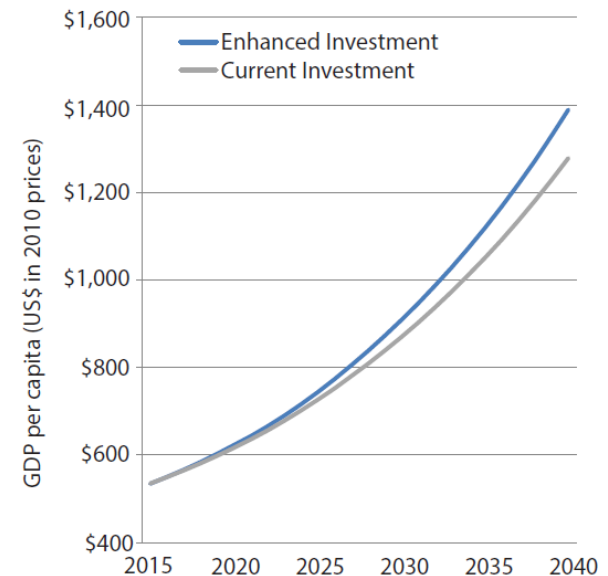
# How can Uganda do things differently?

- Uganda can chart a different path
- Economics study shows that enhanced environmental and water stewardship boosts growth
- Strategic Sector Investment Plan provides a framework and set of tools for sustainable growth

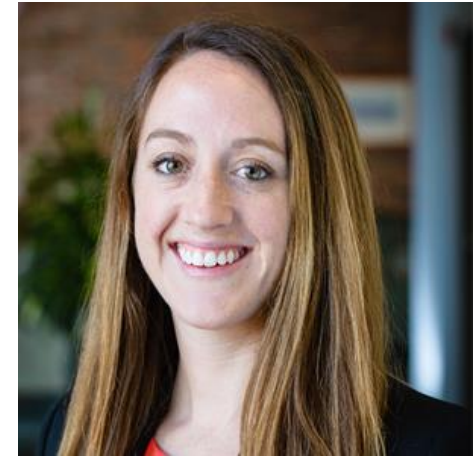


## ECONOMIC GROWTH, 2015-2040

The lower line in the figure shows the modeled trajectory of per capita GDP growth under Vision 2040 conditions, but with Water and Environmental investments at lower, current growth rates. The upper line shows the same trajectory, but with MWE's Vision 2040 Water and Environmental investment scenario. The difference is 9% increase in per capita GDP by 2040.



**Jackie Willwerth**  
Senior Associate  
**IEC**



# BUDGET ALLOCATION IN UGANDA'S WATER AND ENVIRONMENT SECTOR

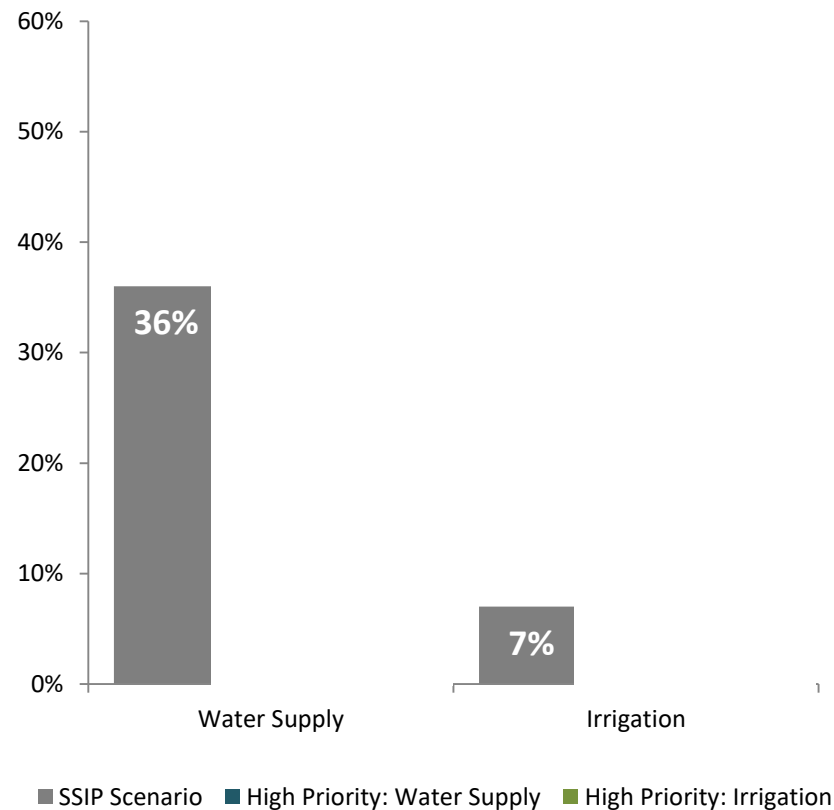
# How to best utilize limited funds in the Sector?

- The **Strategic Sector Investment Plan (SSIP)** provides a sector-wide allocation of funds designed to best address sector priorities
- The **Sector Investment Model (SIM)** is used to develop this allocation based on user inputs (i.e. priorities, costs, and indicators statuses)
  - SIM can be used to understand the tradeoffs assumed with each funding decision



- Example
  - 800 billion UGX budget
  - Two Scenarios compared to SSIP Baseline:
    - High Priority Water Supply
    - High Priority Irrigation
  - *Implemented in the SIM by changing 2030 Preference Weights*

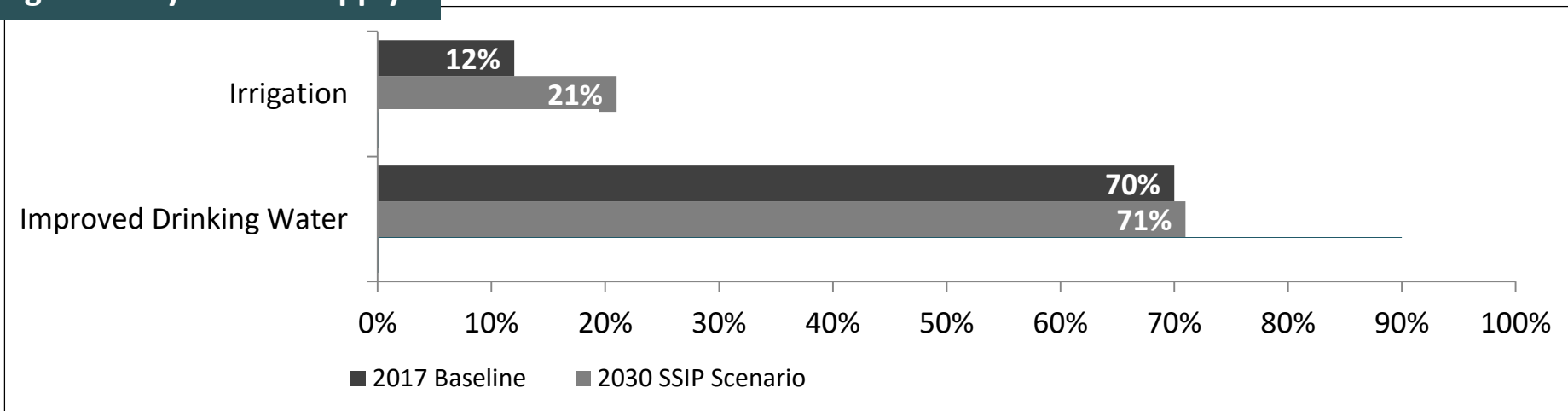
**2030 Budget Share by Activity**



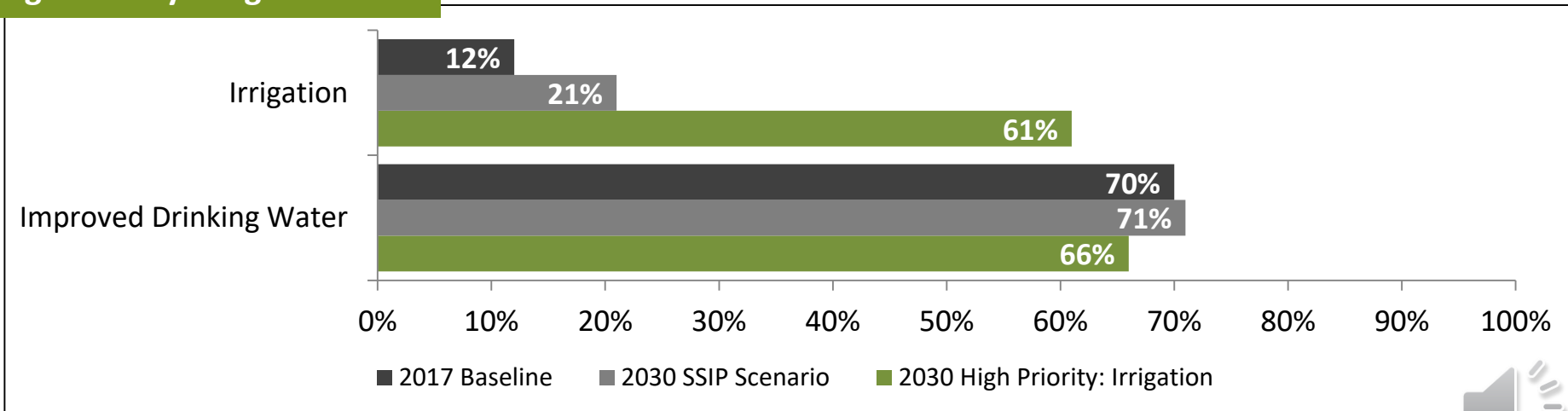


# Exploring Tradeoffs in the SIM

## High Priority: Water Supply



## High Priority: Irrigation



# Using the SIM for Investment Planning

Budget	800	Billion UGX
Budget Growth Rate	3%	Expected Annual growth in budget
Gap Weight	2	Larger values place more weight on gap, 0 =

Preference Inputs		Normalized Values	
Current Budget Allocation	2030 Preferences	Current Budget Allocation	2030 Preferences
<i>Enter proportion of 2017 SSIP-related budget allocated to each indicator</i>		<i>Normalized (sum to 100) preference weights</i>	
<i>Enter preferences. Columns to right will automatically update to sum to 100%</i>			
Clean Water Supply	1.VillH2O	6%	4%
	2.Rfuncnt	8%	3%
	3.ImpH2O	19%	5%
	4.SafeH2O	15%	9%
	5.CostCapita		0%
	6.Ufuncnt	9%	5%
Sanitation and Public Health	7.SldWaste	0%	2%
	8.Bsan	9%	3%
	9.SafeSan	9%	5%
	10.HomeHand	0%	2%
WFP	11.SchlHands	0%	3%
	12.Irr	2%	7%
Water for Economic Activity	13.WfPFunct	2%	3%
	14.StorageCapacity	1%	8%

- The SIM is useful for exploring these tradeoffs across many dimensions

## Indicator Achivement

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2030	Target
<b>Rural Water Supply</b>											
Village Water Supply	66%	73%	79%	83%	86%	88%	90%	91%	92%	90%	100%
Functional rural water sources	85%	89%	91%	92%	92%	92%	92%	91%	91%	88%	100%
Improved drinking water	70%	72%	74%	75%	76%	76%	76%	76%	75%	71%	100%
Safely managed drinking water	7%	7%	7%	8%	8%	9%	9%	9%	9%	10%	100%
Cost per Capita		29.24	33.54	38.06	42.24	45.65	48.78	51.38	53.64	55.02	
<b>Urban Water Supply</b>											
Improved drinking water	70%	72%	74%	75%	76%	76%	76%	76%	75%	71%	100%
Safely managed drinking water	7%	7%	7%	8%	8%	9%	9%	9%	9%	10%	100%
Cost per Capita		29.24	33.54	38.06	42.24	45.65	48.78	51.38	53.64	55.02	0.00
Urban water service functionality	92%	95%	96%	97%	98%	98%	99%	99%	99%	99%	100%
<b>Sanitation and Public Health</b>											
Solid waste disposal	68%	64%	63%	62%	63%	64%	66%	67%	69%	75%	90%
Improved Sanitation	19%	25%	31%	36%	40%	43%	46%	48%	49%	50%	100%
Safely managed sanitation	10%	10%	10%	11%	11%	12%	12%	12%	12%	13%	100%
Handwashing at home	37%	36%	36%	35%	35%	35%	35%	35%	36%	38%	90%
Handwashing at school	35%	35%	35%	35%	37%	38%	40%	43%	45%	53%	90%
<b>Water for Production</b>											
Irrigation	0.49%	0.50%	0.52%	0.53%	0.55%	0.57%	0.60%	0.63%	0.66%	0.83%	4%
WfP functionality	85%	91%	95%	97%	98%	98%	98%	99%	99%	99%	100%
Storage Capacity	38.87	39.28	39.90	40.77	41.84	43.21	44.79	46.60	48.58	59.62	163.67
<b>Water Resources Management</b>											
Compliance with water standards	64%	64%	64%	65%	66%	67%	68%	69%	70%	74%	90%
Permit compliance	71%	79%	84%	86%	86%	87%	87%	87%	87%	88%	90%

*Prof. Joseph Stiglitz, Noble Laureate in Economics*

- impact on GDP may be misleading
- go to foreign owners/managers
- GDP does not include value of resource depletion and environmental degradation
- In many areas adverse effects on environment and health can be very significant
- GDP says nothing about sustainability or inclusiveness of growth
- Important to bear in mind: what we measure affects what we do; if we measure the wrong thing, we may be led to do the wrong thing

Major message of Report of International Commission on the ***Measurement of Economic Performance and Social Progress, Mis measuring Our Lives: Why GDP Doesn't Add Up***





## Doing differently...



- Design of appropriate multi-dimensional indicators to measure “integratedness”, e.g. GDP per capita
- Design of appropriate planning, budgeting, implementation, monitoring and reporting tools and guidelines [e.g. the move from Output to Results-Based Budgeting]
- Establishing capacity needs (gaps) and working with partners [Development, SCO and private sector] to address them.
- Setting up an accountability forum led by Civil Society with participation of the Private Sector





## At Sector level...



- When the development priority areas were approved by Cabinet, challenge was getting all the sectors to see themselves in these prioritized areas
- Given the comprehensive nature of SDGs, they offered an initial framework through which different sectors could trace their linkages to the identified national priority areas
- SDGs and sub-goals now largely mainstreamed into the main planning frameworks, viz. NDP II, and most Sector (18) and Local Government Development Plans



- The SIM provides a logical, transparent rationale behind cross-subsector spending,
- The following are the priority SIM ‘upgrades’:
  - **Improve spending preference weights.**
  - **Enhance cost estimates across space and time**
  - **Improve indicators and the information.**
  - **Better characterize vulnerability to uncertainty.**



- We must listen across disciplines
- We need to use all resources at our hands
- We need to collect more data
- We need to use the tools that we have to maximize the benefits of MWE investments to Economic Growth and the welfare of Ugandans
- We need to communicate our findings in the language of decision-making.
- As Prof Stiglitz says: METRICS MATTER



*If I am going to live below a dam I would much rather have it built by an engineer than an economist. Nevertheless, the economist comes into the picture perhaps by asking the awkward question as to whether the dam should have been built in the first place.*

(Boulding, 1964, p.83)

## Opportunity Cost

noun

1. (economics) the benefit that could have been gained from an alternative use of the same resource





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Thank you

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