

Maura Benegiamo¹

The Labor of the Future, the Future of Labor? A Just Transition Critique of the Digital Agriculture Utopia²

Self-driving tractors, drones, sensor-equipped animals, automated greenhouses, and vertical urban farms – these are the seemingly labor-free components of a digital-green agricultural sector. In her contribution to BG’s “Allied Grounds” text series, Maura Benegiamo shows the limits and, at the same time, the highly speculative nature of these transformative visions, which fail to respond to current emergencies and accelerate the destruction of the socio-ecological foundations on which societies are based.

In my research work, I explored the features of agrarian extractivism in green development processes and their relation to the transformations of the neoliberal political economy triggered by the multiple crises of 2007-2008. Fifteen years and two more global crises later, the COVID-19 pandemic and Russia’s war on Ukraine, invite us to take stock of these transformations and the evolution of the promises of green growth and their impacts on labor and the environment. In this regard, recent policy claims about a digital transition for the agrarian sector provide some useful insights for examining such issues and the challenges they pose to the construction of an anti-capitalist common

¹ Maura Benegiamo is a researcher in economic sociology and labour studies at the Department of Political Science, University of Pisa.

² This article has been originally published in the Berliner Gazette’s “Allied Grounds” text series. Available on: <https://berlingazette.de/a-just-transition-critique-of-the-digital-agriculture-utopia/>

ground in the broader context of the ruination of the common social reproductive capacity, economic stagnation, and ecological degradation of late capitalist societies.

The idea of a “digital agricultural revolution” gained policy consensus in the aftermath of the 2008 food and financial crises, to be definitively affirmed as a transition strategy in the post-COVID-19 era. Organizations such as the FAO, the OECD or the EU insist on the role of digital, precision, and data economy technologies in the transition to more resilient, productive and environmentally efficient food systems. This perspective is also linked to the notion of Industry 4.0, which was launched by the German government in 2013 and was the theme of the World Economic Forum’s Annual Meeting in 2016. The concept, also known as the Fourth Industrial Revolution, highlights the potential impact of a range of new technologies that combine the physical, digital and biological worlds to create a new “cyber-physical space” of action. Within this framework, the “farm of the future” is often portrayed as a technological utopia in which automated and hyper-connected systems – including self-driving tractors, drones, sensor-equipped animals, automated greenhouses, and vertical urban farms – are managed by a new figure of the digi-



Artwork: Colnate Group, 2023 (cc by nc)

tal farmer, whose work is made easier, more dignified, and less burdensome by these same technologies.

In what follows, I focus on three main issues that emerge from these imaginaries: how the future of labor is conceived, what kind of nature this presupposes, and how such perspectives relate to the urgencies of an economically and ecologically devastated present. Although limited to the agrarian sector, these aspects allow for a more general understanding of contemporary class politics, since they demonstrate the material form that capitalist relations take when the re-production of life is both a limit and a frontier of capitalist development, raising the question of what a just transition requires and why it is important to reclaim it.

From self-driving tractors to 4.0 assembly lines

Indeed, there is no trace of the thousands of agricultural workers, seasonal workers, migrant bodies who harvest the food that comes to our tables, nor of their struggles and demands. In its most futuristic version, the digital transition seems to be designed not for them, but against them. However, the actual capacity of digital technologies to replace these typologies of work remains an open question. Instead, scholars attest to the intensification of agricultural labor and its exploitation. This is what the new super-intensive and multitasking machines, from self-driving tractors to the new 4.0 assembly lines, are designed for, offering the possibility of carrying out several operations simultaneously, more quickly and with increased production volumes. It is probably worth recalling what the history of science and technology in the context of capitalist development has long demonstrated, i.e. that technology, in addition to being an instrument of production, has above all acted as an instrument of control, discipline or reduction of the workforce.

But it is not just a matter of contradicting the notion of supposedly disembodied, immaterial and neutral properties of technologies in order to expose the material relations that permeate them. If digitization and automation reinforce capitalism's

reliance on unequal, racialized, and gendered relations of production and expropriation (including the semi-slave labor training artificial intelligence or employed in manufacturing; the incorporation of bodies and everyday life into knowledge-based circuits of valorization; and the uneven environmental impacts of digital infrastructures), it is also important to understand the relationship between these patterns of exploitation and the imaginaries of labor conveyed by top-down digital transition policies.

In their book “Surrogate Humanity: Race, Robots, and the Politics of Technological Futures,” Neda Atanasoski and Kalindi Vora explore the colonial and racial roots that permeate techno-scientific imaginaries of automation and the future of work. Questioning the dream of a post-work future driven by technological progress (a vision often also shared within Marxist circles), they focus on the accompanying promise of a full ‘realization’ of human nature, whose features, however, unmask the liberal subject and expose the colonial hierarchies that sustain productivist visions of labor:

“Technological futures tied to capitalist development iterate a fantasy that as machines, algorithms, and artificial intelligence take over the dull, dirty, repetitive, and even reproductive labor, the full humanity of the (already) human subject will be freed for creative capacities. Even as more valued tasks within capitalist regimes of production and accumulation, such as knowledge work, become automatable, the stated goal of technological innovation is to liberate human potential (its non-alienated essence, or core) that has always been defined in relation to degraded and devalued others – those who were never fully human.”

Farming without labor?

A just transition that moves beyond these techno-liberal imaginaries will therefore need to develop cross-cutting and intersectional alliances between situated knowledge, expertise and points of view in order to provide alternative technological solutions that do not replicate racialized and gendered notions of devalued labor, but rather demand an engagement with the diversity of su-

jects that sustain capitalist production in order to promote their ability to participate in future imaginaries of labor. This also means recognizing that, as Anna Save put it, “under capitalism, labor is called upon to mediate social metabolism in capitalist ways.”

In the context of today’s corporate food regime, only those enterprises that can intensify and expand production, with adequate economies of scale, can survive the pressures exerted upstream and downstream of the agro-industrial system. The accelerated decline in the number of agricultural enterprises worldwide shows that these development prospects do not suit the majority of farmers, who are forced into an unbearable race of intensification, leading to increased indebtedness and new trajectories of land expropriation and rural expulsion.

Similarly, and despite the emphasis by planners and experts on digital strategies to cope with increasing uncertainty, threats and risks, the feasibility of digital intensification is a rather distant hypothesis for many small and medium farms, including in the Northern context. In fact, as many researchers have already demonstrated, the digital agricultural perspective, whose technologies are mostly designed for the North American model of extensive plantations, is only cost-effective in the context of the increase in farm size and land concentration that characterizes the evolution of the corporate food regime and that deprives farmers of the possibility of negotiating a fair price for their products and of adopting more ecologically sound paradigms, such as those proposed by agroecology. All this in anticipation of a hyper-technological transformation of food systems, the feasibility of which can already be questioned, but whose mirage simultaneously supports and hides the more concrete paths of intensified exploitation and ecological degradation.

Reprogramming the future

If these transformative approaches are not tailored to the majority of those working in agriculture, then they are also not tailored to the areas in which they are intended to operate. This is

not only because the agro-industrial model has not yet demonstrated sufficient regenerative capacity to reverse the downward trajectory of yields and biodiversity loss, while remaining heavily dependent on fossil fuels for cultivation, transport and marketing of products. But also because these territories are already threatened by systemic collapse: their capacity to sustain social life is deeply compromised by multiple trajectories of abandonment, including the growing phenomena of farmland abandonment, and the impacts of climate change and ecological degradation. Let's think about what a "transition 4.0" could mean, for example, in a context such as Italy, where the salinization of watercourses, frequent floods, heat waves and droughts are already affecting the productive capacity of entire areas and are at the origin of major ecological disasters, such as the double flooding that hit the Emilia Romagna region between May 2 and 17, 2023.

These dynamics show the limits and, at the same time, the highly speculative character of the current promises of green/digital transition, which, while neither repairing nor responding to current emergencies, accelerate the destruction of the socio-ecological foundations on which societies are based. Similarly, capitalism's insistence on technological solutions for agrarian systems is nothing more than a bet on accumulation through expropriation. Political ecology has largely demonstrated how labor and nature are intensely co-constructed and influence the space of social reproduction. In the utopian futures of digital capitalism, new processes of valorization capitalize on new (cyber) natures that are associated with unequal paths of exploitation, characterized by a further casualization of rural labor driven by public-private debt. At the same time, the promise of a capitalism that can harness the generative and productive capacities of these natures for an affluent and prosperous future is increasingly counterbalanced by an impoverished and ecologically devastated present. Following these insights, a just transition requires not only decolonizing techno-scientific imaginaries and rethinking the relationship between labor and social metabolism, but also putting territories and their defense back at the center of labor

demands, pursuing a politics of attention capable of repairing the socio-ecological foundations of coexistence, against the concrete devaluation of human livelihoods and the non-human environment driven by a neoliberal logic that indebts (present) life to the promise of future abundance.