



Rashtriya Krishi Vikas Yojana- Remunerative Approaches For Agriculture and Allied Sector Rejuvenation (RKVY-RAFTAAR)

ASPIRING AGRI- INNOVATORS



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FOREWARD



Agriculture has always been called the backbone of Indian economy, supporting the livelihoods of the majority of the population. A budding Agripreneur plays a key role in promoting innovation in a society. Through their innovative ideas these Agripreneurs are not only challenging the reign of big corporates but are also providing simpler solutions to the problems they try to tackle. These Agripreneurs with their innovation have come to the aid of stressed farmers and have been successful in answering to the problems of Indian Agriculture. The new wave of entrepreneurs and startups have taken upon themselves to lead the way for disrupting the agriculture sector in India.

The new age of Agripreneurs aims to strike and touch the entire value-chain of agriculture and create a balance between the farmers and the business models they are trying to implement, which allows agri-stakeholders to adapt the changes brought in by such innovations. By equipping the farmers with right tools to function in the market as a businessman, the Agripreneurs are empowering them and ensuring that they receive a remunerative price for their produce.

The present publication talks about such Agripreneurs selected by CCS NIAM to attend a two month rigorous training cum internship programme at NIAM Agri-Business Incubator (NABI). During the programme the Agripreneurs go through expert sessions, technical and market oriented mentoring and advisory on all the issues concerned to develop their ideas into a full-fledged business. The recognition provided by CCS NIAM to these Agripreneurs makes them market ready and prepares them for participating in agri-startup ecosystem as market competitor.

My deepest compliments to NIAM Agri-Business Incubator (NABI) team for bridging the gap between the agri-stakeholder and corporate world by giving these Agripreneurs a platform to showcase their ideas before the Ministry of Agriculture and Farmers' Welfare, Government of India. It is only with such support and guidance that the dream of a developed India seems not very far. The ideas incubated at CCS NIAM includes technology to improve crop quality, B2B Agri commerce platform, application for tele-health medication, unconventional fruit-wine, immunity boosting colostrum powder and many more such Agripreneurs with revolutionary ideas to bring a change to the agri-startup ecosystem.

Shri. P.K. Swain
Additional Secretary, MoA & FW and Director General, CCS NIAM, Jaipur



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PREFACE

With CCS NIAM entering its third year of incubation support to Agri-startup ecosystem in the country it can be very established that as a Knowledge Partner to four Partner R-ABIs, CCS NIAM has very efficiently catered to the position. More than 115 startups have been provided incubation support by NIAM Agri-Business Incubator (NABI) with hand-holding support to many more from the Partner R-ABIs i.e., IIT, Kharagpur, Sri Karan Narendra University-Jobner, Bihar Agriculture University, Bihar, National Rice Research Institute, Cuttack, Odisha.

NIAM Agri-Business Incubator (NABI) has left no stone unturned to adhere to the needs of any budding agri-idea that has been incubated at the incubation center. By comprehending the requirements of an Agripreneur and by channeling the right kind of mentoring and advisory to them, NIAM Agri-Business Incubator (NABI) has made a niche for itself in the startup ecosystem in the country. In such unprecedented times, it is only agriculture sector which has kept the wheel of economy running and budding Agripreneurs have made their fair share in that direction by bringing new technologies and innovation for the aid of Agri-stakeholders. Agripreneurs though are only at evolution stage but still they play an important role in many ways working at both, consumer end and farmer end, to ensure continuity in food and agri supply chains.

Agripreneurs at NIAM Agri-Business Incubator (NABI) during their two months training programme goes through intensive mentoring from subject experts, ecosystem partners and also get opportunities to collaborate with ecosystem partners. All the participants of the programme are kept under close watch and every need of a budding Agripreneur is taken care with utmost consideration.

CCS NIAM feels elated in sharing that fourth cohort of Agripreneurs has successfully graduated after completing two months training programme and are ready to serve the agri-stakeholders with their innovative ideas and lucrative business models. Skills like solid market strategies, financial and legal compliance management and innovation handling has been taught to these Agripreneurs to tackle the competitive startup ecosystem. These Agripreneurs are the pride and strength of CCS NIAM and are committed to provide their supporting hand to farmers and other Agripreneurs in the country to further grow.

The creativity and courage of these Agripreneurs has led them to this stage and we have reason to believe that their hard work and perseverance will lead to the success of their business. Congratulations and good luck for your startup.

Dr. Ramesh Mittal
Director & Chairman, CCS NIAM, Jaipur



| Budding Entrepreneurs |



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JeevaSudha

Working for sustainable community

Business Idea: Production of Bioagents for Areca Husk Decomposition to create Waste to Wealth Products.

- JeevaSudha aims for Sustainable community development in various areas. Their goal is responsible disposal/utilization of Agri waste to increase farmers income and also improve Soil health.
- Rajendra G Mavinkurve has worked as Senior Manager Operations in a Multinational Company overseeing projects valued around 2 Million USD. 20 years of experience working with Government and Multinational companies (Accenture and Cognizant).
- Dr. Nandish M S, Assistant Professor (Agricultural Microbiology), University of Agriculture and Horticultural Sciences, Shivamogga for Guidance and Technology Support.
- Dr. Onkarappa S.Senior Scientist and Head, Krishi Vigyan Kendra, Chitradurga as Mentor.

Areca Husk Decomposition Cycle

- Develop Microbial consortia for Areca Husk decomposition.
- Their product will reduce approx. 75% of the time required for decomposition.
- At present it takes more than an year to decompose



Two pronged approach

- They procure Areca husk, convert to compost and market as innovative products like Beneficial Organism enriched compost/potting mix.
- They produce compost culture and promote farmers to produce compost and use them. Excess compost generated can be marketed through our channel.



Our Laboratory



- Their main market is Karnataka and Kerala which account for nearly 60% of Areca grown in India.
- The initial plan is to launch the product in Karnataka and then in Kerala.

In future they intend to market for all Areca growing regions in India and the world.



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CHERRYGROCER PRIVATE LIMITED

Right Quality of Agri-Products

Business Model: Building Quality Assessment tools in the Agri space

Cherrygrocer team has developed an AI-driven solution that assesses the quality of agricultural products. By leveraging computer vision and deep learning, the team is attempting to bring homogeneity in the purchase of fruits and vegetables by digitally labelling items on the basis of ripeness, size and external conditions (good/average/poor).

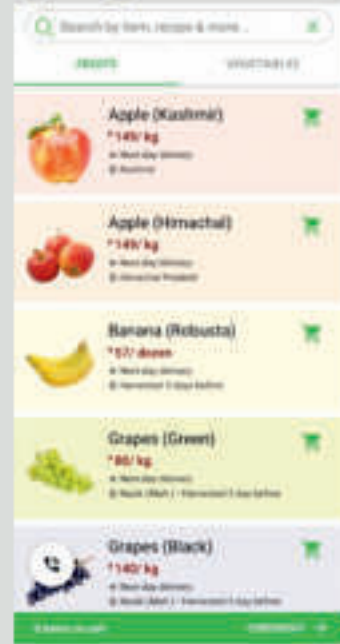
They are currently using it to power their online store 'Fresherry' that sells high-quality fruits and vegetables in Gurgaon. Using the QA tool, Fresherry attempts to imitates offline buying by introducing virtues like selection and zero defects. Conversely, by connecting the solution to the store, the team is further able to leverage the daily operations of Fresherry to train the model with richer real-world data.

In near future, Cherrygrocer intends to introduce this solution to farmers who will then be able to fetch fairer price for their produce by quantifying their quality.

Founded in 2020 by Vikrant Kadian. He is a student of Business and Liberal Arts. Before starting Fresherry, Vikrant worked for 4 years with top consumer-facing internet brands.



App Images:

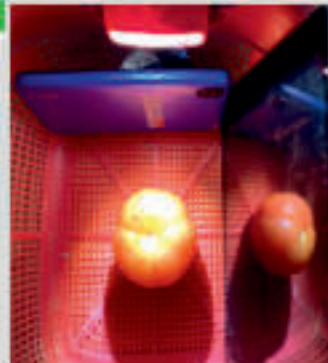


Other Images:

Vikrant Kadian (Founder)



Prototype capturing images for labelling:





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👤 Founder and CEO
Pursuing B.Tech
Business Idea: Manufacturing
of device that
helps farmers in all aspects

YONGER INNOVATIONS

Technology of Agriculture

Business Idea : Voice command robot to help farmers in farming

The Startup has developed a robot i.e, a technology-based machine that helps farmers in agricultural practices like seeding, ploughing, fertilizing, and watering in the field. the robot will be able to move in all areas in the field and identify the area in which certain work needs to be done. The robot is enabled with voice command through Google Assistant.

Field Work:

Farming is the important source of livelihood.

Through it plays a major role, farming methods are very difficult.

It requires high man power for the processes like ' Sowing seeds, fertilization, Watering, Weeding, Pesticides spraying, harvesting'.

Fields have to be monitored 24/7 which is the most typical task.

And it is worthy of doing this hard work for cultivation.



YONGER INNOVATIONS

Marketing:

The product has unique features there will be more chance of purchases in the market.

We will directly explain about our product to the farmers.

We will organize camps for giving the practical knowledge of this product to the farmers, so that they could understand the usage of it and utilize it in an efficient way.

By organizing such camps it will be very easy for advertising the product and the process of selling also becomes easier.

Also we will update all the information about our product in social media.

We will select some TV channels that will help us to advertise about our product.





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Organismic Technologies Pvt Ltd

ORGANISMIC TECHNOLOGIES

Plant Extracts' Based Nano-Biopesticides

Business Idea: Developing Plant Extracts based Nano-Biopesticides

- The startup is working on development and commercialization of the Natural Plant Extracts' based Nano-biopesticides.
- They are incubated at Agri-Innovation Centre of Centre For Cellular & Molecular Platforms (C-CAMP) & University of Agricultural Sciences, Bengaluru.
- Naveen Hiremath has a Masters in Agriculture with specialization in Biotechnology from Tamil Nadu Agricultural University.
- The startup formulations are effective and also safe for environment.
- They are a good tool for Organic farmers to control pests and diseases.
- The startup is studying the stability and sizes of Nano-formulations.

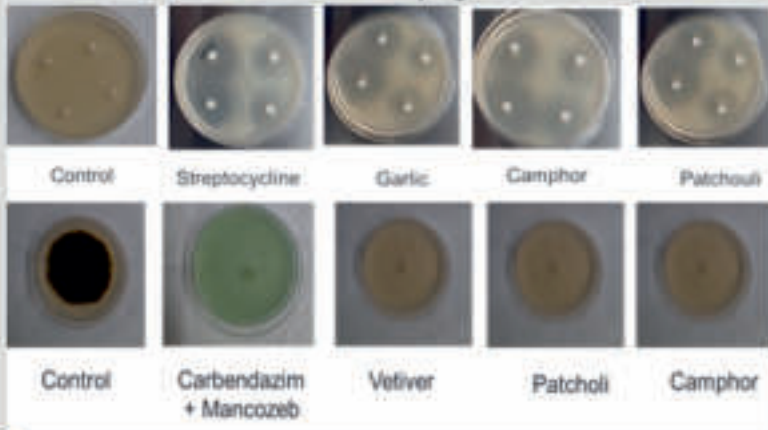


ORGANISMIC TECHNOLOGIES



Our Novelty

Formulations Bio-assay against diseases



- Received a grant of 4000 CHF from World Food System Centre (WFSC), ETH Zurich & Mercator Foundation.
- This grant was given to make the studies on different plant extracts for potential use as bio-pesticides in Organic Agriculture.
- The startup further researched on how we can bring these plant extracts as commercial pesticides.



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FUELIX INTERNATIONAL PRIVATE LIMITED

Waste to Wealth Mechanism

Business Idea : Organic Waste to Wealth using black soldier fly

1

EFFICIENCY

We believe in development of novel solutions, multiple phase testing to analyze the trend and strategic execution.

2

TEAM WORK

The constitution of the startup employs people with advance knowledge in the field of electronics, instrumentation, signal processing and IoT based embedded system. Team constitutes members with hands on experience in industrial design using auto CAD and fusion 360. Fuelix has a dedicated research and development group to move with the technology and publish the work to stay connected with audience.

3

CUSTOMER RELATION

We believe in loyalty with customers and value every review/feedback from the customer to improve our services as per the need of the market.

PROBLEM STATEMENT

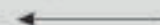
Large quantity of unutilized organic waste from restaurants, catering, food shops, supermarkets, markets, households, farms etc. dumped on a landfill leading to increased CO2 and generation of harmful gases like carbon dioxide, methane, hydrogen and hydrogen sulphide. The legal means provided under the present existing BPL act and guidelines are:

SOLUTION

- Automatic, environment controlled chamber (T) for efficient bio conversion of organic waste with Black Soldier Fly larvae.
- Breeding of Black Soldier Fly in a incubator chamber (C) for the same.



Major states for target market





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TRIBAL AGRO LIFE SCIENCE WEED TO WEALTH

Commercialisation of Weeds

Business Idea: Conversion from weed (Lantana camara) to value added products wealth

Lantana is one of the most invasive weeds, it has taken over nearly 40% of the Forest where the tribal communities live. It is also dense, even animals find it hard to walk through it. It is so stubborn even when the lantana is burned away it grows back. The problem is that tribal communities are Hunter and Gatherers who rely on non-timber forest products. Like wild honey and Indian gooseberries to earn their daily living. Even before Lantanas took over their forest. They are living on less than 50 rupee a day. But when lantana took over it significantly reduced their small livelihood they had.

The stems of a perennial flowering plant / shrub called Lantana camara, originally a native of South and Central America was introduced in India by British people as an ornamental plant in the early 19th century and since then this shrub has completely invaded the native biota of all possible habitats so much, so that it has earned the title of being one of the ten worst weeds in the world.

In an environment where natural population of most native species is in decline both in numbers as well as in diversity and noxious weed seems to be flourishing. With this decline in natural populations the livelihoods of people depended on these resources have also been threatened.



Lantana Coll

TRIBAL AGRO LIFE SCIENCE WEED TO WEALTH

Solution/Product

Apart from being sturdy and lightweight, the most attractive feature of the lantana camara is that it's extremely affordable and it could be used as an alternative for plastic, steel, wood and plywood.

This is in time when cane and bamboo furniture come at more than triple the price, while that of wood would be ten times more.

The low cost of the lantana products is due to the zero investment on lantana stems, the price dependent only on the craftsmanship (hours spent) and transport of the furniture from the production centres to the markets.

Lantana Camara based products are the alternative for plywood, wood, bamboo, cane and plastic materials.

More than 6.5 million physically challenged persons are in need of low cost and less weight wheelchair

Lantana products improves the sustainable livelihood options of the needy forest and rural persons Lantana production centres involves less machinery and gives employment for the rural poor even without any formal education

Lantana Camara removal from the forest restores the biodiversity of the environment

Process of making Lantana products



Social Impact

These ecofriendly products are proposed originally to support tribal community, to whom forest is vital source of livelihood. Hence knowing the presence of this weed is a threat to our native biota in the forest ranges, we planned a sustainable business model that would create a longtime livelihood employment opportunity for the tribal & the rural community. Establishing such a commercially viable business on lantana made products will enhance the economy in tribal communities & also improves their lifestyle.





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AUTOMATED ROOFTOP AND INDOOR FARMING

Indoor Agriculture

Business Idea: Enhancing farming with technology

IDEA OF THE BUSINESS

The startup will help to enhance the organic farming in cities. Small room space to medium and big plots will be utilized for farming. Technological improvisation and intervention as a form of embedded system will help to monitor and analyze the growth of aspects. Technical guidance will be provided to the consumers.

TARGET CUSTOMERS

Technically anyone who owns a rooftop, or a spare indoor space is startup prospective customer. Also, hotels, local supermarkets, chain stores, apartment complexes with large roof tops & open spaces, schools, govt campuses can also be targeted. In the first stage, we will also advertise on Facebook, YouTube and Instagram by allocating small budget in a single metro city in India.

REVENUE- EARNING

Sources of revenue comprises of one time system set up fee, annual maintenance contract, workshop and training fees. Cobranding and promotion fees are also being considered. Our key impediment is creation of the field force for installation and maintenance. The startup need support in creating training modules and DIY instruction guides for field professionals and end users.





BUSINESS GOAL AND ROUTES

The target is to acquire critical number of 1500 customers in a span of 12 months. The startup will target acquiring 10-20 paid customers in 100 days, deploy the system on trial basis and stabilize the process.

FUTURE OF THE BUSINESS

Once the learnings are incorporated and the system is stabilized, The Startup will work on horizontal and vertical expansion to acquire customers. And also embark on branding & Marketing exercise through organizing online virtual workshops.



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Zenofarm East Pvt. Ltd.

Youth for Agriculture

Business Idea: Engage the rural youths as farm Associates by utilizing their their unused land for farming based on an assured earning /incentive unit

Agriculture is the backbone of India's economy. However, farming is still considered as poor man's Job in India. Impact of climate change and dense urban growth are reducing farming lands and its fertility. Farmers are not considering agriculture as a reliable source of earning due to yield unpredictability and opt to be a seasonal migrant for daily wage work.

Evidence indicates that as many as 150 million of India's rural poor migrate seasonally to metros in search of work. They move back and forth undertaking a vast array of casual work in construction and manufacturing sector. Poor wages, erratic employment, hazardous work conditions and lack of essential services define the experience of migrant workers. The basic problem of establishing identity results in a loss of access to entitlements and social services. The issue of lack of access to education for children of migrants further aggravates the intergenerational transmission of poverty.

A noble step towards self resilience:

With precision farming as its backbone, Zenofarm is committed to provide an assured earning to the rural citizens of India who are finding it difficult to get their livelihood in rural ecosystem and hence planning to migrate to metros as daily wage labors. They just need a patch of barren land in their name within their locality irrespective of shape, size, accessibility and fertility of the same. Once on-boarded, Zenofarm shall engage them as their partner (we name them as farm Associates) and ensure them an assured monthly earning by utilizing their barren land for tech-driven farming. This will evolve a new generation of farmers contributing to rural economy.

Socio-economic Transformation:

Not only the earning, Zenofarm shall also work on holistic well being of its farm associates and empower them for a better life through various skill-based trainings and small-scale business engagements. The whole rural eco-system shall directly or indirectly be benefited

in terms of employment, infrastructure and small-scale businesses along with access to healthy farm products.

Zenofarm is persistently working for solutions to empower rural youths into more dignified and rewarding opportunities. Without this, making growth inclusive or the very least, sustainable, will remain a very distant dream. The startup Pilot project is under implementation at Odisha's Kandhamal, one of remote-most districts of India.

Operations & future plan –

The startup as started the operations at Kandhmal ,Orissa and for 2021-22 will be ready to help farmers of Rajasthan,Uttar Pradesh, Uttarakhand and sub sequentially in the other states .

Future projections are to provide source of employment for 5,000 youths whereas harvest in 250+ hectares of unused Land across India.

Agenda



Farms



TEAM NABI



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|ACKNOWLEDGEMENT|

Chaudhary Charan Singh National Institute of Agricultural Marketing (CCS NIAM) is extremely grateful to Ministry of Agriculture and Farmers' Welfare for selecting us as a "Knowledge Partner" for assisting in smooth and efficient execution of RKVY- RAFTAAR Scheme and handholding of RKVY RAFTAAR Agribusiness Incubators (R-ABIs) by implementing Centre of Excellence (CoE) ABI to demonstrate best practices and handholding of Ecosystem Partners during implementation of the scheme.

The contribution from the rich pool of collaborators and supporters from CCS NIAM, NIAM Agri Business Incubator (NABI) Team, NIAM Faculty, Sri Karan Narendra Agriculture University, Jobner, Jaipur; Startup Oasis, Jaipur; Atal Incubation Centre, Banasthali Vidyapeeth, Rajasthan Venture capital Fund (RVCF) and Federation of Indian Chambers of

Commerce and Industry (FICCI) is also greatly acknowledged who have shared their vast knowledge and experience in the startup ecosystem with us that enabled us to successfully start and execute Agripreneurship Orientation Programme.

NIAM Agri-Business Incubator (NABI) is sincerely thankful to each and every person from team NABI who has effectively contributed towards compiling and publishing of this memoir.

Last but not the least, the cohort of Agripreneurs incubated under startup agribusiness incubation programme deserve our thanks and appreciation for sharing their growth trajectory with us for finalising this journey book who have put their heart and soul in transforming their dreams to reality.





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