



RESEARCH  
PROGRAM ON  
Water, Land and  
Ecosystems

LED BY  
**IWMI**  
International  
Water Management  
Institute

EVENT AT STOCKHOLM WORLD WATER WEEK

# ASIA FOCUS: TOWARDS A HEALTHY GANGES

WEDNESDAY, AUGUST 30, 2017 - 9:00-10:30

LOCATION: NL MUSIC HALL / MUSIKSALEN

**giz** Deutsche Gesellschaft  
für Internationale  
Zusammenarbeit (GIZ) GmbH



# Program

- 9:00 - **Welcome and introduction**
- 9:05 - **Reducing fecal pollution in small cities along the Ganga** by Javier Mateo-Sagasta of IWMI
- 9:10 - **Restoring Environmental flows: A framework for the Ganga** by Suresh Babu of WWF
- 9:15 - **Danube to Ganga: Lessons learned for sustainable river restoration** by Fritz Holzwarth of GIZ
- 9:25 - **Energizer**
- 9:45 - **Panel discussion**
  - Facilitated by Marianne Gadeberg
- 10:25 - **Wrap-up** by Javier Mateo-Sagasta of IWMI

# Towards a healthy Ganges:

## Healthier Waters and More Productive Ecosystems

- Javier Mateo-Sagasta (IWMI)



# Healthy Ganga:

Cleaner Waters and more Productive Ecosystems

<https://wle.cgiar.org/healthyganga>



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# Reducing fecal pollution in small and medium size cities

**Javier Mateo-Sagasta**

Research group Leader

Water health and nutrition

(IWMI)



**National Mission for Clean Ganga**  
(Reg. Society)  
Ministry of Water Resources, River Development & Ganga Rejuvenation  
Government of India



# Reducing fecal pollution remains a key priority for the Ganges



**655 M people and 2.7 BLD sewage (74% untreated)  
[Fecal coliform] is high all along the river  
Strong contribution of small and medium size cities**

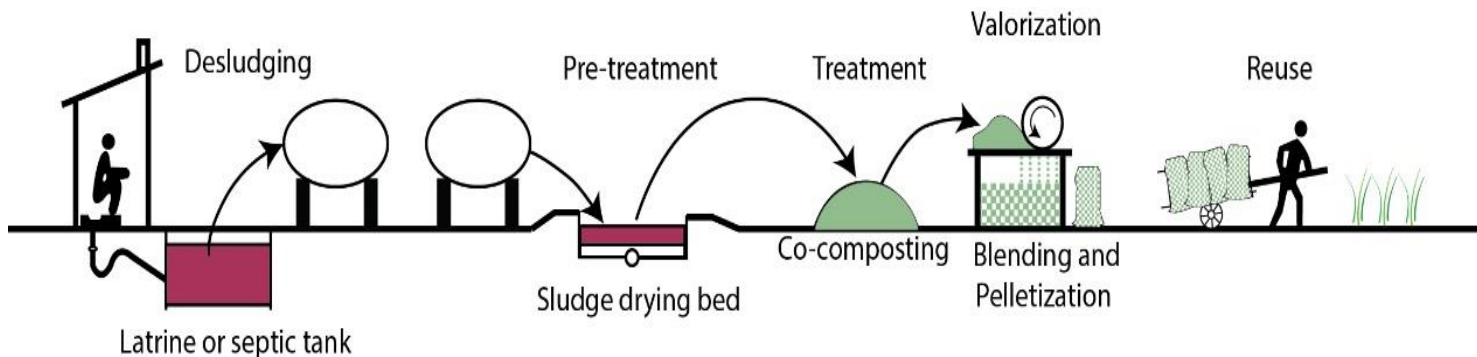
# Septage and septic tank effluents find their way to the Ganga



- **Most households connected to septic tanks**
- **No soak pits, no treatment**

# Recommendations

1. Give priority to septage collection, treatment and reuse in agriculture
2. Support a pilot FSM project in the Ganga basin
3. Develop revenue models for septage and wastewater management



**Thank you!**





# A framework to restore environmental flows in the Ganga

**Suresh Babu**  
Director-Rivers, Wetlands, Water Policy  
WWF-India

**Contributors:**

*Dr Nilanjan Ghosh, Nitin Kaushal, Prof. Vinod Tare, Ankit Modi ,  
Arijit Mishra, Ravindra Kumar, Phanish Kumar Sinha, Himanshu  
Sharma, Prof Mukul Kumar, Prof Indranil De*



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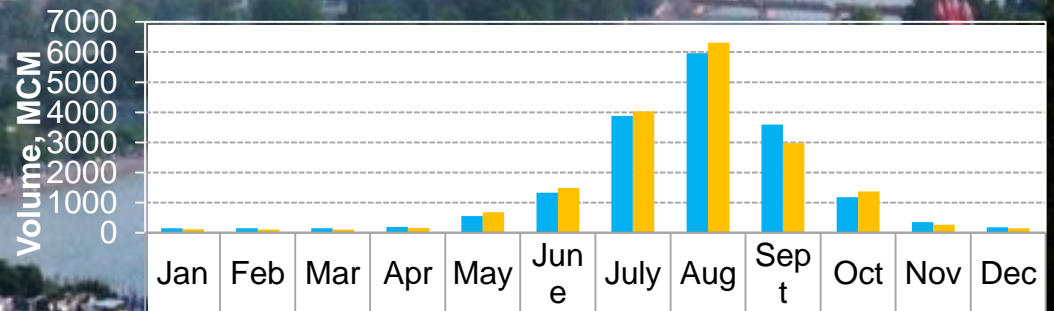


# Bhimgoda Barrage

UGC: (12 districts)

CCA: 1.01 Million hectare

*E-Flows gap: 120 -380 MCM  
(May to August)*



■ BAU flows (Present day flows at Balawali), MCM	148	154	150	190	559	1331	3885	5967	3595	1183	350	179
■ E-Flows d/s of Bhimgoda Barrage at Balawali, MCM	120	110	111	163	683	1488	4033	6313	2973	1378	266	148

Source: IIT Kanpur

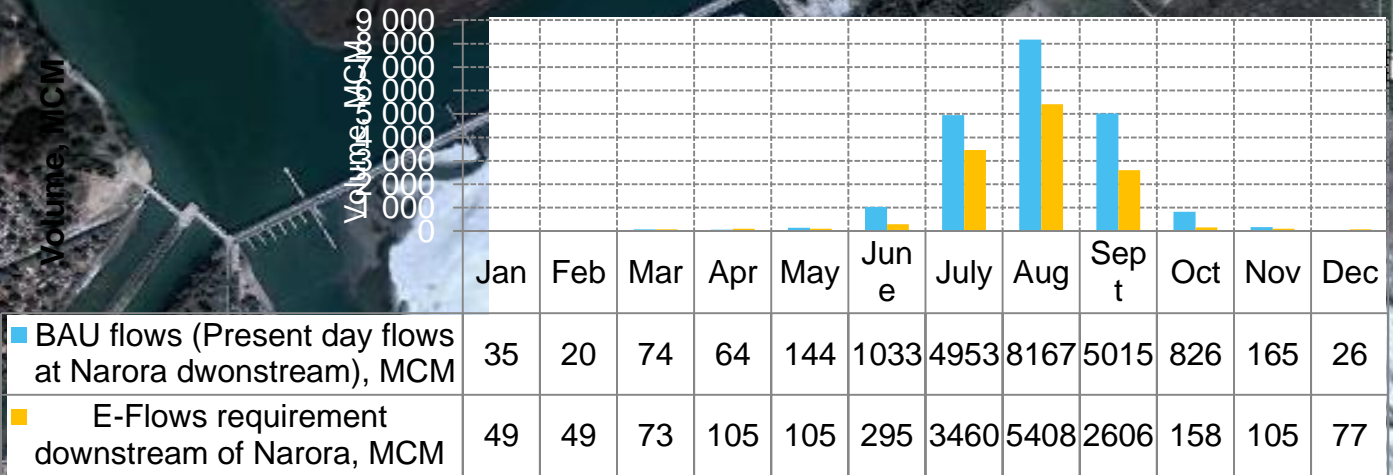
# Narora Barrage

11/7/2002 5:30:00 am

LGC: (12 districts)

CCA: 1.16 Million Hectare

*E-Flows gap: 15-50 MCM  
(December to April)*



Source: IIT Kanpur

# Proposed framework



*Promoting agricultural Package of practices*



*Water use efficiency*



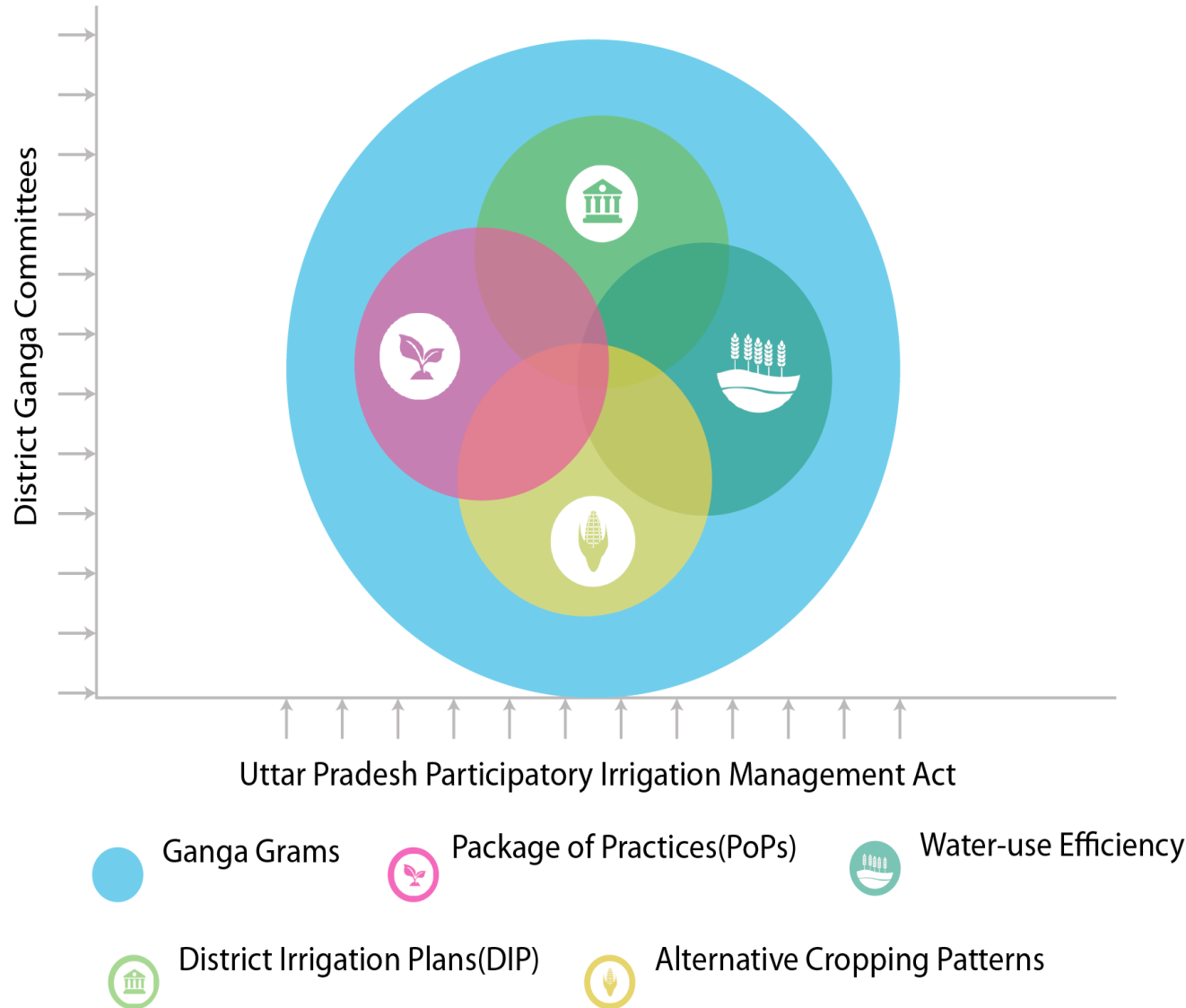
*Alternate cropping pattern*



*Redesigning the Ganga Gram yojna*

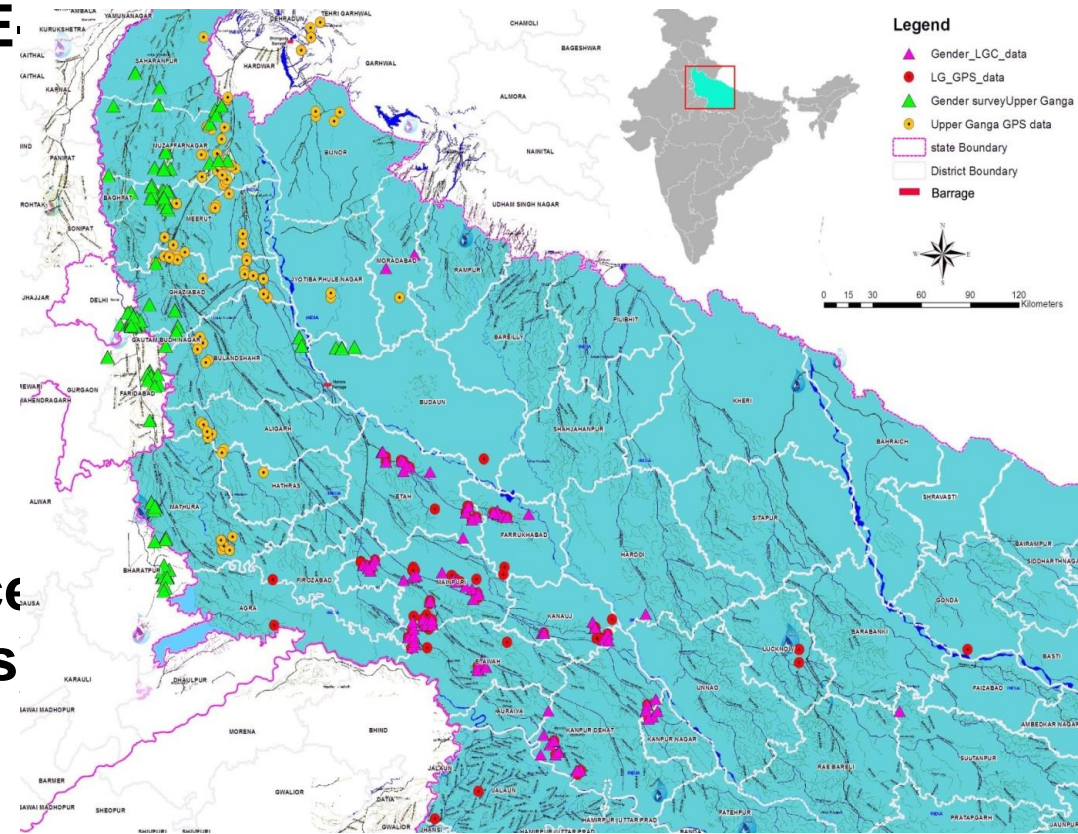


# PROPOSED APPROACH



## Key takeaways

- Tradeoffs are manageable. E. Flows restoration is possible
- Proof of concept on integration of agriculture, water management through Ganga Grams
- Aquifer management (Surface and ground water interactions & modifying reservoir operations need further studies





# **From Danube to Ganga: Lessons learned for sustainable river restoration**

**Asia focus – Towards a healthy Ganges**  
**Joint session: IWMI, CGIAR-WLE, GIZ, WWF**  
**Stockholm International Water Week 2017**  
**30, August 2017**

Dr. Fritz Holzwarth

Senior Advisor Ganga Rejuvenation, Gesellschaft für internationale Zusammenarbeit (GIZ)

[f-holzwarth@t-online.de](mailto:f-holzwarth@t-online.de)



## Lessons can be learned from European River Basins, like the Danube, but there is no European Blueprint

- River Basin Planning and Implementation need to include all stakeholders and their interests
- River Basin Management needs a governance structure that integrates: Central Government, State Governments and Stakeholders
- Parameters to be recognized: Water Quality, Water Quantity, Hydromorphology, Ecosystems
- Point of Departure: Baseline scenario, identifying the pressures and impacts, make actions measurable
- Alternative Actions/Measures/Effect scenarios to be defined as basis for identifying impediments and leading to policy advice for decision options
- No action without economic considerations
- No single issue approach: all sector needs to be recognized

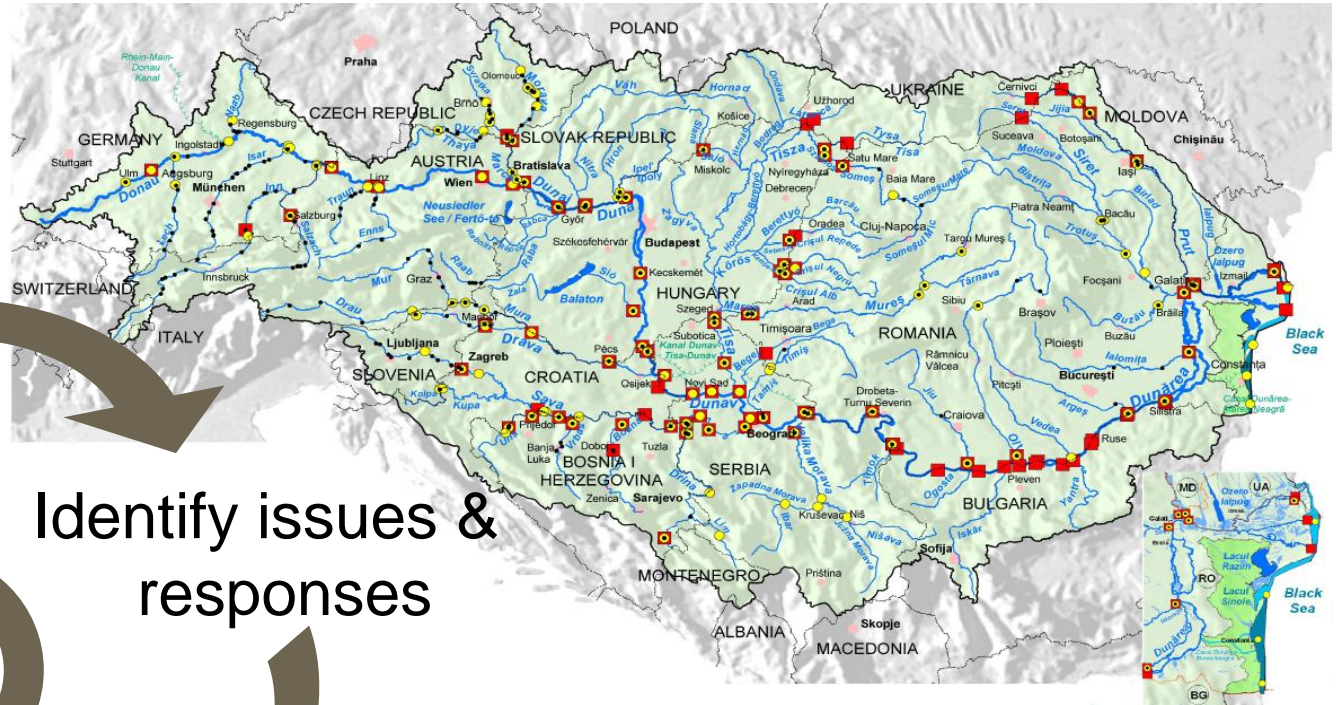




## Ensure operationalization through action plan / road map

- Set **priorities** for measures and investments following hotspots
- Develop **results chains** which relate measures, outputs, outcomes, final goal.
- Specify **detailed actions**, actors, available resources, timelines.
- Develop **implementation monitoring** based on defined **indicators** (potentially as part of result chain).
- Envisage **evaluation** mechanisms at crucial timelines.

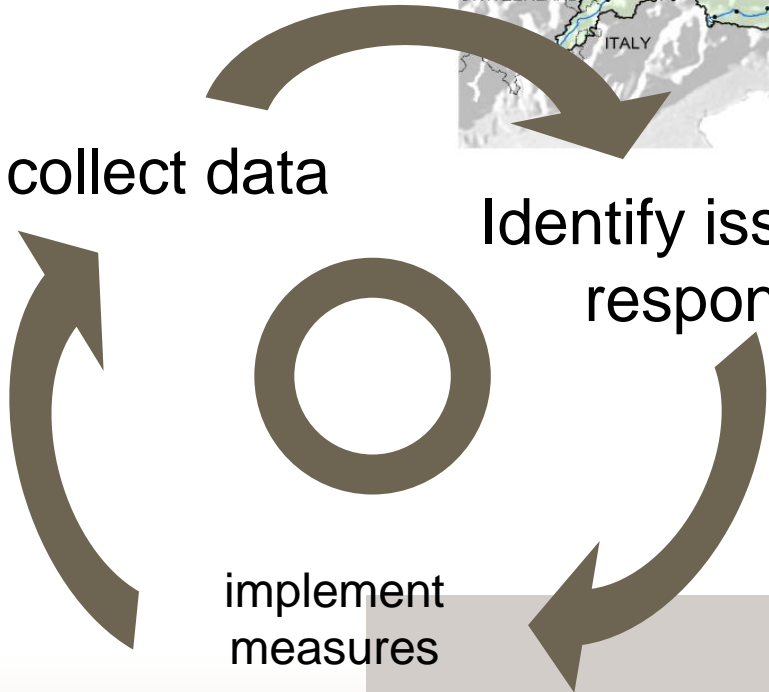
# TNMN: Monitoring Waters



collect data

Identify issues &  
responses

implement  
measures





## A River Basin perspective will make a difference on the ground

- NMCG = excellent point of departure for dialogue and governance
- Perfection leads to no action: Data and knowledge available are sufficient to start
- Stakeholder involvement started but establish participatory processes 'on the way'
- Stepwise approach to develop an agreed River Basin Management Plan but start now with an agreed immediate action program
- Responsibilities have to be clear





**Thank you for your attention!**

# Energizer (10 min)

- Discuss in groups of three to four people:
  - 1) Are there other critical recommendations to add to the ones presented (within the three areas of fecal pollution, e-flows, and river basin management)?
  - 2) What are the biggest barriers to implementing these recommendations?

# Panelists

- **Dipak Gyawali**, Nepal Academy of Science and Technology and chair of Nepal Water Conservation Foundation
- **Fritz Holzwarth**, Advisor to GIZ
- **Arnaud Cauchois**, Principal Water Resources Specialist with the South Asia Regional Department of the Asian Development Bank
- **Bastiaan Mohrmann**, Co-Head Asia and Middle East, 2030 Water Resource Group

**Thank you!**

