

Successful & Safe Alternatives in Farming

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Centre for Sustainable Agriculture



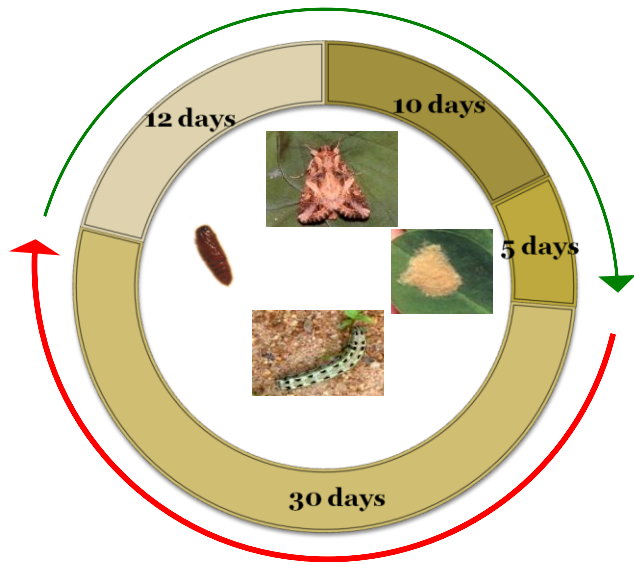
INTERNATIONAL YEAR OF
PLANT HEALTH

2020

Pests or Pesticides! Which are more damaging?

- Pests and Diseases are symptoms of underlying ecological distortions
 - Reducing biodiversity
 - High use of chemicals which kills natural enemies,
 - Resurgence and Resistance caused by selection pressure
 - Climate Change
- Alternate Frame work based on
 - Protecting plants from pests and diseases is far more cost-effective than dealing with full-blown emergencies
 - Plant pests and diseases are often impossible to eradicate once they have established themselves and managing them is time consuming and expensive
 - Prevention is critical to avoid the devastating impact of pests and diseases on agriculture, livelihoods and food security.
 - Ecological Engineering and Non Pesticidal Management

Ecological Approach to Pest Management



- Integrating management practices to prevent insects from reaching damaging stage / proportion
- a natural ecological balance will ensure that pests do not reach a critical number in the field that endangers the yield
- nature can restore such a balance if it is not meddled with too much, hence no chemical pesticides at all.
- understanding the insect biology and crop ecology is important to take up right management practices



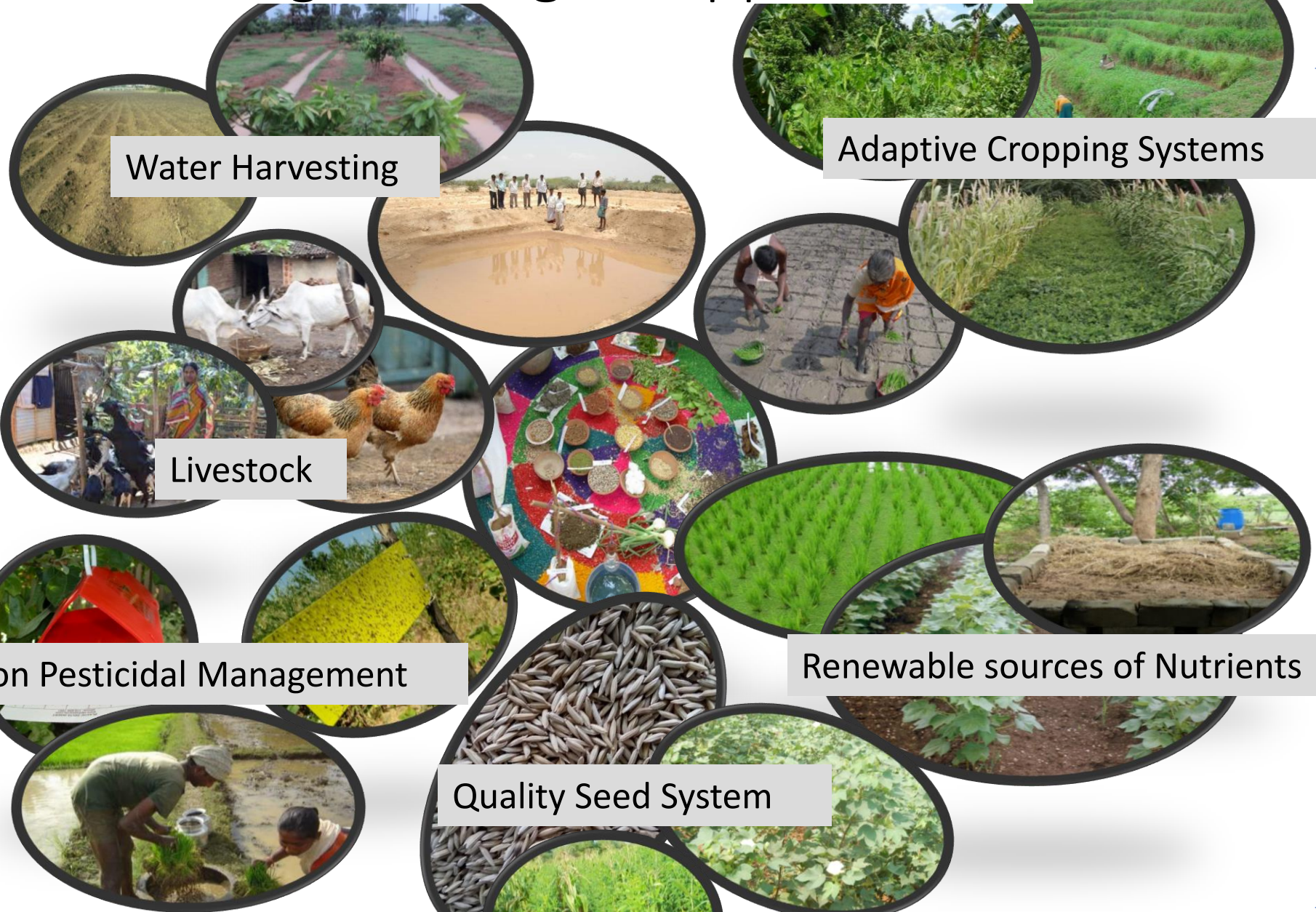
Why Alternatives are not spreading on their own?

- Knowledge intensive approach needs a shift in extension approach
- Shift from ideological rhetoric to science based approach
- Grassroot extension worker needs to have
 - a practiced experience
 - adaptive knowledge
 - a problem solving approach
 - backend support
- Changing the narrative

Agroecological approaches

Community institutions

Public policy support



Water Harvesting

Adaptive Cropping Systems

Livestock

Non Pesticidal Management

Renewable sources of Nutrients

Quality Seed System

Farmer Field Schools



Status of pesticide utilization in different states**

States/UTs	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	kg/ha 2000-01	kg/ha 2009-10
Punjab	6900	5610	5975	6080	5760	5810	0.98	0.82
Haryana	4520	4560	4600	4390	4288	4070	0.84	0.68
Andhra Pradesh	2135	1997	1394	1541	1381	1015	0.34	0.09
Maharastra	3030	3198	3193	3050	2400	4639	0.17	0.24
Tamil Nadu	2466	2211	3940	2048	2317	2335	0.32	0.45
Gujarat	2900	2700	2670	2660	2650	2750	0.30	0.29
Kerala	360	571	545	780	272.69	631	0.31	0.26
Karnataka	2200	1638	1362	1588	1675	1647	0.17	0.14

****Source:** <http://ppqs.gov.in/lpmPesticides.htm> MT of active ingredient

Average Reduction in costs and net additional income for different crops

Crops	Reduction in cost due to NPM (Rs)	Reduction in costs due to use of organic fertilisers/manures (Rs)	Net additional income (Rs)
Paddy	940	1450	5590
Maize	1319	2357	5676
Cotton	1733	1968	5676
Chillies	1733	1968	7701
Groundnut	1021	3462	10483
Vegetables	1400	390	3790

3rd Party Evaluation of Rashtriya Krishi Vikas Yojana (RKVY) : Community Managed Organic Farming implemented by SERP

Evaluation Team

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District-wise Pesticide usage/consumption in Andhra Pradesh
(TECHNICAL GRADE) - 2012-13 to 2017-18 (In MTs)

Sl No	District	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18 upto KHARIF (SEPTEMBER)
1	Srikakulam	275.01	338.44	51.00	231.11	192.58	144.81	79.27	48.13
2	Vizianagaram	241.79	193.12	58.00	168.77	135.12	116.72	105.11	36.63
3	Visakhapatnam	232.06	225.41	151.00	178.57	156.89	155.85	105.56	68.94
4	East Godavari	376.83	255.03	760.00	368.24	413.35	227.07	149.11	110.67
5	West Godavari	354.01	378.10	163.00	305.48	225.04	226.63	128.80	107.00
6	Krishna	415.15	522.13	209.00	285.92	300.44	241.47	265.93	80.52
7	Guntur	570.13	697.82	58.00	402.02	343.67	294.77	311.29	135.00
8	Prakasam	270.10	328.44	672.00	441.18	450.73	215.52	166.10	65.41
9	SPSR Nellore	283.02	321.30	594.00	337.37	399.95	212.19	146.16	54.75
10	Kurnool	564.07	632.06	381.00	366.23	453.08	247.44	155.95	92.95
11	Anantapur	290.07	395.42	350.00	315.86	333.98	205.64	114.74	78.13
12	YSR Kadapa	254.05	189.11	515.00	368.76	325.62	231.45	107.04	56.12
13	Chittoor	284.05	406.02	287.00	483.53	319.59	193.23	179.82	64.70
Total		4410.36	4882.41	4249.00	4253.06	4050.05	2712.79	2014.88	998.96

Data from AP CNF, 2018-19

Cost of cultivation ZBNF Vs Non ZBNF

Crop	Condition	Cost of Cultivation ZBNF (Rs/Ha.)	Cost of cultivation Non ZBNF (Rs/Ha.)	Percentage Change (%)
Paddy	Irrigated	37742	43380	13%
Groundnut	Rainfed	22496	26979	17%
Maize	Irrigated	32590	32837	1%
Cotton	Irrigated	37197	40715	9%
Bengalgram	Rainfed	28611	33326	14%

Yield Comparison ZBNF Vs Non ZBNF

Crop	Condition	ZBNF Yield in Kg/Ha.	Non ZBNF yield in Kg/ha.	Percentage Change (%)
Paddy	Irrigated	4724	4948	-5%
Groundnut	Rainfed	609	723	-16%
Maize	Irrigated	5204	3987	31%
Cotton	Irrigated	2183	1652	32%
Bengalgram	Rainfed	1769	1720	3%

Net Income ZBNF Vs Non ZBNF

Crop	Condition	Net Income ZBNF (Rs/Ha.)	Net Income Non ZBNF (Rs/Ha.)	Percentage increase (%)
Paddy	Irrigated	47859	43327	10%
Groundnut	Rainfed	9245	8341	11%
Maize	Irrigated	45906	21709	111%
Cotton	Irrigated	72046	41119	75%
Bengalgram	Rainfed	55197	47042	17%



Tools you can use

- Download Non Pesticide Manuals
- NPM Packages: <http://www.pestoscope.com>
- IPM Packages: <https://niphm.gov.in/IPMPackages.html>
- Call on 08500 98 3300 for any help
- Email Ramoo@csa-india.org