

**Integration of Artificial Intelligence (AI) in Agricultural
Journalism:
The Case of *Agrogaremo* TV Facebook Reels**

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Abstract

Introduction

In the digital era, media organizations are undergoing profound technological transformation, with artificial intelligence (AI) emerging as one of the most influential drivers of change in journalism. Automation, algorithmic content production, and generative systems are no longer experimental tools but increasingly integrated components of newsroom workflows. As research indicates (Lewis & Westlund, 2015; Pavlik, 2023), AI does not merely optimize production processes; it reshapes journalistic formats, storytelling practices, and audience engagement models.

The integration of AI becomes particularly significant in niche and specialized fields of journalism, where subject-matter expertise, visual demonstration, and educational clarity are essential. Agricultural journalism represents one such domain. Unlike general news reporting, agri-journalism serves a targeted audience—farmers, agricultural professionals, rural communities, and students—who require precise, practical, and visually accessible information. The quality and accessibility of agricultural information directly influence awareness, adoption of innovations, environmental practices, and rural economic resilience.

In countries where agricultural sectors continue to face infrastructural limitations and technological gaps, the role of media as a knowledge intermediary becomes even more critical. In Georgia, where agriculture remains a strategic economic sector, media coverage of farming practices, livestock management, and sustainable production plays a significant role in shaping public understanding and professional behavior (Kuprashvili & Chalaganidze, 2018). However, limited newsroom resources and technical constraints often hinder the production of visually rich and educational agricultural content.

In this context, AI-assisted content production represents not merely technological innovation but a structural opportunity for expanding access to knowledge. Generative AI tools enable the rapid creation of audiovisual material, automated subtitles, synthesized voiceovers, and realistic visual simulations. These affordances are particularly relevant in agricultural journalism, where field filming may be logistically challenging, seasonal, or resource-intensive.

The case of *Agrogaremo TV* offers a pioneering example within the Georgian media landscape. The platform is among the first in the country to systematically integrate generative AI tools in the production of educational agricultural content, including video lessons, recommendations, and short-form audiovisual materials distributed through Facebook Reels. Between September 10 and November 10, 2025, the channel produced 45 short-form videos fully or partially generated using AI technologies. This period marks the beginning of consistent AI-assisted content production in the platform's workflow.

This study aims to examine how AI integration transforms agricultural journalism practices through the case of *Agrogaremo TV*'s Facebook Reels. Specifically, it analyzes the thematic structure, narrative design, visual composition, and audience engagement patterns of AI-generated content. In addition, the study addresses ethical considerations related to transparency, authenticity perception, and audience trust.

By exploring both content characteristics and user responses, the research contributes to broader discussions about automation in journalism, digital trust formation, and the evolving relationship

between technological systems and professional media practice. The Georgian case offers valuable insight into how small, specialized media teams can leverage AI to scale educational production while navigating ethical and professional boundaries.

Literature Review

The integration of artificial intelligence into journalism has evolved from experimental automation to structural newsroom transformation. Early research on algorithmic journalism focused primarily on automated news writing and data-driven reporting (Lewis & Westlund, 2015). Subsequent scholarship expanded the discussion to include generative systems, audience personalization, and newsroom workflow reconfiguration (Pavlik, 2023).

Brennen, Howard, and Nielsen (2020) argue that AI technologies are not simply efficiency tools but reconfigure professional roles, editorial decision-making, and production hierarchies. Automation increasingly supports routine content generation, enabling journalists to redirect attention toward analytical and interpretative tasks. However, this transformation also raises concerns regarding transparency, accountability, and the potential erosion of editorial autonomy.

Recent literature emphasizes that AI functions most effectively in hybrid models, where technological systems augment rather than replace human expertise (Pavlik, 2023). This hybridization is particularly relevant in specialized journalism sectors that require contextual knowledge and ethical oversight.

While much research has focused on political and breaking news contexts, less attention has been paid to AI integration in niche journalism. Specialized domains—such as science, health, environmental, and agricultural reporting—depend heavily on explanatory clarity, visual representation, and educational framing.

Agricultural journalism occupies a distinct position within this landscape. It combines informational, educational, and developmental communication functions. According to Kuprashvili and Chalaganidze (2018), constructive agricultural journalism aims not only to inform but also to enhance farmers' awareness, practical competencies, and

adaptive capacity. This aligns with broader communication-for-development frameworks, where media serve as intermediaries between knowledge systems and local practice.

In this context, AI-generated audiovisual tools offer unique affordances. Visual simulations of animals, crops, or farming processes can enhance comprehension where physical filming is constrained by geography, seasonality, or cost. Thus, automation may expand accessibility rather than merely accelerate production.

A central concern in AI-mediated journalism is audience perception of authenticity. Research indicates that audiences often struggle to distinguish between human-produced and AI-generated content (Brennen et al., 2020). This ambiguity may generate what can be described as “digital trust”—a form of credibility granted to visually persuasive content regardless of its ontological status.

However, transparency remains a critical ethical principle. Disclosure of AI usage aligns with journalistic norms of accountability and informed consent. Studies suggest that transparency may mitigate ethical concerns while maintaining audience engagement (Pavlik, 2023).

The phenomenon becomes particularly relevant in short-form video formats such as social media reels, where rapid consumption and visually compelling imagery shape audience perception. The use of generative animal visuals in agricultural content introduces additional ethical complexity: while the informational text may be accurate, the visual simulation may be interpreted as documentary evidence.

The rise of short-form video formats (e.g., Facebook Reels, Instagram Reels, TikTok) has transformed audience engagement patterns. Research in digital journalism indicates that short videos rely on rapid narrative structure, visual immediacy, and emotionally resonant imagery to capture attention (Pavlik, 2023).

These platform affordances encourage standardized production styles, concise scripting, and strong visual hooks. For agricultural journalism, this format may simultaneously increase reach and

simplify complex agronomic processes. The tension between simplification and accuracy becomes a central analytical concern.

Research Gap

Although global scholarship has extensively examined AI in newsroom automation and political reporting, there remains limited empirical research on AI integration within agricultural journalism, particularly in small media ecosystems such as Georgia.

Furthermore, few studies have explored how AI-generated visual simulations affect audience perception in specialized educational contexts. The case of *Agrogaremo TV* provides an opportunity to address this gap by examining:

- Thematic patterns in AI-generated agricultural content
- Narrative and visual structures of short-form videos
- Audience reactions and authenticity perception
- Ethical implications of generative media in development-oriented journalism

By situating this case within broader debates on automation, hybrid journalism, and digital trust, this study contributes to emerging scholarship on AI-driven transformation in specialized media sectors.

Methodology

This study employs a qualitative case study design combined with quantitative content indicators to examine the integration of artificial intelligence (AI) in agricultural journalism through the example of *Agrogaremo TV*'s Facebook Reels.

The research follows a mixed qualitative–quantitative approach. The primary method is content analysis, supplemented by audience reaction analysis and semi-structured expert interviews with representatives of the channel.

The case study focuses on a defined production period—from September 10 to November 10, 2025—marking the beginning of systematic AI-assisted content creation by *Agrogaremo TV*. During

this period, 45 Facebook Reels videos were published that were either fully or partially generated using AI tools.

This time-bound sampling ensures methodological consistency and allows for focused analysis of early-stage AI integration practices.

The dataset includes:

- 45 Facebook Reels videos
- Associated video captions and subtitles
- Audience comments and reaction metrics (likes, shares, engagement patterns)
- Interview data from channel representatives

All videos were publicly accessible via the platform's Facebook page at the time of analysis. Engagement data were collected directly from the platform interface.

In addition, semi-structured interviews were conducted with channel representatives to clarify:

- Which generative AI tools were used
- How text generation, voice synthesis, visual production, and editing were structured
- The degree of human editorial intervention
- Ethical considerations and transparency practices

The analysis was conducted in three stages.

Stage 1: Thematic Coding

All 45 videos were coded into six primary thematic categories:

1. Livestock (including calves, rabbits, pigs, buffaloes)
2. Beekeeping
3. Crop production / Horticulture
4. Fruits and Vegetables
5. Wild medicinal plants
6. Specialized agricultural culture (e.g., Georgian silk production)

Each video was assigned one primary thematic code and, where applicable, a secondary code to account for thematic overlap.

This classification allowed for comparative analysis of thematic distribution and identification of dominant content areas.

Stage 2: Structural and Narrative Analysis

The second stage involved structural analysis of video characteristics, including:

- Video duration
- Internal narrative structure
- Script segmentation
- Voiceover type (male/female synthesized voice)
- Subtitle format and consistency
- Visual composition (fully AI-generated vs. partially real footage)

Particular attention was paid to the sequencing of information, clarity of practical recommendations, and overall narrative coherence. This stage aimed to assess how AI tools shaped storytelling conventions within the short-form format.

Stage 3: Audience Reaction Analysis

The third stage examined audience engagement and perception patterns through:

- Comment analysis
- Emotional tone of responses
- Indicators of authenticity perception
- Instances where users interpreted AI-generated visuals as real documentary footage

All comments within the defined timeframe were reviewed and categorized according to thematic clusters:

- Positive evaluation
- Practical inquiry (e.g., price, location, breed details)
- Requests for additional content

- Authenticity misperception
- Technical critique

This qualitative comment analysis enabled the study to assess audience trust formation and potential ethical implications.

The study integrates:

- Qualitative content analysis
- Descriptive quantitative indicators (video count per theme, engagement tendencies)
- Thematic audience interpretation analysis
- Institutional insight from expert interviews

Rather than measuring advertising performance or algorithmic reach metrics, the research focuses on structural characteristics of AI-assisted journalism and its perceived authenticity within a specialized media ecosystem.

Since the analyzed content was publicly available, no private data were accessed. However, audience comments were anonymized in reporting to ensure ethical compliance.

The study also critically reflects on transparency practices in AI-generated journalism, particularly regarding disclosure of generative visual content.

Several limitations should be acknowledged:

- The study covers a two-month production window, representing early-stage implementation.
- Engagement metrics were observed descriptively rather than through platform analytics access.
- Audience perception was inferred from comment analysis rather than direct surveys.

Despite these constraints, the dataset provides sufficient depth to identify structural patterns in AI-assisted agricultural journalism.

Findings

The analysis of 45 AI-assisted Facebook Reels published by *Agrogaremo TV* between September 10 and November 10, 2025 reveals distinct thematic, structural, and audience engagement patterns. The findings are presented in four analytical dimensions: thematic distribution, narrative and stylistic structure, audience engagement dynamics, and authenticity perception.

The thematic coding of all 45 videos demonstrates a clear dominance of livestock-related content. This category accounts for the largest proportion of videos within the analyzed period.

Livestock-themed videos—including calves, rabbits, piglets, and buffaloes—constitute the most frequent category. These videos are characterized by highly visual AI-generated animal simulations, often presented in farm-like settings. The prominence of this category suggests that visually dynamic animal imagery plays a central role in content strategy.

A smaller but consistent portion of the dataset (approximately 4–5 videos) focused on beekeeping. These videos typically addressed hive structure, disease prevention, and honey extraction practices. Compared to livestock content, beekeeping videos emphasized instructional clarity over visual spectacle.

A moderate number of videos addressed crop cultivation topics, including tomatoes, potatoes, and lemons. These videos followed a more explanatory narrative format, focusing on planting techniques, disease management, and yield optimization.

Three to four videos emphasized the qualities, cultivation practices, and benefits of specific fruits and vegetables. These were generally less visually dramatic but maintained practical informational value.

Five to six videos focused on wild medicinal plants such as oregano and bay leaf. These videos often incorporated environmental awareness messaging, including ethical harvesting and sustainability considerations.

One or two videos addressed niche agricultural topics, such as Georgian silk production. These videos served more educational and cultural purposes than practical farming instruction.

Overall, the dominance of livestock content suggests that AI-generated animal visuals function as a primary engagement driver within the short-form format.

Across categories, AI-generated videos demonstrate a highly standardized structural pattern:

1. Short topic introduction
2. Brief explanatory segment
3. Practical recommendation or instruction
4. Concluding summary statement

Most videos do not exceed 90 seconds, aligning with optimal engagement duration for Facebook Reels. The voiceover is synthesized—using both male and female AI-generated voices—with a stable, neutral tone. Subtitles are automatically generated in Georgian script and maintain stylistic consistency across videos.

The visual composition is uniform, creating a coherent brand identity. Fully AI-generated imagery dominates livestock videos, while plant-focused content occasionally blends illustrative visuals with explanatory narration.

This structural uniformity suggests that AI tools facilitate not only production efficiency but also stylistic standardization.

Audience analysis reveals a significant pattern: videos featuring AI-generated animal imagery receive comparatively higher engagement levels than other thematic categories.

Although the videos were not promoted or boosted through paid advertising, livestock videos achieved strong organic interaction. Comments frequently included:

- Praise for the “farmer”
- Inquiries about location and price
- Requests for breed information

- Expressions of admiration for farm conditions

For example, typical comments included: “Great farmer, very well maintained.” “Where is this farm located?” “How much does this breed cost?”

Such responses indicate that viewers often interpret AI-generated scenarios as real documentary footage.

In contrast, crop-related videos generated more informational questions but fewer emotional reactions.

One of the most significant findings concerns audience perception of authenticity. Despite transparent labeling in titles indicating the use of AI, many viewers did not recognize the generated nature of the visuals.

In multiple cases, users directed praise toward non-existent farmers or treated simulated animal imagery as documentary representation. This pattern suggests the emergence of what may be described as “digital trust”—credibility granted to visually persuasive content regardless of its generative origin.

While informational accuracy within scripts appears professionally grounded, visual realism occasionally includes exaggerated proportions or idealized farm environments. This creates a tension between informational reliability and visual simulation.

The findings highlight a key ethical dimension: AI-generated visuals, even when transparently labeled, may still be perceived as authentic by audiences.

Interviews with channel representatives confirm that multiple generative tools are combined in production, including:

- Text generators
- Video generators
- Voice synthesis systems
- Subtitle automation tools

However, editorial review, script refinement, and final montage remain human-led processes. This indicates a hybrid production model in which AI augments journalistic labor rather than replacing it.

The study identifies four central patterns:

1. Livestock-themed AI visuals drive the highest engagement.
2. AI enables standardized, efficient, short-form educational production.
3. Audiences frequently interpret AI-generated visuals as real.
4. Hybrid production preserves human editorial control while leveraging automation.

These findings demonstrate that AI integration within agricultural journalism not only transforms production processes but also reshapes audience perception and engagement dynamics.

The integration of generative artificial intelligence into agricultural journalism introduces complex ethical considerations that extend beyond technical efficiency or audience engagement metrics. While AI-assisted production expands access to educational content and reduces resource constraints, it simultaneously raises questions regarding transparency, authenticity, accountability, and audience perception.

One of the foundational ethical principles in journalism is transparency. In the case of *Agrogaremo TV*, AI-generated content is labeled in video titles, indicating the use of artificial intelligence. This practice aligns with emerging standards in AI-assisted journalism, which emphasize disclosure as a mechanism of accountability (Brennen et al., 2020).

However, findings from audience comment analysis suggest that labeling alone may not guarantee informed perception. Despite explicit references to AI, many viewers interpreted generated visuals as real documentary footage. This reveals a discrepancy between formal transparency and effective audience comprehension.

The ethical challenge, therefore, extends beyond disclosure to communicative clarity: How explicit must labeling be to ensure that audiences understand the ontological status of content?

Agricultural journalism traditionally relies on documentary credibility—real farms, real animals, real production processes. The use of AI-generated livestock imagery complicates this foundation.

Although textual information and practical recommendations may remain accurate, simulated visuals sometimes present idealized or exaggerated representations. In some cases, animal proportions or environmental conditions appear hyper-realistic rather than documentary. When audiences interpret these images as factual representations, a form of “perceived documentary realism” emerges.

This raises a critical ethical question: If informational content is correct but visual representation is simulated, does this compromise journalistic integrity?

The study does not identify intentional deception. However, it highlights the necessity of clearer visual signaling mechanisms—such as watermarking or explicit on-screen disclosure—to prevent misinterpretation.

The findings indicate the emergence of digital trust: audiences extend credibility to visually persuasive AI-generated content even when it is synthetic. This trust may enhance educational effectiveness but also introduces vulnerability.

In agricultural contexts, where farmers rely on accurate representation for decision-making, the distinction between illustrative simulation and documentary evidence becomes ethically significant. Misinterpretation could potentially influence purchasing decisions, breed selection, or farm investment planning.

Therefore, AI integration must be accompanied by strengthened media literacy efforts, particularly in rural communities.

Interviews with channel representatives confirm that AI tools are used in combination with human editorial oversight. Script drafting, fact-checking, thematic selection, and final editing remain journalist-led

processes. This hybrid model reflects what Pavlik (2023) describes as augmentation rather than automation-driven displacement.

Ethically, this distinction is crucial. When AI supports production efficiency while preserving human accountability, journalistic standards remain intact. However, unchecked automation could risk reducing critical editorial judgment.

Thus, the ethical viability of AI in agricultural journalism depends on maintaining human responsibility at key decision-making stages.

The uniform structure of AI-generated Reels contributes to brand consistency and efficient scaling. However, excessive standardization may limit narrative diversity and contextual nuance.

Agricultural practices are highly localized, influenced by regional climate, soil conditions, and cultural traditions. If AI-generated formats prioritize visual spectacle or generalized recommendations, contextual specificity may be diluted.

This suggests the need for balance between scalability and contextual adaptation.

Based on the findings, several ethical safeguards are recommended:

1. Clearer on-screen disclosure of AI-generated visuals.
2. Distinguishing between illustrative simulation and documentary footage.
3. Continued human editorial oversight at all stages.
4. Integration of media literacy messaging within AI-produced content.
5. Periodic content auditing to assess representational accuracy.

The case of *Agrogaremo TV* demonstrates that AI can enhance agricultural journalism without necessarily undermining professional integrity. However, ethical responsibility increases in proportion to technological capability.

Generative AI does not eliminate journalistic ethics; it intensifies the need for their conscious application. In specialized fields such as

agricultural journalism—where informational consequences may affect livelihoods—the balance between innovation and responsibility becomes particularly significant.

Conclusion

This study examined the integration of artificial intelligence in agricultural journalism through the case of *Agrogaremo TV*'s Facebook Reels, analyzing 45 AI-assisted videos produced over a two-month period. The findings demonstrate that generative AI is not merely a technical enhancement tool but a transformative force reshaping production practices, narrative structures, and audience engagement within specialized journalism.

The thematic analysis revealed a strong dominance of livestock-related content, particularly videos featuring AI-generated animal simulations. These visually dynamic formats generated the highest levels of organic engagement, suggesting that generative imagery plays a significant role in capturing audience attention in short-form digital environments.

Structurally, AI facilitated standardized, efficient, and scalable content production. Videos followed a consistent narrative formula—concise introduction, practical explanation, and clear conclusion—optimized for platform-specific consumption. This uniformity contributed to brand coherence and production sustainability, particularly for small media teams with limited resources.

At the same time, the study identified a critical tension between visual simulation and perceived authenticity. Audience comment analysis revealed that many viewers interpreted AI-generated visuals as documentary representations of real farms and animals. This phenomenon highlights the emergence of digital trust, where visual realism overrides ontological awareness of synthetic production.

Ethically, the findings suggest that AI integration in agricultural journalism is viable when embedded within a hybrid production model that preserves human editorial oversight. In the case examined, AI augmented journalistic labor rather than replacing it. Script

development, content verification, and final editorial decisions remained human-driven processes.

The study contributes to emerging scholarship on AI in journalism by addressing a gap in research on specialized, development-oriented media sectors. While much literature focuses on automation in political or breaking news contexts, this case demonstrates how generative AI can support educational and sector-specific journalism in small media ecosystems.

Importantly, AI integration appears to expand knowledge accessibility within agricultural communication. By enabling the rapid creation of visually compelling and instructional content, AI lowers production barriers and broadens dissemination potential. In countries where agricultural information infrastructure remains uneven, this represents a meaningful structural opportunity.

However, innovation must be accompanied by ethical clarity. Clear disclosure mechanisms, strengthened media literacy, and continued human accountability are essential to ensure that technological advancement does not undermine professional integrity.

Ultimately, the case of *Agrogaremo TV* illustrates that AI is neither a threat nor a replacement for journalism. Rather, it represents a powerful tool whose impact depends on how responsibly and strategically it is integrated. In the evolving landscape of agricultural journalism, generative AI may serve as a catalyst for scalability, accessibility, and pedagogical innovation—provided that ethical considerations remain central to its application.

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