

## BRIDGING THE GAP: TRADITIONAL Vs MODERN FARMING METHODS FOR INDIAN FARMERS



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### Introduction

Organic farming in India is a traditional and ancient system that is based on the belief that the earth is a nurturing mother that must be treated with reverence. The traditional farming practices in India aim to maintain the soil's health and vitality by using organic waste such as crop, animal, and farm waste, aquatic waste, and other biological materials, along with beneficial microbes (bio-fertilizers), to release nutrients and increase sustainable production. Chemical-free farming has been found to be more profitable in both developed and developing countries. A new report states that over four decades of studies covering 55 crops grown on five continents have found that they yielded a 22-35% better return than conventional produce. The United States Department of Agriculture (USDA) defines organic farming as a system that largely excludes the use of synthetic inputs such as fertilizers, pesticides, hormones, and feed additives, and instead relies on crop rotations, crop residues, animal manures, off-farm organic waste, mineral-grade rock additives, and biological systems for nutrient mobilization and plant protection. The Food and Agriculture Organization (FAO) suggests that organic agriculture is a unique production management system that promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity, by using on-farm agronomic, biological, and mechanical methods to exclude all synthetic off-farm inputs.

My father has experience with traditional farming and has discovered sustainable Desi techniques to protect the farm area from wild boars and other animals without harming them. When I learned about these traditional/ Desi

farming formulas, I began to question why the knowledge of traditional farming practices that existed 50 years ago has been lost.

Although the advent of mechanical technology has made farming easier, the widespread use of chemical pesticides, insecticides, and fertilizers as part of the green revolution has led to severe degradation of soil and water resources. These chemicals have also caused several illnesses in farmers. The use of biotechnology to produce seeds has led to the loss of heirloom varieties of crops. As a member of an active farming family, I feel the need to revive many of the traditional practices used by Indian farmers, create awareness for those farmers who would like to switch to traditional farming (organic) practices, and educate those who are currently unaware of organic farming practices and the overall benefits of organic farming to farmers, consumers, and the earth.

This project aims to create a platform for hands-on traditional /organic /chemical - free farming practices where farmers can learn how to make organic pesticides and insecticides using time-tested recipes in a cheap and low-cost way.

### **HYPOTHESIS**

By promoting and educating farmers about traditional and modern farming methods in India, we can potentially reduce the factors contributing to farmer suicides, such as financial instability, lack of knowledge, and unsustainable farming practices.

### **OBJECTIVE**

The objective of this project is to bridge the gap between traditional and modern farming methods for Indian farmers by promoting awareness and education about the benefits of Indian traditional farming practices. The project aims to make the knowledge of Desi farming visible among the agricultural community in India, with the goal of encouraging more farmers to adopt sustainable and organic farming techniques.

### **PROBLEM STATEMENTS**

#### **Farmer: A**

“GRAMPANCHAYAT DOES NOT PROVIDE INFORMATION ON TRADITIONAL /ORGANIC FARMING, THERE IS NO SUCH KIND OF SYSTEM FOR FARMING”- MR. RAMKRUSHNA KAVALE (FARMER), MR. DEVAJI KOLTE (FARMER), MR. SHRAVAN MANGAR (FARMER).

### Farmer: B

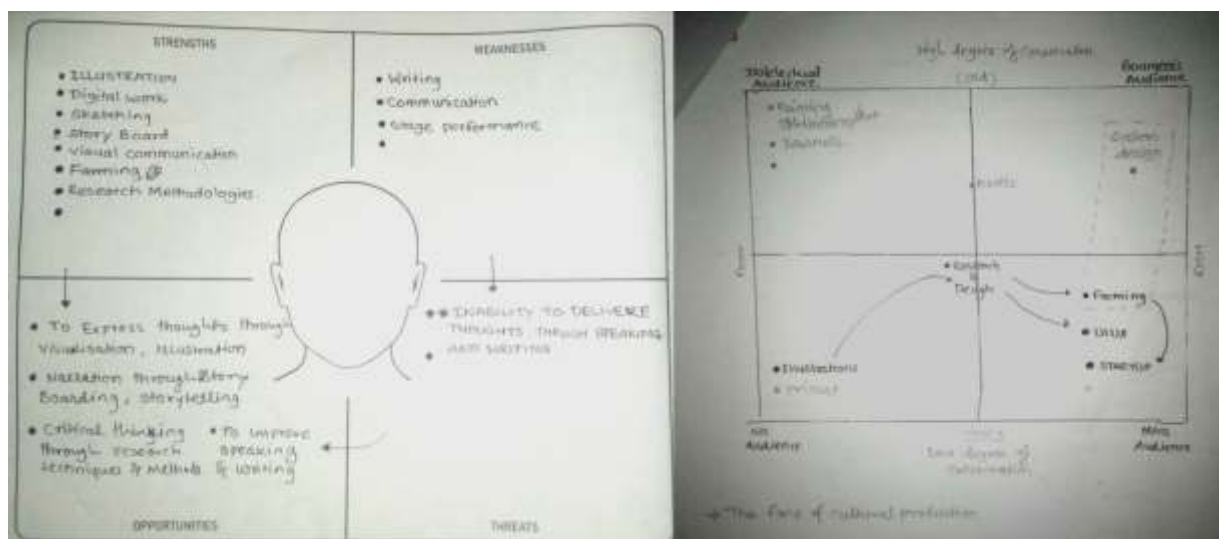
LAST YEAR I SUFFERED HEAVY LOSS DUE TO LACK OF WATER” – MR. SHUBHAM DASHMUKHE (FARMER)

- ❖ Lack of information about organic/traditional farming
- ❖ No organic fertilizer shop nearby village and it is difficult to access organic fertilizers
- ❖ Water irrigation problem/management issues

### RESEARCH METHODOLOGIES

Before initiating my research, I conducted a SWOT analysis and a Personal Position Quadrant as shown below. (Image-1: Swot Analysis & Image- 2: Personal Position Quadrant).

**SWOT Analysis:** I conducted a SWOT Analysis, which is a framework used to analyze strengths, weaknesses, opportunities, and threats. This helped me focus on my strengths, minimize my weaknesses, and take advantage of opportunities available to me. (Image-1: SWOT Analysis)



(Image 1 Swot Analysis)

(Image 2- Personal Position Quadrant)

**Personal Position Quadrant:** Additionally, I used the Personal Position Quadrant to understand where I stand and to move forward in the right direction with the right approach or combination. (Image 2- Personal Position Quadrant)

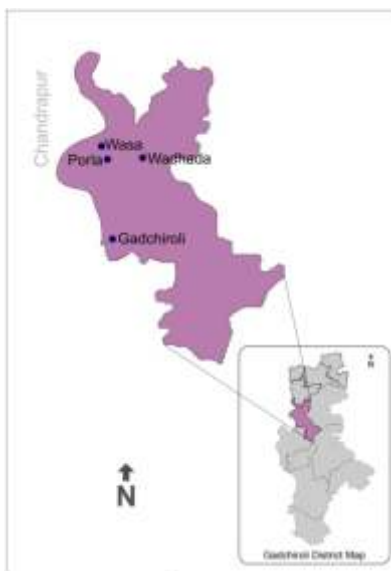
### PRIMARY RESEARCH

My primary research is based on 100 interviews with farmers in Maharashtra and my observations while farming there. I analyzed the data obtained through mind mapping, affinity mapping, and empathy mapping of the interviews. During my on-field research, I noticed that many farmers use chemical pesticides such as UREA and Endosulfan to grow their crops quickly and efficiently. The main reason for this is that farmers want to earn maximum profits without incurring any losses. Some farmers think that using these pesticides saves them money, and others have personal issues such as financial problems, loans, and children's education to worry about.

However, most farmers are not aware of the dilemmas that arise from continuously using chemical pesticides. Additionally, the government bodies in most villages and cities are apathetic towards farmers' issues, and some government servants demand bribes to get work done. The biggest problem is farmers' mindset and their kindness and simplicity, as well as their illiteracy.

### AREA OF RESEARCH

Taluka+ District Gadchiroli (MH) India-442605 (Geographical Location)

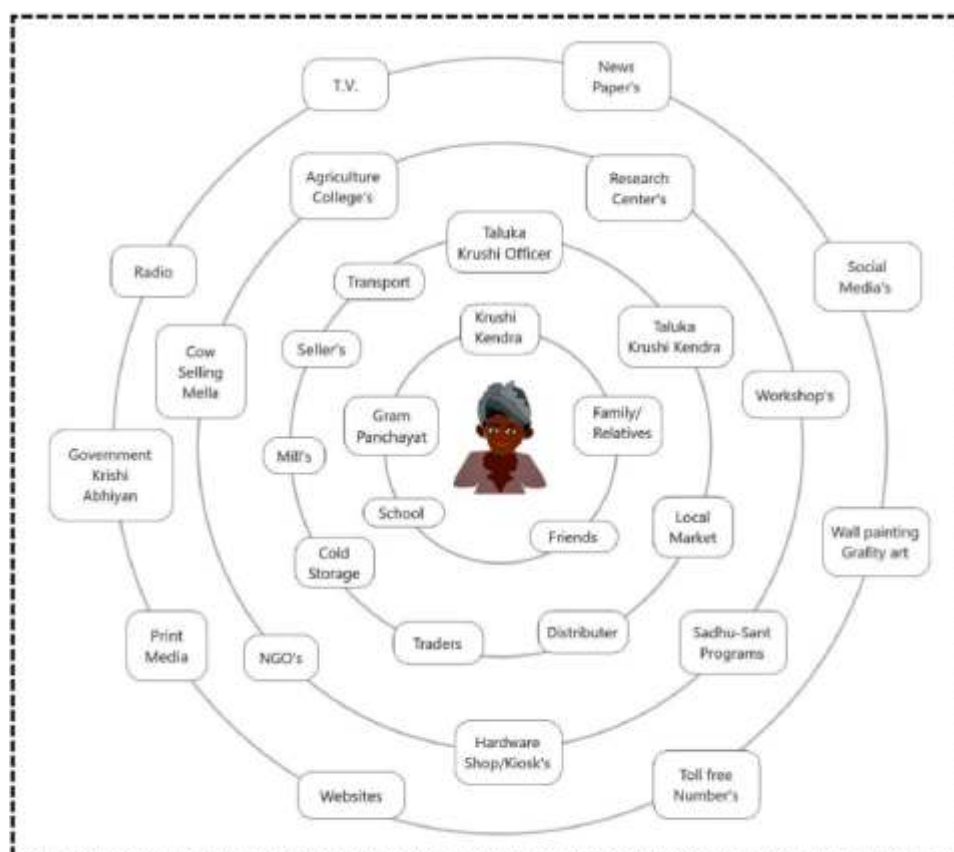


(Image-3: Map- Location)

**Geographic Map:** Took this survey in this area with farmers (Image-3: Map), All questions was about Organic, Natural, and traditional farming/Agriculture. Around hundred different interviews taken through survey forms. Some of them were illiterate so I had filled their form. Survey has taken in three different villages. (Porla, Wasa & Wadhada Villages). In this survey non-agricultural background people are also included. (Like, Pot-maker, Teachers, Drivers, Construction laborers, etc).

## RESEARCH & MAPPINGS

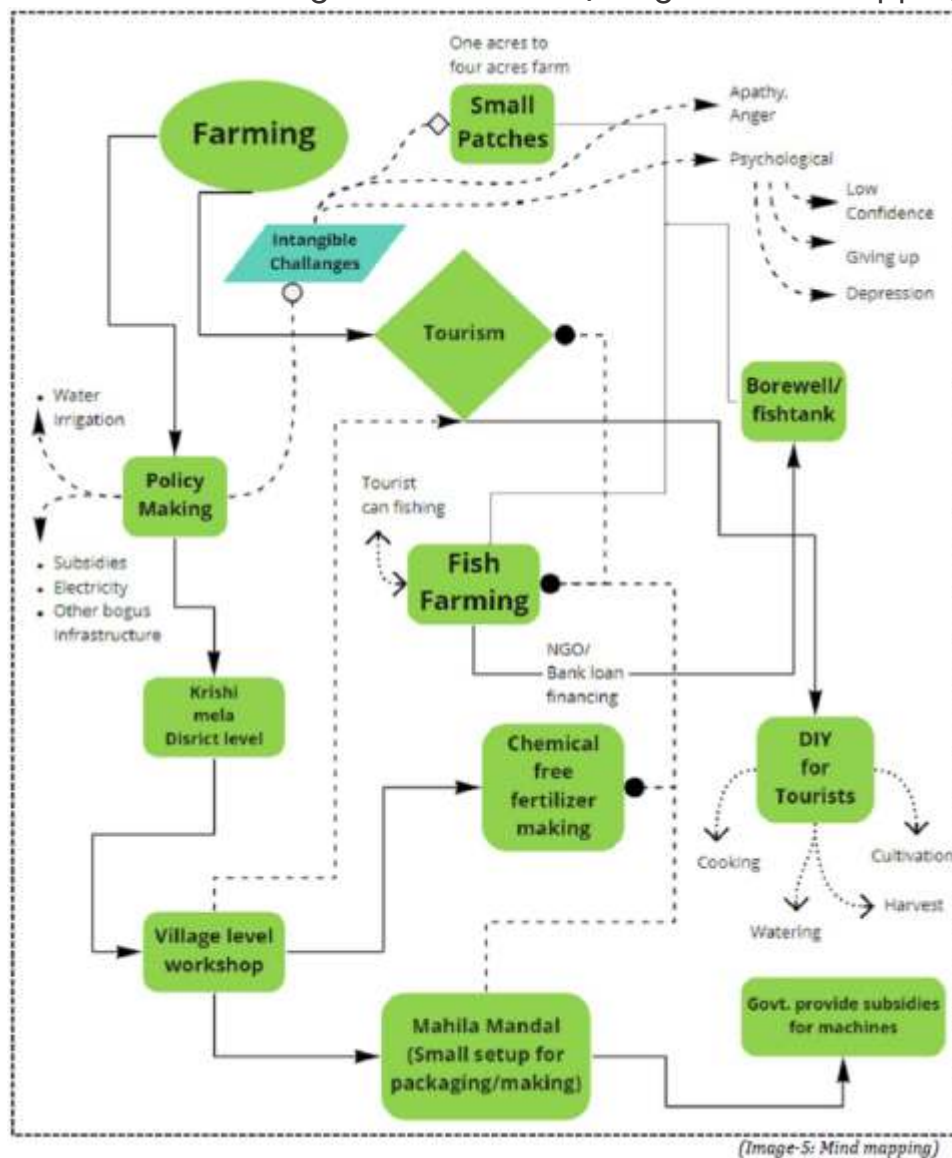
**A. Stake holder mapping:** This is a stakeholder mapping exercise, which involves stakeholder analysis, the process of evaluating a system and potential changes to it in relation to relevant and interested parties. It has helped me to assess how the interests of these stakeholders should be addressed in a farming sector project plan, policy, program, or other actions. It is crucial for me to study this mapping to determine the level of influence that each stakeholder has on one another. (Shown on Image- 4: Stakeholder mapping)



(Image-4: Stakeholder mapping)

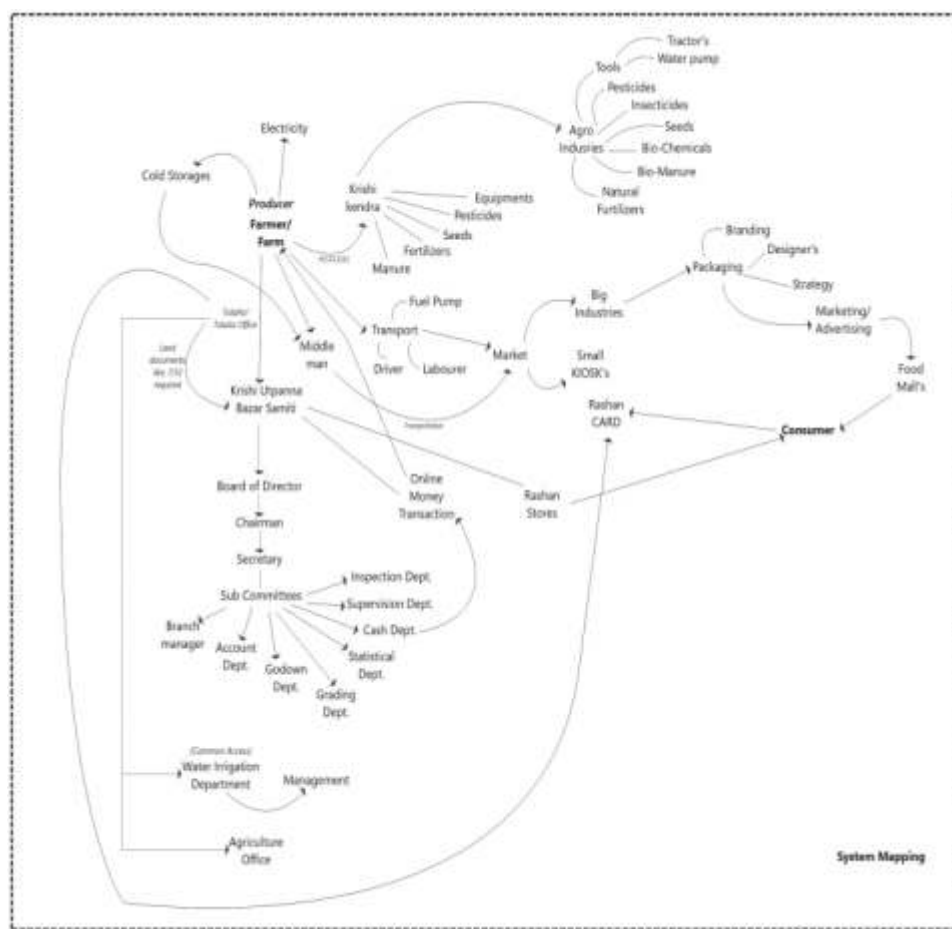


**B. Mind Map:** This is the first time I made mind map and tried to connect the dots in between farming/agriculture sector. After this map I was able to understand the depth of the topic. This map gave me eye to look deeper in the subject and the intangible circumstances of agriculture sector. (Image-5: Mind mapping)



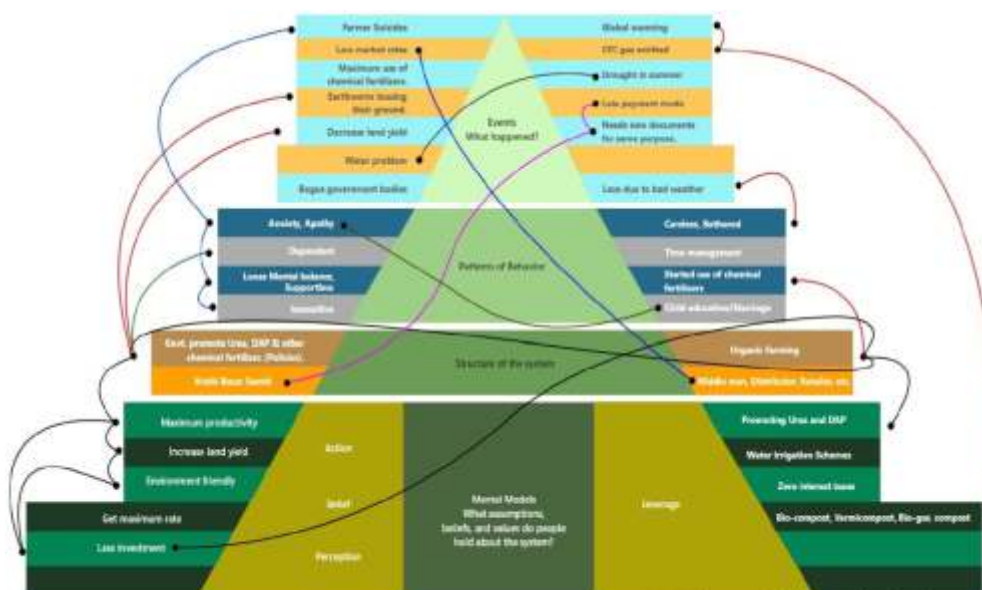
**C. ANT Map:** Through the ANT map I have been working to figure out the ecosystem of farming, how farmers are acts as a drive force for national economy as well as I have studied about how stakeholders are inter dependent on each other and also complexity in farming sectors. Here it is very important thing is to understand is how government tackles the food demand of the nation and world.

(Image-6: ANT map)



(Image-6: ANT map)

**D. Iceberg model system thinking:** This model is used to understand the intangible circumstances faced by farmers. Using the iceberg model and system thinking, I have connected the dots between tangible circumstances and intangible ones. (Shown on Image-7: Iceberg model system thinking)



(Image-7: Iceberg model system thinking)

## PERSONA MAKING

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|---|--|--|
|  <p>Name: Shubam<br/>Age: 34 years.<br/>Occupation: Farming.<br/>Location: Rural area.<br/>Main Crop: Rice.<br/>Land: 20 Acres.<br/>Family Members: Five.<br/>Annual Income: Ten lakhs.</p> <p><b>PAIN POINTS</b></p> <ul style="list-style-type: none"> <li>Less awareness about Natural/Organic Farming.</li> <li>Low market rates.</li> <li>Cold storage capacity is small.</li> <li>Drought</li> <li>Irrigation water service is not working properly.</li> </ul> <p><b>EXPECTATIONS</b></p> <ul style="list-style-type: none"> <li>Hoping for loan waiver.</li> <li>Direct market connection.</li> <li>Decrease fuel rates for farmers.</li> <li>Govt. should provide water bodies for small patch farms; Subsidies. Currently they sanction subsidy only for those who have farm above four acres land.</li> </ul> |  <p>Name: Sachin<br/>Age: 34 years.<br/>Occupation: wholesale crop buyer.<br/>Location: City.<br/>Work: City and Rural area.</p> <p><b>PAIN POINTS</b></p> <ul style="list-style-type: none"> <li>Less awareness about Natural/Organic Farming.</li> <li>Low market rates.</li> <li>Cold storage capacity is small.</li> <li>Maximum investment on self risk.</li> </ul> <p><b>EXPECTATIONS</b></p> <ul style="list-style-type: none"> <li>Should Have maximum storage in cold storage.</li> <li>There should be online system where we can get online market rates and availability of information on storage limits.</li> </ul> |  <p>Name: Mrs. Meenalshi<br/>Age: 47 years.<br/>Occupation: Highschool teacher/ housewife.<br/>Location: Small City.<br/>Family member: Seven.</p> <p><b>PAIN POINTS</b></p> <ul style="list-style-type: none"> <li>Difficult to Identify chemical free vegetables.</li> <li>Quality check.</li> <li>Never sees food inspector, or the system works.</li> <li>Less awareness about chemical free food, Natural, Organic.</li> </ul> <p><b>EXPECTATIONS</b></p> <ul style="list-style-type: none"> <li>Fresh food products.</li> <li>chemical free</li> <li>Reasonable rates.</li> <li>Desi</li> <li>Food Inspector should inspect &amp; grade vegetable shops.</li> </ul> |
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(Image-8: Persona Making)

## PAIN POINTS

- 1) Gets lower rate compared to the market
- 2) No connection with traders/buyers directly
- 3) Pays high commission to agents
- 4) No accessibility to markets outside his area
- 5) Transport fare is high
- 6) Uncertainty in the market rate
- 7) Bad condition of water irrigation system
- 8) Lack of water in summer season.(Draught)
- 9) Lack of information about Natural farming/Chemical free farming
- 10) Electricity problem
- 11) Many of village farmers don't know about organic farming technique, and he is one of them



- 12) No Idea about Organic Farming certificate
- 13) Wild animal destroyed farm, especially wild boars
- 14) No organic fertilizer shop nearby village and it is difficult to access organic fertilizers
- 15) Very costly products are available in market
- 16) No idea about how to apply for organic certification online/offline

### **CONCLUSION**

The entire study shows that the ideas presented in the hypothesis are proven.

### **POSSIBLE OUTCOME AS A SOLUTION**

#### **1) Information Booklet:**

The Information Booklet will contain information on Desi farming techniques or traditional ways of farming, as well as natural farming methods/techniques. This booklet will assist farmers in learning about these natural farming methods, as well as some Desi farming techniques, which they can apply in their farming processes.

#### **Why booklet?**

The basic aim behind this booklet prototype is to raise awareness and educate farmers about environmentally friendly farming/natural farming.

#### **2) Workshop Design:**

Through my research, I have realized that farmers are facing several challenges, such as farm protection from wild animals, financial constraints, and a lack of accessibility to chemical-free fertilizers. Many of them also have limited knowledge on how to utilize cow dung, urine, and other natural components. Considering these issues, I have designed a workshop system for farmers. This workshop will enable farmers to learn how to make chemical-free fertilizers and adopt traditional ways of protecting their farms without harming wild animals. Additionally, this workshop will help farmers understand the importance of nature and the environment.

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- Organic farming could be the key to feed the world as global warming is taking hold over the planet -

## INDEPENDENT ARTICLE

- The case study on Impact of pesticide in kasargod district Kerala state. (Endosulfan).

