

# Innovation in Food and Agriculture Fund

#### Impact Report 2023-24

## Foreword

The imperative for sustainable and impactful investing has never been more pronounced. The escalating severity of climate change, coupled with persistent inequality, demands a radical shift in investment practices. Critics often challenge the efficacy of integrating social and environmental considerations into investment decisions, alleging a trade-off between financial returns and impact. However, our experience unequivocally refutes this notion.

We have demonstrated that generating strong, risk-adjusted returns while simultaneously driving positive social and environmental change is not only attainable but essential. This report underscores our unwavering commitment to this principle. In response to the growing demand for transparency and accountability, we are taking a significant step forward by publicly disclosing our quantitative impact targets and meticulously tracking our progress. We firmly believe that investing in companies with a strong sustainability profile is not merely a philanthropic endeavour but a sound investment strategy.

By aligning our capital with pressing global challenges, we are not only fulfilling our fiduciary duty to our investors but also contributing to a more resilient and equitable future. This report showcases our commitment to measurable impact, highlighting our focus on sectors and companies that are driving innovation and positive change.

As we navigate an increasingly complex and interconnected world, we recognize the importance of collaboration. Together with our investee companies, partners, and stakeholders, we are working to build a more sustainable and prosperous future. This report is a testament to our progress, but it is also a roadmap for the journey ahead. We invite our stakeholders to join us in this endeavour as we strive to create a lasting legacy of responsible and impactful investment.

## **About this report**

This report focuses on the real-world impact of innovative agricultural solutions. We have examined three companies at the forefront of agricultural technology to understand how their work can benefit farmers and the environment.

Our goal was to see how these companies are making a difference. We looked at how their products or services affect things like water use, greenhouse gas emissions, and overall farm profitability. We also explored how these innovations can improve the lives of farmers and their communities.

By analyzing the environmental, economic, and social impacts of these companies, we aim to provide insights into the potential benefits of their work. This report will help us understand how these innovations can contribute to a more sustainable and resilient food system.

#### What's inside

Empowering low – income farmers

Access to clean energy

Reducing farm gate emissions

Promoting sustainable use

Corporate social responsibility

# Innovation in Food & Agriculture: A Glance

The IFA fund is focussed on four major investment thesis: i. *Prioritization of financial well-being, ii. Feeding the world sustainably, iii. Pathways to carbon neutrality, iv. Toxic free environment* 

In developing nations, agriculture plays a central role, driving both economic growth and individual well-being. And these countries are often characterized by small, independent farmers relying on their own harvests for sustenance for the uncertain future. The goal of IFA fund is the upliftment of these communities.

*Cumulative income increase (USD Mn) for low-income customers by 2030* 



#### IFA fund impact footprint

# **Impact Report - Summary**



#### **SDGs Covered**

We integrate key UN **Sustainable Development Goals** (SDGs) into our investment approach, focusing on economic resilience, clean energy, responsible consumption, climate action, and biodiversity preservation. Our commitment to ESGdriven finance ensures sustainable growth, risk mitigation, and long-term value creation.



# ecozen

Driving progress towards

U.N. SUSTAINABLE DEVELOPMENT GOALS

Sathguru Analysis Report



# Empowering Low - Income Farmers

Providing access to climate proofed technology to low-income consumers contributing to U.N. Sustainable Development Goals



In India, smallholder farmers represents around 86 percent of total farmers who provide 51 percent of agricultural output with highest share, about 70%, in high value crops.

#### **Increased Economic Growth**

Ecotron solar pump delivers a significant cost savings to the farmers by reduced irrigation expense leading to more reliable income from year-round cultivation, more resilience to climate change impacts on reduction of climate shock associated expense



prolonged weak spells

farmer livelihood through increased income Ecotron solar pump provides a winwin solution for farmers whose

Strengthening

win solution for farmers whose previous irrigation methods primarily depend on diesel-fueled, electric pumps and for two-third farmers who are victims to climate extremes such as lack of rain, drought). In a way, ecotron solar pump improves farmer's quality of life

by

2030

#### 700,000 farmers

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**Å Å Å Å Å Å Å Å Å Å Å Å Å** 

directly impacted

#### **Improving Food Security**

## Increasing acreage of arable land

**By 2030**, the arable land increase **by** around **3,90,000 Hectares**, increasing production from crop diversification, and enhanced food security





Mean seasonal water deficit during winter cropping (November to March)\*

Ecotron solar pump aids farmers in irrigating arable land, expanding agriculture to **5 acres** of additional land

Out of the farmers who bought Ecotron solar pump, two-third farmers claim increased production from their existing land, rest from additional land, irrespective of crops.

Ecotron solar pump address water scarcity gap among lowincome farmers, providing **more reliable water source**, especially in scarce rainfall seasons. "Now I can generate more money from my land because production has increased as I am doing irrigation on time. I can save more money which is helping me support family manage daily house expenses" – Farmer (Male, 56)



# 

**Emissions** avoided

CH,

emissions

8.000

**No jone** 

bv 2030

eq. emissions

A Win-Win for Food Security and Emission Reduction

## **Reducing food wastage**

Ecofrost cold storage, in a way, ensures food security and minimize greenhouse gas emissions by reducing postharvest spoilage through sustainable solution. Perishable produce like fruits and vegetables have extended shelf life with cold storage, otherwise goes to open dumps and thereby, release of greenhouse gas emissions. In addition to that, there is increase in number of people fed with reduced food wastage



# Access to Clean Energy

Targeting low-income farmers with inaccessibility to clean energy contributing to U.N. Sustainable Development Goals



Achieving access to affordable, reliable, sustainable, and clean energy remains a significant challenge in developing countries, particularly for low-income consumers. According to the World Bank, over 736 million people still lack access to electricity, hindering economic growth, education, and healthcare access\*

#### Energy gaps in agriculture in current scenario

**23%** unelectrified pump to extract

groundwater

98% nonrenewable energy usage ~ 20% total electricity sales consumed by electrified irrigation currently

# Potential address of energy gap in agriculture sector by ecotron units by 2030

### 7%

Potential replacement of non-renewable energy

14%

Potential address of energy gap

#### Addressing Energy Poverty in Agriculture

Compared to earlier electrification efforts in agrisector in the rural India, there is a decline in the rate of electrified pumps in newly electrified districts, limiting access to reliable irrigation, impacting agricultural productivity especially during dry season. The projected figures shows that Ecozen can address this energy gap by 2030.

Ecozen supports U.N. Sustainable Development Goal 7, 'Affordable and clean energy', Goal 12 'Responsible consumption and production', Goal 13 'Climate actions', and Goal 15 'Life on land' in particular

Projected Clean Energy Generated by Ecozen



Ecozen supports India's target of achieving 50% of its energy requirements through renewable energy by 2030

# Reducing farmgate emissions

Minimizing carbon footprint of agriculture sector, contributing to U.N. Sustainable Development Goals



A staggering 14.5% of anthropogenic greenhouse gas emissions originate at the farm gate\*, threatening food security, environmental health, and the future of our planet

#### **Addressing Emission Gaps**

Traditional irrigation pumps rely on diesel fuel, a significant contributor to greenhouse gas (GHG) emissions in agriculture. Ecotron solar pumps & Ecofrost cold storage offer clean alternative, dramatically reducing farm's carbon footprint.

# GHG emissions saved from diesel consumption by 2030, 3.8 million

# tons of $CO_2$ eq.



Increased arable land potential achieved by reliable water source by Ecotron solar pump unlocks the potential soil carbon sequestration

779 GtC



# **Empowering Low-Income Farmers**

Providing more empowered future for low-income farmers with access to climate proofed seeds aligning to U.N. Sustainable Development Goals







8 Decent Work & Economic Growth



#### Improving livelihood

Nu Genes supports low-income farmers in improving their livelihood and providing a quality life by their high-performance hybrid seeds. These hybrid seeds of staple crops like paddy, pearl millet, maize and sorghum are designed to increase yields, reduce resource dependence, generate more profitability and ultimately, improve the livelihoods. In conclusion, it's a win-win for farmers: increased yield stability leading to more reliable and stable income and apart from quantitative traits, the abiotic and biotic traits and the biofortification supports farmers to be more resilient against climate extremes and related biotic stress and improved health.



#### Income saved by increased water use efficiency per hectare





#### Improving livelihood

#### Mitigating Water Scarcity's Impact on Low-Income Farmers

One of the most pressing challenges faced by low-income farmers is the **escalating cost of** *irrigation*. As water scarcity intensifies, irrigation charges rise, eroding profit margins even with government subsidies. Nu Genes' high-performing, water-use efficient hybrid seeds offer a multifaceted solution to this critical issue.

#### Empowering a Sustainable Future

Through a combination of cost savings, water conservation, yield improvements, and drought resilience, Nu Genes' hybrid seeds empower low-income farmers to overcome significant challenges.

### Growing More with Less: Water-Smart Agriculture in Action

While the direct benefit of reduced irrigation needs translates to significant **cost savings** for farmers, the advantages extend beyond the immediate financial impact. Nu Genes' hybrid seeds promote **sustainable agricultural practices** by:

#### **Conserving Water Resources**

By requiring less water for optimal growth, these seeds contribute to the **preservation of precious water supplies**. This responsible use of resources benefits not only the farmers but also the environment at large.

#### **Enhancing Drought Resilience**

Unpredictable rainfall patterns can disrupt traditional farming methods. Water-efficient seeds offer greater **resistance to drought conditions**, allowing farmers to maintain crop yields even during periods of water scarcity.



#### Paddy

Millet

Maize

Sorghum

225

1033

469

500

### Achieving Food Security

Looking beyond immediate benefits for low-income farmers, Nu Genes' commitment to empowering them fosters a broader societal impact. By developing hybrid seeds with increased resource utilization and higher grain output to seed input ratios, Nu Genes contributes to achieving global food security. Their hybrid seeds ensures more food is produced from less, a critical factor in feeding our ever-expanding population.

Crop wise area under cultivation (in million hectares) by total seeds planted



# Nu Genes CORPORATE SOCIAL RESPONSIBILITY

Initiatives

# Empowering Rural Youth and Farmers through Training

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**47** *farmers trained directly,* 

each sharing knowledge to atleast **20** farmers

following "train the trainer approach"

Nu Genes, committed to Corporate Social Responsibility (CSR), partnered with **Cornell Sathguru Foundation for Development (**CSFD) to conduct a residential training program for rural youth and farmers at RARS Warangal. This initiative aligns with the national goal of retaining youth in agriculture.

Nu Genes' contribution to rural development is evident through the program "Enhancing capacities of rural youth and farmers in agriculture and agribusiness and enabling them to explore agriculture profitably" program, equipping young minds and farmers with the knowledge and skills to succeed in agriculture and allied sectors.



# TELLURIS BIOTECH • PROTECTIVE WHAT THE WORLD SOLVE •

Driving progress towards U.N. SUSTAINABLE DEVELOPMENT **GOALS** 



# Promoting sustainable use

Providing innovative, sustainable solutions that empower farmers, maximize profits, and contribute to a healthier planet that aligns with U.N. Sustainable Development Goals



Improved livelihood

#### **Empowering farmers, Securing Livelihoods**

Low-income farmers face a constant struggle – maximizing crop yields for a secure income. Telluris Biotech addresses this critical challenge with innovative biostimulants, a sustainable alternative to conventional synthetic fertilizers and manures.

Telluris' science-backed biostimulants not only contribute to **increased crop yields**, leading to **enhanced income security**, but they also provide **cost savings** associated with the application of synthetic fertilizers and pesticides. This **double benefit** empowers low-income farmers to achieve greater financial stability and **elevate their overall quality of life**.



#### Projected number of benefitted farmers

2023	2024	2025	2026	2027	2028	2029	2030
1,039	20,638	26,829	34,878	45,341	58,943	76,626	99,614

# Cumulative income benefits by biostimulants (in USD Mn)



Income increase per farmer per anuum

**2,820** USD

On application of biostimulants, yield increase varies with crops

On an average, yield increases to 15 – 20%



# Projected reduction in potential exposure for farmers



No. farmers with reduced exposure

#### Sustainable Ag for a Win-Win (Farmers, Consumers)

Telluris biostimulants offer a compelling solution for minimizing farmers' reliance on hazardous pesticides. Telluris products can lead to a remarkable 57 percent reduction in farmers' exposure to these harmful chemicals. This translates to a drastic **decrease** in the risk of developing health problems commonly associated with prolonged pesticide use, such as bronchitis and asthma. Reduced health risks lead to greater peace of mind and overall well-being, allowing farmers to focus on their livelihoods. The commitment to reduced pesticide application extends its benefits beyond the farm. Lower pesticide use on crops translates to a significant advantage for consumers. By minimizing the presence of hazardous chemical residues, Telluris biostimulants contribute to **safer food** on our tables. This approach also mitigates the risk of biomagnification, a process where harmful chemicals accumulate in the food chain, potentially impacting consumer health in the long run.

#### **20%** reduced nitrogen use efficiency due to consumption of fertilizers

*Source*: Nitrogen Challenges and Opportunities for Agricultural and Environmental Science in India

**by 2030**, nitrogen use efficiency will increase by 20 percent with application of biostimulants with average yield increase by 33 percent with improved nitrogen uptake Potential area with improved soil health in terms of NUE **0.1 million ha** 



## Sustainable Solutions, Measurable Savings 💐





\*Cost savings from bioinsecticides are estimated from FY2025 as bioinsecticides are in pipeline stage

Telluris Agbiologicals' products drives sustainable innovation by reducing cultivation costs, enhancing yield potential, and significantly lowering greenhouse gas emissions.



#### Addressing emissions gaps

One-third of global greenhouse gas emissions comes from agriculture. Telluris tackles this challenge head-on with innovative solutions that **reduce agricultural emissions**. Their biostimulants replace synthetic fertilizers and pesticides, while promoting **enhanced plant efficiency**. This translates to less **nitrous oxide** ( $N_2O$ ), a potent greenhouse gas, and **increased carbon sequestration** by plants.

Telluris products avoids the potential emissions from synthetic fertilizers & chemical pesticides application

Total emission reductionby Telluris biotech



**418,000** tonnes

 $CO_2 eq.$ 

<sub>by</sub> 2030

Diesel saved by application of Telluris products

#### Avoided N<sub>2</sub>O emissions from fertilizer in CO<sub>2</sub> equivalents



#### Projected potential food production



#### Achieving food security

Telluris' commitment to sustainability extends beyond immediate economic benefits. Their environmentally friendly solutions contribute to the development of a more resilient agricultural ecosystem, ensuring long-term food security for all, directly contributing to long-term global food security (UN SDG 2: Zero Hunger). By enhancing photosynthetic activity and increasing crop yield potential, Telluris fosters sustainable practices that empower farmers and contribute to poverty reduction (UN SDG 1: No Poverty).

# Disclaimer

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For further details on our impact approach, methodologies, or to obtain additional clarifications, please contact Sathguru Catalysers at <u>fundinfo@sathguru.com</u> or +91 40 6627 6200



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