



Saagu Bagu - An innovative approach towards digitalization in Agricultural sector in Telangana

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The application of scientific knowledge for practical purposes is described as Technology and if the latest or advanced technological methods if applied in the agricultural sector shall make the peasant community lead a better livelihood thereby improving the efficiency of agricultural productivity and leading to a sustainable development. The ultimate aim of usage of techniques should meet human needs and make their lives better. Digitalization in the secondary and tertiary sector is very common and initiation in the agricultural sector is a novel concept and will lead to a harmonious growth in all sectors and as well as community. In this context an innovative programme initiated by Telangana government has to be noted. Saagu Bagu emanated or launched in 2021 in collaboration with World Economic Forum (WEF), Bill & Melinda Gates Foundation and other organizations to digitalize Agriculture using agritech, AI and data to boost and improve the lives of farmers by enhancing their incomes, productivity & sustainability. It's a multi stakeholder benefit project which is adopted as a PPP model wherein both Public and Private jointly work for digitalization in the Agricultural sector through various means.

To begin with, Telangana government initiated as a pilot project in May 2022 to March 2023 in Khammam district which focused on about 7000 chilli farmers and the outcome was farmers saw an increased chilli yields by 21%, reduced pesticide & fertilizer usage by 9% and 5% & significantly higher incomes (over INR 66,000 per acre). With this result, the government has expanded to cover more crops, districts and farmers aiming for a wider arena (Saagu Bagu 2.0) and plans to execute across 10 districts covering 500,000 farmers in five different crops in kharif and rabi season by 2025.Saagu Bagu is a scalable model for integrating the most advanced or breakthrough in technology into small holder farming, improving livelihoods, ensuring food security and promoting sustainable practices serving as a blueprint or a roadmap which can be implemented for other regions in Telangana.

Key words: Saagu Bagu, Technology, Digitalization, AI, Scalable, PPP model.

Introduction: Saagu Bagu is a Telugu word which means Agricultural Advancement. It was launched by Telangana government in collaboration with World Economic Forum (WEF), Gates and Melinda Foundation and organizations like Digital Green wherein companies like Agnext, KrushiTantra & Kalgudi were involved to integrate latest technological methods in the Agricultural sector so that sustainable development takes place. The main objective of this initiative is to transform the lives of peasant community through advanced technology using agritech, digital tools like AI in quality assessment of produce, access to markets and also promoting sustainability by enhancing their incomes and profits, reduction in usage of pesticides and insecticides thereby making their lives self-sustenance. This project if executed properly will empower marginal farmers with science driven solutions. This initiative by Telangana government is highly commendable because globally technology is shaping the future of food and agriculture but complete digital transformation in the primary sector will take much time especially in developing countries. Regarding the Saagu Bagu project Mohit Kapoor, Group Chief Technology Officer, Mahindra group says, There cannot be peace or prosperity in the world when 10% of our people go to bed hungry, hence science should give solutions to the problems in society thereby benefitting humankind.

As one is aware that the majority of the labour force is dependent on the primary sector for livelihood and share from the agricultural sector in GNP is high when compared to developed countries but the problems in the agricultural sector are enormous and If these age-old problems and new problems are to be tackled by cutting edge technology so that majority of the problems in the primary sector can be solved. There were many such programmes or policies undertaken by Indian government & State governments to reduce the problems in agricultural sector and increase the incomes of farmers and this Saagu Bagu is such an initiative adopted in 2021 wherein the problems of peasants are to be tackled through cutting edge technology thereby improving their living standards leading to harmony in nature, community thereby sustainable development.

Against this backdrop, Telangana became the first country in India to adopt a Public Private Partnership (PPP) framework in collaboration with WEF to scale digital agriculture in the state. This PPP framework works on four pillars, they are, Agrivalue chain transformation, Agritech sandbox, Agriculture data exchange (AdEx) and Agriculture data management framework. The first two helps in developing the ecosystem to scale the adoption of agritech services. The latter two focus on developing digital public Infrastructure & policies to enable the efficient use of high value data to fast track the development of customized services to farmers.

Saagu Baagu: An Innovative Approach Towards Digitalization in the Agricultural Sector of Telangana

Agriculture remains the backbone of Telangana's economy, supporting a majority of rural livelihoods. However, traditional farming practices often face challenges such as unpredictable weather, pest attacks, fluctuating market prices, and limited access to timely information. To address these issues and empower farmers through technology, the Government of Telangana launched **Saagu Baagu**, a pioneering digital

agriculture initiative aimed at transforming the agricultural value chain through data-driven and farmer-centric solutions.

Saagu Baagu, which literally means “agriculture well-being,” is designed to leverage digital technologies such as Artificial Intelligence (AI), Machine Learning (ML), Internet of Things (IoT), and satellite imagery to improve productivity, reduce costs, and increase farmers’ incomes. The initiative focuses on end-to-end digitalization—from sowing to harvesting and market linkage—rather than limiting support to a single stage of farming. By integrating technology with traditional agricultural knowledge, Saagu Baagu promotes smarter and more sustainable farming practices.

One of the key strengths of Saagu Baagu is its crop-specific and cluster-based approach. Initially implemented as a pilot in selected districts, the program targeted crops such as chili, cotton, paddy, and turmeric. Farmers receive real-time advisories on crop health, pest and disease outbreaks, irrigation scheduling, and nutrient management through digital platforms and mobile-based applications. These advisories are generated using field data collected via drones, sensors, and satellite monitoring, ensuring accuracy and timeliness.

Another significant aspect of Saagu Baagu is its emphasis on public–private partnerships. The Telangana government collaborates with agritech startups, research institutions, and technology companies to deliver innovative solutions at scale. This ecosystem-driven model enables faster adoption of new technologies while reducing the burden on individual farmers to invest heavily in digital tools.

Market linkage and transparency are also central to the initiative. By digitizing supply chains, Saagu Baagu helps farmers make informed decisions about when and where to sell their produce, thereby minimizing the role of intermediaries and ensuring better price realization. Access to digital marketplaces and quality assessment tools further enhances farmers’ bargaining power.

Importantly, Saagu Baagu aligns with the broader vision of sustainable and climate-resilient agriculture. Precision farming techniques promoted under the program optimize the use of water, fertilizers, and pesticides, reducing environmental impact while maintaining high yields. This not only benefits farmers economically but also contributes to long-term ecological balance.

In conclusion, Saagu Baagu represents a transformative step towards digital agriculture in Telangana. By combining technology, governance, and farmer participation, the initiative addresses long-standing challenges in the agricultural sector. As Saagu Baagu scales across more crops and regions, it has the potential to serve as a national model for agricultural digitalization, ensuring prosperity for farmers and sustainability for the future.

A salient feature of the project is service delivery specific to challenges in a value chain. Initiated in 2022, more than 7000 chilli farmers in Khammam have accessed four agritech services including AI based advisories, soil testing & e-commerce, all in the pilot phase. The government plans to expand existing and

additional Agritech services in phase II from 2023 onwards to 20000 chilli and groundnut farmers in 3 districts. In Kharif season the services should be expanded to 3 crops Cotton, Chilli and Turmeric for the districts Nalgonda and Adilabad for Cotton, Khammam and Mahabubabad for Chilli and Jagtial and Nizamabad for Turmeric and for Rabi season 2 crops Groundnut and Bengalgram, Nagarkurnool and Wanaparthy for Groundnut and Adilabad and Kamareddy for Bengalgram. As it's a multi stakeholder benefit project and relies on the 3P approach, Protecting Users, Preventing Harm & Promoting Innovation, we should hope that this project will surely fulfill the ideology and objectives it's designed for. In near future may the Saagu Bagu project be implemented in entire Telangana and also throughout India.

Reference:

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