# SAMUHA
# Concepts & Practices in Livelihoods

SAMUHA brings the following assets to the table

# Water Pressure
## - a resource group of the HUF-SAMUHA Partnership

### Existing Water

**IN PRACTICE**
- 40% savings in canal-irrigated paddy cultivation:
- 106 billion litres of water saved and assured

- MGNREGA + Climate adaptation
  - 42.14 Crores of MGNREGA works undertaken Raichur Dt Admin
  - xxx cum water-holding capacity built

**ELSEWHERE**
- Farmer conversion of plant to tree-based sericulture

- aeroponics vegetables

- NDRI hydroponics fodder

**AWAITING PILOTS**
- Rain-based Assured Irrigation

- Blue.Green Credits as GP and Farmer incentivisation

### Black Water

**IN LAB**

- Harvesting fecal sludge for:
  - brick-making
  - compost

### Grey Water

**PROVISIONAL PATENT**

- one-step sewage to tertiary treated water for:
  - agriculture
  - industrial use

### New Water

**IN LAB**

- Cwater4Agriculture
  - 7800 km of coastline
    - agriculture
    - horticulture

- Atmospheric water
  - Drinking water
    - humans
    - livestock
    - wildlife

...

ಸಮುಹ
SAMUHA

# 1. Around 40% savings of water in canal-irrigated Paddy

**- through Water Management + Line Planting + Non-Pesticide Management**

- Tested in 81 villages over 5 seasons.
- Current cumulative water savings at 106  billion litres of canal water assured by E&Y, Deloitte and KPMG during different years.
- Ready for replication.
- **Application short-listed for creating a financially viable model**
- Possible Long term Impact: savings of 38 trillion litres in canal-irrigated paddy cultivation across India;

**RECOMMENDATION: introduce Water Savings in Irrigation and Agriculture Ministries reporting indices**

ಸಮೂಹ
SAMUHA

# 2. MGNREGA and Climate-adaptation

## - Helping the Semi-Arids to cope with Climate Change

- **Rs 208 Crores MGNREGA perspective planning undertaken with Raichur district administration in 258 villages of 53 Gram Panchayats in March 2016**
  - **Rs 39.72 Crores MGNREGA works implemented and paid for by district administration as of Sep 2018**
  - **541,386 cum / 0.54 TMC of water holding capacity built at a cost of Rs 25.82 Crores**
- **Ready for replication to other districts in Karnataka and India.**

## Possible Long term Impact:

**Households in the semi-arids become**

- **more food secure as their drylands are drought-proofed with public resources;**
- **enhanced soil moisture;**
- **increased biomass; systematic composting;**
- **improved soil fertility; and**
- **enhanced yields;**
- **Donor and public policy influencing at State, National and International levels.**

ಸಮೂಹ
SAMUHA

| S# | Treatment | Cum ending Sep 2018 - only labour payments | water holding capacity Calculated at Rs 472/Cum for TcBs, and Rs 479 for all other water treatments | Trees calculated at Rs 479/cum towards 2 pits = 2 trees equivalancy |
|---|---|---|---|---|
| | | Rs | CUM | Tree-equivalent |
| 1 | TcBs | 7,17,37,058 | 1,51,985 | |
| 2 | Farm Ponds | 5,82,22,111 | 1,21,549 | |
| 3 | Check dams | 58,66,970 | 12,248 | |
| 4 | Desilting of tanks | 9,13,31,738 | 1,90,672 | |
| 5 | New tanks | 83,39,203 | 17,410 | |
| 6 | Bore well recharge | 19,34,468 | 4,039 | |
| 7 | Open well desilitation | 1,87,43,353 | 39,130 | |
| 8 | Open well construction | 20,85,160 | 4,353 | |
| 9 | Soak pits | 18,15,260 | 3,790 | |
| **A** | **Water holding capacity sub-total** | **25,82,60,061** | **5,41,386** | |
| | **Water holding capacity in TMC (1000 million cft)/1 million cum** | | **0.54** | |
| | | | | |
| 10 | Nala Bunds | 33,71,714 | | |
| 11 | Contour trenches | 1,80,27,311 | | |
| **B** | **Water flow-related sub-total** | **2,13,99,025** | | |
| | | | | |
| 12 | Horticulture | 3,13,880 | | 1,311 |
| 13 | Sericulture | 11,50,204 | | 4,803 |
| 14 | Tree planting | 67,50,851 | | 28,187 |
| C | **Biomass sub-total** | **82,14,935** | | **34,300** |
| | | | | |
| **D** | **NRM Sub-Total** | **28,78,74,021** | | |
| **9** | **Others** | **10,93,94,050** | | |
| **E** | **total** | **39,72,68,071** | | |

# 2a. MGNREGA and Climate-adaptation

## - Helping the Semi-Arids to cope with Climate Change

**RECOMMENDATION:** introduce Water-holding capacity and Water Flow in MGNREGA reporting indices

ಸಮುಹ SAMUHA

# 3. Existing practices and innovations
## - awaiting broad-basing

**Existing Water**

**IN PRACTICE**

**ELSEWHERE**

**- Farmer conversion of plant to tree-based sericulture**

**- aeroponics vegetables**

**- NDRI hydroponics fodder**

**RECOMMENDATION:**

**facilitate Agriculture Ministry to identify water-savings schemes and technology for added support:**

1. **plant-to-tree conversion in Sericulture, Pulses, etc,**
2. **aeroponics vegetables, hydroponics fodder etc; and**
3. **add to reporting indices**

ಸಮೂಹ
SAMUHA


# 4a. Rain-based Assured Irrigation

- Concept outlined
- Outline required for a self-sustaining 1-acre
- **Ready for Pilot.**

**Possible Long term Impact:**

- **Households in the semi-arids**
  - **become more food secure as their drylands are drought-proofed with public resources;**
  - **soil moisture is enhanced;**
  - **biomass is increased;**
  - **composting is undertaken systematically;**
  - **soil fertility is improved; and**
  - **yields are enhanced;**
- **Donor and public policy influencing at State, National and International levels.**

SAMUHA

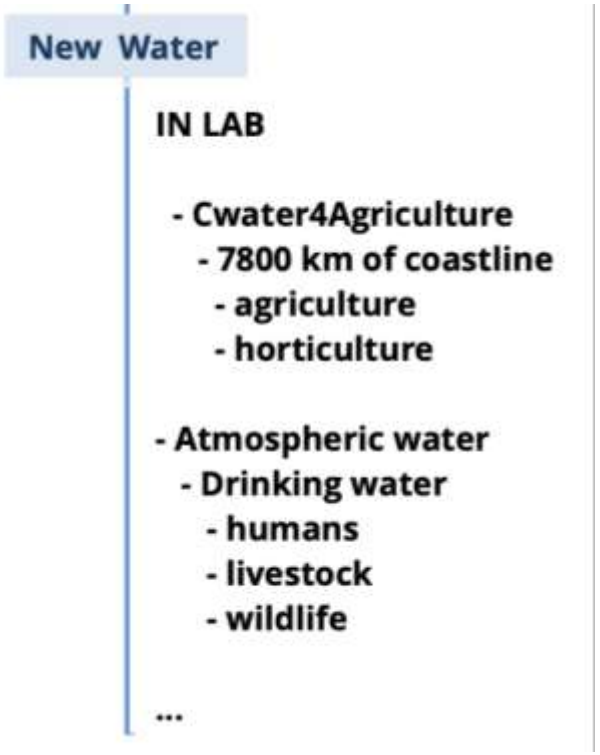
# 4b. Blue.Green Credits

**- incentivising Gram Panchayats and farmers drive faster adoption**


- Open Source Water calculator for water savings (Blue); and tree planting, composting and desilting (Green) outlined.
- Outline required for marketing of Blue.Green Credits
- Ready for Pilot.

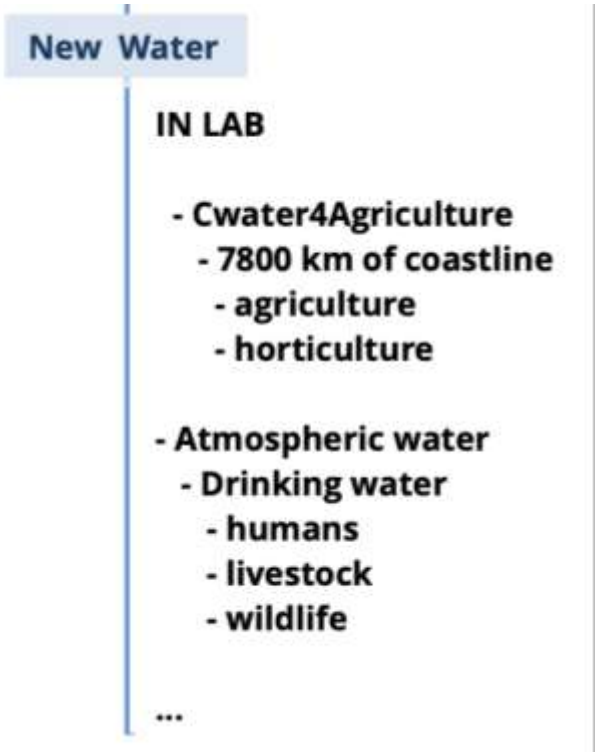
- Possible Long term Impact: Households in the semi-arids
  - become more food secure as their drylands are drought-proofed with public resources;
  - soil moisture is enhanced;
  - biomass is increased;
  - composting is undertaken systematically;
  - soil fertility is improved; and
  - yields are enhanced;
- Donor and public policy influencing at State, National and International levels.

ಸಮೂಹ SAMUHA




# 5a. Cwater4Agriculture

- **Presently in Lab**
  - **Delayed because treatment of sewage water was prioritised over this**
  - **Working towards a patent**
  - **Possible Long term Impact:**
    - **coverage: 7500 km of coastline**
    - **assured irrigation for**
      - **Agriculture**
      - **Horticulture**
    - **Donor and public policy influencing at State, National and International levels.**




# 5b. Atmospheric water

- **Presently in Lab**
  - Focus on reducing energy costs
  - Delayed because treatment of sewage water was prioritised over this
  - Working towards a patent
  - Possible Long term Impact:
    - water security for
      - Drinking
      - Livestock,
      - Horticulture
  - Donor and public policy influencing at State, National and International levels.

# Thank You!

T Pradeep
+91 9900003073
t@Pradeep.online

ಸಮೂಹ
SAMUHA