CSE – NATIONAL CONCLAVE

Holistic benefits of non-chemical agriculture – productive, profitable and sustainable - lessons from A.P Community managed natural farming

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Farming in harmony with nature – for people and for the planet

What is Natural farming ? It is a holistic land management practice that leverages the **power of photosynthesis** in plants to close the carbon cycle, and build soil health, crop resilience and nutrient density.

Universal Principles of Natural Farming – mimicking nature

- Soil to be covered with crops 365 days (Living root)
- Diverse crops , trees 15 – 20 crops
- Minimal disturbance of soils
- Integrate animals into farming
- Bio stimulants as necessary catalysts
- Increase amount and diversity of organic residues
- Use indigenous seed
- Pest management through better agronomic practices, botanical extracts

No synthetic fertilizers, pesticides, herbicides, weedicides

Microbial Seed Coating

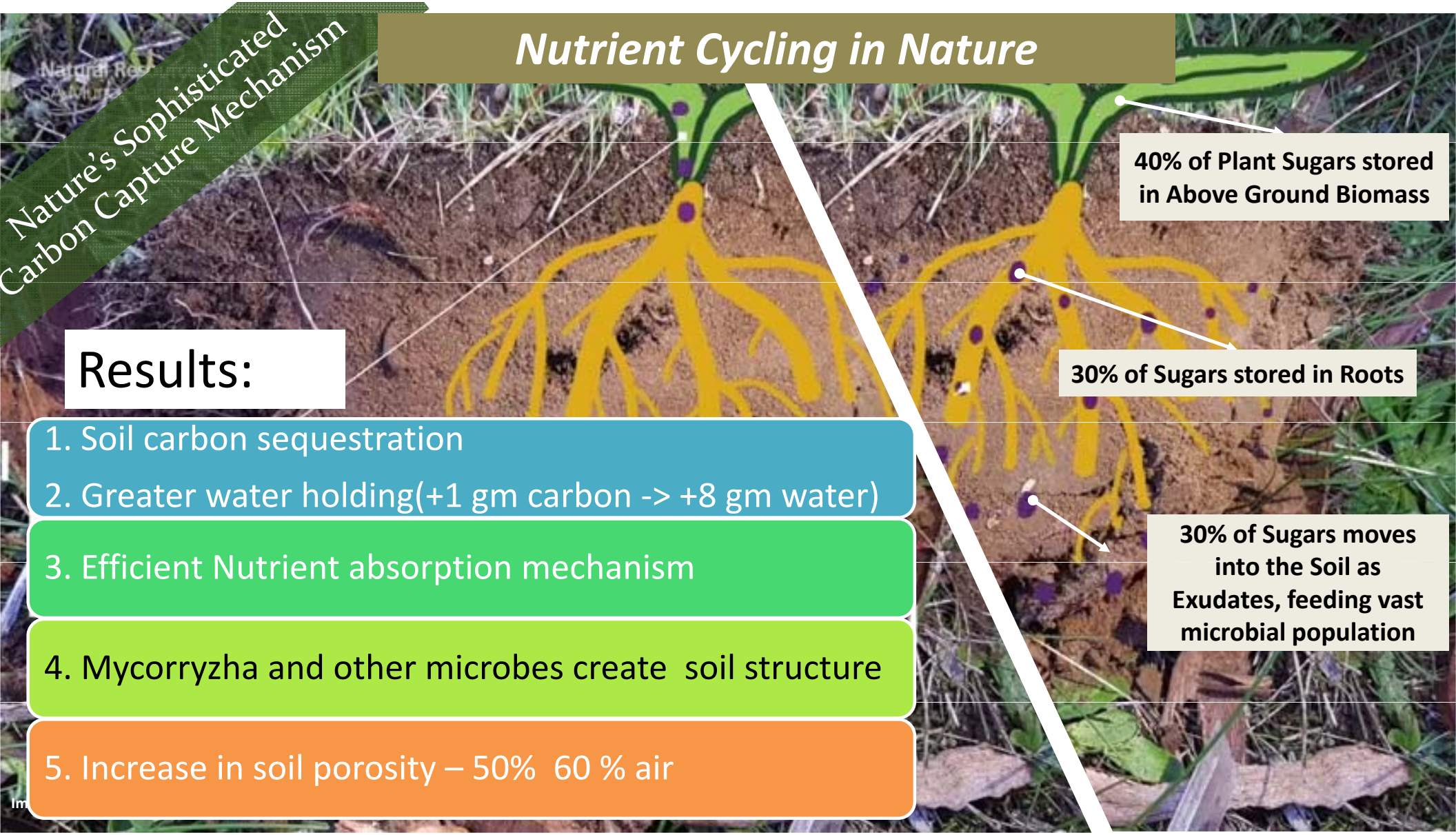
Beejamrutham - cow urine, cow dung, and lime – fermented

Microbial Soil enhancement

Jeevamrutham (bio-stimulant) - cow dung, cow urine, soil, jaggery, p ulses flour – mixed and fermented

Bio-stimulants

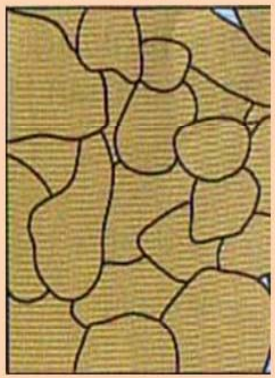
Bio stimulants - unique strength in Indian Agriculture – reduce the transition period

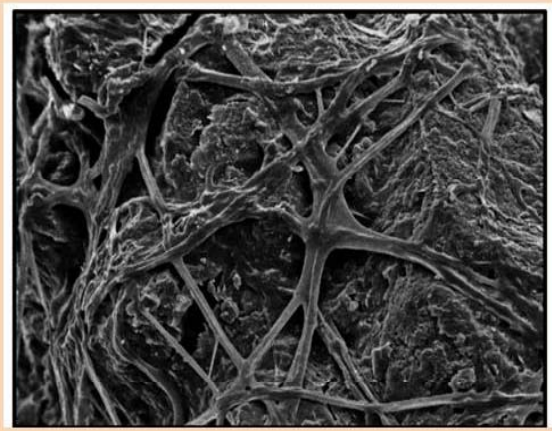

Nature's Sophisticated Carbon Capture Mechanism
Nutrient Cycling in Nature
40% of Plant Sugars stored in Above Ground Biomass
30% of Sugars stored in Roots
30% of Sugars moves into the Soil as Exudates, feeding vast microbial population
Results:
1. Soil carbon sequestration
2. Greater water holding(+1 gm carbon -> +8 gm water)
3. Efficient Nutrient absorption mechanism
4. Mycorryzha and other microbes create soil structure
5. Increase in soil porosity – 50% 60 % air

Soil structure and water conservation - building sub soil reservoirs

Soil aggregation

Non porous and non-permeable

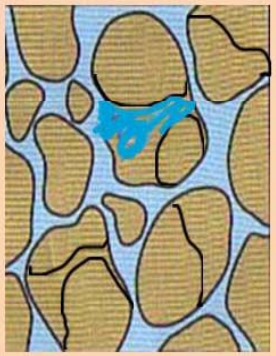




Fungal hyphae, bacteria & root exudates glue together the soil particles

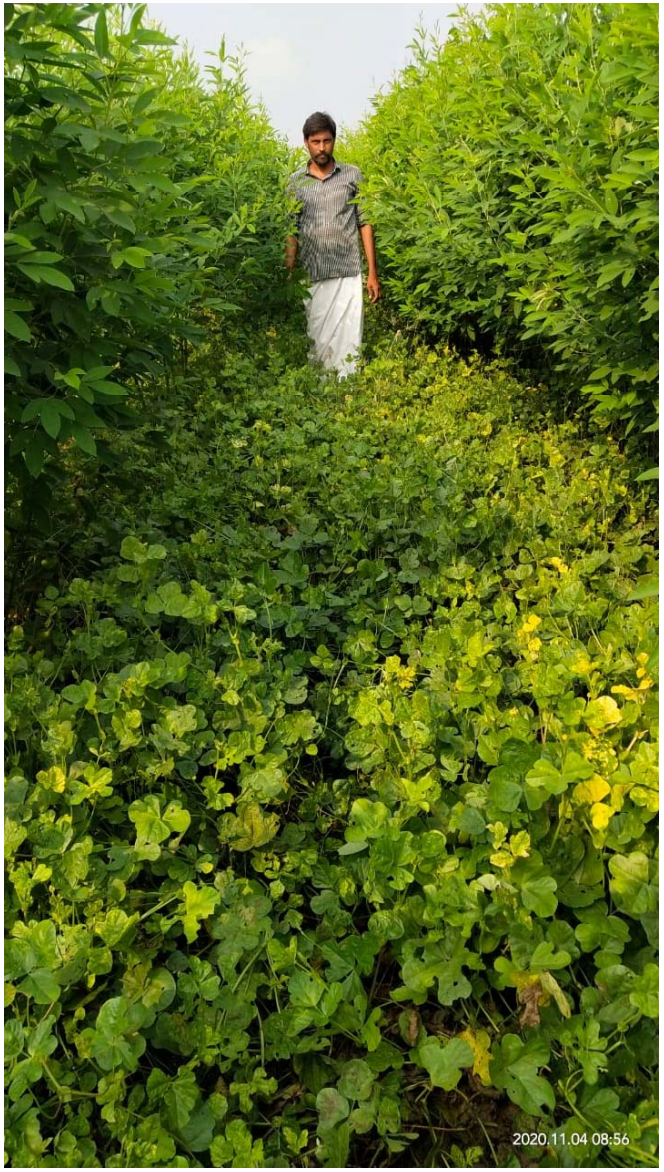
(Electron microscopic image)

Porous and permeable with connected pore spaces



Soil Aeration

- Water infiltration
- Water holding
- **Water vapour harvested for irrigation**



Crop diversity – poly cropping

Crop diversity is an integral part of the APCNF system.

- **Resilience** from vagaries of weather
- **Reduces** risks, surplus income
- Provides **nutrition diversity**
- **Strengthens** soil structure

Cowpea and field beans grown as intercrops in Mango orchard

Microbial seed coating - Beejamrutham

Ingredients

- Cow dung – 2 kg
- Cow urine – 2 liters
- Lime – 40 grams
- Handful of chemical free soil
- Water – 20 liters

Wrap the cow dung in a cloth and submerge in water and let it soak for 12 hours

Squeeze the cloth after 12 hours, add lime, chemical free soil. Mix well in clock wise direction

Spray the concoction on all seeds and ensuring each seed is coated by it before sowing


2020.02.11 13:47

Soil Microbial enhancement – Bio stimulant - Ghanajeevamrutham

Ingredients

- Cow dung - 100 kg
- Jaggery - 1Kg
- Pulse flour- 1 kg
- Cow urine - 10 liters
- Hand full uncontaminated soil

Step 1

Mix all the ingredients properly

Step 2

Make cakes and shadow dry for 5 days for fermentation

Step 3

Apply these cakes in the field

Soil microbial enhancement – Liquid biostimulant - Dravajeevamrutham

Ingredients

- Cow dung- 100kg
- Cow urine- 3-6 ltrs
- Pulse flour- 2 kgs
- Jaggery – 2 kgs
- Water- 200 ltrs
- Hand full of uncontaminated soil

Step 1

Add all the ingredients and mix them in clock wise direction

Step 2

Keep it fermented for 5 days. The colour and smell changes. Keep mixing it in between

Step 3

Spraying of Dravajeevarutham in the field


Shot on realme 3
By murali Karthik

Pest management through botanical bio stimulants

Yellow and blue sticky traps

Preparation of ***kashayams*** (bio-innoculants for pest management prepared from local ingredients

- 7 active biodiversity blocks
- Conserved and characterized 400 traditional varieties
- Promotion of agri-biodiversity resource centre
- Supply of seed kits for undertaking PMDS, kitchen garden etc

APCNF programme at a glance

3 to 5 years for a farmer to transit from conventional agriculture to Natural farming

No cash incentives during transition

2016-17
40,656 farmers
704 (v)

2019-20
440,000 farmers
3011 (v)
180,000Ha

2020-21
480,000 farmers
3730 (v)
220,000 Ha

2021-22
630,000 farmers
3730 (v)
290,000 Ha
27% of villages
12% of farmers
4% of area

2022-23
1,060,000 farmers
10,778 (v)
460,000 Ha
81% of villages
17% of farmers
7.5 % of area

Target 2023-24
1,900,000 farmers
13,371 villages
840,000 Ha
100% villages
31% of farmers
14% of area

Largest Natural farming programme in the country, in terms of farmers enrolled.

6 million farmers. 86% are small and marginal farmers. 1 ha per capita

Source of Funds: Govt, KfW loan – Rs.1800 crs (235 million USD) upto 2024
Azim Premji Philanthropy – RS.100 crs (13 million USD)upto 2022

APCNF IMPACTS

Cost of cultivation - significant reduction - NF costs are much lower than non-NF, across all crops

Yield differences are not significant between NF and Non-NF farms

Significant increase in net income for NF farmers

Independent Assessment by Center for Economics and Social Studies (CESS) / I.D.S
6 seasons till now - 2018-19 (2 seasons) and 2019 – 20 (2 seasons) , Kharif 2020 and Rabi 2020-21 (2 seasons)

NF farms reported better soil health, crop health, resilience, economic empowerment of farmers and dignity of labor.

The report also mentioned that APCNF has higher potential for expansion of extension services by way of increasing CRPs at the village level

SUMMARY RESULTS FOR KHARIF 2020-2021

	Yields (Quintal/ ha)			Gross-returns (Rs./ ha) under			Paid-out costs (Rs./ ha) under			Net-returns (Rs./ ha) under		
Crop	CNF	Non-CNF	% change	CNF	Non-CNF	% change	CNF	Non-CNF	% change	CNF	Non-CNF	% change
Paddy	53.95	51.75	4%	99,293	94,693	5%	46,125	61,301	-25%	53,168	33,392	59%
Groundnut	22.12	19.59	13%	96,439	69,051	40%	46,540	48,448	-4%	49,899	20,602	142%
Cotton	12.45	10.96	14%	63,631	55,622	14%	35,797	49,952	-28%	27,834	5,670	391%
Black gram	9.86	11.27	-13%	76,172	52,159	46%	17,705	25,186	-30%	58,467	26,973	117%
Red gram	7.42	7.33	1%	63,506	34,688	83%	13,305	23,489	-43%	50,201	11,199	348%
Ragi	18.56	12.27	51%	62,236	41,620	50%	23,840	36,947	-35%	38,396	4,673	722%

** CNF sample HH- 1140, Non - CNF sample HH -646*

SUMMARY RESULTS FOR RABI 2020-2021

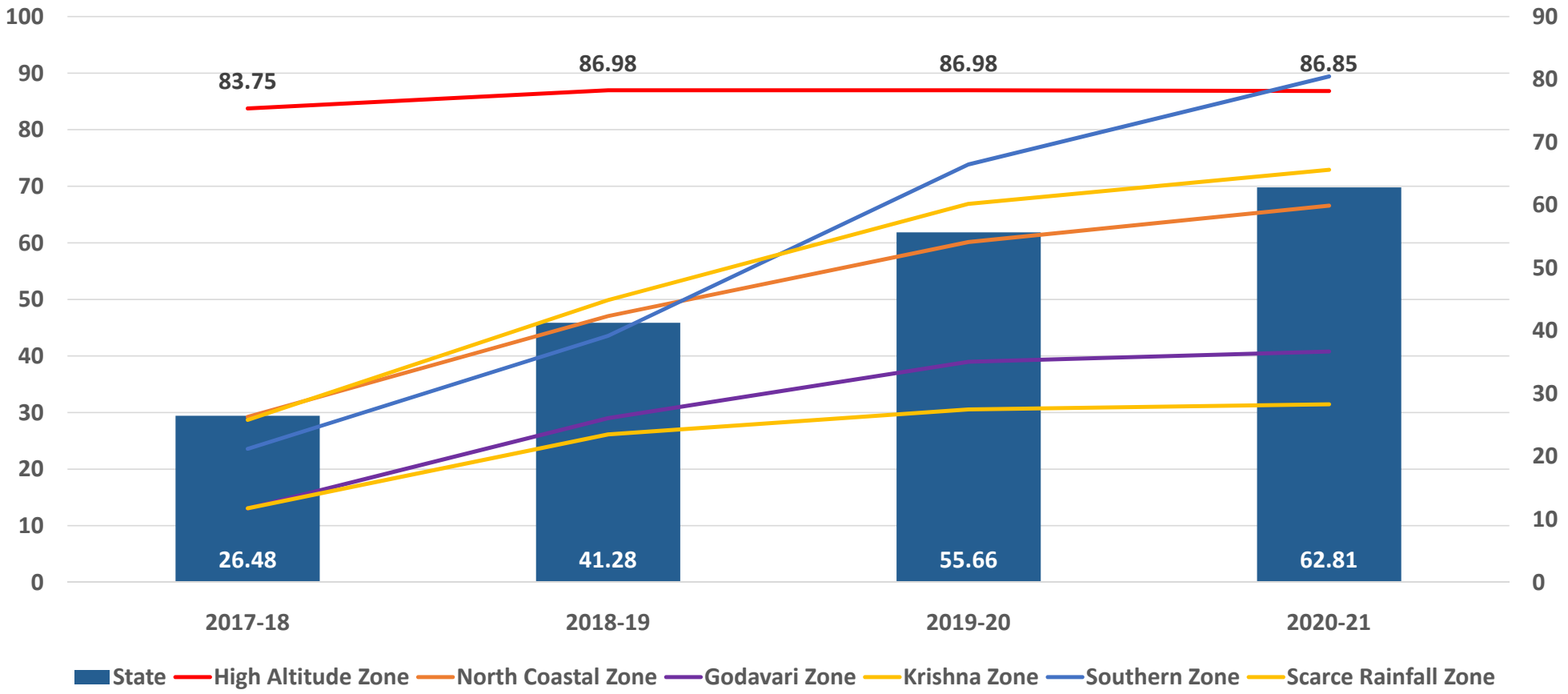
Crop	Crop yields (Quintal/ ha)			Gross-returns (Rs./ ha) under			Paid-out costs (Rs./ ha) under			Net-returns (Rs./ ha) under		
	CNF	Non-CNF	% change	CNF	Non-CNF	% change	CNF	Non-CNF	% change	CNF	Non-CNF	% change
Paddy	62.56	57.11	10%	104967	90811	16%	43760	52029	-16%	61207	38782	58%
Groundnut	36.23	25.61	41%	2,08,215	1,30,637	59%	39,929	57,143	-30%	1,68,286	73,494	129%
Black Gram	12.97	13.05	-1%	84,836	84,290	1%	18,246	25,714	-29%	66,590	58,576	14%
Maize	75.86	63.01	20%	1,19,010	93,122	28%	39,819	43,598	-9%	79,191	49,524	60%
Green Gram	12.64	10.27	23%	77,919	62,820	24%	19,310	26,692	-28%	58,609	36,128	62%

**** CNF sample HH- 800, Non CNF sample HH -494***

IDS Study 2020-2021 Overall Results

Net value of crop output in Rs per ha in 2020-2021 (for one crop)				
	CNF	Non-CNF	Change	% Change
Gross Value (Rs./Ha.)	107013	92397	14616	15.82
Paidout Cost (Rs./Ha.)	49941	60775	-10834	-17.83
Net Value (Rs./Ha.)	57072	31622	25450	80.48
Ref: Table 6 to 8 of State Level data of IDS 2020-2021 Tables				

Year wise area allocated to CNF, as a % of operational area Kharif 2020



Food and Nutrition diversity

Aim to include 5-7 food groups in the household diet

Universal coverage strategy

Focus on landless, farmworkers

Homestead gardens – Mini food forest in one's own backyard



Improved Biodiversity

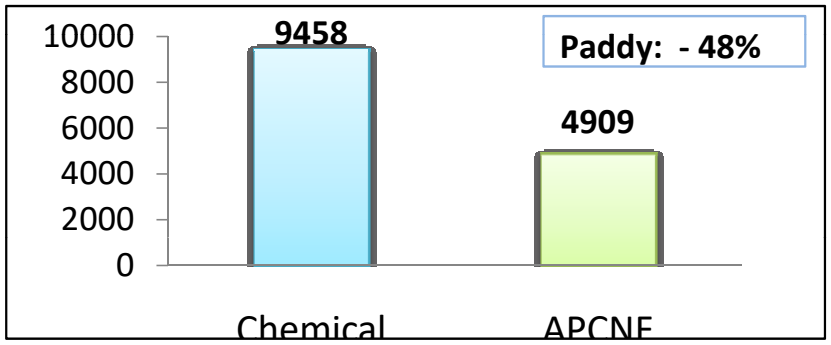


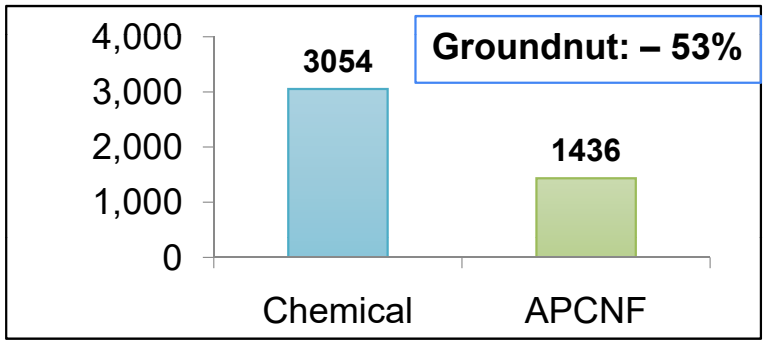
Average number of Earthworms per square meter in Natural Farming plot is 46.83 as compared to conventional plot where it is 5.71

Increase in Beneficial insects

Significant increase in birds nest and birds visiting Natural Farming fields

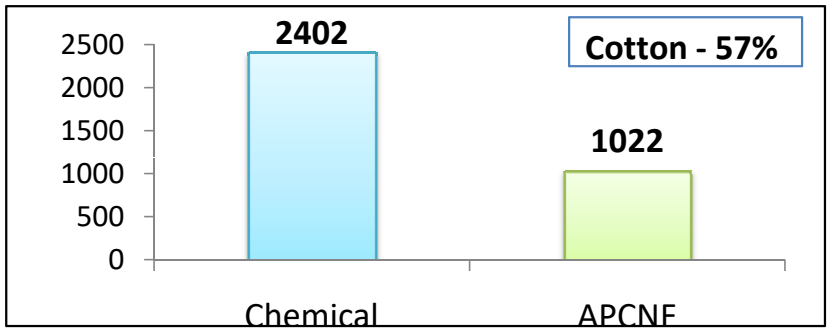
Reduction in water consumption in one cropping cycle 2020-21 (RySS – internal study)

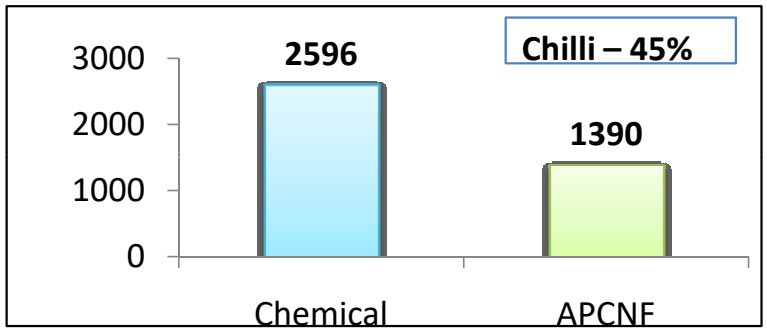




2 External evaluations being done:

1. WALAMTARI
2. ASCI – CORE CARBON X





Y-axis = Water consumption in kilolitre

In 2021, as in 2020, Andhra Pradesh has seen unseasonal rainfall across the state.

APCNF Farmers have experienced less damage compared to other farmers

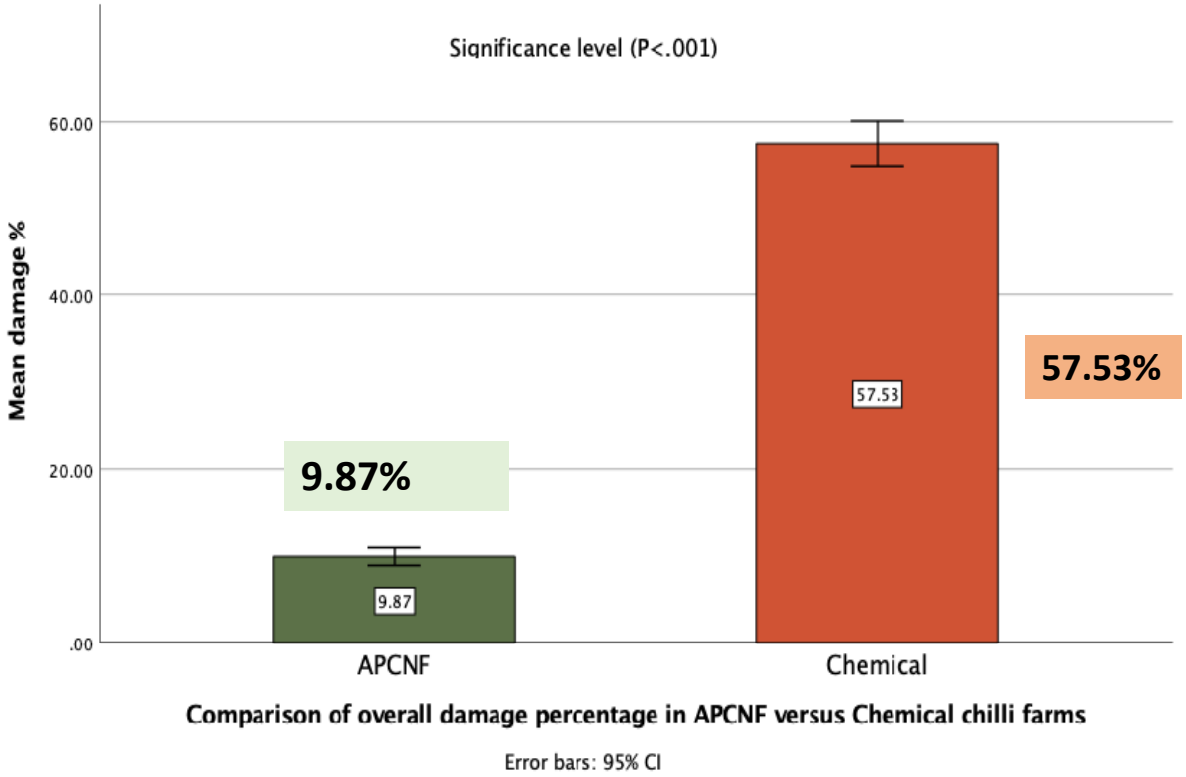
The positive impact of APCNF practices in controlling thrips damage in chilli crop

Survey findings

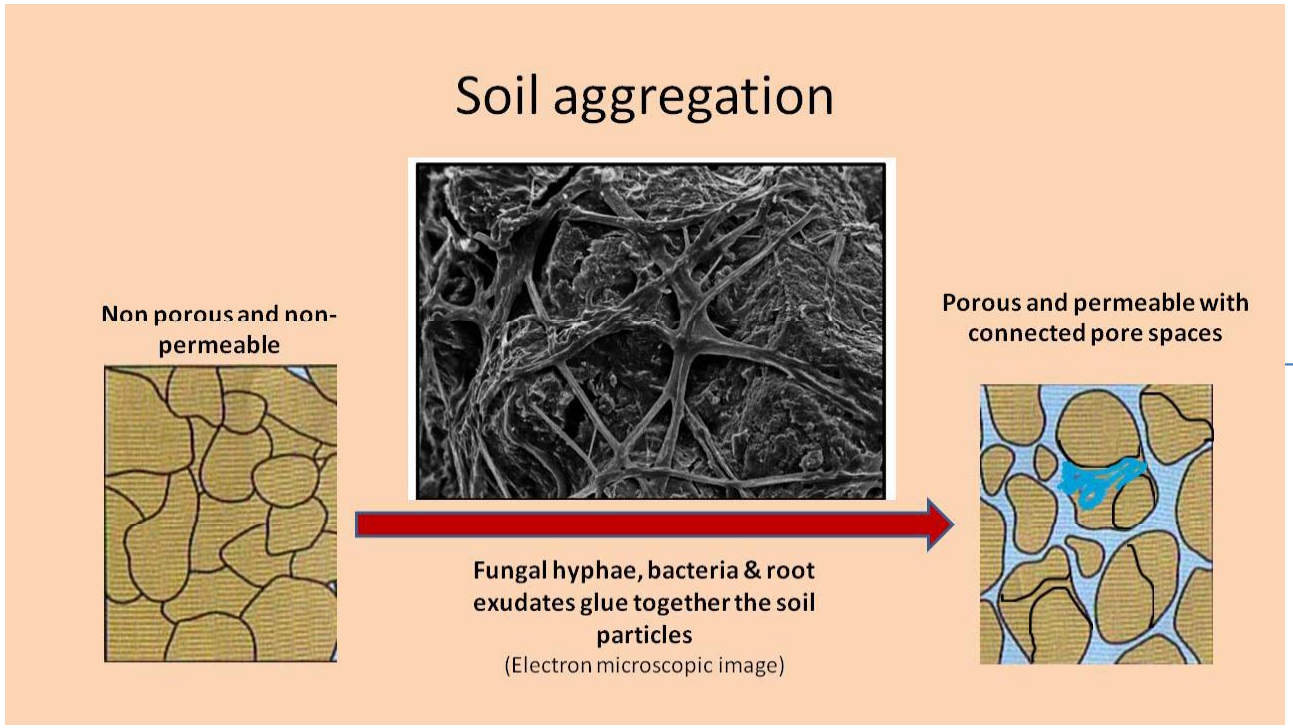
Percentage damage in chilli crop in APCNF versus Chemical crop : Due to Thrips infestation

- Number of farmers surveyed : 143 in Guntur and Prakasam
- APCNF farms : 70
- Chemical farms : 73

- The average proportion of damage in APCNF farms **is just 10 %**, compared to conventional farms, where the average percentage of damage is substantial - 57 %



NF - a possible solution to the global water problem and reversal of desertification



Soil Aeration

- Water infiltration
- Water holding
- **Water vapour harvested for irrigation**

rivers of water in the air – in tropical countries,
air contains 10 times the water in the rivers – upto 50,000 ppm

Harnessing water from the air - pre monsoon dry sowing – breakthrough in APCNF

1. Pre-monsoon dry sowing

- Sowing before Monsoon
- April onwards
- Effectively utilize the moisture available in the atmosphere

2. Rabi Dry sowing

- Sowing during dry-periods – throughout the year
- Dry situations regardless of regular monsoon
- Helps to maintain year-round ground cover in all districts

Scaling up of Pre – Monsoon Dry Sowing breakthrough – harnessing water from the air

	PMDS 2018	Rabi Dry Sowing 2018	PMDS 2019	PMDS 2020	P.M.D.S 2021
Number of farmers	11 (Pilot)	1383	21,635	103,340	348,000
Area covered (in acres)	11 acres	885	13,068	80,409	353,000

Extension of PMDS to 365 days green cover (PMDS + APCNF) – for drought proofing, reversing desertification, increasing cropping intensity - from Anantapuramu District

365 DGC - Pilot started in 2020 with 110 farmers, in Anantapuramu. Expanded to 1000+ farmers in 6 districts, in 2021.

The target for 2022 is 10,000 in all 13 districts.

Anantapuramu

- One of the Largest Districts in Andhra Pradesh
- Semi arid climate, with high temperatures for most of the year
- Average rainfall of 560mm (20 in) per year
- One of the most Drought prone districts in the country - droughts in 17 out of last 20 years
- Known for its red rocky soils, is almost like a desert
- 69% of cultivated area in Anantapur is under a single crop - groundnut

3 crops in an year in semi arid, dry lands

Ananthapuramu District Cropping Pattern based on Agro Ecological Zones

Agro Ecology zones		Aprl	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
		PMDS Window			Kharif window				Rabi Window				
Redsoils	I	Millets and pulses other 22 types crops			Groundnut & other 21 types crops				Vegetables & others 35 types				
Blacksoils	I	Millets and pulses other 22 types crops			Cotton /Bengalgram & 21 types crops				Vegetables & others 35 types				

PMDS CHAMPION FARMER, ANANTAPUR DISTRICT

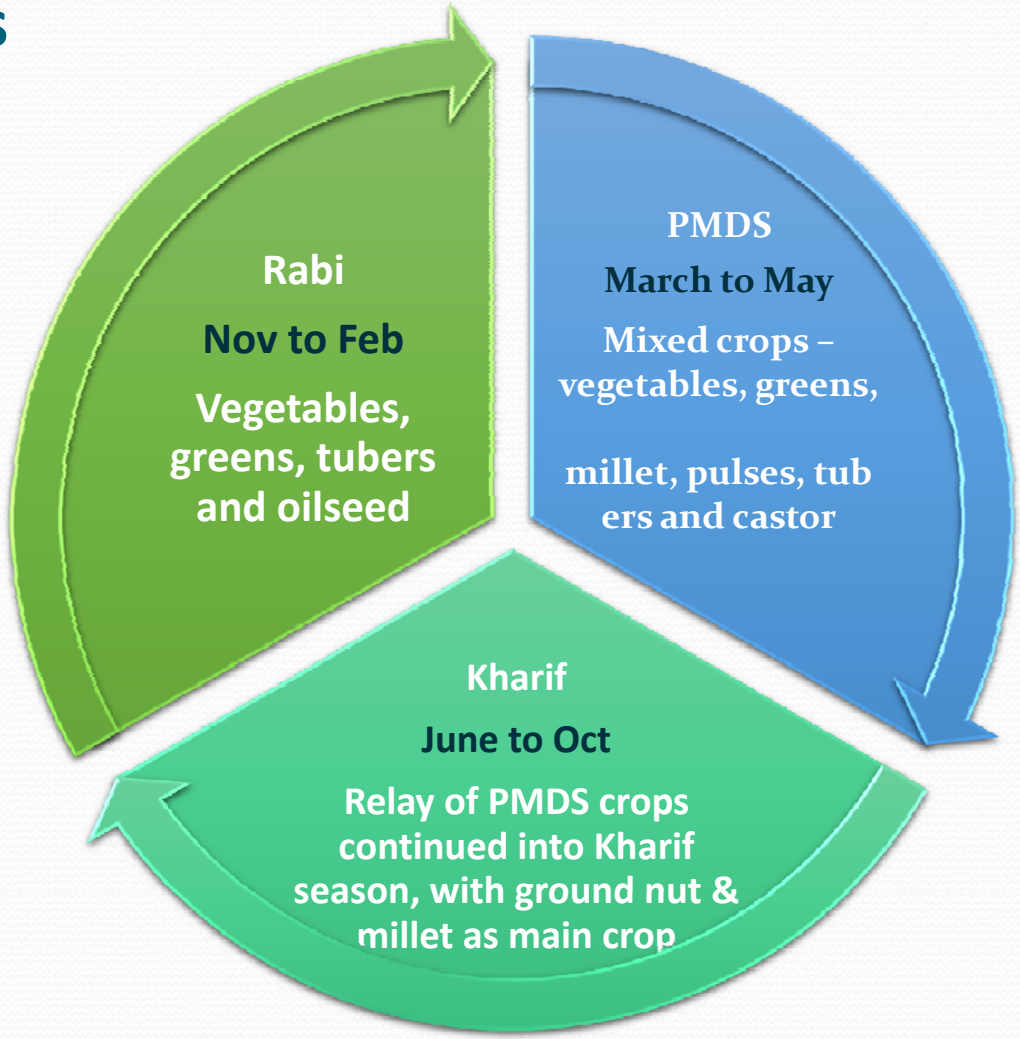
Name : S.SREEDEVI
Designation : CRP – farmer trainer
Village : Pesarakunta
Unit/Cluster : Hampapuram
Mandal : Rapthadu
Division : Ananthapuramu

Meet Sreedevi, an inspiration to other women in her community.

She is a farmer, mother, SHG member and CRP, who helps other farmers transition to Natural Farming.

She practices PMDS on 1 acre of dry red soil, growing a mix of crops ranging from ground nut, castor, ladies finger, tomato and is a completely rain fed farmer

3 Cropping seasons in rainfed lands - a boon for rainfed farmers in semi arid areas



Basic details PMDS Vegetable model

- **1 acre, rain fed red soil.**
- Model: PMDS line sowing
- Used water tankers in 3 months (March, May, January) to maintain crop; 2 tankers per application – 2 mm each time
- **Date of sowing : 6/4/2021**
- **Date of Germination: 13/4/2021**
- No of types of crop seeds sown: 22
- Mulching material used :

Groundnut husk, millet crop residues

- Frequency of mulching: 3/Year

Summer – March & May, Rabi: October

Inputs - Procurement of mulch material

- Mulch Material here: dried millet stalk, ground nut plant remains and crop residues.
- Cost/ tractor load: Rs 450. Two loads used for the same.

Mulching material being spread evenly .

- **Total quantity used per load – 1.5 to 2 tonnes**
- **Average total mulch used per year – 4.5 to 6 tonnes**
- **Mulch thickness maintained – 3 to 5 inches**

Seed pelletization : Critical part of Summer sowing, PMDS

Seed pelletization: Seeds are coated with a mixture of sifted GJM, field soil, ash, lime, with sprinkling of water.

The resulting pellet is 10 times the size of the original seed.

The seed pellet protects the seed, allows for moisture retention and favorable conditions for seed germination

Navdhanya seed mix, consisting of 9 pulses and legumes

The image below:process of pelletization. It is a snapshot of a YouTube video which demonstrates the same.

Crop progress

Almost ready for a harvest, Sreedevi's field looks like a mini forest, rich with multiple types of nutritious produce, in the month of May

Overall harvest of green chilli, tomato, brinjal, field beans, radish, ladies finger on 25.02.22

YIELD / INCOME PARTICULARS - 2021-22

	Premonsoon Window			Kharif window				Rabi window				
	Apr*	May*	June*	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Total
Leafy vegetables	540	530	605	620	405	460	520	725	300	300	1000	6005
Marie gold			1150	2280	7500					2125		13055
Bajra				12680								12680
Field Bean					15600	8320	5880	1020	2500	400	700	34420
Cowpea			1044	1425	1875	2200	1740	670	2200	1062	500	12716
Castor			200	320	600	750	1000	1600	2250	2600	2000	11320
Groundnut							33459					33459
Red gram									23430			23430
Radish					1890	1560		1200	800		1350	6800
Tomato									1014	1100	1815	3929
Okra									1800	3300	650	5750
Chilli									2250	2680	2250	7180
Brinjal									1625	2080	1000	4705
Carrot										2275		2275
GROSS INCOME	540	530	2999	17325	27870	13290	42599	5215	38169	17922	11265	177724
EXPENDITURE	3515	1370	1220	5610	1450	1550	4400	830	800	750	1100	22595
NET INCOME	-2975	-840	1779	11715	26420	11740	38199	4385	37369	17172	10165	155129

**Incomes incurred are from relay crop of the previous season*

Impacts of 365 DGC in Anantapuramu

1. Farmers are getting incomes, on a monthly basis through out the year, from semi arid, rainfed lands.
2. They are getting around Rs.100,000 lakh per acre net income from these rainfed lands.
3. This is 3 to 5 times higher than when they were practising conventional agriculture.
4. They are able to restore degraded lands and lands which were fallow for more than 5 years
5. There is no migration on account of crop failures

APCNF Implementation – overcoming obstacles through critical innovations

Challenges

- **Farmers' Mindset – Agriculture cannot be practiced without chemicals**
- **VESTED INTERESTS**
- **Taking it to every farmer**
- **Handholding until full adoption**
- **Poor extension system**
- **Self sustaining, long-lasting**

Government support and advocacy – resources and implementation

Knowledge – POPs, videos, etc

Research

Innovations and continuous learning

Social capital - Women SHG s and federations

Unique innovations of Govt of A.P and pro farmer policies and welfare measures, across the value chain.
Rythu Bharosa Kendram – farmer service centres – one stop shop. Organic policy initiative of Govt of A.P

Human capital Farmer to farmer – extension system, Knowledge intensive

Facilitating organizations – Govt., NGOs and C.B.Os

Collaborations with Global and National institutions and Scientific experts

Key role of Government of AP

- Government Vision is very important. A.P Govt's vision is to reach all villages and transform 51 lakh (85%) farmers by 2030.
- Govt support:
  - Separate dept for Natural farming, within Agriculture Dept
  - Dedicated Implementation SPV – RySS
  - Technically strong human resources at different levels – state, district, and cluster
  - Village Farmer Service centres as the nucleus for knowledge sharing, input sourcing, etc.
  - Financial resources
  - Project implementation period is flexible – whatever time it takes to transition every farmer in the village
- Reorientation of Agriculture Dept staff

Women in Natural Farming: Our biggest Strength

123,122 women SHGs and their **4740 Federations** are in charge

- Programme Management, transparency
- Collective Action
- Peer Learning
- Farming Plans, and, consumption plans
- Inclusive of the poorest

Farmer ‘heroes’ central to the programme

A Knowledge intensive and not input intensive programme

•Most effective dissemination is “farmer to farmer”

Best practicing farmers, Community resource persons (CRPs) engaged to take NF to other farmers.

APCNF identifies such champions in the community and capacitate them

Inspiration

Knowledge Transfer

Handholding

Video Dissemination

Farmer Field Schools

8000 + Community Resource Persons @ 1/100 farmers

150 Young Agriculture Graduates as Natural Farming Fellows – after 2 years have graduated to trainers and researchers at district and state level

Communications (Local & Global) & Marketing

Farmers, Land, Institutions, Monitoring & Learning

ICT in Natural Farming

Finance & Human Resources

Extension & Capacity Building

Data Collection

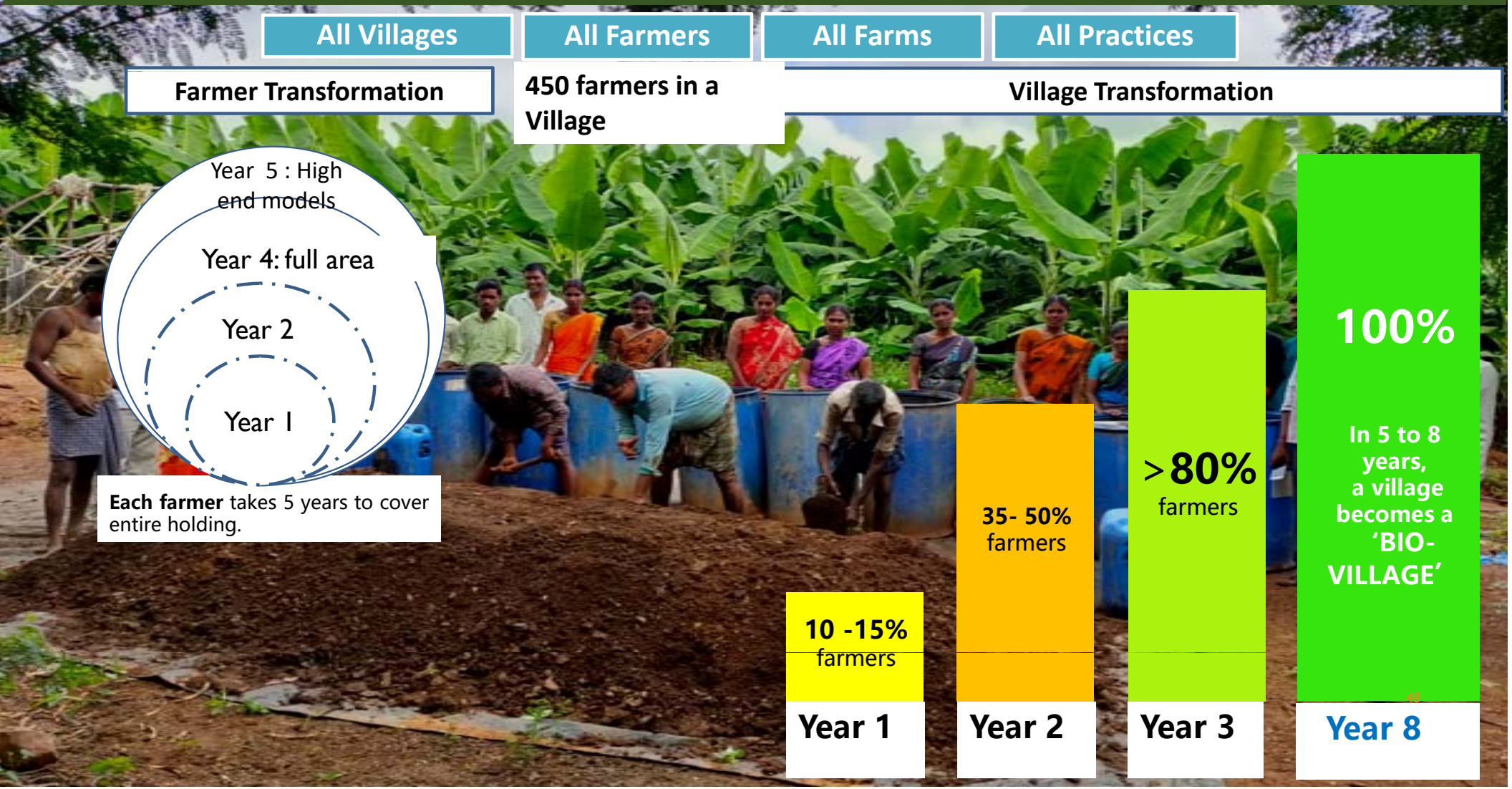
Data Management

Data Analytics

Decision Making

Information & Communication Technologies (ICTs) in Natural Farming

Changing a farmer means changing entire village – long term handholding is critical



NF Progression of farmers in a Farmer service centre (RBK)

APCNF Coverage in RBK							
Year and Description	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**
NF Enrolled	50	50	150	200	450	450	450
PMDS (Pre-Monsoon Dry Sowing)	0	100	250	450	450	450	450
Conversion to organic starts	0	50	100	250	450	450	450
Certified Organic					100	250	450

Individual farmer area transition

Individual Farmer Journey (Area in acres)							
Year and Description	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**
NF (cumulative)	0.5	1	1.5	2.5	2.5		
PMDS Cumulative Area	0	1	1.5	2.5	2.5		
Organic Conversion year			1	1	1.5	2.5	
Certified Organic Area					1	1.5	2.5

Research studies in collaboration with International research organisations

- **CIFOR- ICRAF** : LDSF, GHG Comparison
- **CIFOR - ICRAF and Climate works**: Exemplar Landscapes in Andhra Pradesh
- **University of Reading** : Comparing production system (APCNF vs Organic vs Conventional) Phase 2 - Supported by KFW
- **U.N.F.A.O** - FFS, Foresight Study Studies
- **Walter Jehne, Australian Climate Scientist** – PMDS, 365 DGC
- **CIRAD** - Foresight Study
- **Cambridge University** - PhD Study on APCNF impact on Pollinators
- **Tufts, Wood Hole Institute, USA** - Long term panel studies to track the soil health and Yields
- **James Hutton Institute** - Study on Nutrient Dynamics – PhD thesis
- **University of Edinburgh** - BLOOM study to assess health and nutrition impact of NF food
- **Global Alliance For Future of Food and GIST** – TeebAgri framework, true cost accounting for Natural farming food
- **IWMI – BIOVISION** – comprehensive impact assessment of natural farming

Research studies in collaboration with National research organisations

- Comparative analysis of Water and Energy use reduction in APCNF vs Chemical farms – **WALAMTARI**
- Savings on Fertiliser subsidies - **CEEW** (Council for Energy, Environment and Water) and **SIFF** (Sustainable India Finance Facility), India
- **Zero Budget Natural Farming for Sustainable Development Goals,** Andhra Pradesh - CEEW
- Life Cycle Assessment of ZBNF and Non-ZBNF- a study on Energy and Water **C-STEP**
- Comprehensive Survey for Assessing the impacts of ZBNF in AP – **CESS, IDS**
- Research studies on Validating the APCNF practices : ANGRAU
- Impact of 365 Days Green Cover : Indian Institute of Farming System Research (IIFSR: ICAR)

WALAMTARI CEEW THE COUNCIL CSTEP CENTRE FOR STUDY OF SCIENCE, TECHNOLOGY & POLICY ICAR

In-house studies

1. Comparative analysis of Water use reduction in APCNF vs Chemical farms -
2. Comparing Earthworms population in APCNF fields and Chemical fields-Science team
3. Climate Resilience of APCNF from Cyclone –Science team in RySS
4. Bird population in APCNF farms versus Chemical farms
5. Climate resilience of APCNF to heavy rains
6. Impact of Atavi Chaitanya dravanam, liquid and Solid Jeevamrutham
7. Impact of modified Saguna Rice Technology on water reduction and yields of Paddy
8. Impact of Dry paddy on growth and yield of Paddy
9. Impact of liquid and Solid Jeevamrutham intervals
10. PMDS and it impacts on growth and yield of different crops –PMDS +ZBNF, only ZBNF and Chemical Paddy

Summary of findings from few important studies

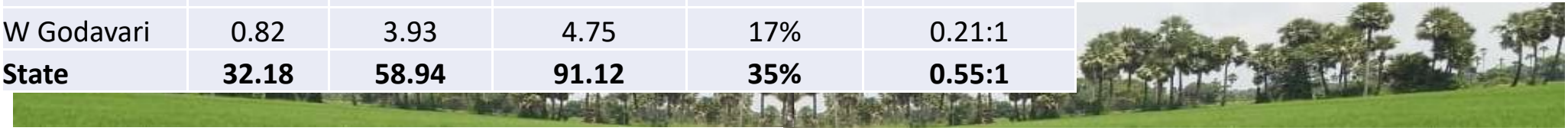
- Land Degradation Surveillance framework: **40 to 60% of the lands in AP are degraded**, low tree density (only 53 species dominating, High run-off in chemical farms compared to Natural farms)
- GHG emissions: The greenhouse gas emissions are 23% to 60% low in APCNF farms when compared to chemical farms (Published data)
- University of Reading: There is no yield penalty in APCNF and APCNF outperforms organic and conventional farms (Published data)
- Water study: APCNF uses 50 to 60 % less water and less electricity when compared to conventional farms
- CESS / IDS Study: The yields are 20 to 30% high in APCNF when compared to conventional farms
- Bird population : The bird visit are significantly high in APCNF farms when compared to chemical farms, Sparrows are returning back to farms (published data)

Bringing into cultivation Vast areas of arable lands are fallow (2017 – 18)

District	Fallow	sown	Total Fallow + sown	Fallow as % of total	Ratio
Y.S.R Kadapa	3.51	3.36	6.87	51%	1.04:1
Nellore	3.26	3.37	6.63	49%	0.97:1
Chittoor	3.79	3.62	7.41	51%	1.05:1
Prakasam	4.11	5.39	9.5	43%	0.76:1
Anantapuram	5.46	7.93	13.39	41%	0.69:1
Vizag	1.63	2.81	4.44	37%	0.58:1
Kurnool	3.15	8.51	11.66	27%	0.37:1
Vizianagaram	1.14	2.73	3.87	29%	0.42:1
Guntur	1.81	5.87	7.68	24%	0.31:1
E Godavari	1.49	4.12	5.61	27%	0.36:1
Krishna	1.3	4.24	5.54	23%	0.31:1
Srikakulam	0.71	3.06	3.77	19%	0.23:1
W Godavari	0.82	3.93	4.75	17%	0.21:1
State	**32.18**	**58.94**	**91.12**	**35%**	**0.55:1**

The APCNF Promise

- APCNF offers a pathway for reversing this
- Dryland crops can become assured crops, and even 3 crops can be taken
- Cropping intensity to increase to 2.5 +
- Barren and Fallows can be minimized
- Vision: To double the Cropped Area



Transformation Cost

#	Categories	COSTS (Rs.)	%
1	ZBNF Capacity building	11,600	77%
2	Support to Community Institutions	1,315	9%
3	PGS Certification, Quality Assurance, Tracking and Monitoring	1,785	12%
4	Technical Support and Overall Programme Management at the District and State levels	300	2%
	TOTAL	15000	

Cost to convert one farmer: Rs. 15000 over 8 years

Funds required to bring 6 million farmers under Natural Farming, over 10 years –

Rs. 10000 Cr

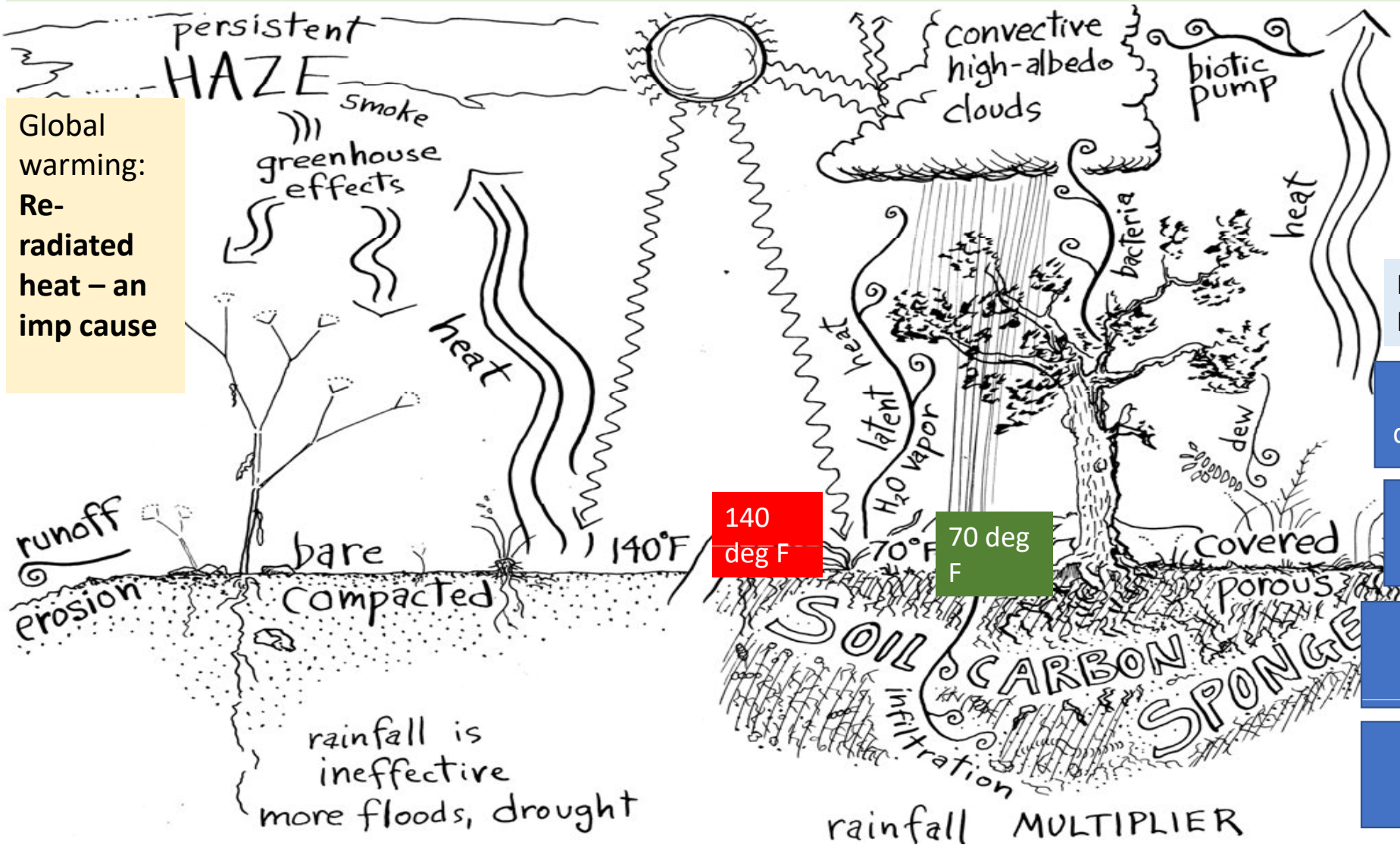
Reach all farmers by 2027; farmland in the state by 2031

Benefits to Govt finances from Natural farming - subsidy reduction and avoidance

Year	Land Lakh Ha.	Electricity savings, Rs. Cr (25% savings)	Fertilizer subsidy Savings, Rs. Cr
21-22	2.64	94	188
22-23	7.92	302	604
23-24	15.18	619	1,239
24-25	23.43	1,023	2,045
25-26	30.36	1,418	2,836
26-27	38.94	1,946	3,892
27-28	44.88	2,400	4,800
28-29	50.82	2,908	5,815
29-30	55.11	3,374	6,748
30-31	60.06	3,934	7,869
Total	**60.06**	**18,018**	**36,035**

Natural farming and 365 days green cover can cool the planet

Global warming: **Re-radiated heat – an imp cause**



NF + 365 DGC

- Reversal of desertification
- Soil / Water conservation
- Food and nutrition security
- Income generation

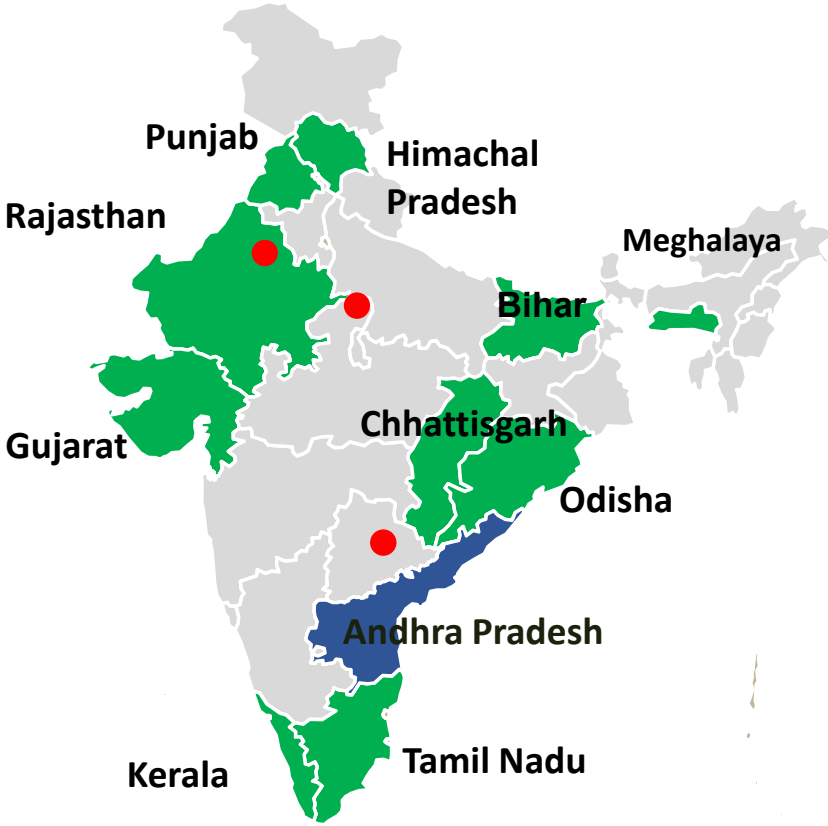
National and International Collaborations

With Countries

- Government of Rwanda
- Government of Kenya
- Govt of Mexico
- CONABIO – Mexico
- The Alliance for food Sovereignty in Africa - AFSA

With States, CSOs

- National Resource organization to NITI Aayog on Natural Farming
- Co-founder National Coalition for Natural Farming
- Support to state governments and national civil society institutions



● NGOs in Rajasthan and Bundelkhand and Tribal Welfare department in Telangana

Mindtree-PCF

Digital Green

“..We do not inherit the earth from our ancestors, we borrow it from our children..”

LET US ALL ACT NOW

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