



**DESIRA POLICY ROADMAP: Ten PATHWAYS TO SUPPORT POLICIES TOWARDS a more INCLUSIVE and SUSTAINABLE rural DIGITALISATION IN EUROPE**





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We would like to thank all experts who provided ideas and feedback to this roadmap for their valuable contributions.

Extracted from D4.1 Report on Policy Analysis and Roadmap (UCO).

*Córdoba, July 2023*

<https://desira2020.agr.unipi.it/>

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# DESIRA POLICY ROADMAP: TEN PATHWAYS TO SUPPORT POLICIES TOWARDS A MORE INCLUSIVE AND SUSTAINABLE RURAL DIGITALISATION IN EUROPE

DESIRA project aims to **enhance the ability** of society and political bodies to **address the challenges arising from digitalisation** in agriculture, forestry, and rural areas.

In the rural digitalisation policymaking process, it is key to **assess the current state of digitalisation** in rural areas, **adopt flexible approaches** that accommodate rapid changes, **consider diverse pathways** based on contextual differences across rural areas, and **extend the focus beyond agriculture**.

At the same time, the European Commission should provide the **necessary instruments to facilitate effective rural digitalisation**, including mechanisms for **policy alignment, monitoring, and accountability** among Member States.

Within the framework of **Responsible Research and Innovation**, the DESIRA Policy Roadmap has been developed using an integrated approach. It provides policymakers with **insights and strategies** to design an inclusive and sustainable rural digitalisation that aligns with the **Sustainable Development Goals**.

## DESIRA WOULD LIKE TO CONTRIBUTE WITH SOME GUIDING PRINCIPLES TO SUPPORT RURAL DIGITALISATION IN EUROPE.



Organise digitalisation strategies around societal issues instead of focusing solely on technological development.



Involve users in shaping technological development.

Ensure coherence with other policies influencing rural areas. ✓

Engage rural stakeholders in the process. 

Endorse the principles of the DESIRA Ethical Code by technology developers. 

The Roadmap draws on **data from National Policy Reports** analysing policies influencing rural digitalisation in the fifteen participating countries, and a comprehensive review of the existing policy framework shaping rural digitalisation in Europe. These analyses revealed **challenges in implementing and assessing** the impact of policies influencing rural digitalisation, as well as an ongoing **urban-rural digitalisation gap**. Challenges include **limited availability of rural data**, difficulties in evaluating policy impact, struggles in following the **rapid pace of changes** in technology and policy development, and **coordination issues** among administrative departments.

The following **ten pathways** are based on **transformative policies**, that is, policies able to address the root causes of societal issues. Transformative policies consider **directionality** (clear policy objectives), **reflexivity** (through engagement and experimentation) and **market integration** (economic viability of digital innovation levers), which are incorporated in DESIRA proposals for a sustainable and inclusive rural digitalisation in Europe.

Current rural-urban digital connectivity gap.  
 New EU connectivity objectives to reach.  
 Physical and backbone infrastructures needed.  
 Lower investments in less accessible areas.



# PATHWAY 1. TO ENSURE ACCESSIBLE HIGH-QUALITY CONNECTIVITY AND DIGITAL INFRASTRUCTURES IN RURAL AREAS

To set up a predictable regulatory environment, providing the conditions to incentivise investment and minimising deployment costs to achieve ubiquitous connectivity to support multifunctional and diverse rural areas, and the goals of the Long-Term vision for Rural Areas through a combination of technologies.

To lay the foundations for the establishment of public-private partnerships to plan and co-fund digital connectivity and infrastructure interventions to benefit rural population.

To create a regulatory environment where verticals have a competitive range of options to access optimal 5G in rural areas.

To consider the nature of rural, agricultural and forestry businesses (which extension might reach wider than populated areas) in the provision of infrastructure for secure edge nodes.

To revise the role that platforms and internet service providers operating in rural areas could play in supporting the deployment of connectivity and digital infrastructures (co-financing, taxation).



### MONITORING

Digital Economy and Society Index metrics regarding connectivity in rural areas.  
 Annual Study on Broadband coverage in Europe by Omdia.

### SUPPORTING INVESTMENTS

European Agricultural Fund for Rural Development.  
 Cohesion Funds.  
 Connecting Europe Facility.  
 Digital Europe Programme.

Horizon Europe.  
 Next Generation EU.  
 Recovery and Resilience Facility Fund.  
 InvestEU.  
 European Investment Bank.

### SUPPORTING POLICIES

Path to the Digital Decade.  
 Cohesion Policy.  
 Common Agricultural Policy.



Interoperability challenges affect daily routines and administrative procedures in rural communities, farming and forestry.  
Global trend to unify platforms.  
New EU interoperability standards to comply with.

BACKGROUND

## PATHWAY 2. TO INCREASE INTEROPERABILITY OF DIGITAL TECHNOLOGIES FOR RURAL AREAS, FORESTRY AND FARMING

To make compulsory the adaptation of the national regulations to comply with EU interoperability standards on rural contexts. If interoperability is achieved in rural contexts, it might as well work everywhere.

To prioritise research and innovation projects that propose standardisation use cases and application scenarios in rural areas.

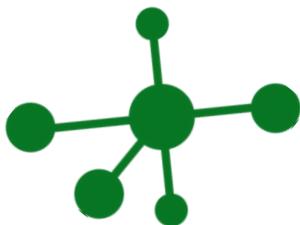
To encourage the development of new services addressed at rural areas and businesses (farming, forestry, tourism, etc.) that are interoperable as well as those that capitalise on existing standards, data and digital applications.

To disseminate the Living-in.eu initiative among rural communities and rural villages, cities and municipalities and to support its adoption.

To support public-private coordination networks to boost interoperability in rural areas.

To monitor system fragmentation in farming/forestry sectors and the origin of applications used in rural areas (locally developed, global ones, etc.).

To make available the existing data regarding the uptake of Minimum Interoperability Mechanisms (MIMs) in rural areas, to encourage its collection.



**SUPPORTING INVESTMENTS**  
Digital Europe Programme.

**MONITORING**  
ISA<sup>2</sup> Evaluation Framework.

**SUPPORTING POLICIES**  
Interoperable Europe Act.  
Data Act.  
Data Governance Act.

# PATHWAY 3. TO IMPROVE RURAL, FOREST AND AGRICULTURE DATA GOVERNANCE AND DATA MANAGEMENT FOLLOWING ETHICAL PRINCIPLES

To engage and include rural areas, farmers, foresters, and rural communities in the conversations defining data governance and data management.

To align national policies for data with the Data Governance Act and the Data Act and to clarify how existing data regulations affect agriculture. To provide tailored regulation if needed.

To encourage reusing and integrating existing data (such as Land Parcel Identification Systems, Farm Sustainability Tool, etc.) in digital applications aimed at farmers, foresters, and rural areas.

To encourage Member States to contribute to define and build the Forest Observation, Reporting and Data Collection framework.

To consider farm, forest, rural enterprises and their associated land (e.g., farmland) in the count of businesses to be provided with edge nodes.

To engage farmers, foresters, and rural communities in the data characterisation and to make the relevant existing data (meteorological data, soil data..) accessible for them.

To support developing and joining codes of conduct and farmer data cooperatives.

To encourage Member States to add/to connect their data to the Rural Observatory and to the Forest Information System for Europe.

## MONITORING

DESI figures regarding Open Data.  
Annual study on edge deployment (Connecting Europe Facility).

## SUPPORTING POLICIES

Data Governance Act.  
Data Act.  
Directive on Security of Network and Information Systems (NIS2).  
General Data Protection Regulation.

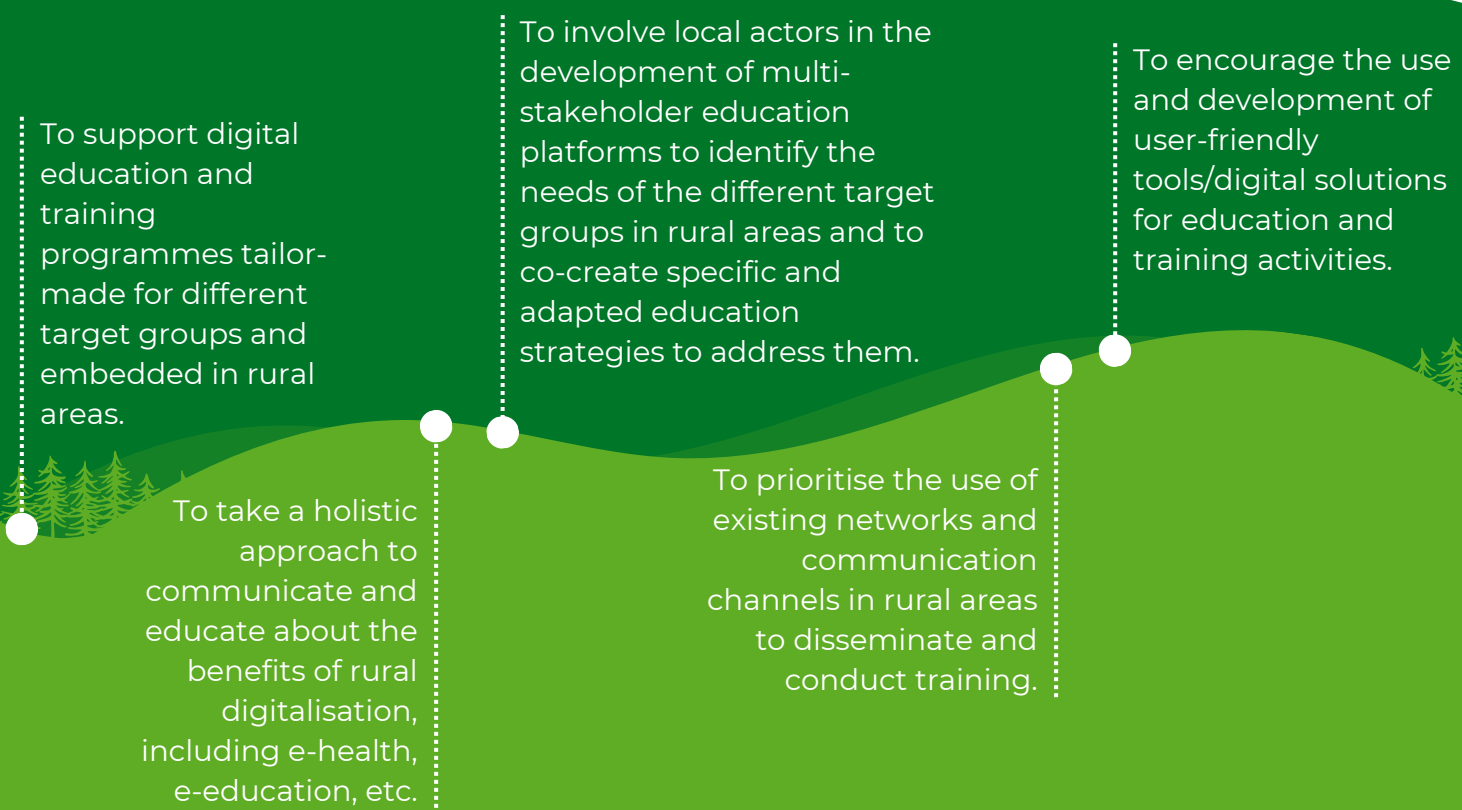


**SUPPORTING INVESTMENTS**  
Digital Europe Programme.

Digital skills gap in rural areas.  
 Limited digital education and training programmes addressing/tailored for rural areas.  
 New EU targets for digital skills, leaving no one behind.



# PATHWAY 4. TO STREAMLINE DIGITAL EDUCATION AND COMPETENCES ADAPTED TO DIFFERENT GROUPS IN RURAL AREAS



### SUPPORTING INVESTMENTS

European Agricultural Fund for Rural Development.  
 European Social Fund Plus.  
 Digital Europe Programme.

### MONITORING

DESI indicators regarding skills in rural areas.  
 CAP indicator for “Enhancing performance through knowledge and innovation” (people involved in advice, training, etc.).

### SUPPORTING POLICIES

Common Agricultural Policy.  
 Path to Digital Decade.  
 Proposal for a Council Recommendation on improving the provision of digital skills in education and training.  
 Proposal for a Council Recommendation on the key enabling factors for successful digital education and training.



Knowledge and innovation can contribute to achieving the goals of the LTVRA and the European Green Deal.  
 Potential to generate new business opportunities in rural areas.  
 Increased complexity in human-technology relations.



# PATHWAY 5. TO PROMOTE INNOVATION AND DIGITAL ECOSYSTEMS IN RURAL AREAS

- To prioritise innovation strategies in rural areas that are aligned with the LTVRA.
- To ensure that rural areas are present in funding programmes fostering innovation and digital ecosystems.
- To couple digital innovation with social innovation in rural areas.
- To enable inclusive spaces where rural communities, farmers and foresters can engage in digital innovation actions or to adapt existing ones (community centres, libraries, etc.).
- To establish digital networks for all territories to connect and to share knowledge.
- To promote the Living Lab approach in research projects working on rural digitalisation.
- To support local stakeholders identifying the gaps and needs to reach competent rural digital innovation ecosystems.
- To promote the use of the socio-cyber-physical approach to evaluate the impact of digital innovation in rural areas.



**MONITORING**

- S3 initiatives related to rural digital transformation.
- EDIH in rural areas, forestry and farming.
- Number of digital knowledge clusters.
- Projects in rural areas funded by innovation and digital programmes.

**SUPPORTING INVESTMENTS**

- Recovery and Resilience Facility Fund.
- European Regional Development Fund.
- Digital Europe Programme.
- European Agricultural Fund for Rural Development.

**SUPPORTING POLICIES**

- Cohesion Policy.
- Common Agricultural Policy.
- Path to the Digital Decade.



Big corporations benefit more from technological development than small farmers, foresters. Existing gap between available technologies and their adoption (cost-benefit analysis is limited, technologies not well adapted to rural contexts).

## PATHWAY 6. TO PROVIDE EASY-TO-USE AND AFFORDABLE DIGITAL SERVICES TO RURAL COMMUNITIES, FARMING AND FORESTRY



To support co-design processes for digital technologies used in rural areas to ensure that the needs of rural communities, farmers and foresters are addressed.

To encourage digital technologies to pass rural proofing (test in real contexts including small, remote farms and villages) before they go out in the market.

To support digital technologies that capitalise on existing services used by rural communities, farmers, foresters or those which serve multiple purposes (cost reduction).

To establish a network of rural digital brokers/enablers who can connect and learn from other communities.

To consider the provision and funding of these services in rural development strategies.



### SUPPORTING INVESTMENTS

European Agricultural Fund for Rural Development.  
Digital Europe Programme.

### MONITORING

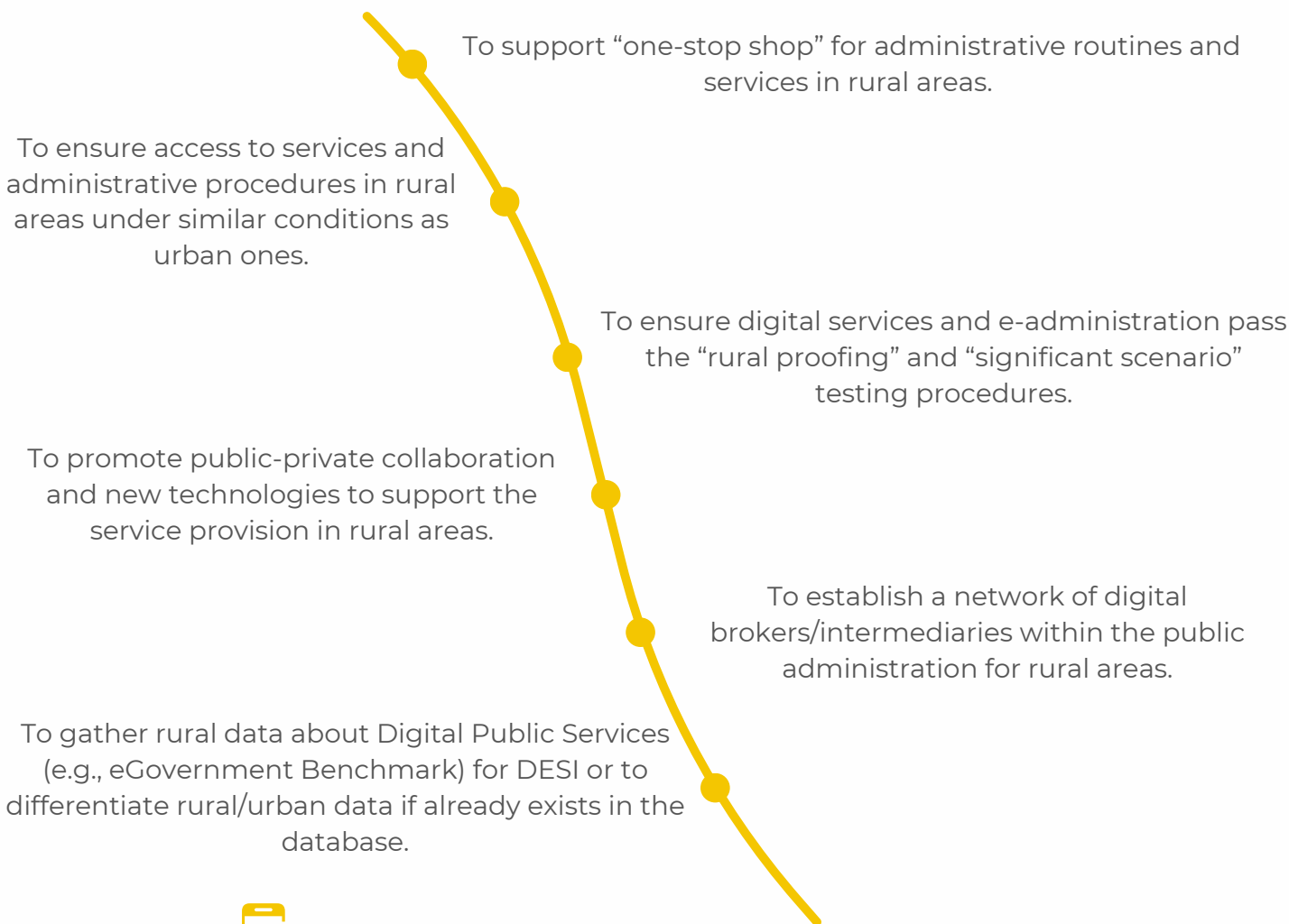
Digital Intensity Index (DII) included in the Annex of the Digital Compass (similar to Digital Intensity Score in DESI).

### SUPPORTING POLICIES

Path to the Digital Decade.  
Digital Markets Act.  
Digital Services Act.  
Common Agricultural Policy.  
Regulation to curb EU-driven deforestation and forest degradation.

Concerns about erosion of service provision in rural areas. EU policies prioritise the digitalisation of public services. Advanced digital skills and high-quality connectivity required.

# PATHWAY 7. TO MAINSTREAM DIGITAL SOLUTIONS TO SUPPORT SERVICE PROVISION AND ADMINISTRATIVE ROUTINES IN RURAL AREAS



To ensure access to services and administrative procedures in rural areas under similar conditions as urban ones.

To support “one-stop shop” for administrative routines and services in rural areas.

To ensure digital services and e-administration pass the “rural proofing” and “significant scenario” testing procedures.

To promote public-private collaboration and new technologies to support the service provision in rural areas.

To establish a network of digital brokers/intermediaries within the public administration for rural areas.

To gather rural data about Digital Public Services (e.g., eGovernment Benchmark) for DESI or to differentiate rural/urban data if already exists in the database.



## SUPPORTING INVESTMENTS

Digital Europe Programme.  
Recovery and Resilience Facility.

## MONITORING

Data currently unavailable.

## SUPPORTING POLICIES

Path to the Digital Decade.  
New Interoperable Act for public administration.

## PATHWAY 8. TO SUPPORT DATA-DRIVEN DECISIONS IN FARMING, FORESTRY AND RURAL AREAS

To support data-driven and AI systems applied in/for rural areas, farming and forestry which are aligned with the LTVRA and multifunctional farming.

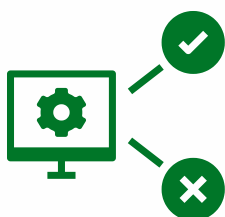
To prioritise data-driven and AI systems in rural areas that use contextualised data in their design processes.

To make information about data-driven applications accessible for farmers, foresters and rural communities so they can make informed decisions about their use.

To protect the fundamental rights of farmers, foresters and rural communities in the applications using algorithms.

To promote the use of data-driven applications once rural digital ecosystems are mature (users with advanced digital skills and sufficient degree of digital trust).

To conduct regular algorithmic risk assessments in the digital tools used in rural areas, farming and forestry.



### MONITORING

Metrics included in the survey on the uptake of AI technologies carried out by Ipsos for the EC. Statistics on Information and Communication Technologies and e-commerce for businesses, households and by individuals.

### SUPPORTING INVESTMENTS

Horizon Europe.  
Digital Europe Programme.  
Recovery and Resilience Facility Fund.  
European Innovation Council.

### SUPPORTING POLICIES

Digital Services Act.  
Artificial Intelligence Act.  
Product Liability Directive.  
Sectoral safety legislation.

Absence of comprehensive rural digitalisation strategies and data at EU level.  
Coordination among public administrations with responsibilities in rural digitalisation required.  
Rapid pace of digital transformation.

Contribution to the LTVRA  
**CONNECTED,  
RESILIENT,  
STRONG,  
PROSPEROUS**  
rural areas

# PATHWAY 9. TO MONITOR RURAL DIGITALISATION POLICIES PROGRESS, IMPACTS AND EFFICIENCY

To encourage the use of policy impact assessments in strategies related to rural digitalisation at European, national, regional and local level.

To set up quantifiable indicators to monitor rural digitalisation progress, impacts and efficiency of policies, and to keep them updated.

To make data about rural digitalisation accessible through the Rural Observatory and the European data spaces.

To disaggregate rural data regarding digitalisation.



**SUPPORTING INVESTMENTS**  
Funding currently unavailable.

**MONITORING**  
Data currently unavailable.  
To disaggregate or to identify with data relates to rural areas in existing datasets would be helpful.

**SUPPORTING POLICIES**  
Common Agricultural Policy.  
Path to the Digital Decade.

Contribution to the LTVRA

**CONNECTED,  
RESILIENT,  
STRONG,  
PROSPEROUS  
rural areas**

Rural areas are providers of essential goods and services, and they play a crucial role in mitigating climate change. General positive consideration of rural areas. Digitalisation can amplify rural voices and improve communication, engagement and networking

BACKGROUND

## PATHWAY 10.

# TO RAISE AWARENESS ABOUT THE VALUE OF RURAL AREAS AND TO FOSTER PUBLIC ENGAGEMENT IN



# RURAL ISSUES

To align the national and regional strategies influencing rural digitalisation with the EU's LTVRA (to use rural proofing mechanisms).

To support digital innovations that help overcome existing constraints in rural areas (such as participation in decision making, access to services, etc.), enhancing local knowledge and public engagement.

To disseminate/to consolidate platforms supporting connections among rural-urban areas and among rural-rural.

To increase awareness about the specificities of rural areas to challenge the predominant urban-centric approach to societal issues.



### MONITORING

Data currently unavailable.

An improvement could be to analyse how often are rural areas mentioned in policies, online or in public discourses. Monitoring the application of rural proofing across Europe.

### SUPPORTING INVESTMENTS

European Agricultural Fund for Rural Development.  
Cohesion Funds.

### SUPPORTING POLICIES

Common Agricultural Policy.  
Cohesion Policy.



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