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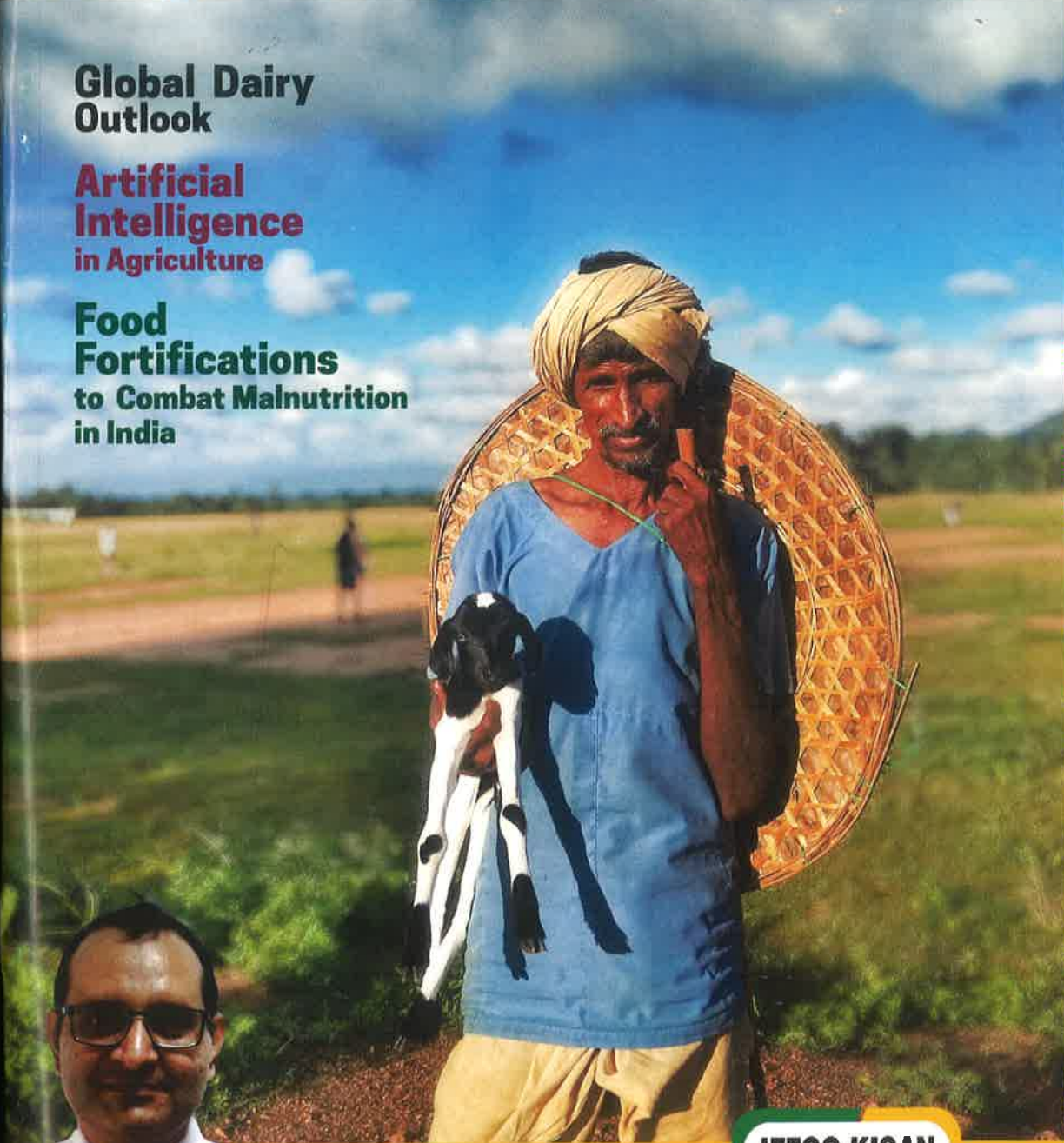
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Outlook**

**Artificial
Intelligence
in Agriculture**

**Food
Fortifications
to Combat Malnutrition
in India**



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on the Path of Empowerment**

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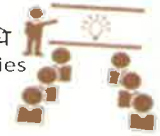
Agri Clinics: A Solution to Farmers' Information Deficit



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Agriculture is the primary income-generating activity for large populations in several underdeveloped and developing countries of the world. With rising food prices that have pushed over forty million people into poverty since 2010, more effective agriculture interventions are required (World Bank 2011). With recent and rapid advances in modern agricultural technologies, information

dissemination and effective communication contribute profoundly to the success of the overall agribusiness value chain. Deficits in these aspects have over time resulted in an ever-increasing number of intended beneficiaries being rendered uninformed thereby preventing them from benefiting from agriculture-related technological advancements. The information explosion in agriculture challenges farmers' decision-making, creating a need for all agricultural stakeholders to

<p>परिक्षण एवं सलाह सेवाएं Testing & Advisory Services</p> 	<p>PI Foundation and S M Sehgal Foundation</p> <p>१०००० किसानों का पौधा स्वस्थ प्रबंधन Plant Health Management for 10000 Farmers</p>	<p>तकनिक एवं फसल प्रदर्शन Tech. & Crop Demonstration</p> 
<ul style="list-style-type: none"> • Advisory on Best Agri. Practices • Diagnosis & Symptoms • On demand rapid Soil Testing 	 <p>20 गाँव के लिए मोबाइल कृषि क्लिनिक Mobile Agri. Clinic for 20 Villages</p>	<ul style="list-style-type: none"> • Crop Demonstrations for 2 crops • Farm Mech. Demonstrations • Follow Ups and F2F interactions
<ul style="list-style-type: none"> • Toll Free Call-In facility & Outbound SMS • Cloud-based Base/End-line & Farmer Profiling • Vehicle Route Tracking & Beneficiary Geo-tagging • Periodic snapshots of progress 	 <p>टेबलेट आधारित डाटा संग्रहण Tablet-based data Collection & Monitoring</p>	<ul style="list-style-type: none"> • Thematic Trainings • Field Days • Exposure Visits • Interfacing with Experts • Assistive IEC Content
 <p>टोल-फ्री वार्तालाप एवं एस.एम.एस द्वारा सलाह/संपर्क Toll Free Call-in and SMS Based Advice/Contact</p>		 <p>क्षमता वृद्धि Build Capacities</p>

“ Mobile agri clinics act as platforms that provide effective and holistic solutions for bridging the information gap and ensuring economic development and food security in the long run

ensure the relevance, quality, and accessibility of information. With everyday challenges in farming, determining the credibility of information from various sources is also a challenge, and sheer information or advice is not enough for farmers to adopt and use a technology. Given the lack of access to information sources, a combination of traditional practices, personal experiences, and trial-and-error approaches are the only options left (Mittal & Tripathi, 2009). Further, the magnitude of modern technologies seems ahead of the capacity of the society for comprehending their relevance and using them, thus making the technology uptake a reality for very few of the marginal and poor farmers of India.

Along with access, how and where to use the right information to enhance sustainability is equally important. Conventional extension systems, like training, demonstrations, etc., are costly, time-consuming, and typically accompanied with poor outreach. These methods are supply-driven rather than demand-driven since there is no mechanism for allowing the inclusion of farmers' queries and experience sharing. To minimize farmers' risk, decrease cultivation cost, and increase farm income, particularly for small landholder farmer, mobile agri clinics act as platforms that provide effective and holistic solutions for bridging the information gap and ensuring economic development and food security in the long run.

In this backdrop, S M Sehgal Foundation with support from PI foundation¹ initiated the mobile van clinics project. Sehgal Foundation works to strengthen community-led development to achieve positive social, economic, and environmental change across rural India. The project aims to provide rural areas with information, build capacity, and positively transform the lives of smallholder farmers who form the backbone of Indian agriculture (80% of farmers in India own less than five acres of land). These farmers, belonging to socially “backward” and historically disadvantaged communities, contribute enormously to the food security of the nation. Under the project, mobile agri clinics provide advisory and on-site demonstration services to farmers to promote minimal or no-tillage in wheat and paddy, improve yields and quality, and reduce the cost of inputs.

About the Van and its Operations

The project's mobile agri clinics became operational in September 2017 and currently operate in thirty-eight villages of three blocks (Samastipur, Pusa, and Kalayanpur) of Samastipur district in Bihar. As of May 2018, 4,144 people obtained information from the clinic (an average of twenty villagers and two villages in six hours on a working day). The van provides information related to agriculture,



With the help of an integrated digital library, critical information is displayed on topics such as agronomy, agriculture technology, entomology and pathology, government schemes, nutrient management, etc



animal husbandry, pisciculture, poultry farming, ration card, power bills, etc. In order to maintain continuity in information, a toll-free helpline number operated by Sehgal Foundation is disseminated by the agri clinic van.

The mobile van that houses the agri clinic has a LED TV, speaker with mic, batteries, and an electric generator. With the help of an integrated digital library, critical information is displayed on topics such as agronomy, agriculture technology, entomology and pathology, government schemes,

nutrient management, etc.

The display covers information on most crops grown in the region, including wheat, paddy, maize, potato, tobacco, lentil, mustard, pigeon pea, onion, cucurbits, mango, litchi, guava, lemon, brinjal, cabbage, cauliflower, etc.

The van, while visiting a village, stations itself at a point in the village where villagers can gather. Announcement of the arrival of the van is made through the loudspeaker. Announcements encourage

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villagers to visit the van to obtain pertinent information. Villagers who need information gather near the van and register basic details such as name, address, and mobile number. A Sehgal Foundation tech expert answers villagers' queries. They are shown videos related to key agriculture problems



faced in the region. Advice is provided along with a printout of the solution for their particular problem and related subjects.

Of the total services availed by villagers, about 50 percent of the advice given is on agronomy and disease management, since these are the major practices that determine the economics of cultivation of any crop. Around 6 percent of the advice given is on soil testing and fertilizer recommendations to reclaim soil. The mobile agri clinic van also provides information related to clean and safe drinking water, and various government schemes such as old age pension, widow pension, *Mukhyamantri Kanya Vivah Yojana*, *Mukhyamantri Kanya Suraksha Yojana*, etc.

Evident Benefits

Mobile agri clinics carried out over a year of operation augmented the capability of smallholders,

especially illiterate people and women, to link with the knowledge, networks, and institutions necessary to improve their productivity, food security, and employment. The success of the clinics extends to the entire rural community. For instance, farmers previously used a high amount of fertilizers; but after soil testing, they are using the right fertilizer in the right ratio, thus saving the cost of buying extra fertilizers. The use of proper insecticides and pesticide management has controlled the crop diseases that used to hamper their yield due. Using the agri van has made farmers aware of zero tillage machines, which are helping to decrease the costs involved in tillage and significantly increase the yield.

Videos running in the van are proving to be a great boon to farmers who recognize and understand the information more efficiently. The scientific knowledge level of the farmers has also improved due to the videos and printed advice, and the retention level has gone up. As a result, the quality of produce has improved, and all these changes have increased the economic benefits that farmers can obtain from agriculture. As the profitability of agriculture increases, the interest in farming also increases. Initially the farmers' registration rate at the agri van was low. However, over time, witnessing success stories around them, farmers have come forward and taken interest in the agri clinic. The registration rate and crowding increased radically. Agri van visitors in the three blocks of Samastipur have also obtained benefits of government schemes with the help of information given through the agri van.

The mobile agri van is a carrier of information that provides on-the-spot remedies to everyday problems of villagers especially farmers. However, a more significant need is for a renaissance of the agriculture extension system in the country to address rural development issues and provide right information at the right time with a qualified workforce and infrastructure. Extending help, support, and guidance will uplift the rural community. Due to incomplete and inaccurate information, people are not able to avail their benefits. Solutions like the mobile agri van provide accurate and complete information and are proving to be of great help to rural people who are suffering due to sheer ignorance.

***PI Foundation was established as a trust in the year 2012 to provide dedicated focus to community development and CSR initiatives of PI industries.**

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