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# Political ecology of digital labor: towards a Just Transition perspective

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## Abstract

Our analysis moves from the premise that the digital economy paradigm—now a central axis of contemporary socio-economic transformation—has historical roots in the crisis of the Fordist compromise. This compromise was based on a “growth pact” between labor and capital that prioritized economic expansion while neglecting environmental and social costs, thereby deepening capitalist contradictions, exacerbating inequalities, and accelerating ecological degradation. The 1980s marked a turning point, with the emergence of sustainable development discourse and the ideal of “green growth,” which aimed to reconcile market expansion with climate adaptation. Simultaneously, the creation of the World Wide Web in 1989 initiated the digital dimension of the so-called Third Industrial Revolution, now in its fourth phase with the rise of artificial intelligence and advanced information and communication technologies (ICTs).

Both processes have profoundly impacted the dismantling of the Fordist wage-based society, transforming the structure of the economy and reshaping the political ecology of capitalism, while radically altering labour processes. By relying predominantly on market dynamics and sidelining labor’s perspective and contribution, this model has led not only to a marginalization of social dialogue—reflected in reduced collective bargaining and diminished worker participation in production decisions—but also to the unfulfilled promises of sustainability and improved working conditions, particularly regarding flexibility and the dematerialisation of production processes.

In this context, the paper subsequently delves into critical reflection on the role of digitalization in agricultural transition policies, with a particular focus on the Italian case. Precision farming technologies have been available in Italy since the 1990s, but their adoption has significantly accelerated over the past decade due to an enhanced supply of Agriculture 4.0 services. Key actors in this shift include agri-mechanical enterprises and start-ups, many of which are university spin-offs. Furthermore, technological adoption has been strongly incentivized by public policy—especially through Rural Development Programs and the Transition 4.0 Plan.

This presentation will outline the national and international policy frameworks that have supported this digital-agricultural transformation, shaped by a convergence of global socio-economic crises. It will then analyze the main challenges to implementing the digital paradigm in Italy, focusing on the often-overlooked role of wage labor. Finally, we argue for the adoption of a *just transition* perspective—one that re-centers digitalization around labor dignity and the agroecological potential of technological innovation.

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