NATURAL FARMING SCALING & COMMUNITY DEVELOPMENT IN INDIA

VIJAY KUMAR

ANDHRA PRADESH COMMUNITY MANAGED NATURAL FARMING, RYTHU SADHIKARA SAMSTHA

Hunter Lovins
Hi, my name is Hunter Lovins. I am so thrilled to be here today with Vijay Kumar and Walter link to discuss the Andhra Pradesh Community Managed Natural Farming. Vijay is a true hero of the planet. He's a top adviser to the government of Andhra Pradesh. He served as a vice chair for the United Nations Food System summit, has been a champion of women's self help economic groups, which he helped create in India. He's the Executive Vice President of the Andhra Pradesh Community Managed Natural Farming. Vijay, thank you so much for being with us.

Vijay Kumar
Thank you, Hunter. It's such a privilege to be with you and Walter, and thank you for the time that you're taking to let people know about the entrepreneurship program.

I'm Vijay Kumar, I head the Andhra Pradesh Community Managed Natural Farming. Andhra Pradesh Community Managed Natural Farming is part of the government of Andhra Pradesh organization called Rythu Sadhikar Samstha. Our vision is to transform all 6 million farmers of the state and 2 million landless farmworkers to natural farming or to regenerative agriculture from the

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current destructive kind of agriculture they are practicing.

So this presentation is to take you through why we are doing it, how we are doing it, what kind of results we have got. And also what are the challenges moving ahead. So you're all aware that we have multiple emergencies, we have farmers' livelihood itself, which is under a great risk, the consumer foodplate is neither safe nor adequate. And the bigger threat is to the soil, there's a soil emergency, water emergency, pollution crisis. And all these are exacerbated by the climate emergency.

Agriculture is a victim, farmers are a victim of the climate emergency. At the same time, the way we are managing our lands itself is causing climate change. And that is the real dilemma or a contradiction, I must say. So the challenge is, what is the solution?

If farming itself is a big cause of climate change, so what we believe very strongly is that farming in harmony with nature is the solution for all these multiple emergencies. A solution for people and for planet. And in this we are mimicking Mother Nature, we're trying to understand her processes and trying to see how best we can replicate and that is the real content of natural farming. So, what we have done, is this combination of traditional agriculture and modern science.

So based on what our indigenous communities have been doing, what our rural communities have been doing since ages, which again over the last 50, 60 years, thanks to industrial agriculture, all of these have been overthrown.

Principles of Natural Farming

We're saying the first principle is: soil should be covered with crops 365 days of the year. Soil should not be there and they should be diverse crops, preferably trees should be incorporated into the farm lands. These are the first two principles. Soil should not be disturbed. Animals should be integrated into farming. And since the soil biology has been depressed on account of 50, 60 years of very adverse land management, use of synthetic chemicals. So we need biological stimulants. Again, these are all traditional practices in India - use of cow dung, coffee or rain botanicals. So these biostimulants are used as seed coating, soil amendment foliar application pest management applications as you know growth promoters.

Use of biostimulants as a catalyst is very critical and the soil should be covered with organic residues, crop residues dung. So these organic residues again have a very important role to play. We also promote use of farmer's own seeds, indigenous seeds - a big no to GMOs and pest management - through botanical formulations and only red box. And our principle says no synthetic fertilizers, pesticides, herbicides, weedicides.

These are the principles that we have. Practices are highly diverse; principles are universal, but practices are dependent on farmers' own innovations. We learn from farmers. Farmers learn from each other. So, this is the a very healthy collaboration between farmers and scientists. And there is a mutual learning.

And, of course, these are just examples of crop diversity in farm lands. And this is a seed coating beejamrutha. So this is microbial seed coating, as I mentioned the role of biostimulants. So this is ghanna jeevan rutham, soil amendment. This is the drava jeevan rutham is used as a foliar application. These are different botanical formulations for pest management.

So the practices under these principles are very simple, very cost effective. And farmers like them, because they can do it themselves. They're not dependent on the outside world for these inputs. It's like liberation for them, that they don't have to buy these inputs.

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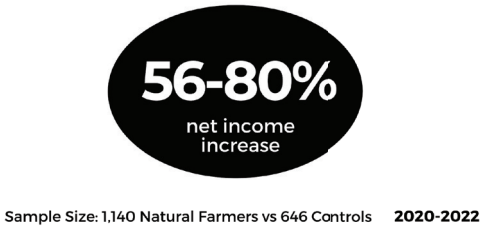
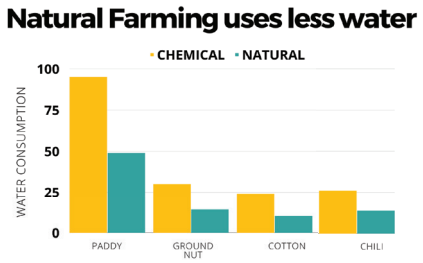
Results

Now, the results at a glance I would like to present starting in 2016 with around 40,000 farmers in 700 villages in 2022. In spite of COVID hampering our work, we had reached 27% villages and 12 personal farmers and 4% area of the state. So I believe we are at a tipping point.

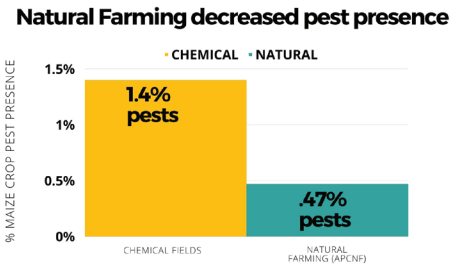


This year my target is 1 million farmers. And already the results are very, very encouraging. And as I mentioned, we are not offering any subsidy during the transition. So no cash incentives

during transition, and also no promise of market premia after transition, and we do know it takes three to five years for this transition process. We provide support to the farmers during transition.



At present, we are the largest natural farming program in the country, also acknowledged as the largest agro ecology program in the world. Currently, the government has given us a budget of around 235 million up to 2024. We are supported by philanthropy. Azim Premji Philanthropy has given us a grant of $14 million. We are also expecting grants from other philanthropies shortly, the impacts of our work.



So we've had independent assessments, very large scale independent assessments of the socio economic impacts, which have reported cost of cultivation has come down very significantly, the yield differences are not at all significant. And the net result is farmers' net incomes have increased.

I'm just presenting a snapshot of 2020-21 results for all the crops. So there was a 16% increase in the gross value of natural farming farmers versus conventional farmers 18% reduction in their costs. So with the result, farmers

practicing natural farming had a 80% higher net incomes.

So the increase in net incomes is not the only benefit from this. We see increased nutrition through diverse foods, 10 to 15 kinds of vegetables and fruits. And we are targeting the landless farm worker especially for this. We also see tremendous increase in biodiversity. Mother Nature is very kind. If you don't harm them, it comes back. It regenerates very quickly.

All this is a result of first year, second year, third year. So we see the earthworm count has actually gone up seven times in a very short period of time. Birds find it safe to build nests in the farmlands and we have seen cotton fields with birds nests and resilience to floods. These are different fields. The natural farming field is intact. But the conventional agriculture field is completely damaged.

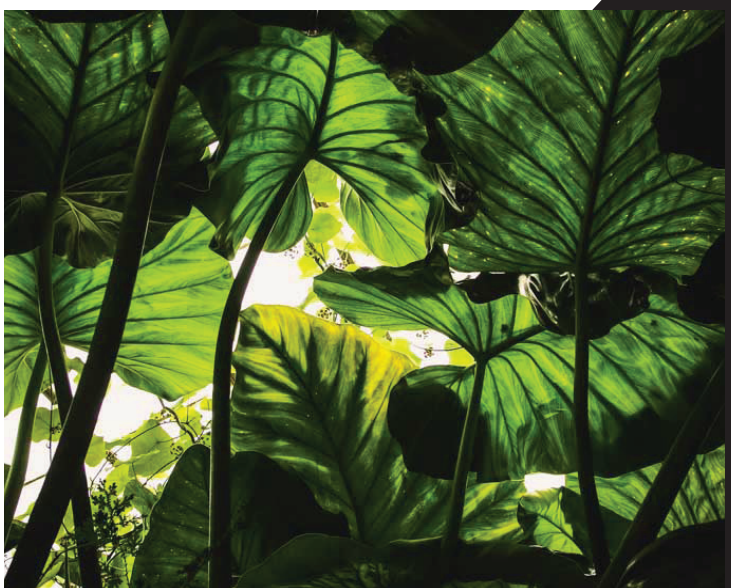
There is also tremendous water saving. This was a big surprise to us. Because farmers were reporting that water has, you know, water consumption has come down, we wanted to know how much. And we were amazed that after three years, farmers were able to save 50% in water. And this is something we never expected. And we are doing more research into this, to find out what is the difference and also what is the cost and resilience

Our chili crop was destroyed last year on account of trips. So when we did the comparison between our farmers and the conventional farmers. Our farmers suffered a damage less than 10%. And conventional farmers suffered a damage of 60%. So this year, greater numbers of chilli farmers are moving to natural farming on account of this. And this is something which I'm very, very pleased to present because this is nothing short of a miracle.

The women that you're seeing, you know she is cultivating her lands in a very rain fed arid area. And thanks to the natural farming technology, she's able to get crops throughout the year, 365 days of the year, where previously even one crop was difficult for her.

And she's also a trainer. She's a farmer, she's a mother, she's a member of a self help group. And she's a trainer. So these are four different roles which she is performing.

These are the three different crops throughout the year, one season from March to May, the other season is from June to October. The third season is from November to February. And she's a vegetable grower. So she has, you know, full of wide, diverse vegetable crops. And this is



"If you invest $1 in natural farming, government finances benefit to the tune of $6-8. So even in the interests of government's own finances, it makes eminent sense."

too I mean, these numbers are too little to see. But just to show that every month, she has got money, she has made money. And the money she has made is four to five times of what she would have made if she had not moved into natural farming. So in fact, it is nothing short of a miracle. And with costs being lower, and results coming in the first year, second year itself, there are many farmers who have restored degraded lands.

I'll just spent the last few minutes on how we were able to scale up, what are the factors which led to the scaling up because many states have tried this, but they have not scaled up. Or NGOs have tried it, and not scaled up.

6 Pillars for Scaling

I believe that there are about six pillars for scaling up and all of them are important, all of them have to move together. First and foremost is the government support. And our state government has the vision of reaching out to all the farmers. In fact, this year itself, my chief justice told me that I should enter all the villages. He thinks that I'm moving slowly. So he feels that should move faster. That's the government division. And the government also decided to set up a separate department for natural farming. So I'm heading that department.

I'm not only implementing natural farming, but I'm also heading the policy being in the government to promote natural farming. And the state is coming out with an organic policy, a universalization of organic policy in a couple of months.

Then women farmers are our biggest and most important thing. Even during COVID our transformation process was alive, was active, because it was a very decentralized process. So these women took it up as their own program. It's not a government program. It is our program and government is a partner in that.

That was a change that we brought about. And the other major reason for our success is the farmer heroes. Farmer scientists, Farmer trainers, farmer, sources of inspiration. So each farmer is able to support 100 farmers. So we have 1,000 plus champion farmers. Eventually I will be developing some 50,000 champion farmers over the next five, six years.

It takes me three to four years to develop a farmer trainer. And there are some lessons for extension because natural farming, you know is a behavior change. It's not changing the inputs. It's a behavior change.

And so the farmer trainers, they are there teaching what is it accepted because they're practicing it in the village itself. They are not teaching theory. And they are there to answer the doubts of farmers.

And one more thing is in natural farming, farmers are also trained to make the biological inputs themselves. It's not that they need to buy these from outside. That's another part of training, which is a little different from the traditional extension system. And we also you have tremendous role for ICT. We have video dissemination, but this ICT in the hands of people, not a top down ICT. Our champion farmers, they have mastered this, you know, digital video dissemination, use of smartphones for a variety of things.

And we have research studies in collaboration with international national organizations. We have colleagues working with us, University of Reading, UNFMO. And I must mention Walter Jana, Australian climate scientist, he is really a great source of inspiration for us, because he led me to, to work on harnessing water from the air. So the 365 days-green cover is the result of the breakthrough from him. And he's been a very steadfast partner, mentor to me.

Our plan is to convert each village into a bio village. So it's not enough to change one farmer, you have to change the whole village to change one farmer. So it's a long term handholding. I believe it may take six, eight or 10 years of our program's intervention, to see that every farmer. Because each farmer takes three to five years to convert her entire farmland into natural farming, because also knowledge intensive farming. So initially, they may start with only 1/4 of the area, then increase the area. Also, they learn more about their practices. So they are more adapted. So they don't suffer any penalty, which is normally a threat given out by the conventional agriculture. And then all farmers don't join in the first year, maybe 5% 10% join.

But seeing the success in the first year, more and more farmers join. So we have two phases. Eight to 10 years is when our SS or government will intervene. But then by six or seventh year, the farmers organization takes over, then our role is withdrawn. So then they take another eight years, 10 years. So we have a light touch approach, the farmers do the heavy lifting.

So and here in our case, it is the women farmers organization, which has the major leadership role. So this is a very important parameter.

I just want to end with a quote, that we do not inherit the earth from our ancestors, we borrow it from our children. So I hope we can act fast. And because this injustice against our children is, you know, is a crime for which I just can't even imagine the punishment that we should get if we don't act fast. At the same time, if we act fast, there are so many benefits, benefits to farmers benefits to us as consumers benefits to the planet.

And to all governments who are mulling over it, I would like to say government will save money. If you invest $1 in transformation, government finances benefit to the tune of six to eight dollars. So even in the interests of government's own finances, it makes eminent sense.