

# GLOBAL GREENING MISSION

Cover the deserts, barren lands and dry lands with grass, herbs and big trees with our proprietary irrigation to change deserts into forests within a concise period and prevent permanent damage of climate change and desertification



## REGENERATED ENVIRONMENT FOR THE FUTURE GENERATION

Sustainable Indian Technology for Agroforestry & Afforestation



(A NON-PROFIT RESEARCH CENTRE FOR  
AGROFORESTRY AND AFFORESTATION)

**AGROFORESTRY RESEARCH CENTRE**  
(A Non-Profit Research Centre for Agroforestry and Afforestation)

**A unit of M/s. Havilah Green Foundation**  
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## **M/s. HAVILAH GREEN FOUNDATION**

M/s. Havilah Green Foundation is a Non-Profit Organization registered in India according to Section 8 of the Companies Act 2013 and licensed by the Government of India to do all activities for the protection of the environment and to engage in the activities of agroforestry, forestry, reforestation and afforestation; and the doing of all such other lawful things as considered necessary for the furtherance of the above objects. The objects of the Havilah Green Foundation extend to the whole of India.

### **AGROFORESTRY RESEARCH CENTRE (A Non-Profit Research Centre for Agroforestry and Afforestation)**

Agroforestry Research Center is a proposed initiative of Havilah Green Foundation's research centre to do further research on the newly invented technology for sustainable agroforestry and afforestation using less water in arid lands. And to establish agroforestry, open vertical farming, and afforestation in arid lands. The water consumption for agroforestry and afforestation through the present technology is less than that of drip irrigation methods. The new method of agroforestry and afforestation technology is the only permanent solution to reverse desertification and protect the environment from global warming.

### **THE MAIN OBJECTIVES OF THE AGROFORESTRY RESEARCH CENTER**

1. The primary objective of the research project is to launch a new method of agroforestry, particularly an automated structure for farming which gives a yield of poison-free food, nine-time multi-productivity than the normal farming method. Freeing the whole world from hunger, and disease, water scarcity, using less and zero wastage of water unlike, in drip irrigation.

An Open Vertical Farming of a minimum height of 34 feet, in an area of 2,500 acres of land with a minimum of 5 layers of open farming forms a single unit consisting of several innovations (Patents pending) suitable for normal lands, arid lands and deserts lands.

The Open Vertical Farming Structure is made of Stainless steel in Five Layers with a minimum height of 34 feet, sustainable for more than 75 years (The unique method of processing the stainless-steel structure provides a shelf-life of more than 75 years) and creates a structure which is in the multi-layer that too at the height of more than 34 feet which is suitable for every kind of plants such as grass, herbs, shrubs and trees.

Multi-layer vertical farming will yield produce to the degree of the layers being built. If an ordinary plantation has an acre of area, the vertical farm can produce a minimum of 5 times the product with built-in 5 layers. Each layer may have the same or different plant from the previous layer. Each singular unit will be able to produce many folds of food products previously produced without the technology at a much lower risk to the environment with conservative water usage; making it suitable for dryer areas.

Open Vertical Farming utilizes customized atomizer technology in lieu of all other irrigation methods, resulting in a fraction of water consumption even in comparison to drip irrigation.

The ground area will be utilized for orchards where trees may be grown, which are too heavy to be planted in vertical farming. This allows the large area to be used for animal husbandry and poultry farm, where free-range healthy chicken and poultry can be produced, with minimum intervention as the natural diet of the farm results in healthy animals.

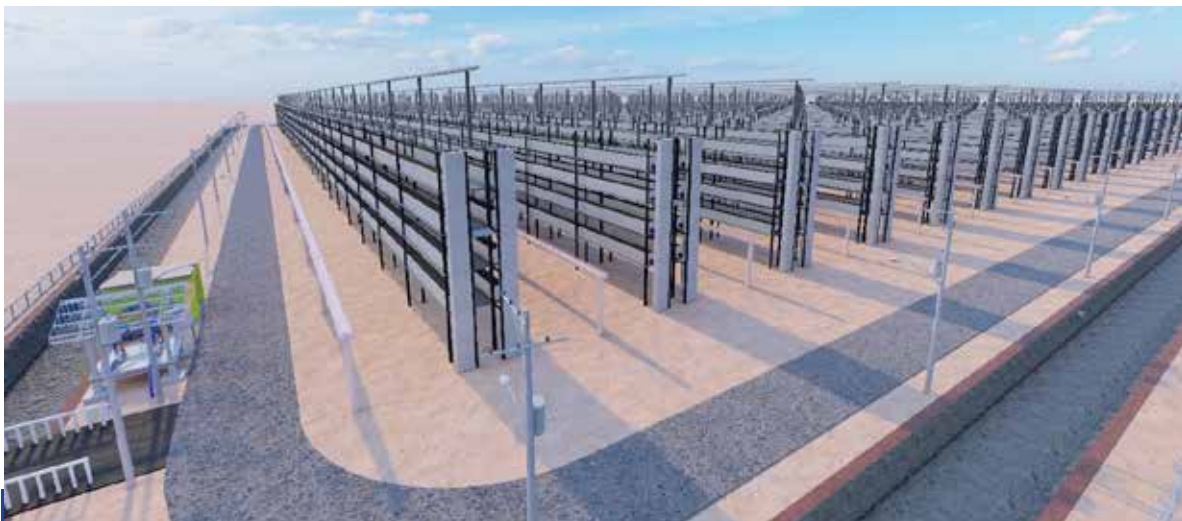
The structure has the provision for an effective automated rain harvesting system, where the water can be preserved for Pisciculture.

2. 2. The secondary objective of the research project is to launch a structure for farming that does not spoil the environment by contaminating the soil and water bodies and causing climate change. Moreover, a system that helps to eradicate greenhouse gas emissions, global warming, air pollution, and other related environmental issues and to launch technology is that it reduces the localized temperature from 50° or more to about 21° and is carbon negative. This is bound to assist in the large endeavor of solving the climate change issue.
3. Another objective of the research project is to establish a system that is the best for the afforestation of barren lands and deserts.
4. Yet another objective of the research project is to create a system that supports animal and fish farms simultaneously without any further costs, including food and shelter.

Including apiary and bee conservation Projects for biodiversity and to save the bees.

5. Still another objective of the research project is to establish a water purification mechanism as pure water is essential for plants and animals too.
6. The other objective is to support the conventional small and medium farmers to establish the technology for farming on all types of small lands 5 acres or more, including drylands in villages. This is the only project to control climate change and provide food and employment together.
7. This project shall provide direct employment to 12,500 persons (minimum five persons per acre) in an area of 2500 acres. 10% of employment must be for specialized fields such as scientists, engineers, etc, and the rest may be reserved for other skilled labors with basic education, and more than 50% can be reserved for women. This project is designed to provide 365-day planting and harvesting cycle for permanent employment and production.

We at M/s. Havilah Green Foundation is of the firm belief that the solution for the problems we humans have created must be addressed by us; today; and not be left for the future generation. We must protect and preserve mother earth, so our future generation need not spend their valuable life trying to fix an even worse situation. Hence, we humbly request your cooperation and financial support, CSR fund, grants and donations.



**NEWLY INVENTED OPEN VERTICAL FARMING STRUCTURE**

The Open Vertical Farming Structure is made of Stainless-steel containers of Five Layers with a minimum height of 34 feet, sustainable for more than 75 years (The unique method of processing the GI steel tube structure provides a longer shelf-life) for the better use of sunlight and water.





### MULTY-STORY STRUCTURE

1) For all kinds of fruits, vegetables and orchards. Open vertical farming is a method without chemical fertilizers and pesticides.



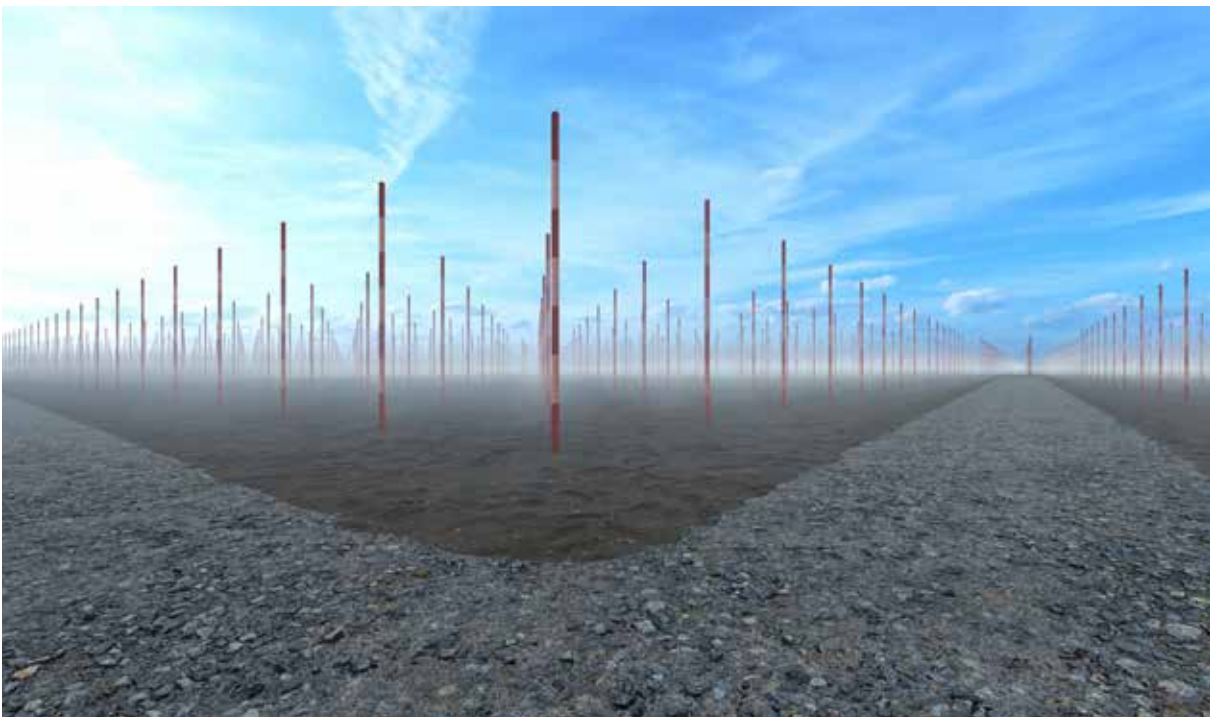
### NEWLY INVENTED AGROFORESTRY & AFFORESTATION

The present agroforestry and afforestation technology and method completely develop the plants/forest within a short period and is easy to control the trees subsequently. Two patent applications are pending for the newly invented afforestation technology and preventing desertification. The newly invented agroforestry and afforestation project is designed to provide 365-day planting and harvesting cycle for permanent employment and production.



### **NEWLY INVENTED IRRIGATION TECHNOLOGY**

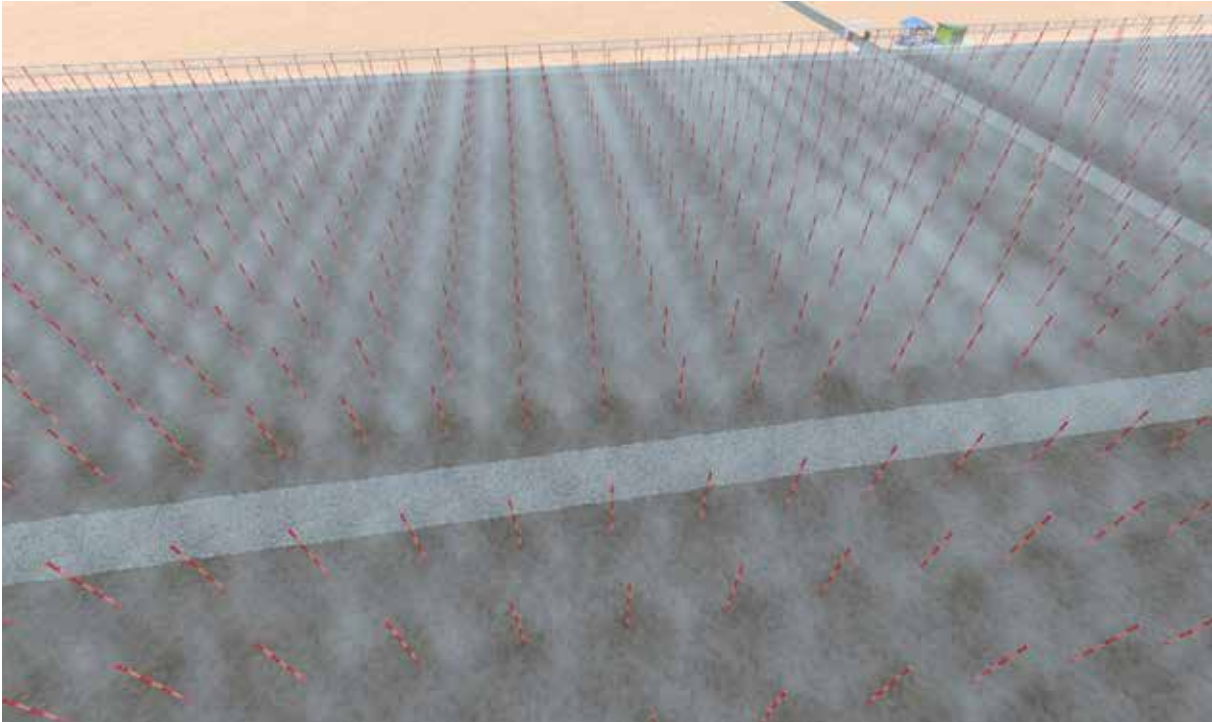
Open Vertical Farming utilizes customized atomizer technology instead of all other irrigation methods, resulting in a fraction of water consumption even in comparison to drip irrigation.



### **METHOD OF IRRIGATION**

The method of irrigation uses a fraction of water compared to the conventional system; the same method is employed to aid the accelerated growth of the plants.





### NEWLY INVENTED IRRIGATION TECHNOLOGY FOR ARID LANDS

Newly invented irrigation technology is the most suitable for arid lands and deserts as it uses a low amount of water.



### POULTRY

Free-range heirloom chicken varieties may be let free in the area and many of the pests and other insects will be eaten by them. A free-range poultry farm will be utilized as a secondary form of income.





### FREE-RANGE LIFE STOCKS

This project allows the large area to be used for animal husbandry and poultry farm, where free-range, healthy chicken can be produced with minimum intervention as the natural diet of the farm results in healthy animals.



### ROOFTOP VINEYARD

Absorbing the goodness of sunlight. The newly invented technology developed a novel concept for rooftop vineyards on an open vertical structure.





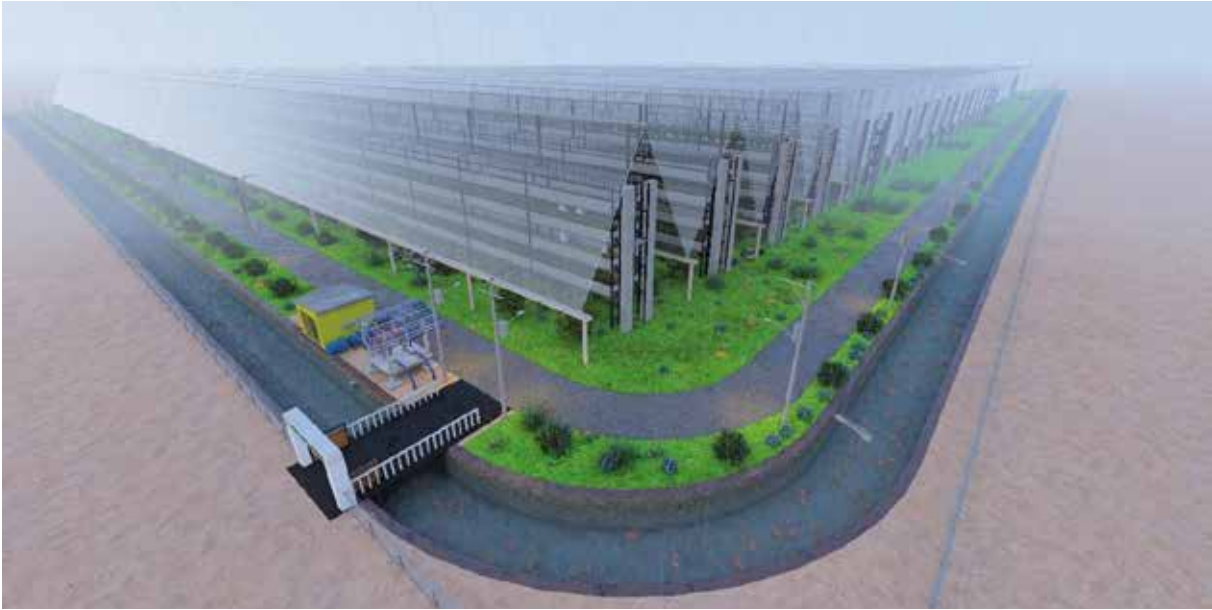
### ORCHARDS AND APIARY

The ground area will be utilized for orchards where trees may be grown, which are too heavy to be planted on the vertical farm. Apiary and bee conservation projects for biodiversity and to save the bees.



### RAIN HARVESTING

The open vertical structure has the provision for an effective automated rain harvesting system and climate control systems.



The rain harvesting system, where the water can be preserved for irrigation, pisciculture and newly invented renewable energy.



**PISCICULTURE**

The rain harvesting system, where the water can be preserved for irrigation and the excess water which may be recovered from the rainwater harvesting, may be utilized for pisciculture to have an additional income source.





### NEW ENVIRONMENT

The newly invented technology is suitable for large areas of agroforestry and afforestation in arid lands and deserts. It is an ideal project to fulfill the Paris Agreement on Climate Change obligations of member Nations, reduce greenhouse gas emissions and carbon-negative afforestation using cloud formation of ultrafine nano water bubble spray, which reduces the localized temperature from 120F (50°C) or more to about 70F (21°C).



### SUSTAINABLE AFFORESTATION

The gravel road system is used as motorable roads and prevents the spread of forest fires. Two patent applications are pending for the newly invented afforestation technology for arid lands and deserts and preventing desertification.



### **NATURAL METHOD OF PLANTING**

Additional systems of non-chemical measures are employed for the protection of agroforestry and afforestation for sustainable and natural growth with maximum results.



### **SUSTAINABLE AGROFORESTRY AND AFFORESTATION IN ARID LANDS**

The new technology has been designed as an open system, where aged wood, husks, and other organic matters provide a grasping ground for the plant. The present agroforestry and afforestation technology and method completely develop the plant/forest within a short period, and is easy to main the plant/trees subsequently.



# OUR TEAM



**Stephen John**  
Founder & Chairman



**Dr. Radhakrishnan Kuzhichalil**  
Co-Founder and CEO



**Mary Stephen**  
Co-Founder & Director



**Maya Radhakrishnan**  
Co-Founder & Director

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भारत सरकार  
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कृषि एवं किसान कल्याण विभाग  
कृषि भवन, नई दिल्ली-110001



Government of India  
Ministry of Agriculture and Farmers Welfare  
Department of Agriculture and Farmers Welfare  
Krishi Bhawan, New Delhi-110001

### CERTIFICATE

I met Mr. John Stephen at his residence, Kochi, Kerala, as an Agriculture Department Official from the Ministry of Agriculture & Farmers Welfare, Government of India. It was an amazing experience for me. His terrace garden was fully covered with lush green seasonal vegetables which include chilli, tomato, cucurbits, bottle gourd, pumpkin, long melon, cucumber, spinach, coriander, capsicum etc. The cultivation of all these vegetable are in a soil less culture. It was a protection against climate change and global warming, at the same time providing nutritious, chemical free excellent healthy vegetables. After having conversation with him on that day and other occasions later on I understood that he was a highly innovative person with exemplary ideas on farming for the present and future world for producing high quality, safe food products in a highly scientific, eco friendly method utilizing less space. I have discussed about his work number of times with the other officials and friends. Many people have contacted Mr. John Stephen through phone and visited his terrace garden at Kochi (Kerala). As the world is facing many problems in farming sector due to lots of issues including climate change and natural calamities, this vertical farming concept offers good hope for the farmers as well as consumers specially for the peri-urban areas. I hope that his project will come up in a big way and implemented in our country for the sake of future generations.

(Dr. Y.R. Meena)  
Additional Commissioner (Extn.)

Mr. John Stephen,  
NRI Colony,  
Kochi, Kerala.





## Green Shield against global warming

**C**over the concrete jungles with a vertical gardens, this will save city dwellers from scorching heat, yield vegetables for the home and serve as a green armor against global warming" says John Stephen. The tall vertical GI frames on his terrace are thickly covered with climbers like pumpkin, bearing fruits in abundance. John Stephen, a USA returnee is offering a novel greening concept for the cities, "Oxy farming".

John Stephen returned to Vennala, Kochi in 2008 from the US after living there for 33 years since he was 30 years old. In the USA, even though John was working in the Oil Industry, he interacted with the farmers and cowboys there. Having a rural background, interest in farming was there with him since early childhood. This motivated John to do research on high intensity farming in lesser area. Oxy farming concept was evolved thus. He field- tested the concept in US and it proved to be a huge success.

"The surface land has less than 3% oxygen in soil and roots need 5-10% oxygen for healthy growth. The heat radiation from the sun dries up the soil moisture and there is almost 7 hours of heat

radiation upon the vegetable soft skin. Even human beings cannot stand one hour of sun heat and the sun's extreme heat kills all micronutrients in the vegetables. What we need is vegetables with good Oxygen and nutritional content in it. So instead of soil I grow them in fiber basket (Baskets filled with coir fiber). 90% of our energy comes from oxygen; only 10% comes from food and water. If oxygen supply to the cells gets reduced they become prone to diseases like cancer. So oxygen rich food is what we want"-says John.

A model of Oxy farming can be seen in John's house and terrace. The double storied house is covered with vines and creepers from ground portion up to the terrace. Plants that emit oxygen in abundance are grown around the house. According to John, vegetables and other plants are grown in his urban farm in an atmosphere having 21% Oxygen. Apart from growing them in fiber baskets water is sprinkled at the root zone through an automatic irrigation system. Bio-fertilizers, which are Microbial inoculants consisting of living cells of microorganism like bacteria, algae and fungi alone or combination, are supplied to the crops





In this method many types of oxygen rich green fodders like elephant grass, green leaves like moringa and different types of grains are fed to the cattle. They are grown in pollution free, comfortable surroundings with good aeration. According to John, the Oxy milk produced by the cattle grown under this system will be rich in nutrients and Oxygen.

"I established a small dairy in a village in Cochin, where I researched for three years on Raw Oxy milk production. The efforts bore fruits and I successfully achieved the know-how to produce Oxy milk through the many green fodders absolutely free from insects, bacteria, fungi and other pathogens. I have also developed a multi tier system in which cattle and fodder can be grown utilizing the vertical space. The fodder waste can be utilized for producing electricity for the unit" - says John.

At 70, John is still very energetic and healthy. He attributes this to his habit of consuming oxy vegetables, oxy milk, Oxy Alkaline water with 74 minerals and physical exercise through farming activities. "In Global Warming era, Vegetables and crops must produce good yields while at the same time conserving land and water should be of foremost importance. Only then we can be proud that we are leaving behind something wonderful for the future generation and not borrowing from the future for our livelihood. I am fully equipped with the know-how and the practical aspects of how to bring about this change and I am sure that likeminded people would accept them. I had discussions with ICAR (Indian Council for Agricultural Research) and they have shown keen interest in the concept," says John.

Population growth, an expanding middle class with changing lifestyles and diets, and the urgent need to improve water, energy and food security for the poorest - all place growing pressure on limited resources. Green, sustainable and futuristic development pathways are need of the hour. The small steps put forward by these three individuals in this direction will have better and wider implications in the future. ■

though irrigation water. They make available all the nutrients including minor ones to the crops and helps in pathogen free productivity. Mist irrigation also work automatically enriching the atmosphere with moisture.

Five vertical GI frames erected on the terrace provide 500sq feet vertical atmosphere. Wines and climbers trailed on these frames act as green shields for the concrete structure. The frames also serve as a multi-tier system for placing fiber baskets planted with vegetables. The whole system reduces the effect of UV radiation and global warming, cut down atmospheric pollution, reduce electricity consumption by reducing heat absorption, act as Oxygen power houses, provide year round vegetables from minimum area with less labor and water and provide a cool and green city ambience. Temperatures are often a few degrees higher in cities than they are in their surrounding rural areas. This

temperature discrepancy is the result of a bizarre phenomenon known as the urban heat island effect. The green blankets of Oxy farming could also help to reduce this devastating situation.

"The terrace area of my home is about 1000sq feet. The whole area is utilized for producing Oxy Vegetables and wine Grape farming. The productivity of vertical farming is 5 to 9 times that of conventional farming. Climate change could lead to even warmer temperatures in cities but the new atmospheric technology brings forth good harvest even in extremely bad weather conditions. These vegetables and fruits have higher quantity of oxygen with higher levels micronutrients. I have been doing this for the past 5 years and I think that it is my moral responsibly to introduce more and more people to this farming method" -John explains.

Another concept that John puts forward is the production of Oxy milk.

Extracted from page 40 of the 'Kerala Calling' article published in 2014 by Shri. G. S. Unnikrishnan Nair, Retd. Director, State Agricultural Management and Extension Training Institute, Department of Agriculture, Government of Kerala, India.





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Date: 20/10/2021

*India being the second largest populated country has great demand for own food. Since independence, we are thriving hard to achieve self-sufficiency in agriculture through designed five year plans. On completion of 13<sup>th</sup> five year plan, self-sufficiency remains a dream.*

*We have enough resources and estimated that nine percentage of India's land are either barren or under-utilized. What we lack is a clear vision and sustainable technology. We need to have certain novel eco-friendly technology with good manufacturing practice. More over India is facing crucial unemployment rate as high as 8.32% which targets 8.5 million additional jobs to educated youth.*

*In the above context, it is relevant to introduce Mr. John Stephan as a unique veteran in agriculture with the most viable technology. His visionary to achieve India's self-sufficiency in agriculture produce is remarkable and practical. His specific approach yields pest free vegetables in most organic sterile ways. It also offers tremendous job opportunities to Indian youth. He gathered his confidence from decade's long research.*

*His agricultural practice was devoid of natural soil and cattle manure. Nutrient supply to plants is more specific. I found healthy plants even in absence of pesticides. The fruits and vegetables derived from his farm were most hygienic, tastier and healthy. I grade his approach as viable and provide vast opportunities to our motherland for generating export oriented quality organic vegetables.*

*I wish him all success in this future endeavor.*

  
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INDIAN TECHNOLOGY FOR  
SUSTAINABLE DEVELOPMENT WITH  
MULTIPLE INNOVATIONS



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