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**DIGITAL TRANSFORMATION IN COMMODITY FRONTIER:
RECONFIGURATION OF SOCIO TECHNICAL REGIME IN WEST BAHIA
REGION (BRAZIL)**

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The West Bahia region, as part of MATOPIBA (an acronym for a key agricultural frontier region in Brazil, combining parts of the states of MAranhão, TOcantins, Plauí, and Bahia), experience a rapid développement of commodity-led intensive agriculture on Cerrado land. This commodity frontier is marked by rapid landgrabs, production intensification, and increased investments linked with financialization of agriculture. Digital transformation and in particular the Agro 4.0 socio-technical imaginary (regime) has been proposed to increase productivity and face environmental issue in agriculture. However, digital transformation in commodity frontiers has been so far overlooked. Based on document and bibliographic review, actors' interviews and fieldwork (November 2025) we analyze the digital transformation of agribusiness in West Bahia. We show that adoption of digital technology is being incorporated by large producers

at the same time they expand their properties (moving the frontier). This process is multifaceted. It facilitates the management of large-scale farms and hence contribute to extension of production structure consolidating land concentration. Along with increasing automatization, it enables also labour reallocation and displacement. Finally, coupled with development of irrigation practices, it enables to reduce agricultural production risk. This production model, based on intensive technology, requires the creation of new financing channels, further deepening the financialization of agribusiness. While promoting the narrative of increased efficiency, digital transformation also facilitates more land and capital concentration in the context of stringent competition in commodity international markets. It exacerbates current dynamics of land concentration, resources intensification used, and agriculture labor reduction. Further digital transformation enabled by artificial intelligence may led to exacerbate further these dynamics.

Palavras-chave: digital transformation; inovacion; soja; land; natural resources; agriculture; agro business.