# Smart Villages – how to ensure that digital strategies benefit rural communities
## Orientations for policy-makers and implementers

The content of this document is based on the outcomes of the discussions of the ENRD Thematic Group on Smart Villages, and does not represent the views of the European Commission.

## 1. INTRODUCTION

This briefing document looks at how the digital strategies, that are being developed at different levels across Europe, can benefit rural communities. It is based upon work carried out in the ENRD Thematic Group on Smart Villages.

Smart Villages are places where rural communities are empowered and are taking the initiative to find solutions to the challenges they face. Digitisation can be a powerful force for change – as long as it is adapted to the rural context and implemented with the involvement of rural communities themselves.

> *Smart villages are all about making different policies work together to find better, smarter ways to promote holistic rural development. It is about harnessing existing and emerging technologies and social innovations to add value to the lives of our citizens. It is about giving villages the tools to address their own challenges while also making a contribution to the bigger challenges facing society as a whole.*



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*EU Commissioner Phil Hogan,
speech at the ENRD Seminar on Smart Villages,
22 May 2018, Brussels, Belgium*

Funded by the    European Commission

## 2. DIGITAL STRATEGIES IN THE CAP STRATEGIC PLAN

The challenges and opportunities offered by digitisation to the society as a whole are immense. The current Rural Development Programmes (RDPs) and the future CAP Strategic Plans co-financed by the EAFRD, cannot trigger the full potential towards a smooth transition to a digital economy in rural areas. However, if used strategically, they do have the potential for achieving a significant impact on those specific barriers and gaps that most affect rural communities and the agricultural sector.

The Commission's proposal for a Regulation on CAP Strategic Plans provides an opportunity to progress towards these goals by including a cross-cutting objective for 'fostering and sharing of knowledge, innovation and digitisation in agriculture and rural areas, and encouraging their uptake'.

> **THE COMMISSION'S PROPOSAL FOR A REGULATION ON 'CAP STRATEGIC PLANS'. ARTICLE 102. MODERNISATION**
>
> The CAP Strategic Plan shall contain:
>
> "A description of the strategy for the development of digital technologies in agriculture and rural areas and for the use of these technologies to improve the effectiveness of the CAP Strategic Plan Interventions".

In order to achieve the maximum impact through their CAP Strategic Plans, Member States could follow a series of steps as outlined below[1].

### POSSIBLE STEPS FOR ADDRESSING DIGITISATION OF RURAL AREAS IN THE CAP STRATEGIC PLANS

**STEP 1**

**Map** the existing landscape of policy support for the digitisation of agriculture and rural areas in their country.

**STEP 2**

**Identify** the opportunities and needs for using digitisation to achieve as many of the nine specific CAP objectives – through the SWOT analysis.

**STEP 3**

**Define** the priorities for the main types of intervention available in the CAP Strategic Plan in order to meet the needs identified under these objectives. For example:

- Investments in small-scale infrastructure and local services to overcome problems such as the last mile connections;
- Knowledge exchange and information for training, advice and overcoming the skills & digital gap;
- Cooperation – including LEADER – for getting stakeholders together, capacity-building, feasibility studies, pilots and digital hubs.

**STEP 4**

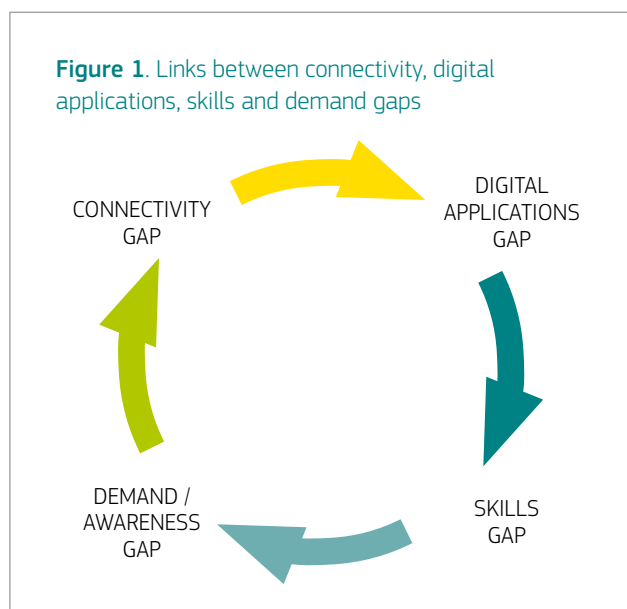**Set targets**, allocate the necesasary budget and finally design and implement the necessary interventions.

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(1) These steps were proposed by several Managing Authorities and other stakeholders in a workshop at an EIP-Agri Seminar on Multilevel Strategies for Digitising Agriculture and Rural Areas held in Antwerp on 12 December 2018.

# 3. OVERCOMING THE DIGITAL DIVIDE IN RURAL AREAS

To ensure digital strategies benefit rural communities and create the conditions for Smart Villages they must tackle all three components of the digital divide while in parallel taking into account the specific needs of each rural area and the existing landscape of policy support.

1. Broadband infrastructure
2. Promoting the uptake of digital services
3. Digital skills and literacy

These three components reinforce each other, so if not addressed together, it would lead to a low level of awareness, demand and uptake of digital technologies, which in turn damages the business case for further investments. Therefore, they need to be addressed together in digitisation strategies.
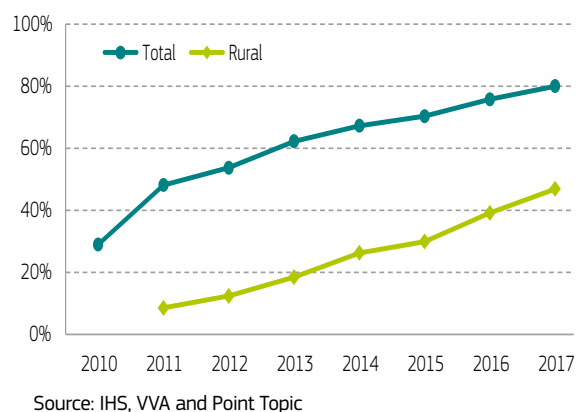


**Figure 1**. Links between connectivity, digital applications, skills and demand gaps

## COMPONENT 1:
## Broadband infrastructure

The Digital Agenda for Europe set the objective that at least 50 % of households should access ultrafast broadband by 2020 (Broadband strategy and Policy). In 2017, some 80 % of EU households were covered by NGA (e.g. fast or ultra-fast broadband networks), however this figure falls to just 47 % in rural, remote and mountainous areas (Figure 2). According to the EU Digital Economy and Society Index (DESI) 2017 report, rural areas remain insufficiently covered as 8 % of homes are not covered by any fixed network, and 53 % are not covered by any NGA technology.

However, these statistics do not map where connectivity is most needed; particularly the most remote regions and those with economic or social challenges, for which digital access could



**Figure 2**. Next generation Access (NGA) broadband coverage in the EU, 2010-2017

Source: IHS, VVA and Point Topic

be most transformative. The 'last mile' of coverage is generally the most challenging, but it often affects those villages and rural towns that could benefit most from connectivity. Focusing on schools, libraries and small businesses (e.g. farms) as well as direct links to homes can also bring important social and economic impact for rural inhabitants.

> ▶ **Key point**: Investment in broadband infrastructure (including 'last mile') needs to be mapped against socio-economic benefits.

## COMPONENT 2:
## Promoting the uptake of digital services

In order to get the full value from investments in broadband infrastructure, rural communities need to understand the usefulness of digital applications – and actively want to use them. In cities there are likely to be a sufficient number of visible applications to make a business case for further investments. But in rural areas many residents may be unaware of potential applications that can dramatically improve their quality of life in fields such as active and health aging, e-health, distance learning, shared mobility, logistics and so on. In order to avoid the underuse of publicly funded infrastructure, therefore, it is important to find ways of designing, testing and showcasing applications with the local community itself.

> ▶ **Key point**: It is important to work with the community itself to develop and promote the uptake of digital services in rural regions.
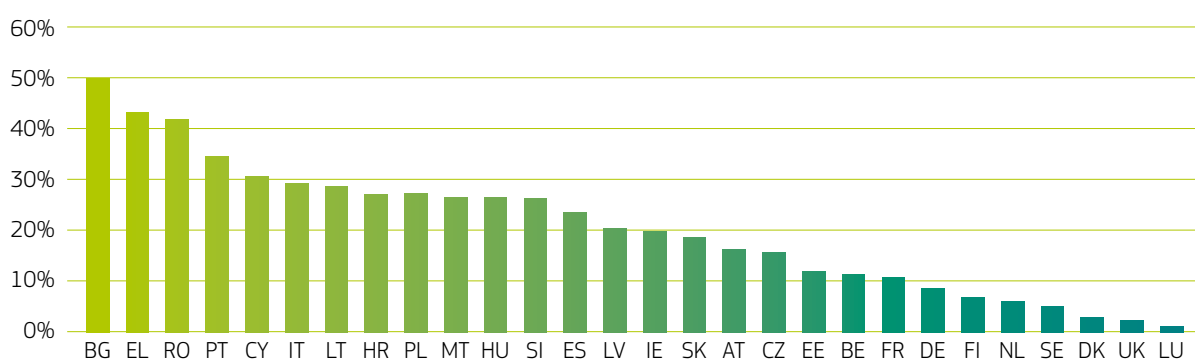
## COMPONENT 3: Digital skills and literacy

The crucial factor that hinders the development of the first two components is the digital literacy of residents in rural areas (Figure 3).

Digital skills are not simply achieved by having access to broadband connection and digital services. They require a level of knowledge and competence in operating digital tools and it is reliant on having at least a basic knowledge of a range of topics, such as security, privacy or app usage.

> ▶ Key point: Digital skills must be delivered alongside digital infrastructure to enable people to benefit from it.

Figure 3. Percentage of individuals in sparsely populated areas who have never used the internet, 2016



Source: EUROSTAT

## 4. HOW TO ENSURE DIGITAL STRATEGIES BENEFIT RURAL COMMUNITIES?

The ENRD has produced case studies that examine the digitisation strategies in four Member States (Spain, Germany, UK and France). The case studies evidence the fact that, at a national policy level, there is significant investment in broadband infrastructure. However, at a regional and local level, a lack of coordinated governance means that digitisation strategies are more fragmented. This section outlines key findings from the four case studies and combines them with some of the key messages emerging from discussions in the ENRD Thematic Group on Smart Villages.

These key points range from thinking more holistically about infrastructure; to how digital skills can be delivered, and how innovation ecosystems can help to drive the development of rural digital services. The benefits can only be mobilised when there is a coordinated governance, from a national to local scale and involving multiple stakeholders:

- Targeting investments in broadband infrastructure;
- Strategies to build digital skills;
- Creating rural innovation ecosystems; and
- Building coordinated governance.

### Targeting investments in broadband infrastructure

The impact of ultra-fast broadband on remote areas can be significant, especially where there has been poor connectivity before. It can drive up digital literacy and stimulate a wide range of local services.

However, the availability of digital infrastructure is a necessary but not sufficient condition for achieving digital innovation in Smart Villages. The infrastructure must consider 'last mile' issues and be targeted to where it is most needed in each community. It must go beyond the simple availability of broadband and wireless networks to enable a digital transformation. For Smart Villages, this can include the availability of sensors to enable applications in the areas of smart homes, smart energy and technologies based on the Internet of Things.

One key message from the ENRD Thematic Group on Smart Villages is that super-fast connectivity is not always a prerequisite of success and that its lack of availability should not be an excuse for doing nothing at local level. More and more local communities across Europe are showing that they can bring together local residents, businesses, local authorities together with the providers of digital services and infrastructure to aggregate demand and create a viable business case for the investment and which adapted to their particular circumstances.

**INITIATIVE: <u>NORTH-WESTERN KUHMO VILLAGE OPTIC FIBRE COOPERATIVE</u> (FINLAND)**

The project aimed at enhancing the quality of life, access to services, entrepreneurial and economic activities by offering fast internet connections based on building 165 km of fibre optic network. The target area was constituted by six villages in the very sparsely populated Eastern Finland. The Village Cooperative initiated and was actively engaged in the process; from needs assessment, through the physical setting up of the network, to awareness raising about the benefits of broadband connectivity.

The Kuhmo Network engaged 200 (74 %) households in 8 villages, by organising village and neighbourhood gatherings. Members of the community provided considerable contribution to setting up the fibre network through voluntary work (worth 36 000 working hours).

**OTHER INITIATIVES**

- Balquhidder community broadband (UK).
- PRIP2 and Rural Area Information Technology Broadband Network – RAIN (Lithuania).
- Molenwaard Civil Society Broadband (The Netherlands).
- New digital opportunities for rural areas, Community Broadband – ENRD Case Study.

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> ▶ **Recommendations**:
> - **Do not wait for ultra-fast broadband to arrive. Bring together local users, public bodies, suppliers and researchers to review digital needs and opportunities, build a vision of the future and a strategy for getting there.**
> - **Aggregate demand, build a business case and a financial plan for investments in key areas.**

## Strategies for developing digital skills

Digital skills training should be designed around the specific needs of a wide range of rural stakeholders; from rural enterprises to farmers, to those inhabitants that are at the extreme end of the digital divide. Regional municipalities and rural organisations also need training to enable themselves to deliver their services to rural communities. One way of doing this is by strengthening local 'digital champions' individual and/or organisations, who help identify, design and deliver skills training.

**INITIATIVE: <u>LA WAB DIGITAL TRAINING HUB</u> (FRANCE)**

The WAB is a hub for innovation and digital training operating in rural Bergerac, France that supports local enterprises and helps them make progress towards a digital transition. It is a 'web school' that helps young people to become web experts following a 2-year training in the digital field. It teaches, through digital training, local businesses how to design effective digital strategies and identify new opportunities and markets for their business development. The WAB is also a business accelerator and a co-working space that offers support for the development of small enterprises. This has involved:

a) mapping the needs of all businesses in their area;
b) carrying out in-depth digital audits of interested companies; and
c) producing individualised digital roadmaps and training paths.

The WAB offered free digital audits to small rural businesses that resulted in a personalised report on the company's digital preparedness. Around 120 businesses participated and are acting based on the key recommendations received. Further information in the ENRD Projects Brochure on 'Digital and Social Innovation in Rural Services', page 14.

**OTHER INITIATIVE**

- Web-based education for farmers (Austria), in the ENRD Projects Brochure on 'Digital and Social Innovation in Rural Services', page 13.

## Building rural digital ecosystems

To benefit from digitisation there is a need for it to become part of the fabric of everyday rural life. Understanding and mapping the local digital ecosystem can help to identify the new digital services that are appropriate to rural community needs. It can also focus on the entrepreneurial activities that bring economic benefits. This can include initiatives such as e-health applications, smart energy sensors and public WiFi access. The different layers and components of the digital ecosystem (infrastructure, platforms, services, providers, users and governance) can be integrated into a digitisation roadmap that can act as the central vision for digital innovation in rural services (ENRD Rural Review 26, page 36).

### INITIATIVE: DIGITAL VILLAGES (GERMANY)

The goal of Digital Villages is to strengthen the feeling of togetherness within the local community by enabling new forms of voluntary participation and enhancing local sourcing of goods and services. The project uses a 'living lab' approach. From the outset, ideas for digital solutions were discussed with residents and other stakeholders, well before any of the subsequent mobile applications or websites were proposed, such as the online marketplace that now offers local deliveries or the local news portal.

The platform enables the creation of shared services and common rules, and the incorporation of basic tools such as payments, login, data usage controls and partner networks. One example of a service offered is a local online news portal 'DorfNews' on which news and events can be quickly and easily distributed to over 3000 residents in the rural community. Rural residents, club representatives or business leaders use the site to share information about opening times, happenings and other points of interest. Similarly, a local communication application for the region has also been set up. 'DorfFunk' allows residents to share their news, advertise their needs or simply chat with other members of the community. Other services include 'BestellBar', an online marketplace for local vendors and service providers. This service allows residents to order goods from local shops online and use the 'LieferBar' app, also created within the project, to deliver the parcels.

### OTHER INITIATIVES

- Lormes (France) has carried out a community-led exercise to imagine all the dimensions of how it could become a 'village of the future' (schools, health, mobility, jobs, etc). It has a digital hub offering training and educational facilities, eight small offices and a fab-lab supported by a team of rural digital experts.
- Superfast Cornwall Digital Hubs (UK).
- Tubbercurry Smart Community (Ireland).

## Co-creation through living labs, fab-labs and pilots

Smart Villages are initiatives that involve testing and piloting to provide an environment that supports innovation adapted to the local rural context. However, while local people know what their needs are, they may not be aware of the technological alternatives available for meeting them. Successful projects, therefore, often adopt a co-creation approach involving a range of service providers, rural organisations and local residents.

A 'living lab' approach can be used to tap into local insights and to come up with practicable and sustainable innovation. 'Living labs' facilitate the development of prototypes, innovation workshops and joint solutions. They also provide an environment where potential partners from industry can explore their solutions quickly having real end-users involved. Fab-labs take this one step further by including digital printing and production facilities. Finally, it can be useful to pilot certain initiatives at a village level before scaling them up.

### INITIATIVE: THE 'ZWIT SMART MANAGEMENT NETWORK' (SPAIN)

Five municipalities share a model of transition to become 'Smart Rural Territories' based on the creation of open and multifunctional municipal/regional communications networks. Their digital roadmap includes entrepreneurial scenarios such as Smart Tourism and Socio-healthcare video-assistance, which aim to drive new business models. The project adopts a smart technologies approach through Smart Management Networks, comprising connected sensors used for the management of municipal infrastructures (energy, lighting, water, urban waste, mobility, etc.) and new services to citizens such as free WIFI access, video assistance for the elderly, e-health, tourism and local trade promotion solutions, among others. Implementation is based on a public-private agreement to develop technological systems which can be made available to other rural areas.

#### OTHER INITIATIVES

- Fab-lab network (Slovenia) is a platform for learning, intergenerational integration, creativity and support to creative makers, start-ups and companies. The national reference Fab-lab Network Slovenia is a technologically supported environment for innovation, prototyping and invention, but is also aimed at encouraging circular economy and local entrepreneurship.
- EPIC e-health innovation (UK).

## The importance of digital hubs

Rural digital hubs can be the catalyst and drivers of a whole range of initiatives and activities that enable rural villages to build on the social capital inherent in rural communities. They are often combined with co-working spaces to attract and retain digital entrepreneurs [2].

In recent years, many different types of digital hub have emerged in rural areas in response to different contexts and challenges.

However, these can be divided into two broad types: the first are regional level hubs that build capacity across the sector and drive innovation through knowledge transfer such as the Digital Innovation Hubs. The second type of hubs are micro-local and operate at village or community level. These are located in village halls, community centres and libraries and offer activities such as digital skills training, fab-labs and innovation support in areas such as e-health. These digital hubs require the support and engagement of community stakeholders.

### INITIATIVE: COCOTTE NUMÉRIQUE (FRANCE)

This rural digital hub is situated in the small market town of Murat in the southern Massif Centrale in France. The origins of 'Cocotte' lie within a public service hub set up by the association of local authorities of the Murat region in 2005. From the beginning, it included a multimedia room, internet access, digital training and tools to support the delivery of public services in a remote upland area. Visitors and regular users of the centre soon began to demand to add a working space facility. A distance-working centre (Télécentre de Murat) was opened in 2007, a training centre was set up in 2008-2009, and a website and the first distance workers' forum in 2009. By the end of 2009, 6 digital entrepreneurs settled in the area and set up businesses. In 2010-2012 the programme attracted digital entrepreneurs and a full-time coordinator in the area through National and ERDF (Massif Central) funding.

#### OTHER INITIATIVE

- St Breward Digital Hub (UK) is a village community hub that offers digital skills training and technology access as well as equipment for a range of community activities and training digital champions.

> ▶ **Recommendation**
> - **Map and identify the key gaps and opportunities in the local digital ecosystem to produce a road map which focuses on the most promising areas.**
> - **A key mechanism is the support for the development of 'enablers' and 'multipliers' such as living laboratories, fab-labs and various forms digital hubs within villages and rural settlements to link regional level initiatives to local communities.**

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(2)   EU Rural Review 24: https://enrd.ec.europa.eu/sites/enrd/files/publi-enrd-rr-24-2017-en.pdf

## Building coordinated governance

The general picture emerging from the four national case studies carried out by the ENRD shows a lack of coordinated governance in the delivery of digitisation strategies across national, regional and local levels. Partnership is key to linking the regional strategies and local initiatives and to build capacity of rural stakeholders. Regional digital platforms can use co-creation methods enabling rural residents to use applications that can support social and business development. This can ensure digitisation strategies are part of creating long term and sustainable development.

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**INITIATIVE: SUPERFAST CORNWALL (UK)**

Cornwall, a pioneering EU region, has sought to deliver localised digitisation by understanding the geographical, socio-economic and political context of a rural region through initiatives and research such as:

- Partnerships between telecoms providers and the public and private sectors;
- Empowering local people as Digital Champions;
- Equipping and enabling Digital Hubs;
- Developing Innovation ecosystems in e-health; and
- Working directly with Community Gatekeepers.

One of the key delivery mechanisms was that Superfast Cornwall worked with Citizens Online, Cornwall Rural Community Charity (CRCC) and Cornwall Council Library Services in a partnership approach to deliver a rolling programme of digital skills training. In 2015, this approach was strengthened through the creation of iCornwall, a group of representatives from the public, private and voluntary sectors with commitment to work together to help people make the most of the digital world. Group members include the Department of Work and Pensions, NHS, Housing Associations and local voluntary groups.

**OTHER INITIATIVES**

- Regional 'coherence' strategies for digital development – SCORAN (France).
- Smart Countryside (Germany).

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▶ **Recommendations**:
- Support for partnerships between stakeholders at a regional and local level. This includes the telecoms/infrastructure providers, regional municipalities, regional NGO's and rural community organisations.
- Implement a range of software and supportive applications to interconnect different systems (e-governance, distant learning and upskilling, etc.), combining the various services and initiatives implemented in different areas (e.g. mobility, public services, education, health, etc).

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ⓘ FOR FURTHER INFORMATION

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Smart villages portal – discover smart projects, initiatives, approaches and networks:
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