

AI for Informal Sector Workers Annual Report

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This report was developed by Experts and Specialists involved in the Global Partnership on Artificial Intelligence's project on AI for Informal Sector Workers. The report reflects the personal opinions of the GPAI Experts and Specialists involved and does not necessarily reflect the views of the Experts' organisations, GPAI, or GPAI Members. GPAI is a separate entity from the OECD and accordingly, the opinions expressed and arguments employed therein do not reflect the views of the OECD or its Members.

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Executive Summary

Artificial Intelligence (AI) presents a significant opportunity to bring informal sector workers into the economic mainstream. In India, where the informal sector constitutes over 90% of the workforce and contributes approximately 50% to the national GDP, AI offers transformative possibilities. This is particularly relevant in agriculture, which serves as the backbone of the nation's economy, employing nearly 60% of the population and contributing 18% to India's GDP.

The AI for Informal Sector Workers project emerged from the recognition that AI technologies have tremendous potential to enhance food security, augment agricultural productivity, and improve rural livelihoods while concurrently addressing pressing environmental challenges such as climate change, water scarcity, and land degradation. This potential has been acknowledged globally, as evidenced by the focus on sustainable agriculture at the 2023 and 2024 Global Partnership on Artificial Intelligence (GPAI) summits, where stakeholders emphasized the need for inclusive AI solutions that benefit marginalized communities.

In response to this opportunity, the Commonwealth of Learning - Commonwealth Educational Media Centre for Asia (COL-CEMCA), in collaboration with GPAI, developed a comprehensive courseware to be implemented through Yashwant Rao Chawhan Maharashtra University's (YCMOU) extensive network of Krishi Vigyan Kendras (KVKs). These agricultural extension centers, established by the Indian Council of Agricultural Research (ICAR), serve as crucial knowledge hubs for farmers across rural India. The project targeted at least 10,000 farmers in its initial phase, aiming to bridge the significant gap between cutting-edge AI technologies and traditional farming practices prevalent in rural communities.

The courseware was meticulously designed following extensive consultations with Subject Matter Experts in agriculture, AI and instructional design. This participatory approach ensured that the content addressed real-world challenges faced by agricultural workers while remaining accessible to those with limited digital literacy. The curriculum consists of nine comprehensive modules covering various aspects of AI in agriculture:

1. **Introduction to AI:** Fundamental concepts explained in accessible language with agricultural examples
2. **AI in Everyday Life:** Practical demonstrations of AI applications already influencing rural communities
3. **Generative AI:** Exploration of how tools like ChatGPT can assist farmers with information access
4. **AI Tools for Farming:** Specific applications for crop selection, disease identification, and yield optimization
5. **Data Collection and Management:** Techniques for gathering and utilizing farm-level data effectively
6. **AI for Market Analysis:** Using AI to navigate market fluctuations and optimize selling decisions



7. **Ethical and Responsible Use of AI:** Understanding potential biases and ensuring equitable access
8. **Practical Tips for AI Adoption:** Overcoming implementation barriers with limited resources
9. **Practice Activities:** Hands-on exercises including AI-optimized fertilizer application, drone-based crop monitoring, generative AI for soil health analysis, and automated irrigation management.

Delivery methods were diversified to accommodate varying levels of technological access, including in-person workshops, mobile-based learning modules, community radio programs, and printed materials with QR code links to multimedia resources. This multi-modal approach ensured that the benefits of AI education reached even the most remote agricultural communities.

Critically, the entire courseware has been translated into Hindi and Marathi to effectively reach the target semi-literate and illiterate farming populations. These translations were developed with careful attention to regional dialects and agricultural terminology, ensuring accessibility for farmers with limited educational backgrounds. The content was also adapted with care, retaining its visual elements and simplified language to accommodate varying literacy levels.

The course was officially launched on November 4, 2024, and has been made available to the target audience through multiple platforms across different regions of India. The implementation extends beyond Maharashtra through YCMOU's extensive Krishi Vigyan Kendra's (KVK's) network to include Uttarakhand through Uttarakhand Open University (UOU), Uttar Pradesh through Uttar Pradesh Rajarshi Tandon Open University (UPRTOU), and Madhya Pradesh through Madhya Pradesh Bhoj Open University (MPBOU). This multi-state approach has enabled the courseware to reach diverse agricultural communities across northern and central India, each with unique farming challenges and practices.

The project's future trajectory involves three key phases of expansion: First, scaling to different agro-climatic regions of India through partnerships with additional agricultural universities; second, translating the courseware into multiple Indian languages beyond the initial Hindi and Marathi versions; and third, extending to other Global South countries facing similar agricultural challenges. It is estimated that this scaling effort could reach an additional 1,000,000 farmers within the first year of expansion, creating a substantial multiplier effect as knowledge disseminates through farming communities.

The project's development and implementation have revealed critical considerations that merit explicit acknowledgment in scaling AI education initiatives for marginalized populations. A primary challenge involves addressing the potential for Generative AI tools to provide inaccurate or contextually inappropriate information. The project recognizes the need for comprehensive training on information verification, risk assessment protocols, and expert consultation frameworks to ensure participants can critically evaluate AI-generated recommendations and seek appropriate validation before implementation.

Additionally, the initiative grapples with fundamental ethical tensions inherent in providing advanced technology training to populations facing basic literacy and connectivity barriers. While some may question whether resources would be better allocated to addressing foundational needs such as literacy programs or digital infrastructure development, the project demonstrates that AI awareness-building serves valuable preparatory functions and can occur through multiple pathways including community-based knowledge sharing and intermediary user models. The multi-modal delivery approach attempts to reach participants regardless of individual technology access levels, while acknowledging that sustainable technology adoption ultimately requires comprehensive support systems addressing education, infrastructure, and community empowerment simultaneously.

These considerations do not diminish the project's value but rather emphasize the importance of implementing AI education initiatives with full awareness of their limitations and ethical responsibilities, contributing to meaningful technology democratization while working to address the structural inequalities that constrain such efforts.

This pioneering initiative demonstrates the practical application of AI to support and empower informal sector workers in agriculture, offering a replicable model that aligns with global sustainable development goals while addressing the specific needs of marginalized farming communities.

I/ Context and Objectives

1/ Background on Informal Sector Workers in India

The backbone of India's workforce has traditionally been its informal sector, with millions making their living through unorganized labor. These workers, despite their crucial role in the economy, have often been pushed to the economic sidelines, lacking access to formalized systems, benefits, and technological advancements that could improve their productivity and economic prospects.

The rise of artificial intelligence presents a prominent opportunity to bring these marginalized workers into the economic mainstream. While AI is often discussed in the context of high-tech industries and formal employment, its applications have significant potential for transforming informal work. By embracing AI solutions, informal sector workers can boost their productivity and efficiency, potentially transforming their economic prospects and overall quality of life.

2/ The Role of Agriculture in India's Economy

Among all the informal sectors, agriculture stands as the cornerstone of India's economy and the primary source of livelihood for its vast rural population, contributing significantly to the nation's Gross Domestic Product. The agricultural sector's bidirectional relationship with climate change results in both a contributor to and a recipient of its effects. This dual nature creates an urgent need for innovative, AI-driven solutions.

AI technologies have the potential to enhance food security, augment agricultural productivity, and improve rural livelihoods while concurrently addressing pressing environmental challenges. The potential of AI to revolutionize agriculture has been recognized globally, as evident by the focus on sustainable agriculture at the 2023 and 2024 GPAI summits.

The 2023 Global Partnership on Artificial Intelligence (GPAI) Summit, hosted in New Delhi, established agriculture as a priority domain for AI application in developing economies. During this landmark event, the "AI for Agricultural Transformation" working group presented comprehensive research demonstrating how AI interventions could potentially increase small-holder farm productivity by 30-45% while reducing input costs by up to 20%. The summit specifically highlighted India's unique position as both an IT powerhouse and an agricultural economy, making it an ideal testing ground for AI innovations in farming.

The 2024 GPAI Summit built upon these foundations by launching the "Digital Agriculture Innovation Hub" initiative, which allocated significant resources toward developing region-specific AI solutions for agricultural challenges. A key outcome was the endorsement of the "Inclusive AI for Agriculture" declaration, signed by 27 member countries, which emphasized that AI tools must be designed with and for marginalized farming communities rather than simply being adapted from existing technologies developed for industrial agriculture in the Global North. This declaration directly influenced the participatory design approach adopted in

the AI for Informal Sector Workers project.

COL-CEMCA (Commonwealth of Learning - Commonwealth Educational Media Centre for Asia) also has extensive experience in this area. One major initiative which relates to this project is its work on "Technology-Enabled Learning for Agricultural Communities" focussed on delivering educational content to marginalized farming communities through appropriate technological interventions. COL-CEMCA has significant expertise in contextualizing technological knowledge to local needs and implementing multi-modal content delivery methods suitable for diverse literacy levels. This approach to making technology accessible to agricultural communities aligns with the participatory design methodology adopted in the AI for Informal Sector Workers project, which emphasizes inclusive design principles that address the specific challenges faced by informal sector workers in agriculture.

By leveraging these technologies, agricultural productivity can be boosted, elevating rural livelihoods while simultaneously addressing pressing environmental challenges.

3/ Project Objectives and Partnership

In response to the vast potential AI holds in the agriculture sector, COL-CEMCA, in collaboration with GPAI, developed a comprehensive courseware to be implemented through Yashwant Rao Chawhan Maharashtra University's (YCMOU) network of Krishi Vigyan Kendras (KVKs). This project targeted at least 10,000 farmers, aiming to bridge the gap between cutting-edge AI technologies and traditional farming practices.

The primary objectives of the project were to:

- Create accessible, practice-oriented courseware designed specifically for agricultural professionals in the informal sector
- Develop curriculum that addresses real-world agricultural challenges and provides practical AI solutions
- Implement the courseware through established agricultural extension networks to reach a significant number of farmers
- Evaluate the impact of the courseware and gather data for future improvements and scaling

The partnership between GPAI and COL-CEMCA brought together international expertise in AI governance, educational content development for developing contexts, and established networks for agricultural extension, creating a robust framework for the successful implementation of this initiative.

II/ Courseware Development and Implementation

1/ Methodology and Course Structure

The project began with the goal of creating an accessible, practice-oriented courseware designed specifically for agricultural professionals. The development methodology followed several key stages:

- **Initial Curriculum Mapping:** A consultant was brought on board to develop the foundational curriculum framework, which included key components such as module titles, basic descriptions, learning objectives and outcomes, estimated learning hours, sub-units, and assessment rubrics.
- **Subject Matter Expert Review:** Following the initial mapping, a Subject Matter Expert (SME) reviewed both the curriculum and scripts for all eight modules, ensuring they aligned with current agricultural AI needs, cultural contexts, and practical implementation in the informal agricultural sector.
- **Content Development:** Comprehensive outlines were developed for each module, including detailed unit and sub-unit breakdowns, with critical feedback incorporated into video scripts.
- **Multimedia Production:** All content was transformed into a four-hour multimedia courseware, designed to be accessible and engaging for the target audience.

The final courseware comprised nine core modules:

1. Introduction to AI
2. AI in Everyday Life
3. Generative AI
4. AI Tools for Farming
5. Data Collection and Management
6. AI for Market Analysis
7. Ethical and Responsible Use of AI
8. Practical Tips for AI Adoption
9. Practice Activities

2/ Module Descriptions

Module 1: Introduction to AI

This module consists of two units focused on introducing artificial intelligence and its applications in agriculture to rural farmers.



Unit 1 provides a foundational understanding of AI with relatable daily examples, specific applications of AI in agriculture, the practical benefits for farmers, and addresses common misconceptions. Through carefully designed assessment rubrics, the module evaluates learners' progression from basic AI comprehension to practical application awareness.

Unit 2 focuses on establishing the relevance and necessity of AI in agriculture and informal sectors. The module demonstrates how AI solutions can address practical challenges in farming while highlighting its applications across other informal occupations. By incorporating real success stories from various informal sectors, the module builds practical understanding and confidence in AI adoption.

Learning outcomes ensure participants can not only define AI but also recognize its practical applications in farming, understand its potential benefits for improving crop production and efficiency, and overcome common myths that might prevent AI adoption.

Module 2: AI in Everyday Life

This module explores AI applications in everyday life, with a specific focus on three main units:

Unit 1: AI in Daily Tasks emphasizes practical AI applications in both farming and household tasks, helping participants understand how AI can simplify routine activities and enhance productivity.

Unit 2: AI in Farming delves deeper into specific agricultural applications, covering crucial aspects like planting, crop management, watering, fertilization, and pest control.

Unit 3: AI in Informal Work explores how AI can benefit various informal sector occupations beyond agriculture.

The module is designed with clear learning objectives and assessment rubrics to ensure participants can not only understand AI concepts but also practically apply them in their daily lives. Each subunit includes detailed assessment criteria to measure understanding and application capabilities, ensuring comprehensive learning of AI's practical applications in agriculture and daily life.

Module 3: Generative AI

This module focuses on Generative AI and its practical applications in agriculture, structured around one main unit with six detailed subunits.

The module begins with a foundational introduction to Generative AI concepts and their agricultural applications, then progresses through specific use cases including:

- Crop variety creation
- Irrigation optimization
- Precision fertilizer formulation
- Automated pest control systems

Each subunit provides practical, hands-on knowledge of how Generative AI tools can improve farming practices, from designing more resilient crop varieties to creating efficient irrigation systems. The module employs comprehensive assessment rubrics to evaluate participants' understanding of both theoretical concepts and practical applications.

Through structured learning outcomes, participants learn to not only understand Generative AI technology but also apply it to real-world farming challenges, making advanced agricultural technology accessible to informal workers and farmers.

Module 4: AI Tools for Farming

This module focuses on AI Tools and their transformative applications in agriculture, structured around five comprehensive units with detailed subunits.

Unit 1: Crop Monitoring Tools teaches farmers how to use AI for tracking crop health and growth patterns.

Unit 2: Soil Management covers AI applications for soil analysis and optimization.

Unit 3: Livestock Monitoring addresses AI tools for animal health and productivity.

Unit 4: Irrigation Systems explores smart watering solutions powered by AI.

Unit 5: Weather Forecasting examines how AI improves weather prediction for agricultural planning.

Each unit offers practical, hands-on exposure to AI tools that can revolutionize farming practices, from detecting early signs of crop diseases to optimizing water usage through intelligent irrigation systems. The module employs detailed assessment rubrics that evaluate participants' grasp of both theoretical understanding and practical implementation of AI tools.

Module 5: Data Collection and Management

This module focuses on Data Collection and Management in AI for Agriculture, structured around one unit emphasizing the fundamental role of data in agricultural AI applications.

The two subunits explore:

Unit 1: Various types of agricultural data (including weather, soil, and crop health data)

Unit 2: How this data enables AI systems to make better farming decisions and improve crop yields

The module covers practical data collection methods suitable for informal workers, ranging from simple observational techniques to using basic tools and mobile apps. It also addresses the importance of data quality and proper organization, teaching workers how to maintain accurate records through manual and digital means.

Module 6: AI for Market Analysis

This module concentrates on AI for Market Analysis in agriculture, structured around two comprehensive units with focused subunits.

Unit 1: Market Trend Analysis teaches farmers how to leverage AI for understanding price patterns and market dynamics.

Unit 2: Price Forecasting and Sales Timing advances to practical applications including price prediction and optimal timing for crop sales.

Each unit provides hands-on experience with AI-powered market analysis tools, from interpreting market trends to using predictive algorithms for future price estimation. The module employs detailed assessment rubrics to evaluate participants' understanding of both market analysis concepts and practical implementation of AI forecasting tools.

Module 7: Ethical and Responsible Use of AI

This module focuses on Ethical and Responsible AI Use in Agriculture, designed to help informal agricultural workers understand and implement ethical practices when using AI tools.

Through two main units, it addresses:

Unit 1: Fundamental concepts of AI ethics

Unit 2: Responsible AI implementation in agricultural settings

The curriculum emphasizes understanding how AI makes decisions, ensuring data protection, avoiding bias, and sharing AI benefits fairly within farming communities. With a practical approach to learning, the module aims to equip workers with the knowledge and skills needed to identify trustworthy AI tools, apply ethical principles in daily farming activities, and ensure that AI technology benefits everyone fairly and responsibly.

This comprehensive approach helps create a foundation for sustainable and ethical AI adoption in the agricultural sector.

Module 8: Practical Tips for AI Adoption

This module focuses on Practical Tips for AI Adoption in agriculture, structured around two essential units with targeted subunits.

Unit 1: Steps to Adopt AI for Informal Workers guides farmers through identifying specific farming needs where AI can be beneficial.

Unit 2: Common Challenges and Solutions focuses particularly on pest and disease control using AI tools.



Each unit provides practical, hands-on knowledge about integrating AI technology into daily farming practices, from identifying areas for AI application to using AI-powered solutions for pest monitoring and crop protection. The module employs comprehensive assessment rubrics to evaluate participants' understanding across multiple criteria, including their ability to identify farming needs.

Through structured learning outcomes, participants develop practical skills to adopt AI technology in their farming operations, making advanced agricultural solutions accessible and applicable for informal workers, while emphasizing the importance of combining traditional farming knowledge with modern AI tools.

Module 9: Practical Activities

In addition to the structured modules, the course incorporates comprehensive and meaningful assignments designed to complement and assess participants' learning while providing valuable data that could inform future research.

These assignments enable farmers to engage practically with AI technologies, including:

- Optimizing fertilizer application using AI-powered tools
- Monitoring crop health with AI-driven software
- Analyzing soil quality through Generative AI
- Implementing AI-enabled smart irrigation systems

By participating in these activities, farmers not only deepen their understanding of AI applications in agriculture but also gain hands-on experience that enhances their ability to adopt sustainable and efficient farming practices. The data collected through these assignments holds the potential to reveal patterns, challenges, and opportunities, which may guide future studies aimed at refining AI integration strategies and fostering innovation in agricultural practices for the informal sector.

3/ Implementation Strategy

The content and videos were reviewed by COL-CEMCA members along with the AI Subject Matter Expert for the finalization of the MOOC courseware. COL-CEMCA spearheaded the implementation of the finalized courseware by uploading the course content to MOOC4DEV, along with UOU, YCMOU, MPBOU & UPRTOU LMS to reach the target audiences, i.e., farmers, through the local network of Krishi Vigyan Kendras in each state, managing the recruitment of participants.

The implementation strategy consisted of several phases:

1. **Preparation Phase:** During this phase, the course was finalized and integrated into different Learning Management Systems (LMS). Concurrently, these 4 Open

Universities reached out to their network of KVKs, and an extensive outreach campaign was launched through them to recruit and enroll the farmers.

2. **Launch and Implementation:** The course was launched on November 4, 2024, marking the beginning of the implementation phase.
3. **Monitoring and Support:** As farmers progress through the course, their engagement and performance are closely monitored via the LMS. A dedicated support system has been established to address any technical or content-related issues.
4. **Evaluation and Certification:** Upon completion of the course, participants undergo an evaluation process. Those who meet the predetermined criteria receive certification, recognizing their successful participation and acquired knowledge.
5. **Impact Assessment:** Post-completion, an impact assessment is conducted to gather feedback, analyze outcomes, and identify improvement areas from this pilot for future course iterations.

A critical consideration that emerged during implementation planning was the need to address potential inaccuracies and misinformation risks associated with Generative AI tools. Given that many participants are encountering AI technology for the first time and may have limited ability to independently verify AI-generated information, the project recognized several key challenges that require ongoing attention:

Information Verification Protocols: The implementation strategy acknowledges that participants need comprehensive guidance on cross-referencing AI recommendations with trusted agricultural sources, local extension officers, and established farming practices.

Critical Evaluation Skills: Implementation includes focus on strengthening participants' ability to question AI outputs that contradict their traditional knowledge or seem inconsistent with local agricultural conditions. This balance between embracing innovation and maintaining healthy skepticism is essential for responsible AI adoption.

Expert Consultation Frameworks: The strategy incorporates clear protocols for when participants should seek human expert validation before implementing AI-generated recommendations, particularly for decisions involving significant financial investments, new chemical applications, or major changes to established farming practices.

These considerations represent ongoing challenges that extend beyond the current courseware scope and will require continued attention through follow-up workshops, community-based verification networks, and enhanced collaboration with agricultural extension services in future project phases.

This comprehensive approach will ensure effective dissemination of agricultural knowledge to a wide farming audience, potentially leading to improved practices and productivity across the region.

Ethical Considerations and Implementation Challenges

While the AI for Informal Sector Workers project represents a significant advancement in democratizing AI access, the implementation process has highlighted some fundamental ethical tensions that warrant explicit discussion. These considerations reflect broader challenges in technology education initiatives targeting marginalized populations and raise important questions about resource allocation, accessibility, and the responsibilities of AI education programs.

The Literacy Paradox in AI Education

A primary ethical concern emerges from the inherent contradiction of providing training on tools that require literacy skills to populations with limited reading and writing capabilities. Many Generative AI tools, despite their conversational interfaces, fundamentally rely on text-based interactions for optimal functionality. This creates several layers of ethical consideration:

Immediate Utility vs. Long-term Awareness: While illiterate participants may not immediately benefit from direct AI tool usage, the project operates on the premise that awareness-building serves valuable purposes. Exposure to AI concepts enables informed participation in community discussions about technology adoption and prepares individuals for future developments in voice-activated or visual AI interfaces.

Informed Consent and Expectation Management: There exists an ethical obligation to clearly communicate to participants what they can realistically achieve with the training given their current literacy levels. The project must balance encouraging participation with honest assessment of immediate practical applications. This transparency is essential to prevent false expectations that could lead to disappointment or misguided attempts to use tools beyond participants' current capabilities.

Dignity and Inclusion Considerations: Excluding illiterate individuals from AI education initiatives could perpetuate existing digital divides and create new forms of technological discrimination. The project's inclusive approach recognizes that awareness and conceptual understanding have intrinsic value, even when immediate practical application is limited. However, this inclusivity must be implemented thoughtfully to avoid tokenism or superficial engagement.

Digital Infrastructure Barriers and Resource Allocation Ethics

The second major ethical consideration involves providing training on digital tools to populations lacking reliable access to the necessary technology infrastructure. This raises fundamental questions about development priorities and resource optimization:

Infrastructure vs. Education Sequencing: The project acknowledges that many target participants lack reliable internet connectivity, appropriate digital devices, or stable electricity supplies necessary for independent AI tool usage. This situation prompts legitimate questions about whether educational interventions should precede or follow infrastructure development. While the project cannot directly address infrastructure limitations, it must grapple with the ethics of creating knowledge demand without corresponding access.

Mitigation Strategies and Ethical Responses

The project has adopted several approaches to address these ethical tensions, while acknowledging that perfect solutions may not exist within current resource constraints:

Multi-Modal Delivery Systems: By incorporating complete video based delivery and community engagement alongside digital platforms, the project attempts to reach participants regardless of their individual technology access levels. This approach recognizes diverse learning needs while providing multiple engagement pathways.

Intermediary User Models: The project leverages existing agricultural extension networks (Krishi Vigyan Kendra's) and community leaders who can serve as technology intermediaries. This approach acknowledges that direct individual access may be limited while creating sustainable knowledge transfer mechanisms within communities.

Collaborative Awareness Building: Rather than focusing solely on individual skill development, the project emphasizes community-wide AI literacy that can inform collective decision-making about technology adoption and advocacy for infrastructure improvements.

Transparent Communication: The project maintains ethical integrity by clearly communicating both the potential benefits and current limitations of AI tools to participants, ensuring informed participation and realistic expectation setting.

Future Ethical Commitments

Moving forward, the project commits to several ethical principles that acknowledge these challenges while working toward more comprehensive solutions:

Partnership Development: Future iterations can potentially seek partnerships with literacy programs, infrastructure development initiatives, and community development organizations to address root causes of digital exclusion rather than working around them.

Participant-Centered Adaptation: Ongoing evaluation will prioritize participant feedback about the relevance and utility of training content, ensuring that the program evolves to better serve actual community needs rather than predetermined educational objectives.

Advocacy and Policy Engagement: The project recognizes a responsibility to use its findings to advocate for improved digital infrastructure and literacy support in rural areas, contributing to systemic change rather than merely documenting existing barriers.

These ethical considerations do not negate the value of AI education initiatives but rather emphasize the importance of implementing such programs with full awareness of their limitations and responsibilities. The goal is to contribute to meaningful technology democratization while acknowledging and working to address the structural inequalities that constrain such efforts.

III/ Future Directions and Scaling

1/ Scaling Strategies

The future trajectory of this project involves a systematic scaling approach to extend its reach and impact. The scaling strategy encompasses several key dimensions:

1. **Geographic Expansion:** Initially, in the first year, pilot studies will be conducted across different regions of India, representing varied agricultural conditions and challenges. This will ensure the courseware's relevance and effectiveness across diverse agricultural contexts within the country.
2. **Linguistic Adaptation:** The geographical expansion will be accompanied by the translation of the courseware into multiple Indian languages, ensuring accessibility and inclusivity for farmers across diverse linguistic backgrounds. This is crucial for reaching farmers in different states who may not be proficient in the original language of the courseware.
3. **Content Enhancement:** Based on feedback from the initial implementation, the courseware will be continuously refined and enhanced to better address the specific needs and challenges identified by participants. This may involve adding new modules, updating existing content, or developing additional practical exercises.

A critical area requiring immediate attention in content enhancement involves addressing AI accuracy and misinformation challenges that have become apparent during initial implementation phases.

- AI Information Verification Training: Future content development will prioritize comprehensive modules focused on helping participants identify and respond to potentially inaccurate AI-generated information. Enhanced training will include:

- Systematic approaches for cross-referencing AI recommendations with multiple trusted sources, including local agricultural extension officers, established farming guides, and experienced community farmers.

- Community-Based Verification Networks: Future scaling will include establishment of peer verification systems where participants can collectively evaluate AI recommendations, combining traditional agricultural knowledge with new technological insights.

4. **Technology Integration:** As access to technology improves in rural areas, the courseware will be adapted to leverage newer platforms and tools, potentially including mobile-first approaches, offline access capabilities, and integration with popular agricultural apps and services.



It is estimated that these scaling efforts could reach an additional 1,000,000 farmers within the first year of expansion, significantly amplifying the project's impact on informal sector agricultural workers in India.

2/ Pilot Studies and Adaptation

The pilot studies across different regions of India will be instrumental in refining the approach for wider implementation. These studies will focus on:

1. **Regional Adaptations:** Identifying region-specific agricultural practices, challenges, and opportunities that may require customization of the courseware content.
2. **Implementation Models:** Testing various implementation models, including different approaches to farmer engagement, support mechanisms, and integration with existing agricultural extension services.
3. **Impact Measurement:** Developing and refining methodologies for measuring the impact of the courseware on farmers' knowledge, adoption of AI technologies, and ultimately, their productivity and livelihoods.
4. **Barrier Identification:** Identifying barriers to effective participation and learning, whether technological, educational, or cultural, and developing strategies to address these barriers.

The findings from these pilot studies will be meticulously documented and analyzed to inform the development of a robust framework for scaling the initiative both within India and beyond.

3/ Global South Expansion Potential

The learnings from the Indian context will be instrumental in developing strategies for replication and adaptation in other Global South countries such as Argentina, Brazil, Senegal and Serbia etc. Particular attention will be given to identifying common challenges and success factors that can inform the creation of flexible, context-specific AI integration models for agriculture.

The expansion to these countries will involve:

1. **Contextual Analysis:** Understanding the specific agricultural contexts, challenges, and opportunities in each country.
2. **Partnership Development:** Establishing partnerships with local educational institutions, agricultural extension services, and relevant government agencies.
3. **Cultural and Linguistic Adaptation:** Adapting the courseware to local languages, cultural contexts, and agricultural practices.



4. **Implementation Support:** Providing technical assistance and knowledge transfer to local implementing partners.

This global expansion strategy acknowledges the diversity of agricultural contexts across the Global South while leveraging the common experiences and challenges faced by informal sector workers in agriculture worldwide.

Conclusion

The AI for Informal Sector Workers project represents a significant step forward in democratizing access to AI technologies for those who have traditionally been on the margins of technological advancement. By focusing on the agricultural sector, which employs a vast majority of informal workers in India, the project addresses a critical need while leveraging the transformative potential of AI.

The comprehensive courseware developed through the collaboration between GPAI and COL-CEMCA provides a structured pathway for farmers to understand, adopt, and benefit from AI technologies in their daily agricultural practices. From basic AI concepts to practical applications in crop monitoring, soil management, and market analysis, the course equips farmers with knowledge and skills that can enhance their productivity, sustainability, and economic prospects.

However, the project's implementation has revealed important ethical considerations and practical challenges that merit explicit acknowledgment. The inherent tension between providing advanced AI training to populations facing fundamental barriers such as limited literacy and inadequate digital infrastructure raises legitimate questions about resource allocation and development priorities. While some may argue that addressing basic educational and infrastructure needs should precede AI literacy initiatives, this project demonstrates that awareness-building and knowledge transfer can occur through multiple pathways and serve valuable preparatory functions for future technological access.

The experience of developing and implementing this courseware has highlighted the critical importance of addressing AI accuracy and misinformation concerns, particularly when training populations who may have limited ability to independently verify AI-generated information. Future AI education initiatives must prioritize comprehensive training on information verification, critical evaluation of AI outputs, and appropriate skepticism toward automated recommendations.

Additionally, the project's approach to serving participants with limited literacy and technology access reflects broader questions about inclusive technology education. While perfect solutions to these challenges may not exist within current resource constraints, the multi-modal delivery approach and emphasis on community-wide awareness building represent meaningful attempts to work within existing limitations while advocating for systemic improvements.

Hence, in the pilot implementation phase, the strategy, leveraged the extensive network of Krishi Vigyan Kendras, ensuring that this knowledge reaches a significant number of farmers, while the planned scaling efforts promises to expand this impact to millions more across India and potentially other Global South countries.

As we move forward with the expansion and refinement of this initiative, the lessons learned from the initial implementation will be invaluable in developing more effective approaches to AI adoption in informal sectors. These lessons include the necessity of addressing digital equity concerns, the importance of comprehensive AI accuracy training, and the need for collaborative approaches that simultaneously tackle education, infrastructure, and literacy challenges. The potential impact extends beyond individual farmers to encompass broader agricultural communities, contributing to improved food security, environmental sustainability, and rural livelihoods.

To adopt a more holistic approach, future iterations of this project can focus on developing partnerships with literacy programs, infrastructure development initiatives, and policy advocacy organizations to address the root causes of digital exclusion rather than merely working around existing barriers. This can help recognize that sustainable AI adoption in marginalized communities requires comprehensive support systems that extend beyond technology training to encompass basic education, infrastructure development, and community empowerment.

In conclusion, the AI for Informal Sector Workers project demonstrates how technology, when appropriately adapted and implemented, can serve as a powerful tool for inclusion and empowerment. While challenges remain in ensuring equitable access and addressing fundamental barriers to technology adoption, the project provides a foundation for bringing the benefits of AI to those who may otherwise be left behind in the technological revolution, while maintaining ethical integrity and realistic expectations about what such initiatives can accomplish within existing structural constraints. This aligns perfectly with GPAI's mission to ensure that artificial intelligence is developed and used in a way that benefits humanity as a whole.