

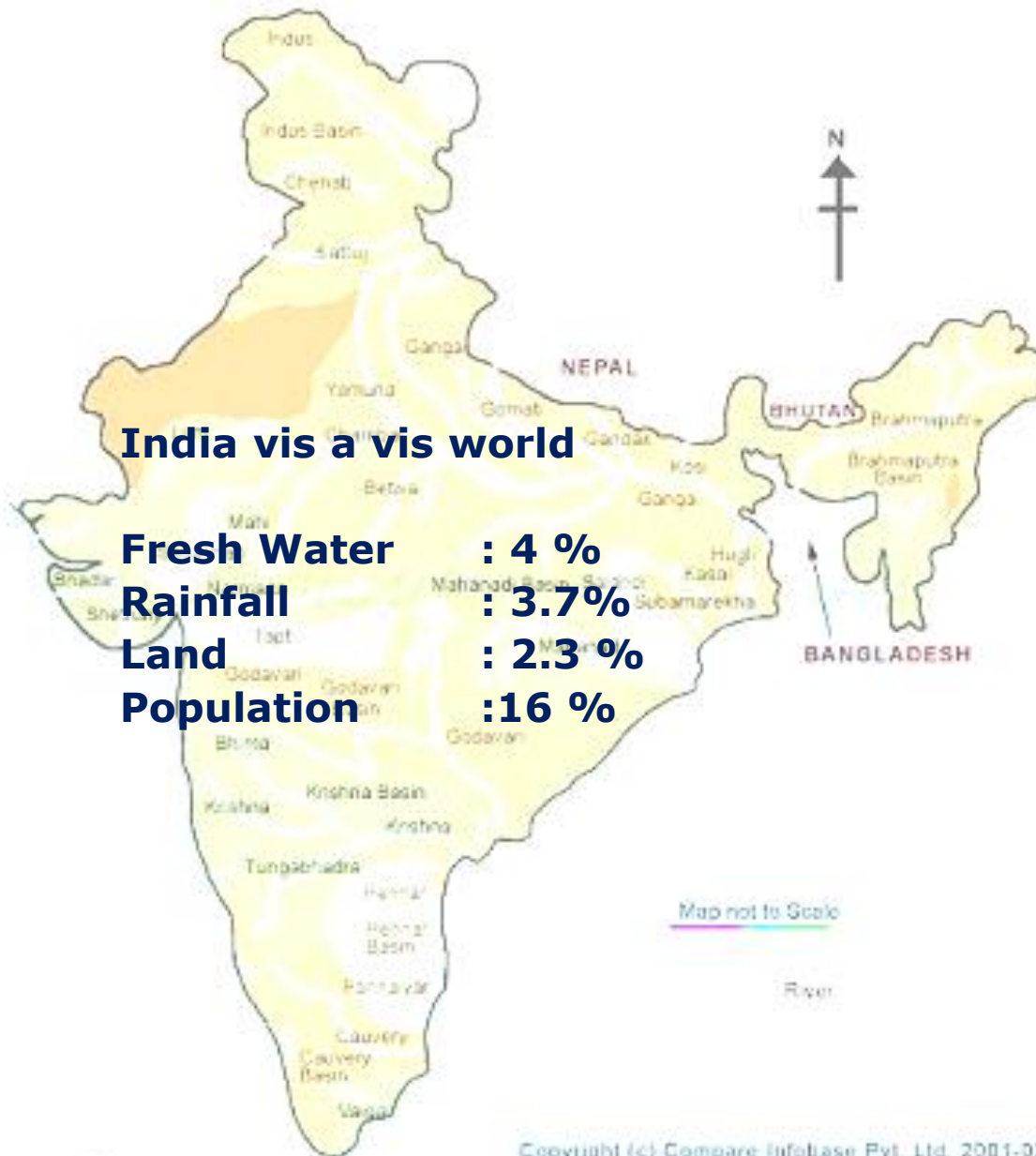


On Farm Water Management

ON FARM WATER MANAGEMENT



India: At a Glance

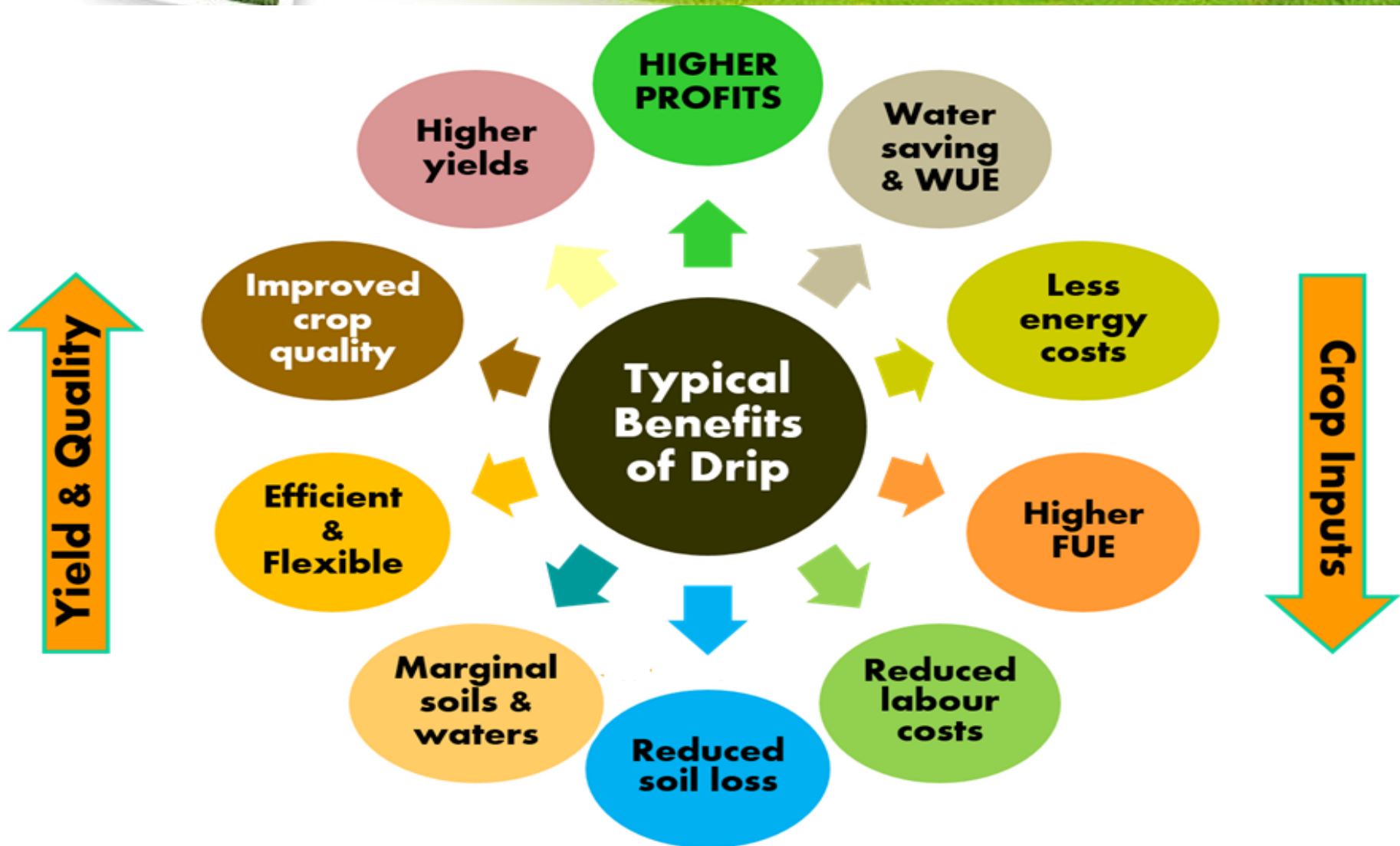


Micro Irrigation Potential in India

Crop	Area (mha)		
	Drip	Sprinkler	Total
Cereals	-	27.6	27.6
Pulses	-	7.6	7.6
Oil seeds	3.8	1.1	4.9
Cotton	7.0	1.8	8.8
Vegetables	3.6	2.4	6.0
Spices and condiments	1.4	1.0	2.4
Flowers and Medicinal and aromatic plants	-	1.0	1.0
Sugarcane	4.3	-	4.3
Fruits	3.9	-	3.9
Coconut & Plantation Crops, Oil Palm	3.0	-	3.0
Total	27.0	42.5	69.5

Source: National Task Force on Micro Irrigation; January 2004

Advantages of Micro Irrigation





National Mission for Sustainable Agriculture

OBJECTIVES

- To make agriculture more productive, sustainable and climate resilient.
- To Conserve Natural Resources.
- To adopt comprehensive soil health management practices.
- To optimize water use efficiency & water management.
- To enhance the capacity building of farmers and other stakeholders.
- Scheme Convergence & Coordination with Line Departments/ Ministries.



Mission Components

- Rainfed Area Development(RAD)
- **On Farm Water Management (OFWM)**
- Soil Health Management (SHM)
- Climate Change and Sustainable Agriculture –

Monitoring, Modelling & Networking (CCSAMMN)

- Management (State & Central)

On-farm Water Management



- Efficient water application & distribution system
- Drip Irrigation – 25% higher unit cost considered for NEH states
- At least 25% of micro irrigation for crop sector.
- OFWM component restricted to farm size of 5 Ha
- Training on appropriate water management technologies, judicious use of water and agronomic & land development

Implementation & Monitoring Structure (NMSA)

National Level

- National Advisory Committee (NAC)
- Project Sanctioning Committee (PSC)
- Standing Technical Committee (STC)
- Technical Support Unit (TSU)

State Level

- State Level Committee (SLC)
- State Standing Technical Committee (SSTC)
- Technical Support Unit (TSU)

District Level

- District Mission Committee (DMC)



Micro Irrigation Technologies

- Drip irrigation (Wide Spaced Crops)
- Drip irrigation (Close Spaced Crops)
- Mini Sprinklers
- Micro Sprinklers
- Portable Sprinklers
- Semi Permanent Sprinklers
- Large Volume Sprinklers (Rain-guns)

CPCT

- Training Programmes

Pattern of Assistance – Micro Irrigation



On – Farm Water Management

Category of Districts	Category of Beneficiary	Assistance (%)
Non DPAP/ DDP	Small / Marginal	35
	Other Farmers	25
DPAP/ DDP/ NEH	Small / Marginal	50
	Other Farmers	35

DPAP: Drought Prone Area Programme;
NEH: North Eastern & Himalayan States

DDP: Desert Development Programme;

Unit Cost Norms – Micro Irrigation

SN	Technology	Unit cost -Rs/ha
1	Drip Irrigation \geq 2m spacing	23,500 to 58,400
2	Drip Irrigation $<$ 2m spacing	85,400 to 1,00,000
3	Micro Sprinkler Irrigation	58,900
4	Mini Sprinkler Irrigation	85,200
5	Portable Sprinkler Irrigation	19,600
6	Semi- Permanent Sprinkler Irrigation	36,600
7	Large volume Sprinkler Irrigation (Rainguns)	31,600

25% additional cost for NEH Region

5% of Gol outlay as administrative charges to state Govt



Cost of installation of Drip Irrigation System for different spacing and land size

Lateral Spacing (m)	Amount in Rupees				
	1ha	2ha	3ha	4ha	5ha
A.Wide Spaced crops					
8m & above	23,500	38,100	59,000	74,100	94,200
4m to <8m	33,900	58,100	89,300	1,13,200	1,42,400
2m to <4m	58,400	1,08,000	1,61,800	2,20,600	2,71,500
A.Closed Spaced crops					
1.2m to <2m	85,400	1,61,300	2,43,400	3,32,800	4,12,800
<1.2m	1,00,000	1,93,500	2,92,100	3,99,400	4,95,400

Strategies to promote MI in India



- Micro Irrigation has inherent advantages in terms of saving of water, fertilizer and energy for lesser withdrawal of water. Since in most of the states for agriculture, water & power are free & subsidies are available on fertilizers. Hence the real benefit of Drip Irrigation is not being appreciated by the farmers for the above.
- The policies should be so designed that farmers continue appreciating the financial benefits of drip irrigation technology. This would also lead to his adoption of drip technology even with a lesser subsidy on drip when the other benefits are realized in financial terms.
- The promotion policy of GoI should have consistency for a long term so that farmer doesn't have any apprehension of a higher subsidy in the days to come and such assistance should range 30-50% at most. GoI must consider Subsidy on Drip as an investment rather than cost as it leads to food security, soil maintenance, higher fiscal earnings .



- The decision must be taken for an overall subsidy ceiling (Govt+state) by any means. The competition for a higher assistance across the states to be reduced to nil.
- While the subsidy is reduced, the balance cost should be available at 3-4% per annum interest only to the farmers. The farmers would go for loans only if their share is considerable % of unit cost and also rate of interest is affordable.
- Online disbursement of subsidy would reduce the operating channel in between and leakages thereof, if any, resulting cheaper system to the farmer.



Way Forward

- MI potential in the Country: 6.95 cr Ha
- MI realised till 2014: 10% , i.e.,70 lakh Ha
- MI to be done : 6.25 cr Ha
- Per Ha Average cost (approx): Rs.0.5 lakh
- Total funds required for MI: Rs.3.125 lakh Cr
- Yearly budget of Centre: Rs.1000 cr
- Yearly budget of all states: Rs.2000 cr
- Total funds for MI in India for one year: Rs.3000 cr
- Time required to realise MI potential : 104 years!!!



20 year vision

- If the MI potential is to be realized in 20 years, the investment required is
- $312500/20 = \text{Rs.}15625$ cr per year
- 15000 Cr Approx
- This can be done with Govt subsidy + Bank credit + Farmers' Contribution in 50:30:20 ratio.
- GOI should allot 7500 Cr per annum for 20 years
- States should contribute 7500 Cr per annum
- Banks should give Credit @ 4-5 % rate under priority sector
- Farmers should come forward with own contribution of 3000 cr per year
- Each farmer can contribute Rs.10000 per annum



What is required

- Consensus on the part of States to cap the subsidy at 50%
- Bring MI under the Priority sector
- Consensus on the part of Banking Sector to lend farmers for MI at 4%
- Willingness on the part of Farmers to contribute 20% of the project cost and take loan from banks for 30% of the cost
- This will ensure involvement and ownership of the project from farmers



MI Matrix



Subsidy Pattern	50 : 30 : 20	40 : 30 : 30	30 : 60 : 10
Time Period	Govt.: Bank: Farmer	Govt.: Bank: Farmer	Govt.: Bank: Farmer
10 Years 30,000	Govt. Subsidy : 1500	12000	9000
	Bank Loan : 9000	9000	18000
	Farmer : 6000	9000	3000
20 Years 15,000	Govt. Subsidy : 7500	6000	4500
	Bank Loan : 4500	4500	9000
	Farmer : 3000	4500	1500
	15000	12000	5000