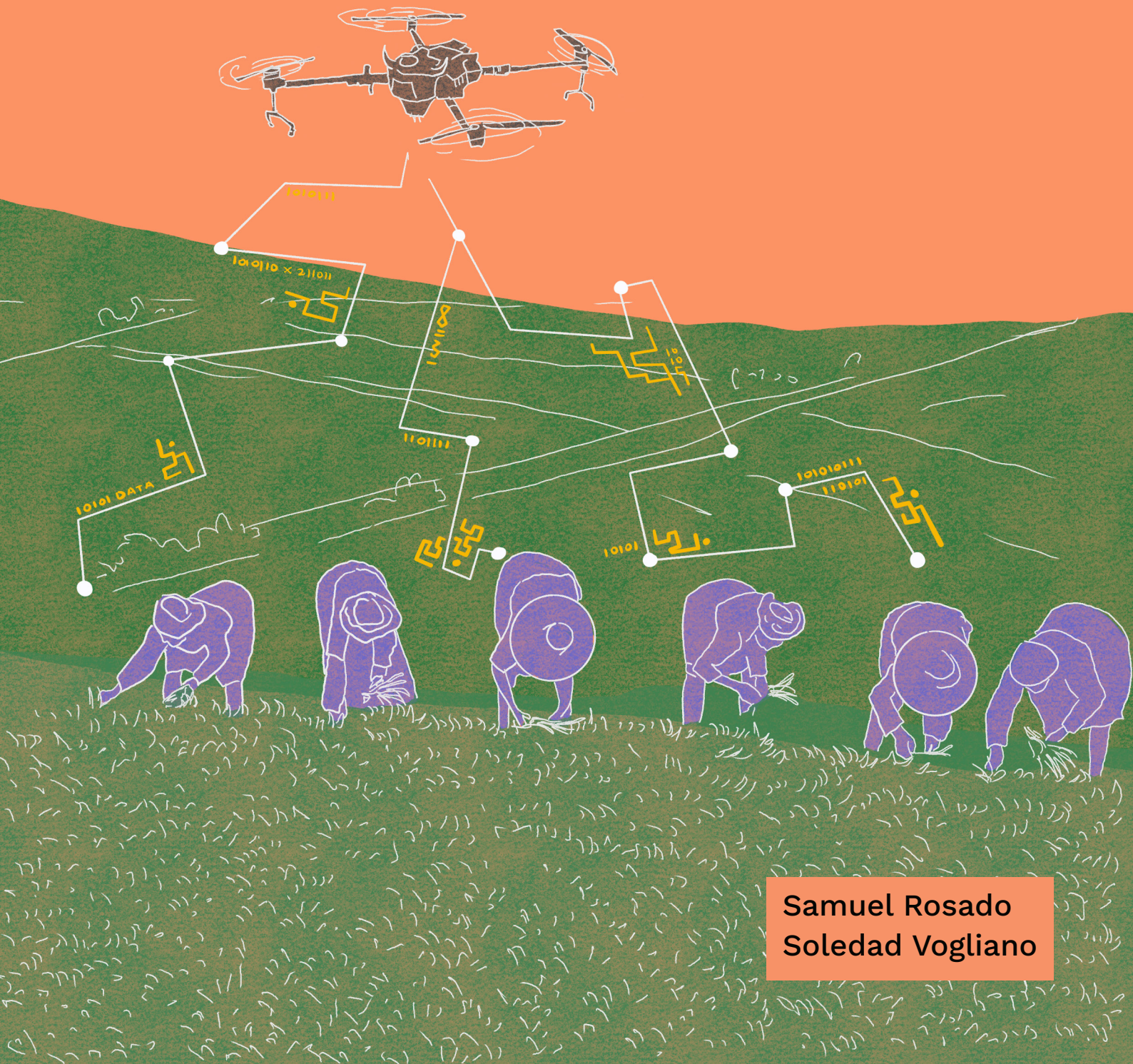
Commons to Code:

How Platforms Rewire Agriculture and Reshape Power

A case study focusing on Bayer's Climate FieldView platform



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1 Background and Context-Setting

The digitalization of agriculture signals more than the adoption of new tools, it marks a systemic shift in how food systems are organized and governed. At its core lies the agricultural data pipeline, where everyday farming activities are transformed into data streams, transmitted across global cloud infrastructures, processed through algorithms, and ultimately monetized. Each stage of this pipeline embeds asymmetries of power: control over devices and connectivity, access to cloud storage, ownership of algorithms, and the authority to transform data into financial assets.

The study argues that this process exemplifies ‘data colonialism’—the extraction of value from life, labor, and ecosystems through digital infrastructures. Farms and territories are reframed as nodes in a global system of surveillance and prediction, where decisions are governed less by farmers’ knowledge than by corporate algorithms and market logics.

Platforms are not just technical tools but institutional forms that govern how data flows, how value is generated, and who controls the terms of interaction. Platformization enables a shift from direct transactions and relationships to data-mediated, algorithmically-governed systems dominated by a handful of corporate actors operating at a global scale.

This restructuring has been accelerated by the convergence of agribusiness and tech giants—what the report calls the 'Big Ag–Big Tech complex'. Agribusiness corporations embed data services within their input packages, while tech companies provide the cloud infrastructure and analytic engines that make agriculture compatible with the broader digital economy. The result is the phenomenon of 'platformization': farming organized through proprietary, closed ecosystems that lock users into subscription-based services and redirect agricultural value upstream into financial and speculative markets.

The case study uses these analytic lenses to reveal how digital agriculture deepens dependency, erodes autonomy, and redefines farming as a data-extractive sector, raising fundamental questions of justice, rights, and sovereignty.

2 Implications for Data Justice and Economic, Social, Cultural and Environmental Rights (ESCR)

2.1 Data Injustices

- **Corporate control:** Agricultural platforms integrate seeds, inputs, and services with data infrastructures, consolidating power in the hands of a few corporations. Farmers and rural communities have little say over how the data is collected, processed, or monetized.
- **Opacity of governance:** Platforms often claim that farmers "own" their data, but in practice contractual terms allow corporations broad rights to use, share, or repurpose it. This ownership is symbolic, masking a lack of enforceable rights.
- **Platform lock-in:** By embedding agronomic recommendations, machinery compatibility, and financial services into closed ecosystems, platforms create dependencies that reduce autonomy, portability of data, and limit alternatives such as agroecology.

- **Algorithmic governance:** Decision-making increasingly shifts from experiential, farmer-led knowledge to proprietary algorithms. These 'black box' systems are non-transparent, reproduce biases, and are designed to optimize corporate profitability rather than food sovereignty or ecological sustainability.
- **Cross-border extraction:** Data flows across jurisdictions through hyperscale cloud infrastructures, escaping national regulation and reinforcing North–South asymmetries in control over resources and knowledge.
- **Assetization and financialization:** Agricultural data is commodified and transformed into financial products such as carbon credits, ESG derivatives, and risk profiling. Value is captured upstream by corporations, while producers remain data suppliers without benefits.
- **Hidden environmental costs:** Expanding digital infrastructures (data centers, wireless networks, and edge computing) consume vast amounts of energy and water, yet these impacts remain invisible under "green" narratives.

2.2 Upshot of ESCR Implications

Right to Adequate Food (Art. 11, ICESCR): Platform-driven agriculture prioritizes yield and market efficiency, reinforcing monocultures and undermining agroecological practices. This narrows the basis for resilient, diverse, and culturally appropriate food systems.

Right to Water (Art. 11, ICESCR): Platform logics intensify agrochemical use, contaminating water sources, while the data infrastructures behind them increase industrial water withdrawals for cooling.

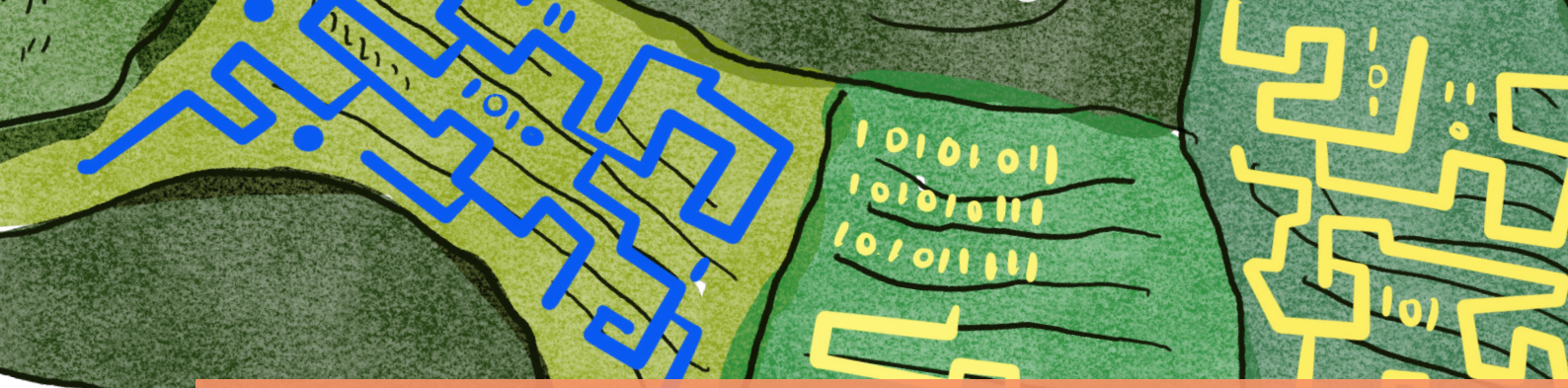
Right to Health (Art. 12, ICESCR): Communities are doubly exposed through pesticide-intensive models recommended by platforms and through the toxic footprints of digital infrastructures, from e-waste to mineral extraction.

Right to Work and Just Conditions (Arts. 6–7, ICESCR): Automation and algorithmic surveillance displace labor, erode traditional expertise, and reshape employment around precarious digital regimes.

Right to Cultural Life (Art. 15.1a, ICESCR): By reducing farming to computable variables, platforms marginalize diverse knowledge systems, Indigenous practices, and cultural relationships with land.

Right to Benefit from Scientific Progress (Art. 15.1b, ICESCR): Farmers generate the data that fuels innovation but are excluded from its governance and benefits, entrenching inequalities in access to science.

Right to a Clean, Healthy and Sustainable Environment (UNGA Res. 76/300): Platform infrastructures intensify biodiversity loss, greenhouse gas emissions, and energy use, contradicting their sustainability claims.



3 Sector-Specific Pathways for Data and Development Justice

Reframing data as a commons

Civil society can challenge the framing of agricultural data as a private commodity. By building narratives and practices that connect data with land, seed, and water struggles, movements can reposition it as part of the commons and highlight how enclosure undermines public value.

Building data sovereignty from below

Farmer organizations, Indigenous Peoples, and grassroots movements can develop community-controlled governance models (e.g. data cooperatives, commons-based repositories, data sovereignty protocols) that demonstrate alternatives and strengthen advocacy. These experiments prove that communities can govern digital resources on their own terms.

Exposing and resisting platform lock-in

Civil society can document and publicize how agricultural platforms design dependency. By naming these mechanisms as enclosures, reclaiming data portability and contesting technology lock-ins (e.g. Right to Repair) movements can shift debates from efficiency to justice, equipping communities with arguments to resist lock-in and defend technological autonomy.

Embedding agroecology in digital narratives

Agroecology must be uplifted as a counter-narrative to digital solutionism. Civil society can highlight cases where digital tools are subordinated to agroecological principles. Linking agroecology and data justice reframes technology as one element within complex ecological systems, resisting its reduction to algorithmic optimization. This alignment strengthens food sovereignty struggles by connecting ecological knowledge with digital governance debates.

Challenging financialization and greenwashing

Digital agriculture increasingly feeds data into carbon markets, ESG products, and speculative finance. Civil society can expose these dynamics as false solutions and highlight the environmental costs of datafication of climate markets mechanisms. By linking data justice to climate justice, movements can denounce how “green” platforms entrench extractive logics. Advocacy should insist on genuine climate pathways (such as agroecology and indigenous conservation strategies), not as offsets for financial speculation.

Building transnational and cross-sectoral alliances

Agricultural data governance is not only a farmer issue but part of the wider struggle over control of digital infrastructures. Because platforms operate through the same systems that organize finance, health, and climate policy, their impacts extend across society. Civil society must therefore build alliances that are both transnational and cross-sectoral, linking food sovereignty, digital rights, climate justice, labor, and Indigenous movements, to confront Big Tech power and reclaim data justice across interconnected struggles.

Democratizing innovation

Movements can create participatory research spaces, open-source agronomic tools, and farmer-led experiments that prefigure alternative models of digitalization. Such initiatives show that innovation can be co-created and collectively governed, rather than dictated by corporate players. By assessing technologies from the bottom up, and embedding them in social priorities, civil society crafts the pathway for technology to serve autonomy and ecological sustainability.

Advancing advocacy and legal activism

Advocacy and legal strategies are essential to contest the asymmetries of digital agriculture. Civil society can demand recognition of collective rights over data and challenge exploitative contracts (e.g. Right to Repair). Strategic interventions in human rights arenas, combined with grassroots mobilization, help reframe agricultural data governance as a societal concern. Legal activism complements movement building by pressuring institutions and holding corporations accountable for rights violations and systemic enclosures.

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Read the full report **here**

This report is part of a research collaboration between IT for Change and the ETC Group under the Centering Equity and Justice in Global Data Governance project, a collaborative initiative anchored by IT for Change, with support from the Fair Green and Global Alliance (FGG) and the Centre for Global Digital Justice (CGDJ). The project aims to advance sector-specific, contextually grounded data justice principles rooted in Global South perspectives, developed in collaboration with progressive civil society organizations and people's movements. Through this engagement, the project examines the impacts of digitalization and datafication in critical domains— including public health, biodiversity, food sovereignty, and climate change mitigation and adaptation— to articulate justice-oriented approaches to data governance.

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