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Agricultural productivity and
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TOWARDS
**A GREEN &
DIGITAL
FUTURE**



European
Commission

The JRC report underpins the European Commission's Strategic Foresight Report

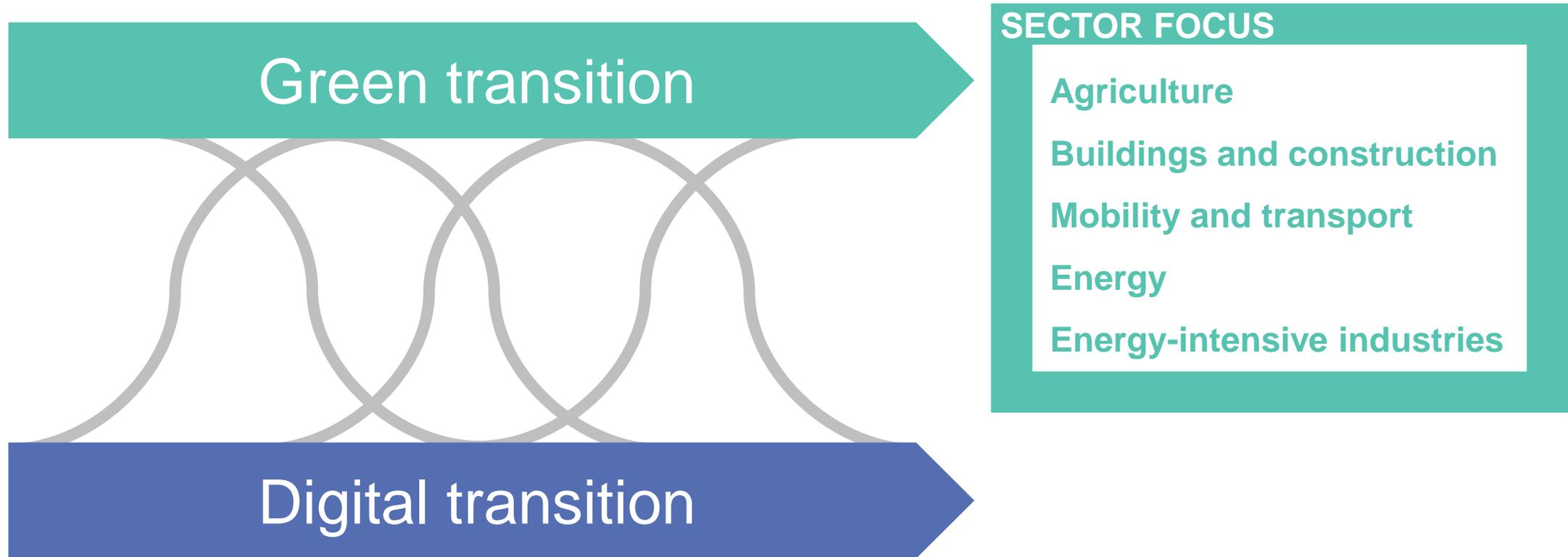


Science for Policy Report

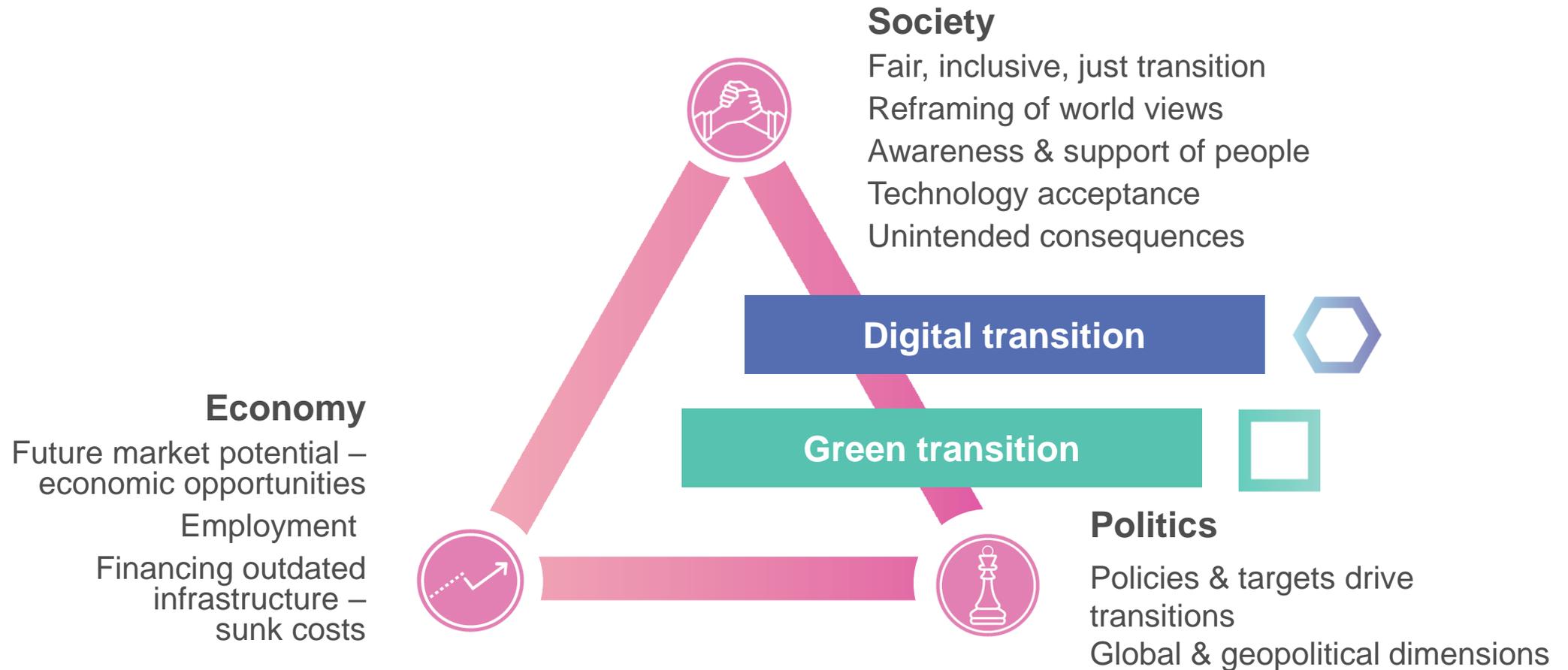


Communication

How can the green and digital transitions reinforce each other?



Contextual factors can determine success



Key challenges for green and digital transition

Agriculture is driven by trends

- Resilience becoming more important
- Increase in food demand
- Consumer choices and social norms change
- Increased health-consciousness

Green and digital technologies enable tackling new challenges

Digital functions enable transition



Monitoring and tracking

Gather knowledge on biodiversity deficits



Simulation and forecasting

Digital Twins of animals to improve prediction capacity



Virtualisation

Virtual fencing



Systems management

Increase productivity and decrease use of fertilizers in agriculture



Information and communication technologies

Supply chain tracking e.g. via RFID chips

DIGITAL ENVIRONMENTAL MONITORING SYSTEMS

Role of digital technologies

- Real-time monitoring
- New ways of analysing and visualising data (e.g. geographical mapping, multi-temporal trends)
- Improved data accessibility and usability to various stakeholders / decision makers with different degrees of expertise
- Information sharing among individuals

SMART SUSTAINABLE FARMING

Role of digital technologies

- Real-time monitoring of health of plants and livestock
- Data analysis and decision support
- Managing autonomous devices and drones
- Communication and management of the agri-food supply chain
- Traceability and transparency of products



Enabling factors

- Trust in digital tools & data protection, data ownership & secure platforms
- Value chain profitability, collaborative business models
- Digital skills & solution knowledge
- Digital infrastructure, IoT devices
- Interoperability of procedures



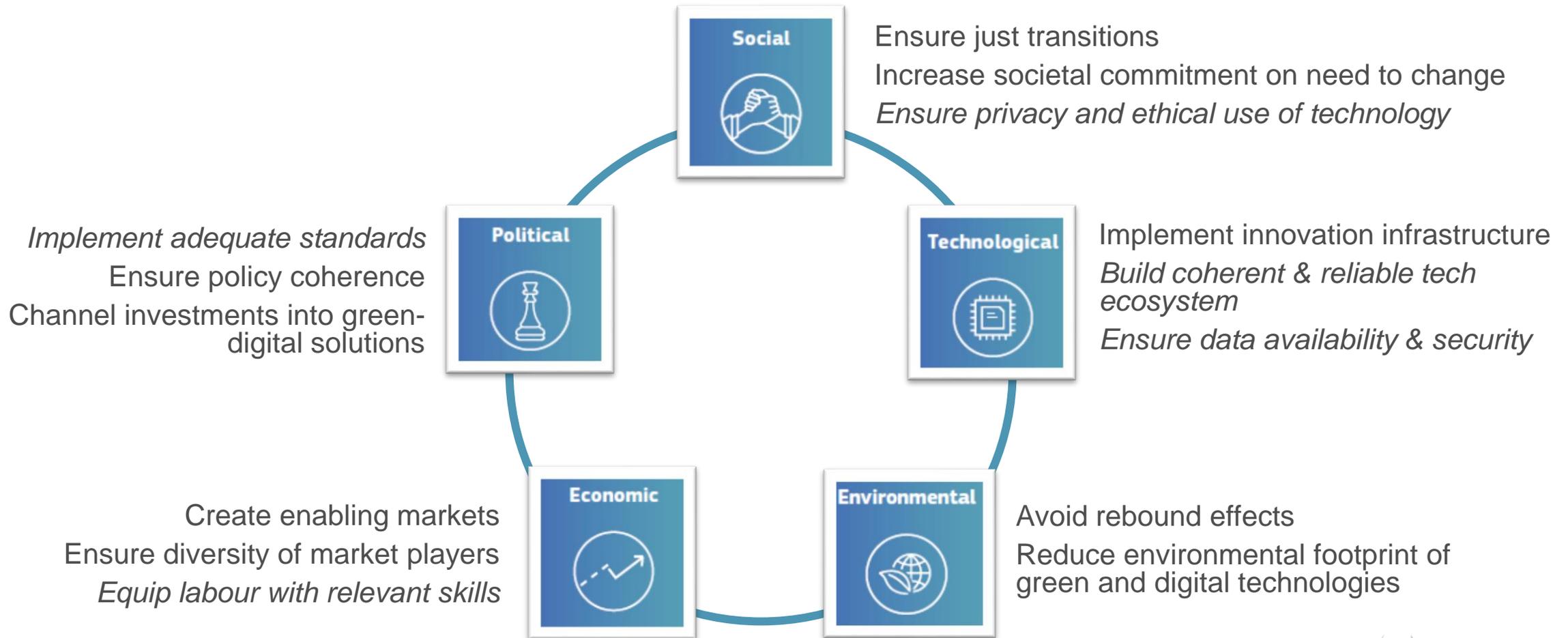
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Thank you



There are key requirements we need to achieve successful twin transitions



Foresight methods fueled the future-oriented analysis



Strategic Foresight Report 2022



Resilience and open strategic autonomy in critical twinning-related sectors.



Stepping up green and digital diplomacy vis-à-vis third countries.



Strategically managing critical supplies, including critical raw materials.



Strengthening social protection and the welfare state.



Transition to new quality jobs, also via adequate skills.



Mobilising additional strategic investments for the twinning.



Developing monitoring frameworks on digital footprint and well-being.



Ensuring a future-proof governance and agile regulatory framework.



Lead in standard-setting, also for greening digitalisation.



Strengthening cyber-security and data policies.