

Table S1. Difference of governance style along information flow.

Information flow	Hierarchical style	Network style	Market style
Generation	Environmental data: landscape configuration and composition; climate; production; water; biodiversity; soil Social data: economic input and output; demographic structure; workforce; financial; policy		
Collection	<ul style="list-style-type: none"> ● Top-down, government-imposed orders to oversee implementation. 	<ul style="list-style-type: none"> ● Government, market, and society participation in information collection. 	<ul style="list-style-type: none"> ● Market-led information collection.
Analysis	<ul style="list-style-type: none"> ● The government relies on research institutions or partner companies to analyze data and lacks connectivity between different stakeholders to make the most of digital transformation opportunities in agriculture. 	<ul style="list-style-type: none"> ● Different stakeholders use the web-based information platform to analyze data and information according to their own demands. Different stakeholders need to be involved and use the information platform. 	<ul style="list-style-type: none"> ● The marketplace is profit-oriented, analyzing data and identifying potential technology needs based on the needs of different stakeholders, making it difficult to fully consider the expectations of different stakeholders for digital transformation in agriculture.
Application	<ul style="list-style-type: none"> ● Develop a top-level design for agricultural development. ● Promote new technologies and guide the application of digital technology services in the sustainable transformation of agriculture. ● Government departments need to strengthen the regulation of the market to ensure information security. 	<ul style="list-style-type: none"> ● Meeting the needs of different stakeholders (farmers: simplifying production processes and improving agricultural safety; media: transmitting agricultural information; market: providing technology or platforms for profit; research institutions: realizing the combination of industry, academia, and research; government: ensuring information security). 	<ul style="list-style-type: none"> ● Demand-driven, market-based technology and information for other stakeholders.
Impact	<ul style="list-style-type: none"> ● Can promote the important role of digital technologies in sustainable agricultural development, but it is difficult to directly mobilize the participation of different stakeholders. 	<ul style="list-style-type: none"> ● Grid-based governance can mobilize the participation of different stakeholders in the process of digital transformation of agriculture and promote digital transformation of agriculture. 	<ul style="list-style-type: none"> ● Market-led can provide diversified IT services, but is prone to homogenization. Information barriers exist within market players or with other stakeholders.