



Enduring Value

INTEGRATED PEST MANAGEMENT – CUMIN

Target 2020-Clean, Safe & Sustainable Supply Chain

Spices

Ahmedabad, 28th Feb 2016

Day 1 - A Few Takeaways

- Less than ¼ of 1% is the cost of spice in the final product
- Brands are the most important assets
- Chain of Custody
- TRUST
- Allergens- peanut scandal
- Short Supply Chain
- 48 Mn Americans get ill every year a/c food
- Customers and Consumers

There is a Missing Link !!

SCHEMA

CUMIN GLOBAL AND DOMESTIC SCENARIO

INDIAN OPERATING CONTEXT

ITC Limited

ITC - A SUSTAINBLE FOOD SAFE SUPPLIER

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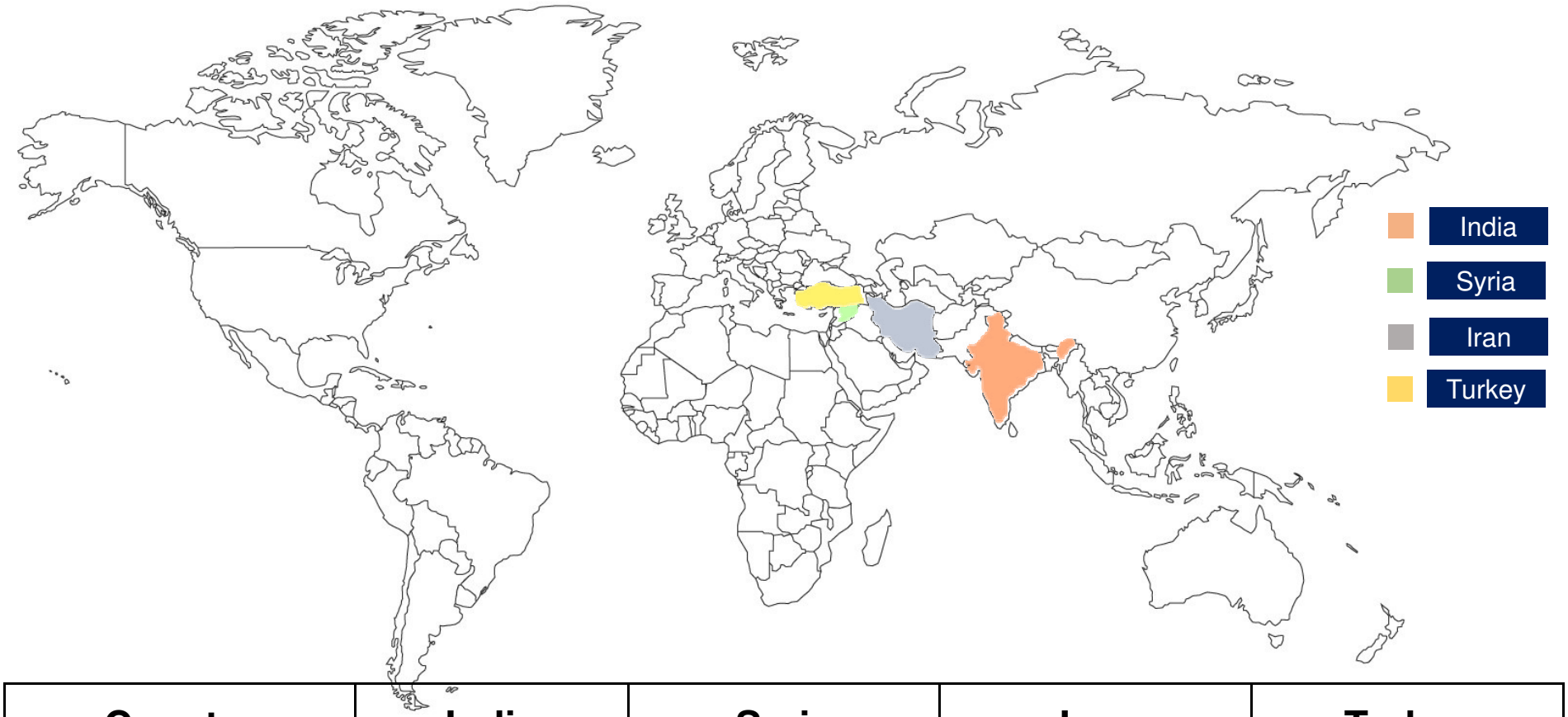
GLOBAL SCENARIO
Cumin Production



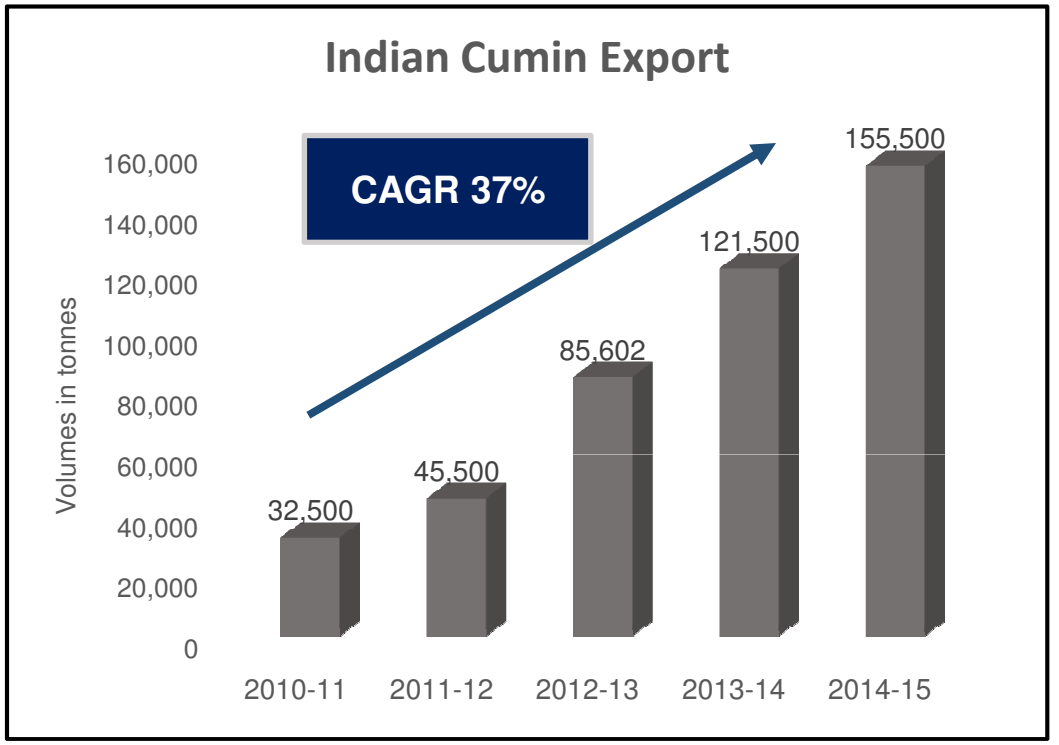
Country	India	Syria	Iran	Turkey
Volume in '000 MT	200	20	10	10
% Production	70	7	3.5	3.5

*as of 2012

Source: UNcomtrade

STEADY GROWTH IN INDIAN EXPORTS

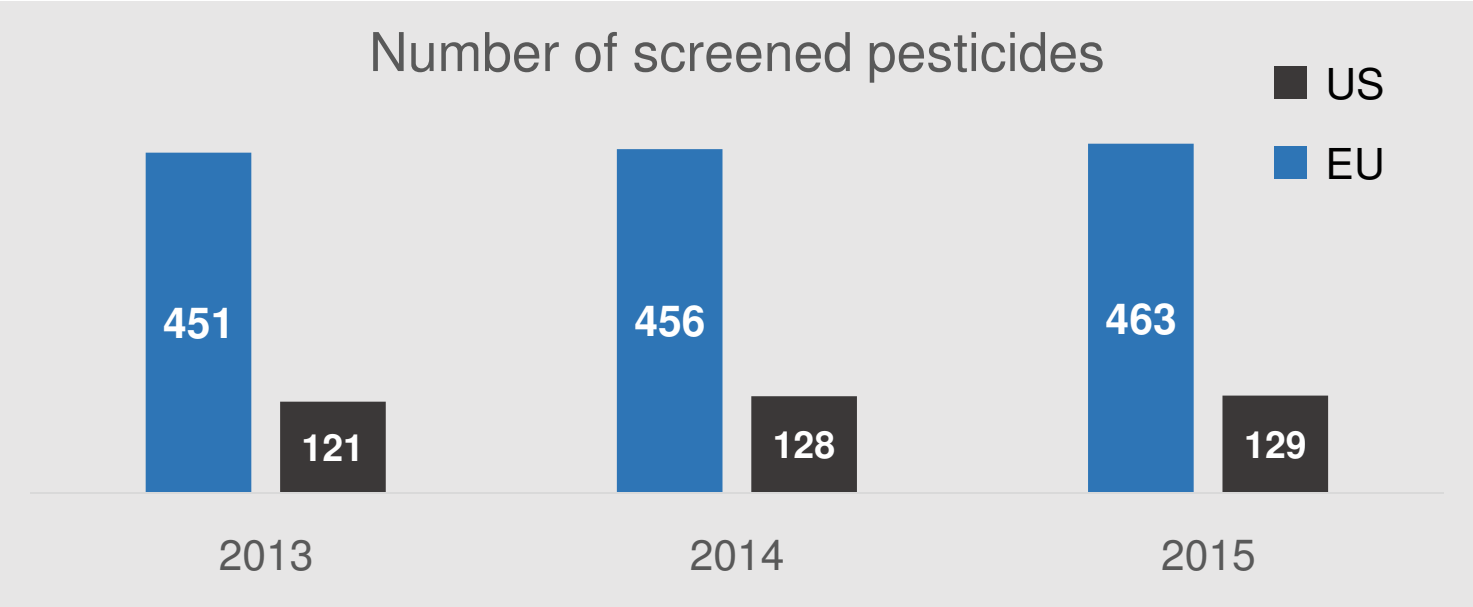
Production contribution	
GUJARAT	47%
RAJASTHAN	53%



Source: Spices Board

INCREASING STRINGENCY

Increased stringency both in terms of Maximum residue limits and Number of restricted molecules



Maximum residue limit revisions - EU:

Cumin – Acetamiprid MRL changed from 0.1 ppm to 0.05 ppm

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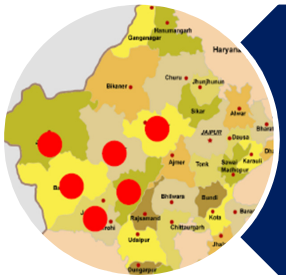
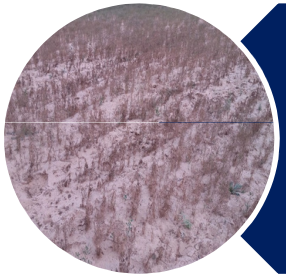


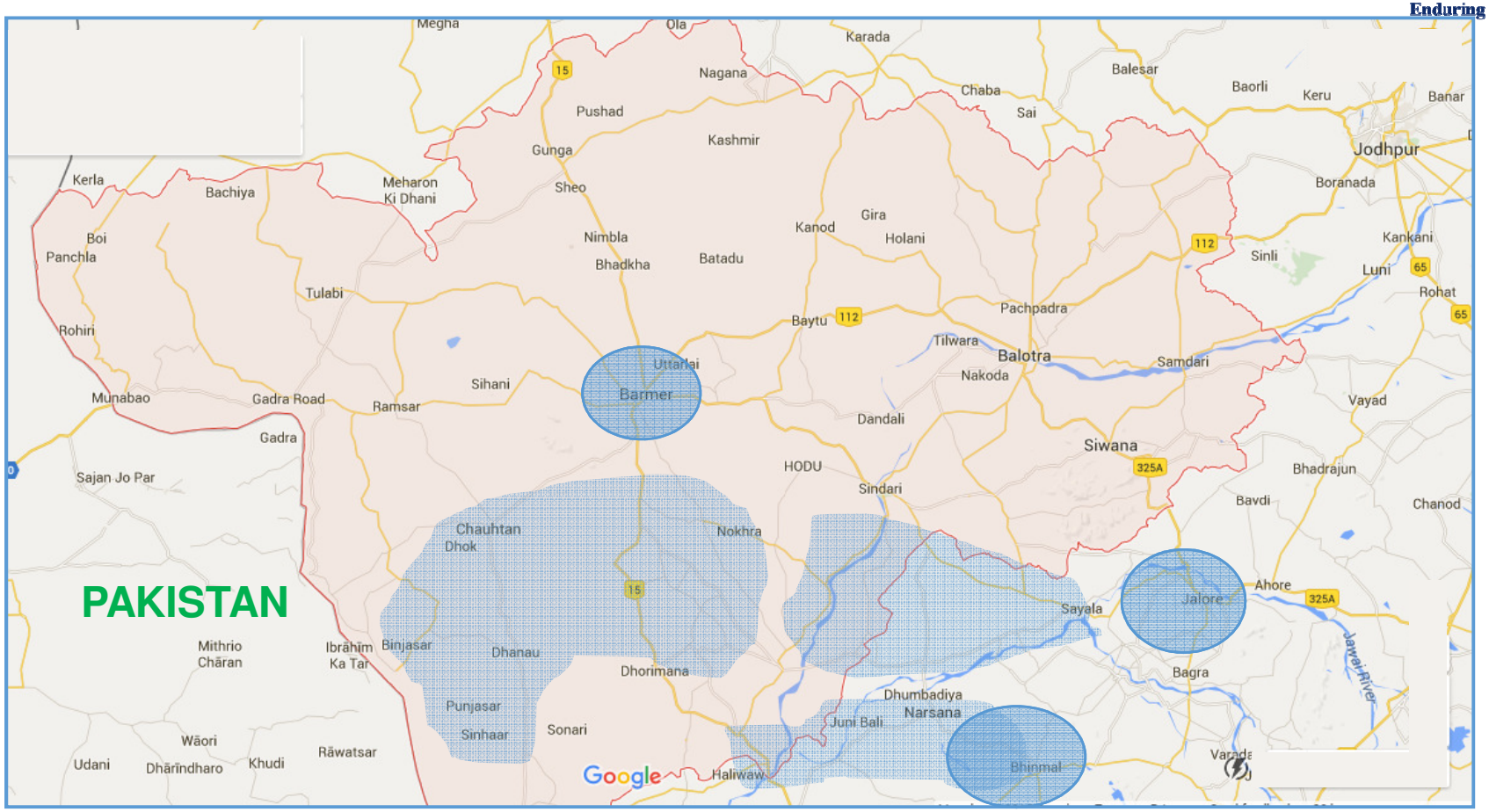
Dispersed geographies



Low productivity

Farmer status

DISPERSED GEOGRAPHIES



Dispersed and difficult operating conditions

LOW PRODUCTIVITY

Productivity = 300 Kg/Ha(Cumin)
v/s
6200 Kg/Ha(Chilli)

Spices

FARMER STATUS

SMALL FARMERS

- **Poor Literacy**: Low acceptance of initiatives
- **Agricultural Practices**: Primitive and Conventional
- **Risk Aversion**: Resistance to Investments

OPERATING CONTEXT
Farmer Status

Total Yield (Kg/ha)	300
Production Cost ($/Ha)	**$ 300**
Net Returns ($/Ha)	**$ 150**
Average Land Holding (Ha)	**2**

Net Annual Income for a family of four: $300

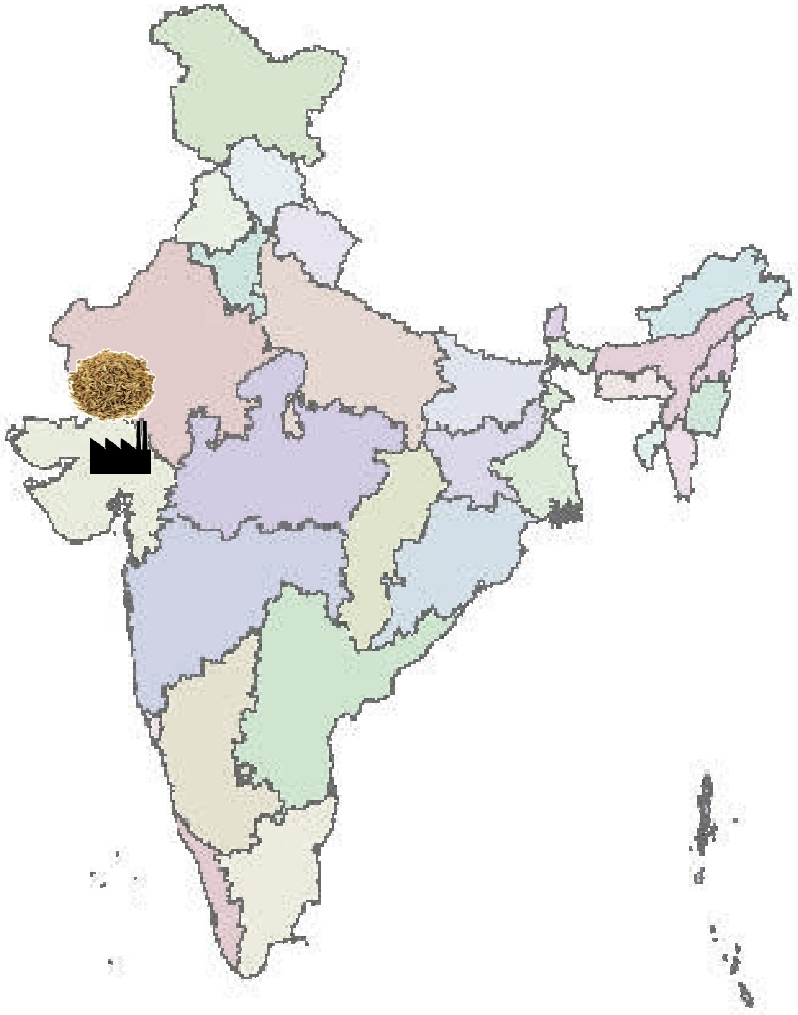
SCHEMA

CUMIN GLOBAL AND DOMESTIC SCENARIO

INDIAN CURRENT CONTEXT

ITC - FOOD SAFE SUPPLIER

BACKWARD INTEGRATION



CUMIN

5000+ Farmers

40,000+ Acres

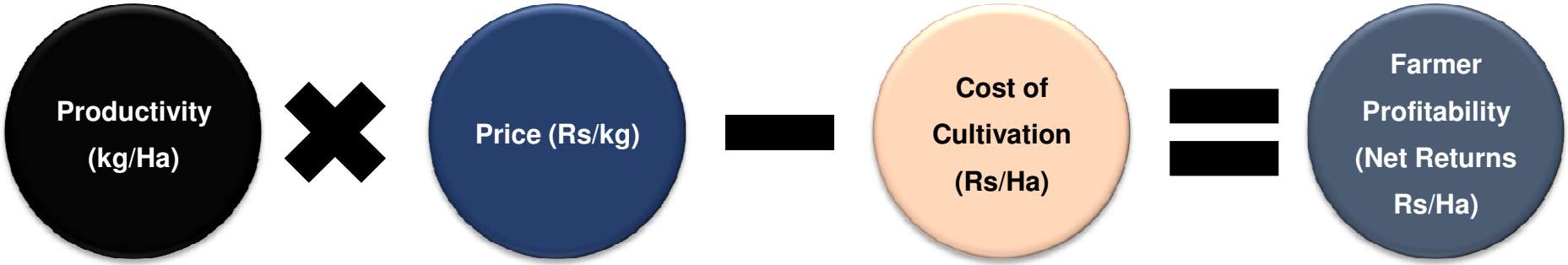
2500+ MT

100+ Villages

Bringing the finest Food Safe Sustainable spices to the world

FARMER INCOME

FARMER PROFITABILITY



FARM PRODUCTIVITY

PRODUCT QUALITY PRODUCT INTEGRITY

PRODUCTION COST

CUMIN JOURNEY-CASE STUDY

INTEGRATED CROP ENGAGEMENT (ICE)

Enduring Value

INTEGRATED CROP MANAGEMENT (ICM)

INTEGRATED PEST MANAGEMENT (IPM)

Spices

2012

2015

2016

CUMIN JOURNEY

Enduring Value

INTEGRATED PEST MANAGEMENT

IPM

INTEGRATED CROP MANAGEMENT

ICM

INTEGRATED CROP ENGAGEMENT

ICE

ECONOMIC RESILIENCE

PRODUCTION CAPABILITY

SOCIAL WELL BEING

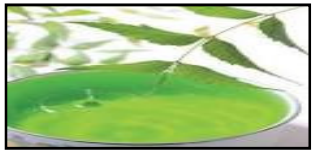
Spices

IPM APPROACH

Pest & Disease Management

Preventive

Wilt & Blight - Seed Treatment



Aphids – Organic Inputs

Aphids – Sticky traps

Control

Blight – Chemical as per IPM norms

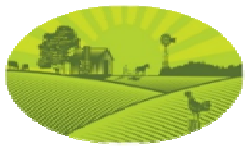
Aphids – Chemical as per IPM norms

Powdery mildew – Chemical as per IPM norms

IPM VILLAGES

100+
IPM Villages

2500
Farm families



40,000
Area (Acres)

2500
MT Production

CUMIN JOURNEY

Enduring Value

INTEGRATED PEST MANAGEMENT

IPM

INTEGRATED CROP MANAGEMENT

ICM

INTEGRATED CROP ENGAGEMENT

ICE

ECONOMIC RESILIENCE

PRODUCTION CAPABILITY

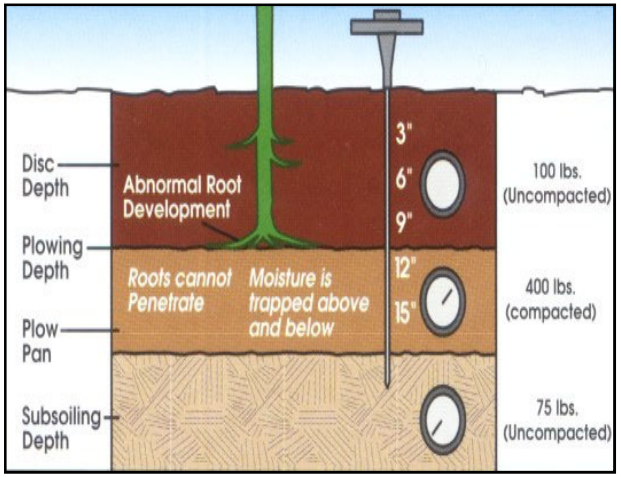
SOCIAL WELL BEING

Spices

ICM APPROACH

IPM	+	Productivity Management	+	Water Management	+	Village Adoption

ICM APPROACH
Productivity Management



SOIL COMPACTION

PENETROMETER

SUB - SOILING

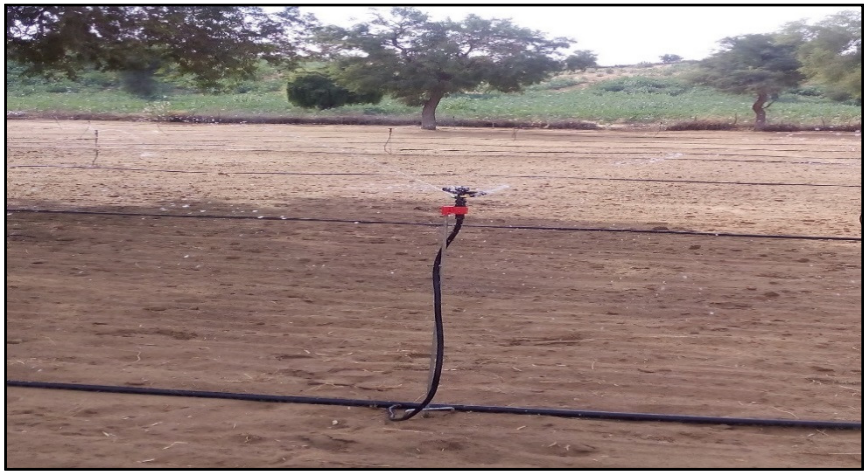
LINE SOWING - MANUAL

LINE SOWING –MACHINE

LINE SOWING – CROP

Spices

ICM APPROACH
Water Management



CONVENTIONAL – SPRINKLER IRRIGATION

INITIATIVE – DRIP IRRIGATION

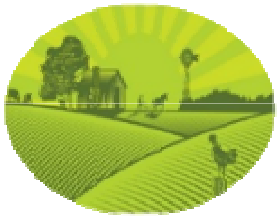
ICM APPROACH
Village Adoption

Enduring Value

ICM VILLAGES

10
Model Villages

600
Farm families



2200
Area (Ha)

Spices

CUMIN JOURNEY

Enduring Value

INTEGRATED PEST MANAGEMENT

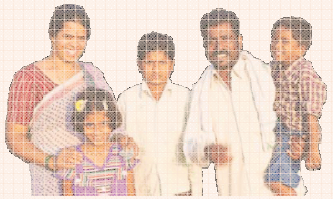
IPM

INTEGRATED CROP MANAGEMENT

ICM

INTEGRATED CROP ENGAGEMENT

ICE



ECONOMIC RESILIENCE

PRODUCTION CAPABILITY

SOCIAL WELL BEING

Spices

ICE APPROACH

ECONOMIC RESILIENCE


ENVIRONMENTAL INTEGRITY


SOCIAL WELL BEING


Creation of Economic Surplus through value chain development

Playing a catalyst role in creation & implementation of Village specific development plan.

Coordination with various Stakeholder - Community/ Gov. Departments/ Public Institutions

ICE APPROACH

Enduring Value

ECONOMIC

SAP Training Program

Farm Mechanization

Mobile Telephony

ENVIRONMENT

Soil Compaction Management

Customized Fertilizer

Ground Water

SOCIAL

Health Education

Women Empowerment

School Amenities

ICE VILLAGE- DASHBOARD

ICE VILLAGE – DASHBOARD

VILLAGE DEVELOPMENT – PLAN
(Participatory Rural Appraisal)

VILLAGE TRACKER

ICE VILLAGE - METRICS

ECONOMIC DEVELOPMENT

ENVIRONMENTAL

SOCIAL DEVELOPMENT

VILLAGE ENVIRONMENTAL PERFORMANCE

Initiative	Status (Y0)	Target (Y1)
Soil Conservation	 Customized Fertilizer: 18 Tons → 60% → 120 Ha	**200 Ha** Reduction in Inorganic Fertilizer (36 Tons)
Water Conservation	 Tank Rehabilitation: 38 Million Litres – Storage Capacity → 83% → 80 Ha	**100 Ha** Irrigation facility
Biodiversity Protection	 Tree Plantation: 80 Trees → 80% → 1 BD Park	**100** Trees – Increase in Green Cover

VILLAGE SOCIAL PERFORMANCE

	Initiative	Status (Y0)	Target (Y1)
Education	 School Infra	100% - Children Enrolled in school 100% 100 Benches + 1 Building	100 Benches + 1 Building School Infra
Sanitation	 Household Toilets	Open defecation free village 100% 500 HHTs	500 Household With toilet facility
Safe Drinking Water	 RO plant	1900 Beneficiaries 100% 1 RO Plant	1900 Beneficiaries Safe Drinking Water

DRIVE FOR INNOVATION
Learnings from across the globe: Israel

25 cm average annual rainfall vs India's 154 cm.

-14 to 55 °C temperatures with high diurnal variations.

2 per cent water cover with high groundwater salinity.

80 per cent of soils classified as "Desert silt".

Toughest possible conditions for agriculture
Yet, highest yield in the world

DRIVE FOR INNOVATION
Learnings from across the globe: California

Example - Lettuce

Main field - Bed Making with GPS enabled Tractor

Subsurface drip & fertigation

Precision Sowing & Pesticide Application 1cm to 100 cm

Harvesting & Packaging in Field

TRACEABILITY
Fork to Farm

FARM DETAILS: TEJA KI BERI

Enduring Value

FARM

Visibility of crop production location

- Village Profile
- Geography
- Soil Condition

FARMER

Understanding of farmer profile information

- Farmer Family
- Income Levels
- Social Status

PRACTICES

Visibility, monitoring & control of practices

- Soil Conservation
- Water Conservation
- Waste Management

INPUTS

Visibility, monitoring & control over inputs

- Fertilizer Used
- Pesticide Used
- Other Inputs

SUSTAINABILITY

Compliance to farm sustainability norms

- Biodiversity Protection
- Child Labour Audits
- Farmer Certification

WIN,WIN,WIN – ALL STAKEHOLDERS

Sustainability is India's commitment to farmers, customers and the society where we live.

An integrated approach!