

Corporate stewardship

– Partnering to Improve Agricultural practices

Mumbai

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Flow of Presentation

Agriculture in India – Overview

Present Challenges

Why Sustainability ?

The Way Out

Ensuring sustainability

Corporate Stewardship – Few Examples

Going Forward

Agriculture in India – An Overview



High Dependency on Agriculture

- 60.53% of total land area under agriculture
- 58.45% of the Indian population is dependant on agriculture
- 80% of farmers are small & marginal



Water Intensive Crop Dominance

- Water Intensive crops- wheat and paddy, most consumed food grains
- Production of such crops expected to grow by 80% by 2050
- 89.5% of the available water is used by agriculture sector and the consumption to increase by 68.8 trillion lit by 2025



Water Account Deficit

- Water reserve - **39% ground water** & **61% surface water**
- Consumption in Agriculture :- 64% Ground water & 36 % Surface water i.e. reverse pattern thus creates deficit
- Per capita availability to decline 1341 cubic meter in 2025 from current 1545 cubic meter



Subsistence & Traditional way of Agriculture

- Only 10% coverage from MI, rest in though tradition methods
- Monsoon dependence for irrigation to crops
- Lack of water harvesting structures
- Less crop diversification & market orientation

Present Challenges



Low Productivity

- Traditional method of crop cultivation
- Insufficient mechanisation of about 23% only
- Insufficient credit availability



Water Loss at the farm gate

- Conventional flood irrigation
- Leaching, Increased soil salinity & depletion of fertility



Excessive Power Usage

- Harnessing ground water through tube wells
- Declining water table- 72 % of India under crucial zone



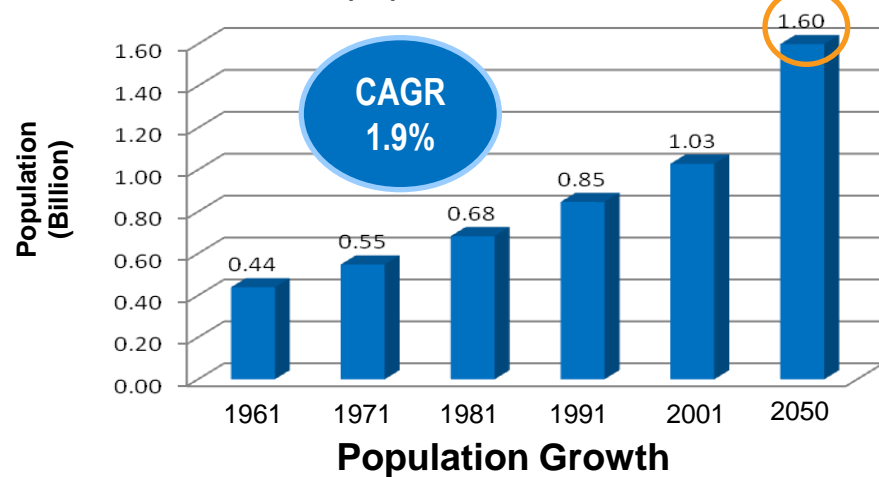
Labour Intensive

- High labour intensive practices – manual seed sowing, intercultural and harvesting
- Movement of rural labour to urban for better living is about 30%

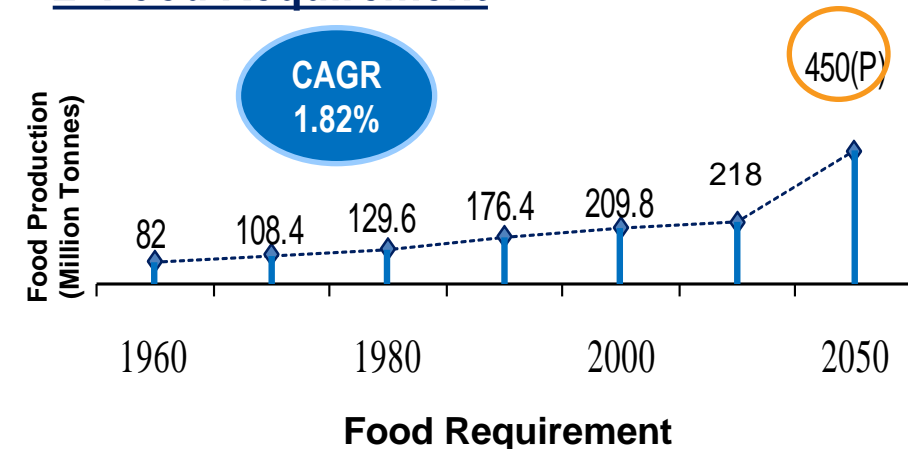
Why Sustainability ?

1. Population Explosion

- India - The second most populated country
- 17.55% of world's population resides in India



2. Food Requirement



3. Water Requirement

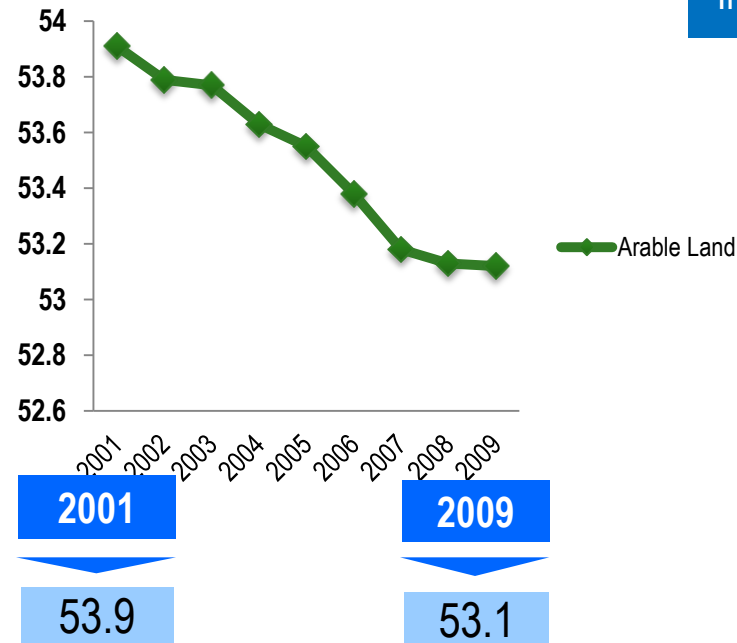
- Continuously Increasing Demand & Static Supply of Water

Sector	Water Demand in BCM			
	Year	2010	2025	2050
Irrigation		688	910	1,072
Drinking Water		56	73	102
Industry		12	23	63
Energy		5	15	130
Others		52	72	80
Total		813	1,093	1,447

- Requirement of Water by 2050 is 1,447 BCM
- Utilizable Water by 2050 is 1,123 BCM

Why Sustainability ?

4. Shrinking Arable Land (%of total land area)



5. Irrigation water demand

India is worlds largest user of Ground water in Agriculture – 61%

- Total water demand by 2030 = 700 bcm
- 85% used for producing food alone
- The total water supply will only rise to 744 bcm, barely half the total requirement.

Source- IWMI, Indian express

Water Stress... Alarmingly Near!

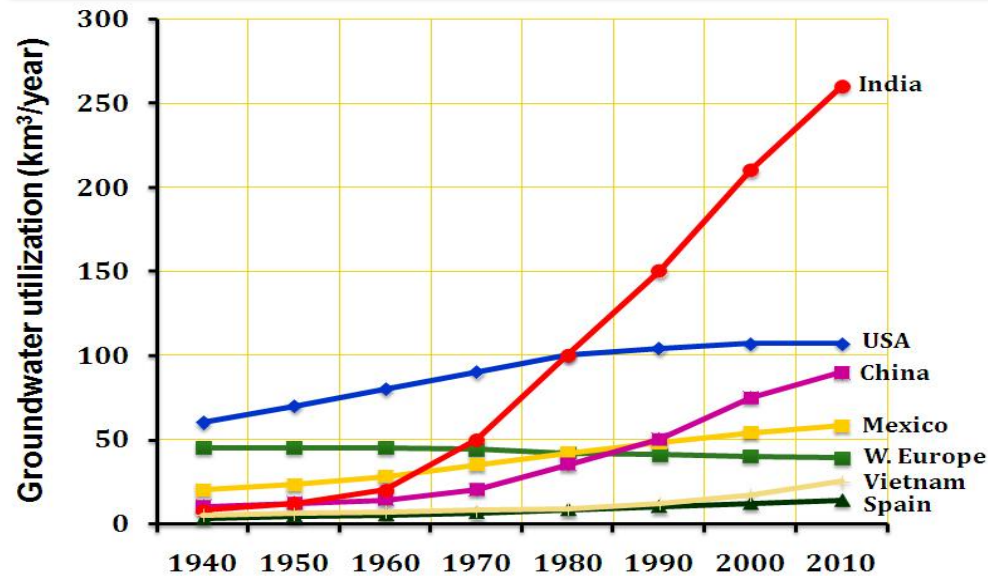
As per international criterion less than 1700 (cu.m / capita / year) is considered as water stressed

Water availability in India is 1000 (cu.m / capita / year), indicating that 70% of global area including large part of India will become water stressed by 2025..

Why Sustainability ?

India has over 20 million irrigation wells. We add 0.8 million/year.

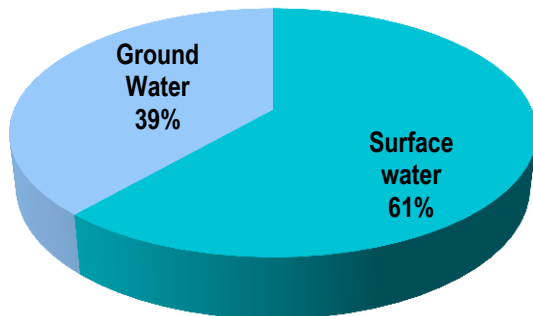
Every fourth cultivator owns an irrigation well; non-owners depend on groundwater markets.



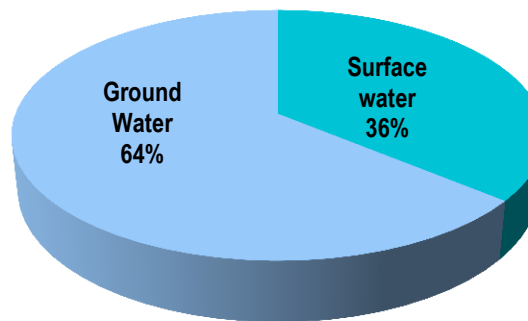
Indian Agriculture - world's largest user of ground water since 1975

Increasing population & intensive diversification of farming have fired groundwater boom

Water reserve in India



Percentage of Total Irrigation Water used



A huge imbalance!

The Way Out

Increase Farm
Productivity

Optimum
Utilisation of
Resources

Reduction of
Burden on
Groundwater

Technology
Dissemination

Improved
agricultural
practices

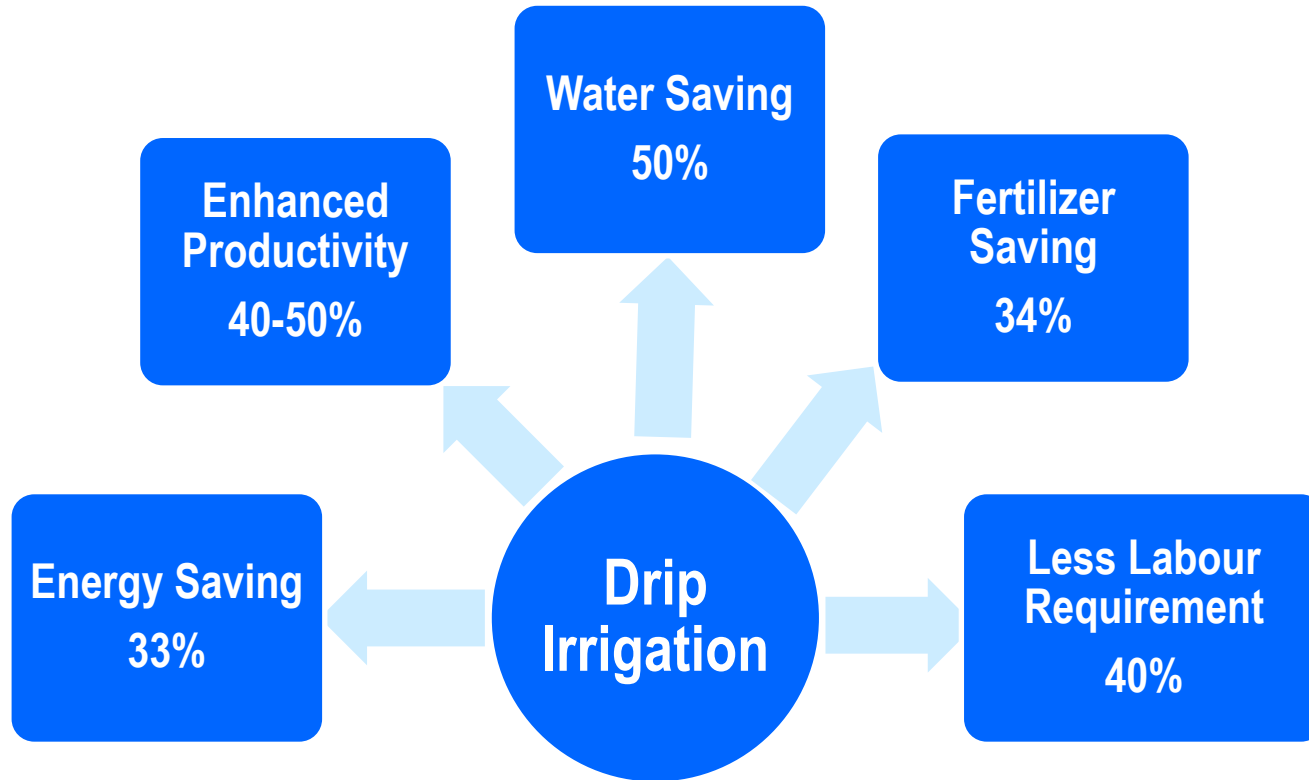
Prudent and
efficient usage of
Land, Water and
Energy

Rain water
harvesting,
Community
Irrigation,

Modern
technologies - Drip
Irrigation, farm
mechanisation

- Creating awareness about improved agricultural practices (7.26 billion INR allocated in FY13-14 for training and extension by central govt.)
- Bring commodity crops under micro-irrigation (80 % area left out)
- More and more area under micro- irrigation (current penetration <10 %)
- Disseminate modern technology via extension services
- Propagate community irrigation for small land holders

Drip Irrigation- A Viable option



- Water and nutrients supplied directly to root zone, improved uptake by plants
- Enhanced quality of produce
- Soil Conservation
- Hassle free intercultural operations
- Saline water be used for irrigation

Drip Revolution- Irrigating Plants not the Soil !

Ensuring sustainability-

How do we ensure sustainability

Drip Irrigation Emphasis

- Highest water use efficiency (90 % plus)
- Many obvious benefits

Increased Connect With the Society

- Creating Awareness for improved practices
- Demonstrating technologies
- Sharing success and enabling replication

Collaboration - with Key industry players

- Joint promotion and better resource utilisation
- Cross learning and promoting ideas

Alliances with NGO's/ Government bodies

- For disseminating latest information
- Increased reach in the rural areas

Corporate Stewardship

- Few Examples

Drip Irrigation Emphasis

- So far covered 250000 farmers & 3.3 lakh Ha.
- Plan to reach more than 65000 farmers in 2013

Increased Connect With the Society

- Moti Tokri in Gujarat
- Family Drip System in Jharkhand & Kerala

Collaboration - with Key industry players

- Bharti Walmart Tie-up
- Unilever- Marcatus Sustainability Initiative
- Coca-Cola initiative in Rajasthan
- Collaboration with Bayer Crop Sciences

Alliances with NGO's/ Government bodies

- Irrigation Association of India and state chapters
- CARE, Dilasa, Deshbandhu

Serving For and Serving With the Society

1

Revival of a tribal village- Moti Tokri, Gujarat

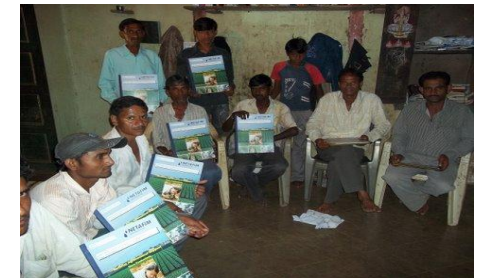
A village in the dark:

- Crops grown under rain fed conditions
- Low productivity
- Shallow wells- Negligible availability of water
- Lack of exposure to modern farming practices-fertilizers, manures, etc.



Ray of Hope- An Initiative for change:

- Netafim, NGO CARE and GGRC came together to help
- 23 farmers identified and made the beneficiaries
- Key farmers taken for an exposure trip
- Conducted awareness meetings and field demonstrations
- Provided full agronomy support



Farmers' Speak

1

“It is very easy to irrigate and fertigate the total field with drip irrigation system. It is very beneficial to us now we are planning to cultivate water melon in drip after chilly in drip irrigation system”

2

“We get good income in chilli than cotton or maize. We save our labour in irrigation, fertigation and weed control. We are also able to irrigate our field at night when power is available at night”

Benefits Harnessed



Crop	Av. Gross Income before projects (Rs./ acre)	Av. Gross Income after projects (Rs./ acre)	Yield before drip	Yield after drip	Increase in Yield /Ha.
Cotton	32,000 - 40,000	53,000 - 64,000	2 Tons/Ha.	5 Tons/Ha.	140%
Maize	12,000 - 14,000	20,000 - 22,000	2 Tons/Ha	3.5 Tons/Ha.	57%
Tomato	56,000 - 75,000	1,40,000 - 1,70,000	65 Tons/Ha.	150 Tons/Ha.	144%
Chilli	24,000 - 32,000	44,000 - 48,000	4 Tons/Ha.	7.5 Tons/Ha.	54%

2 Reaching out to the unreached- FDS in Jharkhand

Agriculture Scenario- Jharkhand

- Small and marginal land holdings, Low productivity
- Mono cropping with paddy, Plateau terrain
- Rain fed agriculture & inadequate irrigation facilities

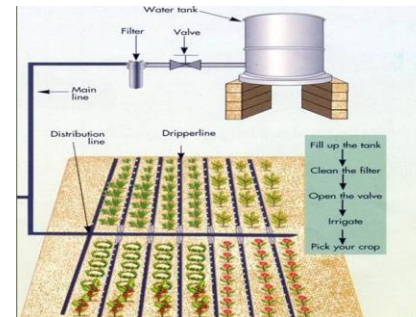
Netafim, Jharkhand State Livelihood Promotion Society (JSLPS) and UNDP came together



Family Drip System

Water Source- Wells, river, borewell, tanks, etc.

- Easy installation on marginal land holdings
- Suitable for cultivation of vegetables and other crops



What was done?

- Exposed to FDS- A gravity based low cost drip irrigation system
- Classroom Training
- Training on field preparation & installation of FDS
- Guidance for selection of vegetable crops
- 18000 units installed

Benefits Harvested

- An efficient efficient irrigation (Water) management technology
- Empowered farmers to overcome drought
- Reduced dependency on monsoon to cultivate crops
- Increased livelihood options



Yield Increase

CROP	Yield Increase / Ha
Tomato	100 Tons
Cabbage	75 Tons
Capsicum	75 Tons
Potato	50 Tons
Ginger	50 Tons
Bitter gourd	25 Tons



Shaking Hands with the Industry Partners

1

The Bharti Walmart tie-up:

Objective

- To provide training on water conservation and sustainable food production to its multi thousand farmer base
- Install Drip Irrigation System in their FTC under Direct Farm Initiative

Present Status

- Demonstration plots have been set in North and Central states
- Farmers are trained on basic agricultural Practices
- Started getting lead from Walmart farmers

Impact/ Result

- Expand reach via the Walmart network
- Encompass more no. of farmers in coming years
- Improve farmer income by 20%



Netafim will provide water conservation and sustainable food production training to 40,000 farmers by 2015

Shaking Hands with the Industry Partners

	<u>Unilever-Marcatus Sustainability Initiative</u>	<u>Alliance with Coca- Cola</u>	<u>Collaboration with Bayer Crop Sciences</u>
Objective	<ul style="list-style-type: none">• Saving of natural resources• Make farmers adopt drip irrigation system	<ul style="list-style-type: none">• Better utilisation of groundwater• Increase vegetable crop area	<ul style="list-style-type: none">• Trials for Bayer's pesticide in Netafim DI field• Joint Promotion
Present Status	<ul style="list-style-type: none">• Five demonstration plots organised in two states	<ul style="list-style-type: none">• Collaboration since 2008• Drip irrigation installed for 218 farmers	<ul style="list-style-type: none">• Pesticide of Bayer tested at Netafim Israel• Joint trials in sugarcane crop in Maharashtra
Result/ Impact	<ul style="list-style-type: none">• Extensive reach• Joint promotion of the products	<ul style="list-style-type: none">• Vegetable production of desired quality• Enhanced production- Mutual benefit	<ul style="list-style-type: none">• Increase penetration of area

Going Forward

1

Public Private
Partnership in
Maharashtra

- Under PPP for Integrated Agricultural Development (PPP-IAP)
- To Increase productivity with market linkage
- Netafim to start with two crops maize and cotton

2

Collaboration with
Deloitte

- To facilitate the farm loans to either a group of farmers or potential big farmer
- Economic upliftment of the farmers in backward areas

3

Focus on commodity
crops

- To introduce and propagate drip irrigation in commodity crops like paddy and wheat
- Enhance the productivity and quality

4

Alliances with NGOs and
Universities

- Collaborate with NGOs to spread knowledge in interior areas
- To set up a demonstration plot in university research farms
- Educate students about drip technology

**THANK
YOU**

