

# “Organic Farming / Agro-Ecological Approaches”: Ready-to-Replicate Best Practices from around India

**Alliance for  
Sustainable &  
Holistic  
Agriculture (ASHA)**



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# Why Organic Farming?

- Degraded State of Environmental Resources: if productive resources are eroded, farm livelihoods are obviously impacted
- Acute as well as chronic health impacts of agri-chemicals, in addition to impacts on other living organisms
- Reducing out-of-pocket investments in agriculture, and thereby indebtedness for cultivation purposes (Institutional credit coverage is very low for more than 3 crore sub-marginal landholding agri households, for eg.)
- Both mitigation and adaptation potential highest in the era of climate change – lower risk, resilient system
- Providing safe food to consumers – residue-free and may be even ‘more nutritious’?

# State of the environmental resources

## LAND:

- 146.82 Mn Ha degraded out of 306 Mn Ha of reporting area in India
- 44 Mn Ha out of net cultivated 142 Mn Ha is degraded due to salinity, alkalinity, acidity and water-logging
- *Direct consequences of agricultural development on the environment arise from intensive farming activities, which contribute to soil erosion, land salination and loss of nutrients. The introduction of Green Revolution in the country has been accompanied by over-exploitation of land and water resources and excessive usage of fertilizers and pesticides*
- (Source: MoEF's State of the Environment 2009)

# State of Environmental Resources

## WATER & BIODIVERSITY

- NASA's Gravity Recovery and Climate Experiment (GRACE) found that the groundwater beneath Northern India has been receding by as much as one foot per year over the past decade
- Around 29% of India's groundwater blocks are semi-critical, critical or over-exploited (WB's "Deep Wells and Prudence:.....", 2010)
- Most of India's surface water polluted: State of the Environment 2009
- Bio-diversity, including agro-diversity loss: rapid - monocropping spreading to more areas – has serious livelihood implications incl health & nutrition security, in addition to environmental

# State of environmental resources

- Deceleration in agriculture growth: - *technology fatigue and increasing environmental stress in irrigation crop production regions*
- ‘Nearly 2/3rds of our farmlands are in some way either degraded or sick and only about 1/3rds are in good health’  
(Planning Commission’s ‘Agriculture Strategy for 11th Plan: Some critical issues’)

# ASHA's APPROACH

- **LIVELIHOODS APPROACH** – THIS MEANS FOCUS ON REDUCTION OF RISKS IN FARMING AND INVESTMENTS IN/COSTS OF FARMING (reducing dependency on external inputs, including bio-inputs); INCREASE IN PROFITS AND VIABILITY OF FARMING
- **FOOD SAFETY APPROACH** – MAKING ORGANIC AFFORDABLE OVER A PERIOD OF TIME FOR ALL INDIANS – THIS IS NOT JUST ABOUT EXPORT MARKETS & COMMERCE, BUT SAFE FOOD FOR THE MOST MALNOURISHED ALSO
- **SOCIAL EQUITY APPROACH** – ORGANIC ALLOWS FOR A WIN-WIN APPROACH ESPECIALLY WITH THE MARGINALISED – MARGINAL & SMALLHOLDER FARMERS, WOMEN FARMERS, AGRICULTURAL WORKERS, ADIVASI FARMERS ETC.

# WOMEN & ORGANIC FARMING

- Higher market integration in chemical, commercial agriculture has pushed women to the margins, given the existing asymmetries: **MASCULINISATION OF AGRICULTURE**
- Elsewhere, women are handling more responsibilities related to farming than they always have, without any recognition and support when men migrate out of farming: **FEMINISATION OF AGRICULTURE**
- On the other hand, most recent analysis especially by various UN agencies shows very clearly that unless women are given a central role in agriculture, other development agendas including empowerment of women themselves, fall by the way side: **NO DEVELOPMENT WITHOUT EMPOWERING WOMEN FARMERS**
- **ORGANIC FARMING IS AN EXCELLENT APPROACH TO EMPOWER WOMEN, GIVE THEM MORE HOUSEHOLD LEVEL AUTONOMY AND ENSURE THAT THEIR FARMING IS VIABLE**

# OF & Women Farmers

- Organic Farming, that too diversity-based, has a central role for women farmers – **ALLOWS THEM TO TAKE PART IN DECISION-MAKING AND IMPLEMENTATION**
- Given the gendered nature of household level food and nutrition security responsibilities, **women have greater interest in healthy food**
- Other gendered roles thrust on women are also better fulfilled through organic farming (fodder, fuel, healthcare etc.) – **their work burden can lessen**
- Women's traditional knowledge important in agro-ecological approaches – **use of existing skills and knowledge**
- **MOST BEST EXAMPLES AROUND ORGANIC FARMING HAVE WOMEN IN A LEADING ROLE: DDS, CMSA, KUDUMBASHREE, GREEN FOUNDATION, DRCSC etc.**



# OF & Smallholders

- Once again, reduces need for external investments/debt and risks of smallholders – they are the ones who have least access to institutional credit and borrow at exploitative terms
- Relies on family labour or exchange labour systems within smallholder households
- Organic Farming needs smallholders, since big holders tend to go in for monocropping and machines; on the other hand, smallholders need organic farming for profitability
- Collectivisation and aggregation become important however for better scale
- **Specific models meant for ½ acre farmers (Integrated Farming Systems; Dabholkar Model/20-gunta model etc.) to be specifically created into a SCHEME and implemented: this is MISSING RIGHT NOW**

# Usual apprehensions/skepticism

- *Will we have food production deficits?*

**FAO analysis shows that intensification of organic farming in most subsistence systems yields 40% more; while there will be transition losses with organic farming adopted in intensive agriculture situations, this can be overcome in 4-7 years' time – it is a matter of planning incremental shifts; Indian NARS data shows nothing to fear on yield losses, except in wheat crop (data in upcoming slides); Sikkim is an example to draw courage from.**

# Usual apprehensions/skepticism

- *Is there enough bio-mass for organic farming?*

**Question assumes the same linear paradigm adopted in crop nutrient management in the chemical paradigm. Organic Farming is a combination of various practices which integrate and generate the biomass required for the approach. It is a shift from soil chemistry to soil biology which also addresses soil physical characteristics. Therefore, looking at chemical equivalent of NPK in FYM is not right**

# Usual apprehensions/skepticism

- *Isn't organic expensive—can consumers afford it?*
  - **Yes, today, organic is more expensive and unaffordable than it needs to be in most cases**
  - **It is because of lack of integrated supply chains, with the supply chains being dispersed. Certification also adds to the cost. With a cluster approach, based on diversified cropping systems approach & localised markets, organic need not be expensive. If govt steps in to support marketing of organic produce, costs will decline**
  - **There are replicable models of affordable organic**

# Usual apprehensions/skepticism

- *What (new) public financing needs might be there?*
- **We are mostly talking about ‘re-casting’ of existing public investments which are on a chemical agriculture paradigm**
- **If we can adopt highly decentralised models of organic farming both for inputs and outputs, very little investments needed**
- **At present, models of state-supported organic farming range from Rs.25000/- per acre to a meagre Rs. 175/- per acre!**

# Current picture of Indian Organic (industry)

- Accurate or Reliable Data on organic farming not present : official data put out by APEDA of certified organic does not match with numbers of state governments and others – APEDA is not the last word on OF data
- Certified organic farming area growth: ~ 17-fold, past one decade
- Organic industry been growing, and expected to grow at a CAGR of over 25% during 2015-20
- Total market size now ~ Rs 1000 crore (market research firms' data)
- India ranks 16<sup>th</sup> in the world in terms of area under Organic
- However, 1/2 of world's organic farmers are estimated to be in India.
- In 2013-14, total area under organic certification was 47.2 lakh hectares. Vast majority was forest and wild area!\*
- 7.23 lakh Ha certified cultivated area\*
- About 6 lakh organic farmers by 2010 itself, as per NCOF (GoI)
- Production of ~12.4 lakh MT of certified organic products (2013-14)\*
- In 2013-14, export volume was 1.9 lakh MT of organic products, worth 403 million US \$.\*

(\* APEDA data)

# Current situation

- Oil seeds - Soybean (70%) lead among the products exported followed by Cereals & Millets other than Basmati (6%), Processed food products (5%), Basmati Rice (4%), Sugar (3%), Tea (2%), Pulses and Lentils (1%), Dry fruits (1%), Spices (1%) and others.\* (\*:APEDA)
- Some organic brands have 5-8 fold increase in turnover in just the past 5 years or so.
- Cities like Bangalore have more than 100 organic retail outlets, and around 7-8 fully organic restaurants
- PKVY target is 5 lakh acres in 3 years time, with Rs.20k outlay per acre
- OFFICIAL AND MARKET RESEARCH FIGURES HAVE NOT BEEN ABLE TO CAPTURE THE REAL SITUATION, THOUGH!
- Organic has been growing despite the lack of government support – only 2% outlays under RKVY, for instance. Similar low outlays across schemes.
- The overwhelming extension messages are around chemical – organic is swimming against the stream.
- Karnataka (2004-05), Kerala (2008), Sikkim (2003), Madhya Pradesh (2010), Himachal Pradesh (2011), Nagaland (2007), Gujarat (2015) etc. have Organic Farming Policies adopted
- Mizoram has a Mizoram Organic Farming Act 2004 (for banning agri chemicals in notified areas): Uttarakhand's Agriculture Policy (2011) has a specific chapter on creating "organic state". Similarly, in Odisha
- India's organic area declined in the recent past after the advent and spread of Bt cotton due to GM contamination

# OF policies: Ready reference

- [http://raitamitra.kar.nic.in/kda\\_booklet.pdf](http://raitamitra.kar.nic.in/kda_booklet.pdf)
- <http://www.hpagriculture.com/Organic%20Farming%20Policy.pdf>
- <http://keralabiodiversity.org/images/pdf/organicfarmingpolicyenglish.pdf>
- <http://www.nagaland.gov.in/Nagaland/UsefulLinks/State%20Organic%20Policy.pdf>
- <http://www.sikkimorganicmission.gov.in/wp-content/uploads/2015/01/policy.pdf>
- [http://www.organicuttarakhand.org/org\\_policy.html](http://www.organicuttarakhand.org/org_policy.html)
- [http://www.mpkrishi.org/krishinet/hindisite/pdfs/javikneeti\\_eng.pdf](http://www.mpkrishi.org/krishinet/hindisite/pdfs/javikneeti_eng.pdf)
- <http://agri.gujarat.gov.in/hods/index.htm>



# Mean yield of crops tested in cropping systems under organic input management and yield trend over the years

Crop	N	Mean yield (kg/ha) under organic input management	Yield trend under organic system over the years (% increase (+) or decrease (-) over inorganic input management)						
			1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5 <sup>th</sup> year	6 <sup>th</sup> year	7 <sup>th</sup> year
Basmati rice	67	3099	-13	-14	-3	2	2	8	7
Rice	56	3639	-12	-13	5	2	1	2	1
Wheat	56	2952	-15	-9	-7	-3	-7	-13	-4
Maize	55	4541	-5	9	4	0	3	10	16
Green gram	12	905	-	-4	-	-9	3	13	13
Chickpea	25	1269	-10	5	9	3	0	1	5
Soybean	58	1697	1	1	5	0	3	0	12
Cotton	29	1243	8	9	11	12	11	14	12
Garlic	9	7878	-10	-19	8	15	-	-	-
Cauliflower	12	10683	-8	-8	4	2	-	-	-
Tomato	11	20577	-13	-13	-30	-28	35	26	20
<b>Mean</b>			<b>-6.7</b>	<b>-4.8</b>	<b>0</b>	<b>1</b>	<b>8.4</b>	<b>5.6</b>	<b>9.0</b>

# Number of data entries, averages and ranges (%) of relative yields between organic over inorganic for selected crops in India

Crops	n <sup>a</sup>	Organic over inorganic		Crops	n <sup>a</sup>	Organic over inorganic	
		Mean	Range			Mean	Range
<b>Positive organic</b>							
Basmati rice	67	104	88-121	Okra	10	118	90-142
Rice	52	100	89-122	Chilli	12	109	107-112
Maize	37	110	62-137	Onion	13	107	87-127
Sorghum	17	114	89-132	Garlic	9	104	86-121
Greengram	12	107	96-122	Cauliflower	12	104	90-117
Chickpea	24	100	65-114	Cabbage	5	111	81-142
Soybean	54	104	96-123	Tomato	11	106	83-130
Groundnut	16	103	83-116	Ginger	12	120	108-129
Pea	21	125	94-162	Turmeric	18	146	93-242
<b>Negative organic</b>							
Wheat	55	93	78-113	Lentil	12	92	83-101
Mustard	32	93	67-137	Potato	32	95	48-162
Sunflower	8	99	94-103	Radish	9	75	43-108

<sup>a</sup>n= the number of yield entries



**Expected changes in in production due to organic farming of major food crops  
(based on the area, production and productivity of 2010-11)**

Crop	Area ('000 ha)	Production ('000 t)	Productivity (kg/ha)	8 year* mean yield with 100% organic**	Expected production under organic system ('000 t)	change
Rice	42008	89084	2121	3719	156227	+
Wheat	28457	80802	2839	2536	72166	-
Maize	8255	16710	2024	3688	30444	+



\* Including conversion period, \*\* On-station yield



*ICAR-Indian Institute of Farming Systems Research, Modipuram (UP)*

Note: These 3 slides have been copied from an ICAR-IFSR presentation on July 30<sup>th</sup> 2015

# Scientific Evidence related to ecological agriculture

A compilation on the scientific evidence within the NARS in India related to ecological agriculture is available here, breaking the myth that organic farming is unprofitable, less productive or even unscientific!

- <http://www.kisanswaraj.in/wp-content/uploads/scientific-evidence-on-eco-farming-in-india.pdf>

# Karnataka's OF initiatives

- One of the first states to formulate an OF policy, in 2004-05
- Wide publicity and demonstration of political will by CM spending a night in an organic farmer's house every month in the initial years
- Spending of 215 crore rupees over past 12 years: > 1 lakh Ha of OF
- "Organic Village Scheme" is the flagship programme for implementing the policy (initially, one village per district, later one village per *hobli*): integrates extension, training, soil, seed, livestock, marketing
- Free (group) certification is a key component
- Right now, cooperatives' federation being created from Hobli upwards for supporting marketing *a la* dairy cooperatives' structure
- Sophisticated labs for residue testing
- Separate Processing Centre set up in Nelamangala (RKVY)
- Quasi-governmental set up in the form of Jaivik Krishik Society – outlets in Bangalore
- Integrated Farming Systems approach : Convergence between different departments
- Flexible design in implementation: NGO + Dept + Farmers' collective bank account at the ground level for funds operation
- Regional Institute for Organic Farming in UAS Bangalore: for systematic research inside agri-universities

# Kerala: OF Revolution in the making?

- 2008 policy (implementation started in 2010): Ambitious targets: Plan for converting whole state to organic
- Main push for OF coming from huge consumer demand for Organic food – Govts have no option but to promote organic farming: wide publicity by govt too, with agri minister personally appearing in advertising, urging citizens to opt for organic
- Regulation of pesticides: no licensing to certain pesticides
- Panchayats play a key role, along with Kudumbashree institutions
- Focus on school based organic farming also
- ‘No to transgenics’ built into the policy
- OF getting promoted through active involvement of agriculture university, department, agriculture cooperative societies, panchayats and women’s SHGs
- Main thrust right now on Vegetables: Interested private parties invited to apply for adoption and certification for OF, at Rs. 5 lakhs per 50 Ha cluster, while farmers are supported under NHM for maximum of 4 Ha per beneficiary for 3 years for various NHM-mandated horticultural crops – agencies to facilitate buyback arrangement also
- ‘Organic farming and “safe to eat food” production scheme’: 10 crore rupees.
- No estimate of how much Panchayats are spending. There is anecdotal evidence that some Panchayats are spending upto 50 lakh rupees for organic farming investments
- In the Agriculture Department, 1 out of 5 Deputy Directors under the Principal Agriculture Officer in each district designated to work exclusively on organic right now

# Sikkim

- “Food Security and Agriculture Development” department
- Organic Farming policy in 2003 itself. Serious implementation in Mission Mode from 2010 – creation of Sikkim Organic Mission (SOM)
- Regulation of agri-chemicals: no licensing for sales provided at all
- Extension system geared towards organic advisories only
- Livelihood Schools set up for training, incl of rural youth
- Development of “BioVillages” for more intensive work
- Sikkim Organic Mission: ICS blocks – inputs and certification
- Organic agriculture curriculum introduced at school level along with HRD Department (5<sup>th</sup> to 7<sup>th</sup> Standard)
- SIMFED procures from certified organic producers through 170 multipurpose cooperative societies, and supplies to other states or international markets
- “Organic / Nature Tourism” also raking in some revenue
- No drop in productivity of food grains in the state:  
<http://www.sikkimorganicmission.gov.in/towards-organic-sikkim/achievements/>
- Sikkim’s certified organic area in 2014: 43000 Ha (**60% of their agricultural land: expected to be fully organic by next year**)

# Madhya Pradesh

- Implemented by “Farmer Welfare and Agriculture Department”
- 32-40% of India’s certified organic area in MP
- Cluster based approach, with Jaivik Kheti Gaon (BioVillage) being created (5 villages per block) – initially in 48 districts
- Right now, focus is on 18 districts with low fertiliser consumption/tribal districts
- Separate certification agency: MPOFCA – 3 years’ subsidy for certification
- Govt funds being used, and DBT into registered farmers’ accounts for purchase of inputs (direct transfer into bank accounts of organic farmers)
- A Regional Research Station of Jabalpur Agri Univ (JNKVV) exclusively for OF in Mandla (tribal area)
- Separate marketing agency also set up recently
- About 50 crore rupees’ annual outlay
- ASSOCHAM’s 2012 study estimated a wealth accumulation of Rs.23000 crores, 60 lakh employment days and exports worth Rs.600 crores with OF
- An April 2015 ASSOCHAM report claims 26 lakh hectares under organic in 2014 in MP, with certified area remaining at just 1.48 lakh hectares.
- Policy adopts a no-transgenics approach, as it is found to be incompatible with OF

<http://www.biofarming.mp.gov.in/>



# CMISA project: AP/Telangana

- Community Managed Sustainable Agriculture project of the Rural Development Dept. – the women's federations realised that what they were saving with great difficulty was many times lesser than what they were giving away to agri-chemical industry – NPM was introduced – now on 35 lakh acres!
- Mainly rests on Extension System Innovations: Farmer Field Schools, Community Resource Persons (CRPs)
- Extension workers' salaries directly deposited into women's federations' accounts – they get to pay: downward accountability of functionaries
- Use of (video conferencing & mobile) technology for trainings and extension
- POP (Poorest of the Poor) models: Integrated Farming Systems: seeking to support the poorest through agro-ecology
- Direct Marketing of organic in some places
- NPM produce to an extent gets integrated into the 'Food Security Credit Line' programme
- Very useful MIS systems
- GoI evaluation shows no decline in yields – actually, increases in certain crops!
- One of the least expensive eco-farming projects : just about Rs. 175/- per acre per year by 3<sup>rd</sup> year!

# http://65.19.149.140/CMSAAP/ui/cmsamodules/HomePage.html

The screenshot displays the homepage of the Community Managed Sustainable Agriculture (CMSAAP) project in Andhra Pradesh. The page features a green header with the project name and logo. Below the header is a navigation bar with links for Home, MIS Reports, Dashboard, GIS, and Contact Us. The main content area is divided into several sections:

- Left Sidebar:** Contains links for CMSA, Press Clips, Community Video films, and Image Gallery.
- Success Stories:** Lists items like N P M shop and Kashayala Gangireddy, with a 'More stories >>' link.
- Evaluation Reports:** Lists reports such as RKVY Cover page, Annexure, and Food Security.
- Success Stories (Text):** A list of achievements:
  - Developing new tools and equipment for reducing drudgery to women farmers.
  - Establishing village level infrastructure for supply of these tools.
  - Upgrading women farmer's knowledge in eco-friendly farming technologies.
  - Organizing capacity building programs with new training content and improved methods.
  - Managing revolving fund for decentralized extension system leading to multiple livelihood options models to be managed communities on their own.
- Vision:** Sustained efforts to make agriculture as economically viable and ecologically sustainable activity, without compromising on yields and improving returns per unit of land and water, to improve the quality of farmer's life.
- Mission:** To improve the annual incomes of farmers in Rain fed areas in particular and agriculture in general with integrated farming systems.
- Latest News:** DCC wise CA & VA training schedule from 08-09-2014 to 12-09-2014.
- Helpdesk:** Contact number 83746 17998 and website [www.smart.ap.gov.in](http://www.smart.ap.gov.in).

At the bottom, a footer states: DESIGNED & MAINTAINED BY BLUEFROG MOBILE TECHNOLOGIES PVT. LTD.

# Meticulous MIS

Inbox (5,086) - kavitakuru x rural development depart x Society for Elimination x CMSA: Community Man x e-CMSA x

65.19.149.140/CMSAAP/ui/cmsamodules/main.aspx#



## Community Managed Sustainable Agriculture Andhra Pradesh



Home MIS Reports

District : ALL Functionary : ALL Mandal : ALL CA : ALL

GP : ALL  Date  Month  year 14/09/2015   ITDA  NON-ITDA  ALL

- R1. Master Details
  - + R1.1 Social category wise farmers
  - + R1.2 Year wise farmers details
  - + R1.3 Sowing Details
  - + R1.4 Adoption details
  - + R1.5 Action Plans
- R3. Functionary Modules
  - + R3.1 FFS
  - + R3.2 PoP
  - + R3.3 Mana TV
- R2. CA Modules
  - + R2.1 FFS
  - + R2.2 PoP
  - + R2.3 SRI
  - + R2.4 36X36
  - + R2.5 NPM SHOP
  - + R2.6 NADEP
  - + R2.7 SHG Meeting
  - + R2.8 Mana TV
  - + R2.9 Sub Committee Meeting

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# Gov schemes to tap into

## Exclusive Organic Farming:

- NPOF under NMSA
- PKVY

Components to support organic, or 'agnostic' schemes that can be put to good use for organic: MIDH, MKSP, RKVY, MGNREGS (for some activities)

In 8 years of RKVY (2007 to 2014), projects classified as OF projects got a meagre 2% support. A separate %age of allocation should be mandated.

# Pre-requisites for Success

- LARGE SCALE **AWARENESS CAMPAIGNS**: BOTH ABOUT ILL EFFECTS OF CHEMICAL AGRICULTURE AND POSITIVES OF ORGANIC FARMING, both with farmers and consumers
- **INTENSE EXTENSION SUPPORT**, INCLUDING BY MAKING **PRACTISING FARMERS AS RESOURCE PERSONS**: CREATE A WHOLE NEW CADRE OF EXTENSION PERSONNEL AT LEAST AT THE CLUSTER LEVEL
- INVESTING ON **CAPACITY BUILDING SYSTEMATICALLY, INCLUDING OF AGRI DEPT OFFICIALS & AGRI SCIENTISTS**
- **COLLECTIVISATION** OF WOMEN FARMERS, SMALLHOLDERS ETC.
- **INTERNALISE ALL INPUTS & PROCESSES** IN THE PACKAGE OF PRACTICES ADVOCATED/RECOMMENDED (NO NEED TO WORRY ABOUT REGULATION OF QUALITY OF INPUTS EITHER!)
- **ADDRESS MARKETING CONSTRAINTS** AS MUCH AS PRODUCTION
- **CREATE LOCALISED MARKETS**: TRY OUT MANY INNOVATIVE MODELS (NO NEED TO WORRY ABOUT CERTIFICATION EITHER!)
- WHERE CERTIFICATION IS NEEDED, **SUBSIDISE IT FULLY FROM GOVT**
- **PROMOTION OF Org Farming BUT ALSO REGULATION OF CHEMICAL, GM AGRI**
- **A POLICY COMMITMENT, WITH FINANCIAL OUTLAYS**

# Highly possible interventions

- Focus on organic seed breeding & revival of traditional seed varieties
- Integrate livestock component and other components in an IFS approach
- Integrating food schemes of the government, especially for children, with organic producer collectives (MDMS/ICDS/PDS)
- Using NREGS/NRLM/MKSP/PKVY for schemes for women farmers' collectives' organic cultivation
- Setting up organic market yards with grading, processing and value addition facilities for traders to procure from certified organic producers, and retailers to in turn procure from the yard – RKVY funds can be used for the same.
- Food festivals and consumer awareness campaigns to increase demand for organic from consumers – support farmers to participate in melas
- **SET ASIDE ALLOCATIONS FOR ORGANIC PROJECTS IN EACH SCHEME: 30% TO BEGIN WITH (since these are demand-driven)?**
- **Have transition insurance & EcoSystem Services Bonus: more rapid adoption and spread.**

# For further information....

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