INTERNATIONAL JOURNAL OF MARKETING CASES AND RESEARCH
Volume: 1, Issue: 1 @June 2025
Publication
Washington 98092, USA

InQube

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DEVELOPING AN ORGANIZATION IN AGRI MARKET

On a sharp winter morning in December 2016, Subhankar Pandey, Director, and CTO of InQube Innoventures was reading a newspaper with the headline “As stated by the Indian National Crime Records Bureau, 296,438 Indian cultivators have killed themselves from the year 1995.”. Pandey’s face looked suddenly soft and sorrowful. But soon a smile had overcome sorrow on Pandey’s face as he reflected on the relentless journey of InQube which turn out to be an immense revolution in the Agri market.

InQube was established with a vision of a Sustainable, Eco-friendly, and Equitable by consistently strengthening masses of agricultural workers throughout the world by the means of the state’s creation and use. InQube had created a great image in the Agri Industry and had been crowed as “Fascinating Developing Organizations for Employment " by NASSCOM followed by becoming a finalist in the "NASSCOM" All-India Innovations Rewards”. In addition, the Organization had earned many accolades: it received Startups from Google Alumni in 2021, Global Entrepreneurs Programme from UK Trade & Investment, UK-India Startup from UK India Tech Hub, The Go Global award by International Trade Council, and many more.

InQube Innoventures is an organization that focused on merging and utilizing the best Technology & Design and the predictive skills of Analytics in crafting innovation-led applications and solutions to problems for the next 500 million farmers by giving them access to qualitative life by creating equal opportunity access. InQube develops solutions in the areas of statistical analysis, technological advances, visualization, and IOT solutions to have a positive effect on the economies of rural areas in emerging nations, with agribusiness serving as the primary engine of economic growth.

Agri Market in India

India's agricultural history started in 9000 BCE in northwest India through the flora sowing, and agricultural breeding. India is an agricultural country and 1/3rd population of the country depends

on the agriculture region. The Indian agriculture industry is the largest producer of wheat and grain. India started exporting its products all over the world via various trading networks. Gross Value Added through agribusiness as well as forest management had been forecasted at Rs 19.48 lakh crore (US$ 276.37 billion) during the Financial Year 2020. According to the Indian government the nationwide revenue Financial Year 2022, the proportional contribution of Gross Value Added by Agribusiness and Associated regions has been calculated to 18.8% for the overall Gross Value Added.

The national cuisine as well as groceries markets are positioned at the sixth position in the market globally, by 70% retail participation among marketing. Within the biggest sectors in India, the food and beverage manufacturing sector comprise 32% of the nation's overall food sector and is rated fifth on the basis of manufacturing, consumer use, exportation, as well as predicted advancement.

The overall Agriculture and Allied shipments of goods totaled US$ 41.24 billion in Financial Year 2021.

Agri market size in India

In 2020-21, The Indian Economic Survey report as mentioned in financial year 2020, the yield of food grains in the nation was estimated at 296.65 million tons, up to 11.44 million tons from 285.21 million tons in the financial year 2019. In the financial year 2021, food grain manufacturing had been observed as 303.34 million tons against a target of 301 million tons. For Financial Year 2022, the government asks the cultivators to elicit the manufacturing of agricultural grains by 2% along with 307.31 million tons of the aforementioned.

The world's 15th leading exporter of agriculture products is India. Agricultural shipment through India outstretched to US$ 38.54 billion during Financial Year 2019 and US$ 35.09 billion in Financial Year 2020.

By 2025, the agriculture sector of India shall be increased to 24 billion US dollars (Inc 42).

The second-largest producer of cereals, sugarcane, cotton fibers, and groceries is India. In the last decade, 25% of the world's pulses were produced in India.

By 2015-25, the Indian market for nutritious foods shall grow at a CAGR of 10% followed by an estimated projection of Rs 75,000 crore (US4 10.73 billion).

Farmers' conditions in India

Farmers are the support system of the economy of India. Every citizen residing in the country is proportionately dependent on agricultural products produced by them. They feed the entire nation but they struggle to have bread two times a day.

Farmers are committing suicide because of the debt burden and disgrace that they can't feed and provide a good life to their families. A lot of farmers had come to cities in search of jobs for stable income so that they can provide 2 square meals a day to their families. If such a condition of Farmer's suicide continues then India will soon become a food importer from a food exporter. Every year thousands of farmers suicide and the main reason for their suicide is the repayment of loans or crop damage due to various phenomena.

ISSN: 2997-2817

About 80% of farmers own less than 1 hectare of land. The Average Income of a farmer is Rs 90,000 per hectare and over 50% of an agricultural household is under debt burden with an average outstanding debt of Rs 74,121. They are forced to sell their products at a cost lower than the MSP. Agriculture provides employment up to 50% but stills contribute 15% to the GDP.

InQube Innoventures: The Journey

In 2014, Subhankar Pandey was in the US and there were a lot of farmers' suicide cases going on in India. Every day he found a new heated topic on farmers' suicide cases which made him think that "what have you done for that?" and there was no answer. A few days later his wife asked him "what have you done for it" and he started feeling guilty.

In 2015, his US company wanted to have green cards mandatorily because investment banks have the data that Donald Trump will come and Barack Obama will go so that way, they wanted to have all their key resources in green cards. At that time Subhankar said that he can't continue with his US company and he came back to India. He always wanted to do something of his own. So here he meets Kalyan Kar and Tridibesh Bandyopadhyay and discuss the current situation and told them that he wanted to do something called Heal India. He and his team understand the need of the market and developed a product, an AI engine called InQube.

They started this project in 2015 and by 2016 WB government gave them the whole West Bengal project and they had reached 72 lakhs farmers with the help of WB government officers. They have done a complete soil mapping of those 72 lakhs farmers i.e., they have collected soil from each farmer's land, got them tested, created an AI engine which will take that micronutrient parameter from that testing and give you the output that if this is a kind of crop if this a kind of season you are going to grow and based on your soil characteristics what fertilizer and pesticides you will be required? And they ensure that whenever they collect the soil, they enter the GPS location. From that GPS location, they can figure out that this is the farmer's land location.

If there is a drought or a flood, the time period for the insurance cheque to reach the farmer is at least two seasons. The farmer had to wait for nine months to receive the insurance cheque.

What Subhankar and his team did was they reduce these nine months into fifteen days.

In 2016, there was a flood in West Bengal, and a lot of areas were submerged under water, and a lot of crops were wasted. What farmers had to do was, open the farmer app i.e., InQube and they just have to post a photo of themselves standing on that piece of land. And by the help of GPS, they can identify that it's a farmer's land and it is submerged under water and its lap length of the particular land and it is validated and cheques started rolling out within seven days.

Usually, farmers had to write about their problems but if they are not able to write, they can just take an audio clip to attach it to the problem, and the AI engine will figure out what is the problem and give them a proper answer. These answers get converted into SMS files as well as voice files. In these voice files, a direct call happens to the farmer. The farmer can listen to the answer, and if the farmer is not available so it calls up that particular farmer three times after every hour, and if he is not able to receive the answer then after twenty-four hours an SMS is sent with a code that they can call up on the toll-free number and they can put that code and hear the answer as well.

Their first customer was Peru's government but the problem was a lot of companies working on satellite data as well as drone data but they don't know how to reach the farmers. They have clients

ISSN: 2997-2817

in Africa, India, and Bangladesh everywhere but the problem was the same in all developing countries. In 2020 they have started working with Google and the UN also, and they were part of the UNSDG group.

InQube Innoventures' service

- They provide Advisory and Analytics services to the government
- They create a Digital platform for the management of farm credit with validations of transactions.
- Agri purchasers and vendors can engage among one anoother on this platform as well as discover better prices for Agri products.
- They have created a Digital platform for identifiable high-value food and beverage products. It's based on a blockchain system and it's a highly secure network.
- Analyzing raw data i.e., Data Analytics to integrate soil, weather, and other parameters.
- For better analysis they use drones and satellite images for macro-level study, Productivity improvement, and farmer security.
- They use data and image analytics for disease, pest, and nutrient advisory support.
- They provide a logo and banner to a farmer in their app which helps them to configure their profile. This will help them to connect with a farmer better.

GreenQube – Agri ERP Platform

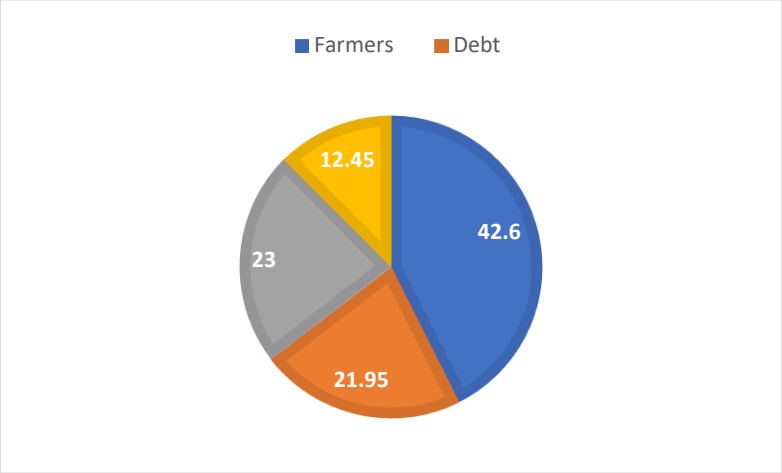
GreenQube is a decision support platform offered by InQube Innoventures. GreenQube is the platform for farmers to monitor agriculture issues digitally. It provides regional employees and supervisors accessibility to a website including managers. Through GreenQube, you can enroll your regional employees and cultivators on this structure, are provided with geographical locations, harvest, and field information. It is a decision support system for providing complete information to farmers during all the phases of the crop life cycle. There are programs like advisory on crop production, scientific farming practice, fertilizer and pesticide advice, weather advisory, soil management, and nearby market information.

This app is available in almost 27 different local languages which the farmer can choose from and start communicating. It's a part of the farm value chain Enterprise Resources Planning (ERP) platform. It helps FPOs, NGOs, and co-ops to provide its farmer each kind of managerial assistance. It's a good platform for two-way communication between enterprises and farmers.

The impact of this application as per the West Bengal government data is that before 2014 the average income of farmers was Rs 90,000 per hectare and after four years the income grew up to Rs 3 lakhs per hectare. So, this is more than three times. Subhankar and his team have been appreciated by CM Mamata Banerjee in Biswa Bangla Sammelan.

Pie Chart of Agri Market

ISSN: 2997-2817



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ISSN: 2997-2817