



European Network for
Rural Development

EN

PROJECTS BROCHURE

The European Agricultural
Fund for Rural Development

DIGITAL AND SOCIAL INNOVATION IN RURAL SERVICES



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Funded by the



European Network for Rural Development

The European Network for Rural Development (ENRD) is the hub that connects rural development stakeholders throughout the European Union (EU). The ENRD contributes to the effective implementation of Member States' Rural Development Programmes (RDPs) by generating and sharing knowledge, as well as through facilitating information exchange and cooperation across rural Europe.

Each Member State has established a National Rural Network (NRN) that brings together the organisations and administrations involved in rural development. At EU level, the ENRD supports the networking of these NRNs, national administrations and European organisations.

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The EAFRD Project Examples brochure forms part of a series of ENRD publications that help encourage information exchange. Each edition of the brochure features different types of projects that have received RDP co-finance from the EAFRD.

Past editions of the EAFRD Projects Brochure can be downloaded from the publications section of the ENRD website.⁽¹⁾ The ENRD collection of good projects and practices⁽²⁾ contains many additional examples of EAFRD assistance to rural development initiatives.

(1) <https://enrd.ec.europa.eu/publications/search>

(2) https://enrd.ec.europa.eu/projects-practice_en

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Introduction

This edition of the EAFRD Projects Brochure profiles twelve participatory social and digital initiatives that are enhancing rural service delivery. The source of these innovative initiatives varies – sometimes it is the village community itself (Braemar, Scotland), sometimes it is the municipality or an association of municipalities (the village hub in Beveren, Flanders). In others, it is a research institute (German ‘digital villages’) or the private sector (Portuguese ‘digital villages’). However, in all cases, local communities play a central role.

The examples cover six key service areas – multi-service hubs, health, education, mobility, energy and digitisation of the village itself. On their own, they can make a major impact on the quality of life in rural areas. Taken together, they can provide inspiring examples and food for thought for the much wider concept of ‘Smart Villages’.

The ‘EU Action for Smart Villages’⁽¹⁾ states that these are rural areas and communities which build on their existing strengths and assets as well as new opportunities to develop added value and where traditional and new networks are enhanced by means of digital communications technologies, innovations and the better use of knowledge for the benefit of inhabitants.

It suggests that villages of the future will need to bring different programmes together in order to build strategic approaches to promoting smart villages, including support for knowledge, investments and connectivity.

The ENRD is bringing European rural development practitioners together to better understand and ultimately encourage more smart village initiatives. The ENRD Thematic Group on that topic⁽²⁾ has uncovered a range of good practices, some of which are included here, and will report its findings and conclusions on social and digital innovation in the summer of 2018.

Social innovations are “innovations that are social both in their ends and their means... In other words, they are innovations that are both good for society and enhance societies capacity to act.”⁽³⁾

(1) https://enrd.ec.europa.eu/news-events/news/eu-action-smart-villages_en

(2) https://enrd.ec.europa.eu/smart-and-competitive-rural-areas/smart-villages_en

(3) European Commission, ‘Social Innovation: A Decade of Changes’, 2010: http://espas.eu/orbis/sites/default/files/generated/document/en/social_innovation_decade_of_changes.pdf



Smart villages share certain traits:

- They are about people, about rural citizens taking the initiative to find practical solutions that would transform their locality. Care is taken to ensure that equity and efficiency targets are carefully balanced.
- They are about using digital technologies only when appropriate – not because they are fashionable. Smart villages are adept at tailoring digital technologies to better serve the local community.
- They are about thinking beyond the village boundaries. Many initiatives taking place involve the surrounding countryside, groups of villages, small towns and links to cities.
- They are about building new forms of cooperation and alliances – between farmers and other rural actors, between municipalities, the private sector and civil society, between the bottom-up and the top-down.
- They are about thinking for yourself. There is no single model or off-the-shelf solution. Successful projects take stock of local assets, draw on the best available knowledge and make change happen.

Many of the projects presented in this brochure are not examples of smart villages *per se*. However, they do include some of the vital ingredients described above that can help rural communities build smart villages.

The Rural Development Programmes (RDPs) provide a versatile toolbox with a significant budget. When used strategically, RDP Measures can support the people in smart villages at each stage of the transformation process: from the initial idea to successful scale-up. Many RDPs are supporting bottom-up planning, animation, training, technical assistance, piloting and financing of innovative projects.

Smart villages also use Rural Development policy as a catalyst to mobilise other financial and human resources. Some Managing Authorities are showing how the RDPs can be used to have multiplier effects by drawing in other EU, national and private funds and support smart village initiatives in areas such as renewable energy, broadband and mobility.

However, the ENRD Thematic Group revealed that in many cases rural communities are responding to the challenges they face faster than policy. As a result, innovative funding solutions are being found which include private sector investment and crowdfunding. That is why, in this edition of the EAFRD Projects Brochure, 12 inspiring projects have been selected, but not all were reliant on RDP support.

The ENRD Contact Point Team

1. Multi-service hubs

When private companies and public service providers centralise their operations it can signal a decline in the overall quality of rural life. When banks, post offices and even local retailers decide to permanently shut their doors, it can seem like inexorable decline has set in. How do villages retain their basic services in the context of cutbacks and depopulation?

Continuity of service

The provision of quality services in rural areas has come to the forefront of policy debates in recent years. The OECD notes that even though the majority of its member countries have recovered from the financial crisis, public budgets remain tight.⁽¹⁾ As the costs per head of population of providing certain services are higher in rural areas than in cities, rural services are proving to be particularly vulnerable to cuts.

It also suggests that rural communities cannot exist without the appropriate public services to meet residents' needs. Accessibility of services is critical to the well-being of rural residents and the social and economic resilience of communities.

Creating markets for public services can help. Some municipal tasks, such as snow clearance for example, may be more efficiently provided by a farmer than by a municipality. Similarly, local people can often provide better care for the elderly and disabled than agency staff who have to travel long distances.

Links between the public service and NGOs can also help maintain services, for example affordable homes delivered by housing associations or library services delivered by voluntary organisations.

Multi-service hubs

The emergence of multi-service hubs is proving to be an effective response for some villages. These hubs can maintain basic retail services by linking them with other services or support entrepreneurial spirits looking to develop their new business idea. Initiatives may start spontaneously when a local shop or garage decides to take on additional activities, or sometimes

an idea is sparked by municipal planners looking for ways to sustain services across areas with low population density.

On page 5, see how a Belgian village hub created a thriving social centre in a remote area.

While the form of the hub may vary, the common idea is that a joined-up approach to services can help rural areas achieve the critical mass needed to keep service provision viable. But it is not all about the bottom line. Examples abound of initiatives that are proving to be a great way of channeling volunteerism and increasing social engagement, whereby neighbours help each other out.

See a project from Spain on page 6 that is helping to limit the brain drain from rural areas by establishing a network of co-working spaces to attract entrepreneurs.

The blend of social and digital innovation that powers multi-service hubs is a prime example of what smart villages are all about.

(1) Making public services work for rural communities, 20th meeting of the working party on Rural Policy, 5 December 2017. See also OECD, 'Strategies to Improve Rural Service Delivery,' 2010: <http://dx.doi.org/10.1787/9789264083967-en> and OECD, 'Regional Outlook 2016', 2016: <https://regions20.org/wp-content/uploads/2016/08/OECD-Regional-Outlook-2016.pdf>



Strengthening community ties in a Belgian village

A village hub project in the Westhoek region of Flanders, Belgium, is a community-led initiative that created a thriving social centre that delivers a range of services in a remote area. Not only does it address mobility challenges, but it serves as a focal point for the village, bringing together people of all ages.

The project grew out of an earlier initiative that identified difficulties experienced by many people in rural areas in travelling around for their basic needs, especially if they do not have a car. The project 'Village Hub Beveren aan de Ijzer' built upon the positive engagement experience with local people and involved them from the very outset of the project design and development.

The main idea was to establish a service centre providing social contact and a venue for activities in the village of Beveren aan de Ijzer. This hub is located in a former restaurant building and now contains a small convenience store and catering service. EU funding covered building-related costs as the project began.

The hub was developed in cooperation with the disability organisation De Lovie which saw an opportunity to expand its work among those with intellectual difficulties. In fact, many of the people with whom De Lovie works are finding meaningful employment at the hub. More than 20 people also volunteer at the hub.

"Within a year we were able to pay the fixed costs of the building through the sale of drinks and homemade cakes, our percentage of sales in the store and our handyman service."

Jan Vermeulen
De Lovie

A popular tradition in Flanders is to eat bread rolls ('pistolets') and coffee cakes on Sunday afternoons. The village hub is now compensating for the closure



© Dorpspunt in Beveren

Social contact and community activities are thriving at the village hub.

of the local bakery by serving as a pick-up place for such baked treats, a sweet example of how to boost social cohesion.

"The residents can now collect fresh items from the village hub, because they work together with the former village baker."

Dieter Hoet
Westhoek Consultation

The villagers had a clear set of objectives in mind when launching the hub. They wanted to address poor public transportation by bringing facilities closer to the people. They also wanted to reinforce neighbourhood cohesion and reciprocity, promote short supply chains for local food and develop an economically sustainable village hub.

A year after its creation, the project is still going from strength to strength. More than 20 suppliers are selling their goods at the store which serves a fifth of the village's population of 500. Some of the useful services provided include glass collection and a parcel service.

The hub has become an indispensable part of life in the village, a place where locals go to pick up their neighbour's shopping or to simply meet people in a friendly environment. Building on this positive experience, the Association of Flemish municipalities (Westhoek Overleg) aims to promote a network of similar hubs in Flemish villages.

Project Name	Village Hub Beveren aan de Ijzer
Type of beneficiary	Care institute
Period	2016-2019
Funding	<ul style="list-style-type: none"> • Total cost: €20 000 • EAFRD contribution: €13 000 • Private source: €7 000
RDP Measure	Measure 19: LEADER
Further info	www.facebook.com/groups/Dorpspuntinbeveren/about/
Contact	dieter.hoet@wsg.be

A rural network of co-working spaces in Catalonia, Spain

The COWOCAT Rural project (COWorking CATALuña) brought village co-working spaces in 10 LEADER areas together to help stem the brain drain from rural areas by establishing a network to attract professionals and improve the digital skills of local entrepreneurs.

One way to reinvigorate rural areas battling depopulation is to harness ICT and boost skills by using co-working spaces. Following a pilot project that had set up just such an office in Catalonia, Spain, in an earlier initiative, the COWOCAT Rural project scaled up the idea. It went on to develop a network of co-working spaces in the region.

The idea was to promote a teleworking and co-working culture among entrepreneurs in rural areas, to raise awareness and create synergies with other territories. Ultimately, the goal is to utilise the new ways of working made possible by ICT in order to attract and retain talent in the long term.

The inter-territorial project was launched by 10 Local Action Groups (LAGs). It first created a database of the existing co-working spaces in the LAG territories and then trained a promoter for each additional co-working space. The promoter, typically a co-worker, is tasked with connecting professional users of the space and encouraging cooperation among a community of co-workers.

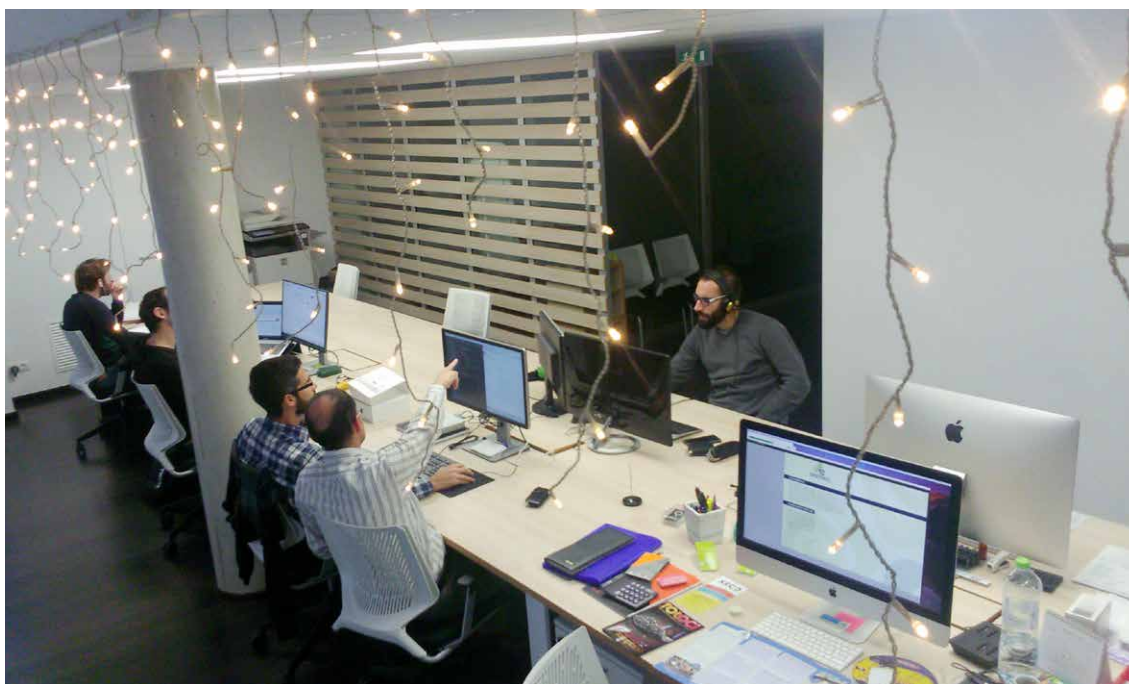
Promoters also seek to attract investment and generate ideas for projects while making the co-working space self-sustainable in the long run. Collaboration among co-workers is further encouraged via a digital platform that allows users to search for partners with whom to develop projects. The approach can already boast tangible examples of co-workers teaming up on projects.

"It is a shared space where synergies among people can arise and flourish."

Albert Vilana
Co-worker and entrepreneur

Between 2014 and 2017, COWOCAT Rural inspired the creation of 14 new co-working spaces, with the network linking more than 130 professionals. Furthermore, within the project a Catalonian LAG launched a study on the renovation of houses in rural areas to attract new entrepreneurs and thus boost the local economy.

The option of co-working has moreover provided families holidaying in rural areas the opportunity



© COWOCAT Rural

The network of co-working spaces is stimulating the local business ecosystem.



COWOCAT Rural gives young people a pathway to begin their working lives locally.

to maintain work contact via a co-working space. Rural areas targeted by the project have already experienced an increase in the number of seasonal co-workers, especially during the summer, when they and their children can benefit from the often cheaper leisure activities that these areas offer.

The desired and foreseen outcome of the project was to show how a culture of co-working can revive rural economies, providing young people with a means of beginning their working lives locally and facilitating a collaborative way of working. The impact of the project may take a while to become truly apparent, but its reach promises to be wide and extensive. Co-working has educational and social benefits, as well as a positive economic impact.

“We seek people who are looking to change their lifestyles and working philosophy.”

Begoña García
Project promoter

Ongoing support and cooperation

The COWOCAT Rural initiative is now continuing through a LEADER transnational cooperation project that will run until 2019. While still focusing on Catalonia, the project partners now extend to Belgium, France, Germany, Ireland and the UK. Ongoing actions include the creation of touristic experiences for entrepreneurs, which will include the use of the co-working spaces and leisure activities. The idea is to raise awareness among urban entrepreneurs of the possibilities offered by rural areas, both for working and living.

Entrepreneurs are also being encouraged to exchange with other co-working spaces around Catalonia in order to boost urban and rural linkages. Technical assistance to invigorate co-working spaces in rural areas is enhancing professionalism. It can include advice on legal matters, co-worker selection policy,

site management and events to promote community sense. Specifically, the project is creating a new co-working space for university students in Tarragona, which will focus primarily on digital issues, as well as a new space in a small village located within a Natura 2000 area.

While the range of benefits of co-working are evident, COWOCAT Rural noted a number of success factors that need to be met. High-quality broadband internet access is a must for the experience to be satisfactory. Co-working spaces work best when they are driven by motivated professionals. The existence of this cohort is a primary determinant of success and it was found to be more important than the location or size of the co-working space.

To replicate the COWOCAT Rural approach, a project would first need to determine if the minimum critical mass of entrepreneurial talent exists on its territory. It then needs to take care of the community of co-workers by creating a sociable atmosphere and attractive workspace.

COWOCAT Rural is continuing to show the value of the co-working concept and the desirability of its application across Europe. Co-working can revive rural economies by retaining bright young minds and attracting experienced professionals to counter declining population.

Project Name	COWOCAT Rural
Type of beneficiary	Local Action Groups
Period	2014-2017
Funding	<ul style="list-style-type: none"> • Total cost: €67 110 • EAFRD contribution: €31 542 • National / regional contribution: €35 568
RDP Measure	M19: LEADER
Further info	www.cowocatural.cat
Contact	info@cowocatural.cat

2. Health and care

The location and form of certain essential public services can serve as a catalyst rather than a break on rural development when planned well. Smart villages are improving the availability and sustainability of health and care services guided by a community-led approach, often combined with the deployment of new technology.

The provision of health and care services is being transformed by technology. The use of digital solutions provides a host of advantages for patients and carers alike. Remote monitoring possibilities and logistical improvements that were unimaginable just a few years ago have now become a reality.

When used correctly, the latest technologies can improve both the quality of care and social cohesion. From an administrative perspective, the financial cost of supplying health and care services can be substantially reduced, especially in rural settings.

The IMPROVE project from Sweden on page 9 is providing targeted and cost-effective homecare to remote rural populations.

Technology allows for a much closer match between patient or user needs and care provision. This greater precision reduces resource waste. The end result is positive for municipalities and other providers: less time is spent on travelling to patients and better targeted interventions reduce stress for those receiving care.

To make the most of such opportunities, an inclusive approach is needed. In addition to involving the service providers, those receiving the care should be consulted. The 'living lab' concept based on a user-centred approach to integrating research and innovation processes is sometimes utilised in designing a project. Typically operating in a territorial context, it involves the co-creation, exploration, experimentation and evaluation of innovative ideas in real-life use cases.

By consulting widely ahead of making changes, goodwill is created. This enhances the acceptance and efficacy of services. For example, remote monitoring services that provide tailored patient-centred information can be accessed without the need for travel. They also limit unnecessary visits by healthcare professionals.

Health and care improvements should not be limited to the use of new technology. There is often scope for social innovation. For example, existing care budgets could be used to employ local people rather than agency staff who otherwise have to spend much of their time travelling and who may not know the people as well as local carers do.

See a project from Finland on page 10, which used a 'living lab' approach to designing smart healthcare service provision.



Improved homecare through technology in Sweden

The IMPROVE project is using technology to provide more targeted and cost-effective homecare to remote rural populations.

'Involving the community to co-produce public services' (IMPROVE) is an e-health project that enhances services for the elderly through smart homecare in Västernorrland, Sweden. The project, supported under the EU's Interreg programme, used an open innovation or 'living lab' approach to tailor a sustainable public service solution for homecare in peripheral and sparsely populated areas.

IMPROVE began by selecting a network of 'local champions' in the Västernorrland region from those already providing homecare in the area. This process helped to identify four priority areas for e-health services: keyless homecare; cameras for night-time monitoring; sensors for incontinence management; and remote patient care planning involving seven municipalities.

Care workers typically visit hundreds of clients in their homes, requiring staff to carry around with them a high number of keys – and some could easily get lost or fall into the wrong hands. The idea of keyless home access was therefore appealing, thus the project focused on installing keyless lock systems that allow homecare providers to unlock a client's door via a secure app on their phone.

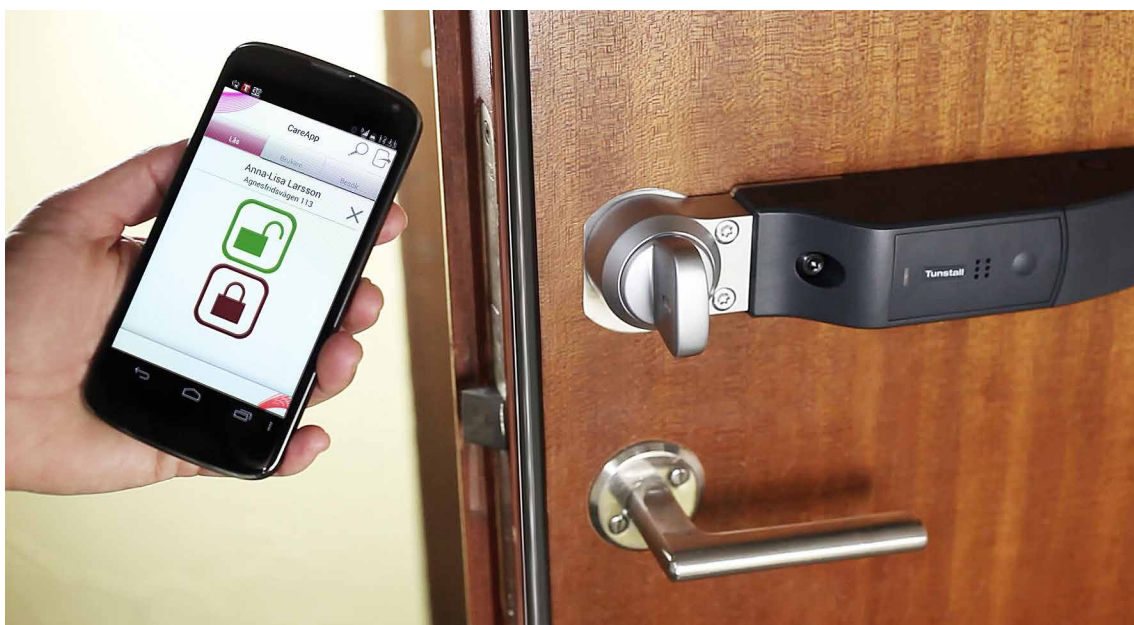
Homecare visits are often necessary during the night. In rural areas of Sweden, this can mean that carers have to travel long distances in the dark. Many frail older people find such visits disturbing because they are woken up when carers enter their homes, which is unfortunate as a major reason for nightly visits is to ensure security and a good night's rest for the client.

Installing cameras in homes limits the need for travel and any unnecessary disturbance for the client. Furthermore, less time behind the wheel is good for the environment and means more time for patient care. For example, the introduction of 34 cameras meant that overall carers in the region drove 551 km less (equivalent to 9h 12 min saved working time) per night.

"The users that have tried this [camera] do not feel like they are under surveillance. The camera is activated only during the night and at times that the user together with the staff have decided."

Linnéa Hamrin

Head of home care in Örnsköldsvik



The project installed keyless lock systems that allow homecare providers to unlock a client's door via a secure app.

High technology for high-quality care

The IMPROVE project also addressed the problem of incontinence, which is not uncommon among its elderly clients. It focused on the use of a sensory device that detects urination patterns and allows individual plans to be drawn up. The project's system tracks patterns over a 72-hour assessment period and its accurate data, superior to manual recordings, enables caregivers to make more informed decisions for their individual patients.

Patient care was further improved through the use of technologies that allow carers to engage their clients remotely. Such care results in time and travel savings – benefitting both the patient and the care provider – and it was taken up by all seven municipalities involved in the project. Plans are also being made for the roll-out of remote care on a larger scale, including at the local hospital.

“Working together prevents us from ‘reinventing the wheel’ – each municipality doesn’t have to do everything. One can start and become an expert and share its knowledge with the rest.”

Madeleine Blusi
Project coordinator

Far-reaching impacts

The project forms part of a wider initiative to raise the know-how and capacity for innovation in five regions in addition to Västernorrland. Its success in developing technology-driven public services represents a valuable contribution to this initiative. These new services have demonstrable benefits for both the care provider and the care receiver.

Other regions could also experience these benefits by replicating IMPROVE's novel methodology. The project team affirm the value of assigning champions and, moreover, the value of taking time to find the right person, even if the process proves to be lengthy.

The project has also shown the benefit of municipalities working together to avoid duplicating each other's efforts. An importance message is that not every municipality needs to do everything.

The project is ongoing and the network of champions that it set up will continue after its end. The project coordinator emphasises that through this network further technological developments will continue to be introduced to raise patient care still higher.

Project Name	IMPROVE (Involving the coMMunity to co-PROduce public serVicEs)
Type of beneficiary	Association of local authorities
Period	2015-2018
Funding	<ul style="list-style-type: none"> • Total cost: € 242 961 • Northern Periphery and Arctic (NPA) programme – supported under the European Regional Development Fund (ERDF): € 179 971 • Association of local authorities in Västernorrland: € 62 990
Further info	<ul style="list-style-type: none"> • http://improve.interreg-npa.eu • www.kfvn.se
Contact	Madeleine.blusi@kfvn.se

Keeping the elderly safe in their homes in Finland

Most accidents that befall elderly people occur at home. The ‘Safety at Home’ (KAT 2) project is addressing this challenge by developing a risk information system to enhance home safety.

The KAT 2 project is building a network of actors to create an information system to manage home-based risks in rural areas. It brings together social and healthcare professionals in the South Karelia region in Finland.

The project challenged emergency, social and healthcare professionals to develop better cooperation and network-based models to manage their input. Coordinated action on tackling home hazards is vital in reducing the burden on emergency services.

“After 2020, every third person in South Karelia will be older than 65 years.”

South Karelia Welfare Plan, 2017-2021

Initiatives to boost health services are commonly considered the preserve of the Ministry of Health. The Finnish Rural Development Programme (RDP) supported the project in the context of a wider national social and health service reform which offers new opportunities and challenges to rural service provision. KAT 2 has demonstrated that smart services can



© KAT (Kotona Asumisen Turvallisuuksia)

A smart blend of social outreach and digital technology helps coordinate different care providers, allowing elderly people to live longer in their own homes.

play a major role in transforming sparsely populated rural areas.

A combination of social and digital components has made the project a success story. The new networking model was devised in consultation with stakeholders from a wide range of sectors, both private and public, who took part in meetings and workshops. The network will continue beyond the duration of the current project, maintaining key outcomes such as an online digital platform sharing information on risks at home.

Involving the elderly from the outset of the project meant ensuring they had the required digital literacy to provide feedback. Crossing administrative boundaries was an especially innovative aspect of the project.

“The new Safety at Home tools will halve your worries by allowing you to live in your home for as long as possible.”

Kristiina Kapulainen
Project manager

The main outcome was the development of a new planning model – one that includes the direct involvement of elderly people – and that enables them to live in their own homes for longer. Not only does KAT 2 reduce the financial cost of care provision, it also improves social well-being.

Project Name	Safety at Home (KAT 2)
Type of beneficiary	Public - South Karelian Social and Health District
Period	2017-2018
Funding	<ul style="list-style-type: none"> • Total cost: €290 648 • EAFRD contribution: €122 072 • National contribution: €127 885 • Regional contribution: €40 691
RDP Measure	Measure 7.1: Plans and feasibility studies for village development and basic services
Further info	www.kotonaasumisenturvallisuus.fi
Contact	kristiina.kapulainen@eksote.fi

3. Education and training

Smart means thinking beyond the village itself. This is especially true when it comes to education and training services. Technology is enabling rural communities to access relevant research findings as never before. The digital economy also presents challenges that cannot be ignored.

One of the long-standing reasons why young people leave rural areas is that they go in search of better education and training. If they subsequently find employment, they may never return to live in their villages.

While smart villages may not be looking to compete with the hallowed universities of Oxford, the Sorbonne or Bologna, they are alert and ready to grasp the new opportunities afforded by technology. Teachers are now better able to design and improve the education and training facilities they want to provide. An open-minded approach means that rural areas can access centres of academic excellence remotely.

From video-on-demand, to webcasting, to access to the latest course materials, the possibilities for distance learning continue to grow and become ever more impressive. Rural development practitioners are seizing these possibilities to provide access to high-quality information that previously may only have been available in an urban centre.

For busy individuals who are looking to develop their environmental knowledge or marketing skills – such as farmers – technology-enabled education can allow them to access the right information at the right time. In other words, at the time that fits in with their working day. An additional bonus is that the student avoids having to drive a long way to access their training.

See how 10 000 Austrian farmers are availing of digital training courses on page 13.

While technology can be the driver of new delivery channels for education and training, it is also a subject in and of itself. Europe is forging ahead with its Digital Single Market strategy.⁽¹⁾ The aim is to create a digital economy where the free movement of goods, persons, services, capital and data is guaranteed and where citizens and businesses can seamlessly and fairly

access online goods and services, whatever their nationality and location. The strategy could contribute € 415 bn to the European economy, boosting jobs, growth, competition, investment and innovation.

Is the rural economy ready for the Digital Single Market? Rural Development policy is already supporting efforts to improve digital skills. Education and training will continue to be a vital component of the digital transformation of rural areas. All sectors of the economy need to get on board. Rural businesses of all kinds from farming, to manufacturing, to tourism can benefit, but they need the skills to thrive in the digital economy.

A French LEADER project is accompanying local businesses through the process of digital transition to help them identify new opportunities and markets, see page 14.



(1) https://ec.europa.eu/commission/priorities/digital-single-market_en

Online training for time-pressed farmers in Austria

Digital training courses by Ländliches Fortbildungsinstitut (LFI), part of the Austrian Chamber of Agriculture, have been used by 10 000 farmers. Such wide-scale reach avoided countless hours travelling to an educational centre and its associated environmental toll.

As broadband internet access expands into rural areas, the opportunity to offer online training opens up. Under the 'Web-based education for farmers' project, the LFI developed short online courses on subjects such as filling in online application forms, renewing plant protection certification and implementing agri-environmental Measures. Other areas included hygiene and allergies, alpine areas, direct marketing, upgrading computer systems, live-streaming and social media.

A notable feature of the courses that was especially appreciated by the participants was that they are available online. It means that they can be taken anywhere and at any time, and thus they do not involve hours of driving. This approach proved to be very popular. One in five of the 50 000 farmers participating in Austria's agri-environmental programmes have taken part.

"The courses were a very practical solution for offering good education in rural areas!"

Gerald Pfabigan
Project leader, Chamber of Agriculture

The project estimated that the digital delivery of the course for its 10 000 users saved 1.5 million kilometres of travel by car. Farmers commonly work long hours and live in remote areas, and do not generally have the time to travel long distances. The online courses only take a few hours and can be taken (and paused) at any time.

"It's really great that the courses are easy to understand and interactive."

Eva Hauenschild
Dairy farmer

The long-term legacy is an e-learning platform that is still being used by farmers. Younger farmers in particular are very enthusiastic about using modern technology to become more effective and efficient. But e-learning should be for everyone, and the project highlighted the importance of clearly defining the target group and adapting the training accordingly. The project organisers emphasise that their courses were successful at reaching a wide audience, developing training offers that are useful for farmers across Austria and not limited to specific regions.

The screenshot shows a Zoom webinar interface. At the top, there are three video thumbnails for participants: Gerald Pfabigan (Moderator), Bauer Willi (Vortragende), and Alois Wohlfahrt (Beisitzer von bauernwilli.com). Below the thumbnails is a chat window with a message from Gerald Pfabigan: "Guten Abend, ich hoffe Sie sehen und hören mich! Wir beginnen um 19:00 Uhr". To the right is a slide titled "Best-Practice-Beispiel Social Media in der Land- und Forstwirtschaft bauernwilli.com" with the LFI logo and photos of the three participants.

On-demand web courses for farmers were successful in reaching a wide audience.

The project beneficiary is continuing to add new courses even after the funding ended. For organic farmers, for example, it is now offering a course on procurement of seed, fertiliser, organic plant protection products and animal feed.

The project can even be said to have given impetus to the roll-out of broadband internet in rural areas. When farmers experienced the benefits of e-learning, they started to lobby for better internet access.

Project Name	Web-based education for farmers
Type of beneficiary	Austrian Chamber of Agriculture, Continuous rural education department (Ländliches Fortbildungsinstitut, LFI)
Period	2015-2017
Funding	<ul style="list-style-type: none"> • Total cost: € 245 313 • EAFRD contribution: € 196 250 • National / regional contribution: € 49 063
RDP Measure	Measure 1: Knowledge transfer and information actions
Further info	http://elearning.lfi.at
Contact	g.pfabigan@lk-oe.at

A school for digital transition in Dordogne, France

A LEADER project has accompanied local businesses through the process of digital transition. The training is helping entrepreneurs to define coherent digital strategies and identify new opportunities and markets.

Job creation and economic development have always been at the heart of the LEADER strategy for the Dordogne in France. LEADER support helped establish a tailored 1-to-10-day web course for local businesses, providing them with the tools to take advantage of the digital economy.

The Web Association Bergeracoise (WAB) is a 'web school' that teaches local businesses to design effective strategies that incorporate digital aspects in their operations, communications and marketing. It was the project promoter for the Local Action Group (LAG) 'Pays de Bergerac' which was looking to meet the demand for digital training from small enterprises located in and around the town of Bergerac.

Gauging the state of play

To raise awareness of the initiative, around 2 000 companies in the Dordogne area, including 1 200 located in the LAG area, were invited to participate in an online questionnaire. The survey was carried out in partnership with the employment department of the local government. It consisted of four main categories of questions regarding: (a) the perception of digital tools; (b) equipment and budget dedicated to digital tools; (c) digital needs; and (d) challenges.

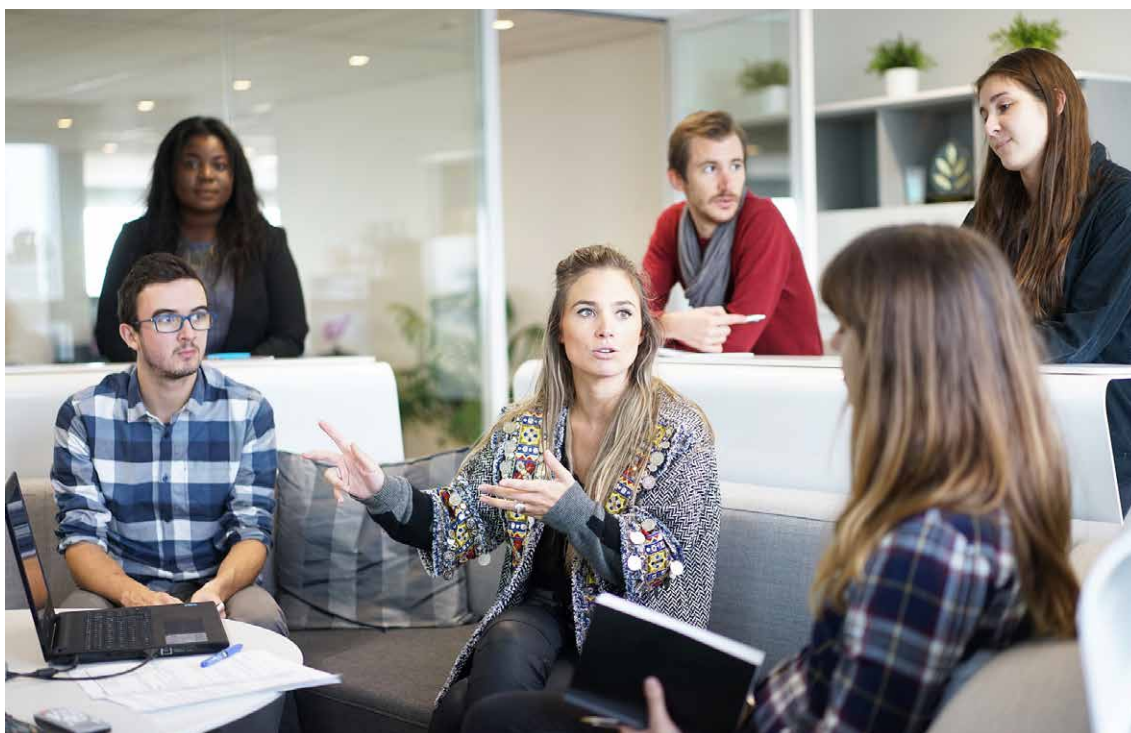
The results showed that just over half of the companies consider digital tools as an opportunity for business growth and use social media to promote and market their business. More than 80 % have a web presence, but only 42 % have a formal digital strategy and only 28 % have a specific budget for digital development.

The online survey also assessed the willingness of small rural businesses to get involved in the initiative. More than half said that they would like to improve their existing tools, but nearly three quarters said that they lack time to make the digital transition.

The WAB then offered free digital audits. They consisted of a two-hour interview with the business manager that resulted in a personalised report on the company's digital preparedness, both in terms of the quality of its equipment and skill sets. The audit also assessed the benefits and costs of digital transition for the individual company. Around 120 businesses in the LAG area participated and are acting on the key recommendations received.

"From our audits of mainly small rural businesses, we realised that in terms of digital use, Dordogne is slightly behind, although the level of equipment is rather good."

Alban Bretes
WAB manager



© La WAB

The WAB's 'digital roadmap' for local businesses consisted of individually tailored courses on digital skills.

Digital roadmap

Following the digital audit, each business manager interviewed could sign up for an individual training path coordinated by the WAB. The 'digital roadmap' consisted of an individually tailored course taken from a selection of 30 vocational courses on digital skills. A total of 48 managers took advantage of this opportunity within the project.

The WAB also offers information on available public funding schemes for digital investment. Furthermore, the project led to the creation of an employers' alliance in a co-working space supported under LEADER.

For those looking to go further, in March 2017, the WAB launched a new training module which consists of 700 hours in the classroom and 168 hours on-site instruction aimed at anyone aged 16 and over interested in developing their IT skills. This certified training is highly practical, enabling businesses to easily apply the digital solutions being taught. While not part of LEADER, training at the WAB – a registered training and apprenticeship operator – is subsidised under governmental apprenticeship and vocational training schemes.

The digital transition has the potential to invigorate the Bergerac area. The project has boosted digital skills among small rural businesses and has the wider ambition of making Bergerac a 'digital city'.

"In such a fast-evolving sector, the pedagogical skills need to be sharp. As Bergerac is just an hour and a half away from Bordeaux by train, it can attract qualified instructors to take part in the initiative."

Katalin Kolosy

Rural development expert

Project Name	Web Association Bergeracoise, WAB (rural school for digital transition)
Type of beneficiary	Local Action Group 'Pays de Bergerac'
Period	2015-2016
Funding	<ul style="list-style-type: none"> Total cost: €61 864 EAFRD contribution: €30 932 National / regional contribution: €30 932
RDP Measure	M19: LEADER
Further info	<ul style="list-style-type: none"> www.la-wab.fr www.pays-de-bergerac.com/le-pays-programme-leader/groupe-action-locale/index.asp
Contact	contact@la-wab.fr

4. Mobility and logistics

Low population density and long distances travelled are part and parcel of country life. The movement of people and goods is a persistent challenge. It is also one that has been made more difficult in the context of cuts to public transport systems since the financial crisis. Furthermore, mobility-related issues tend to be transversal, cutting across other aspects and diminishing the quality of rural life.

Advances in technology now allow many logistical functions to be carried out remotely. This fact can be something of a double-edged sword for rural areas. On the one hand, people can get greater access to goods and services not normally available, but on the other hand, this may spell the end of local shops unable to compete with bigger rivals located far away who offer a wider choice and whose catchment area has grown.

For more isolated communities, the mobility challenge can be even starker. Public transport facilities may be limited or non-existent. Or else, service providers may simply pull out and refuse to supply areas with dwindling populations and little chance for growth. One strategy is to respond by using digital technologies when they are appropriate, i.e. when they add value.

The French project on page 17 is working to boost transport facilities and community solidarity thanks to a purpose-built smartphone application.

The smart village approach is to bring the community together, identify common targets and then to use the available technology to better match supply and demand. The result is a better use of resources, be it for car-sharing or for logistics, whereby critical mass is attained by pooling demand and thus allowing the delivery of goods to remote areas and vulnerable populations.

Building new forms of cooperation and alliances is at the heart of the smart village concept. It is for the actors themselves – be they farmers, municipalities, private sector or civil society actors – to spot the opportunity and initiate change.

The La Exclusiva initiative in Spain is delivering many socio-economic benefits along with the weekly supplies its customers have ordered, see page 18.



Organised hitch-hiking to improve rural mobility in France

‘Rezo Pouce’ is a project supported under LEADER, which is tackling mobility issues in rural areas by providing a safe and free way for people to car share on short journeys between key locations.

In many remote rural areas public transport is infrequent or non-existent and the car can be the only option for getting around. The Rezo Pouce project has re-purposed an old tradition to boost local mobility and to enhance social cohesion. It enables carpooling at designated hitch-hiking spots. Registered users can get a ride to and from their chosen destinations. It provides a pragmatic solution for the often problematic first or last leg of a journey, for example getting to or from a train station.

To register for this free service, users, who must be over 16 years old, simply provide their municipality with a copy of their ID card and sign the Rezo Pouce charter. Drivers, who also have to register, are then given windscreen stickers to show that they are part of the scheme, while passengers are given a special badge.

Administration costs are covered by the participating towns and are not passed on to users. The mobility scheme is funded under energy saving and soft mobility objectives. The subscription fee for the municipality is based on the number of registered users of the scheme. For municipalities with a population of 10 000 to 25 000, the fee amounts to € 7 500 and € 3 000 for two years. In return, the social enterprise behind Rezo Pouce supports the roll-out and provides technical and coordination assistance, along with the training of the dedicated person at the municipality charged with overseeing the scheme.

Continuing expansion

In rural and semi-rural areas of France, such as those in the regions of Île-de-France, Bretagne and Aquitaine, where the scheme is operating, the uptake has been substantial. The number of shared journeys is increasing threefold each year and more than 1 500 municipalities are now taking part.

The LAG ‘Grand Pic Saint-Loup’⁽¹⁾ in Occitanie, southern France, was one of the early adopters of Rezo Pouce. The scheme was implemented by the LAG in 2015 as part of its local mobility plan. It covers 36 rural municipalities with over 125 Rezo Pouce stops.

The social enterprise behind Rezo Pouce organises training sessions, gathering representatives from local authorities to brief them on all aspects of the



© Rezo Pouce

The Rezo Pouce carpooling project is growing throughout France as a smart way to boost local mobility.

scheme. The aim is to expand still further. To this end, the project has teamed up with the Transdev Group, a major player in the global transport industry, and the Macif Foundation, an organisation supporting social innovation, to develop an app that facilitates the registration of new users to the service and the matching of those seeking and offering rides.

The app records patterns of use and thus allows the pick-up spots to be adjusted according to demand. Around three quarters of the trips on Rezo Pouce have been shown to be less than 10km long, emphasising the local character of the project. Young adults without a driving licence are the main user group.

Project Name	Rezo Pouce
Type of beneficiary	Local Action Group
Period	2010-ongoing
Funding	LAG ‘Grand Pic Saint-Loup’ Rezo Pouce activities were co-funded under LEADER: € 15 214 out of € 23 771 in total
RDP Measure	M19: LEADER
Further info	www.rezopouce.fr
Contact	<ul style="list-style-type: none"> • b.rozes@rezopouce.fr • a.jean@rezopouce.fr

(1) www.cc-grandpicsaintloup.fr/RezoPouce.html

Delivering services in sparsely populated areas in Spain

The Spanish province of Soria has experienced severe depopulation over the past century. The 'La Exclusiva' initiative is looking to arrest this long-term decline by improving the quality of life of those remaining in the area, particularly the elderly who make up a large percentage of the inhabitants.

The economic downturn in Spain has put rural service provision under strain. The effects are particularly felt by the elderly who make up a significant part of the population in rural areas and who are, in general, less mobile. In Soria the problem is particularly acute: there are more people aged 80-90 than children under 10 years old.

Two out of three villages in the province have fewer than 100 inhabitants and numbers are declining. For retailers, this is an extremely challenging environment. However, La Exclusiva is a private company with a difference. It focuses on 'social logistics' as a way to help residents remain in sparsely populated areas and to create new employment opportunities.

Social logistics

The entrepreneurs behind La Exclusiva individually ran five shops selling a range of products in several villages in the province. Year-on-year depopulation was adversely affecting their revenues. Rather than

accepting what seemed like an inevitable decline of their businesses, they joined forces to create a social enterprise. The aim of the new initiative was to allow the continued provision of retail services in remote rural areas. The fledgling enterprise used the local 'El Hueco' co-working space to keep costs down.

Initially, the ambition was to provide access for those in remoter areas to basic products, such as food and medicine. By pooling resources, the privately funded initiative ensures that customers do not have to pay extra for home delivery. The service provided is a time-saver and a comfort due to its home delivery model. The weekly face-to-face contact is also an important socialisation opportunity for some elderly customers in particular.

Prior to launch, La Exclusiva carried out a survey to determine whether there would be enough customers to make the business viable. Concluding that there was enough aggregate demand, it opened up four new supply routes in the Soria province, which provide a



© La Exclusiva

The social and entrepreneurial venture is maintaining retail services in sparsely-populated areas and creating new employment opportunities.

© La Exclusiva



La Exclusiva has extended the range of services it offers to include electronics, gardening, laundry and dry-cleaning services.

total of 518 villages and some 10000 families with access to the weekly deliveries.

The social and entrepreneurial venture has been a real success. has been able to extend greatly the range of services it offers. For example, it now offers electronic and media services, drugstore, library, laundry and dry-cleaning services, plumbing, gardening, electricity bill checking, catering, and the sale of organic products and furniture.

La Exclusiva has created two new full-time jobs and three part-time positions. On its third anniversary, La Exclusiva opened a second office to start providing products and services in the neighbouring Burgos province – its three supply routes there serve an additional 78 villages and 1 000 families. Customers can place orders by sending a message via email or WhatsApp, as well as by a phone or at the point of delivery.

“I believe that there will be life in villages, there will be persons, there will be popular meals, and there will be people.”

Victoria Tortosa Vicente
Manager of La Exclusiva

Rewarding initiative

It is not just those who live in Soria that have noticed the benefits of the project. La Exclusiva has received four awards for its efforts to stimulate the rural economy and combat depopulation and was selected among the 10 best social youth entrepreneurship by the European University of Madrid. Furthermore, La Exclusiva was recognised for its rural women innovation by the Spanish Ministry of Agriculture, Food, Fishing and Environment.

A key factor in the success of the initiative was the support it received from three investment partners. They donated a small amount of money and helped design the plan for growth, regularly overseeing

progress and re-investing as the company grew. La Exclusiva’s social impact is assessed every six months.

The next step is to continue to grow the enterprise’s customer base, targeting restaurants and care homes. It is also seeking to expand its service offering to include property and nursing services for the elderly.

In the meantime, efforts to re-populate rural areas are ongoing: its promoters form part of an Interreg project in this area with partners in Finnish Lapland, Brandenburg, Germany, and the Castilla y León, Spain.

“La Exclusiva is much more than a social enterprise, it brings hope to elderly people, keeping them living in their villages where they grew up and have all their memories.”

Frederic Guallar

Trainee at the co-working space El Huevo

Finally, the project provides a good demonstration of the benefits that can be achieved by up-scaling logistics in rural areas. Such an approach could easily be replicated in other areas affected by declining population. La Exclusiva’s mix of social goals, entrepreneurship and the latest technology is a good example of the smart village ethos.

Project Name	La Exclusiva
Type of beneficiary	Private enterprise
Period	2013-ongoing
Funding	Private source: € 3 000
Further info	www.laexclusiva.org
Contact	info@laexclusiva.org

5. Energy

The move to a low-carbon economy is recognised as essential for the future prosperity of the European Union in the context of global climate change and limited natural resources. Rural areas contain the majority of these resources and are showing that they are ready to contribute to smart, sustainable and inclusive growth.

Making energy more secure, affordable and sustainable is one of the ten political priorities of the European Commission. Around Europe, villages are implementing projects for energy saving, renewable energy production and sustainable transport.

Smart villages not only seek to limit the effects of climate change and environmental degradation, they wish to develop the full potential of rural areas in the transition to a low-carbon, circular economy. In rural areas with strong social capital, there is evidence of direct community investment in strategic local assets such as energy, broadband and transport. Such investment draws on community sources of finance and labour, with surplus funds generated by these assets re-invested into other economic and social activities.

Where national energy frameworks support decentralised energy production and local ownership, there is significant potential for community-centred energy production. There are already a few thousand renewable energy cooperatives in Europe active in energy production, grid operations, energy monitoring and saving and e-car sharing.

In such cases, interested communities need to analyse the technical alternatives and establish a viable business plan. External expertise will be necessary in most cases. When planned correctly, a successful energy project can mean that local communities reap the returns.

See example from Scotland, UK, on page 21 that shows how a crowdfunded community project is generating renewable energy with profits going to the local community.

The scale of projects varies according to the specific local context. In the community energy sector, this can range from small-scale neighbourhood initiatives, such as the 'Energy Lucioles' project in Bretagne, France, to install 150m² of solar panels on a public building, to much larger projects, such as the transformation of the Danish island of Samsø (population 4 000) into a carbon-neutral, net exporter of renewable energy.

The Rural Development Programmes (RDPs) are supporting the move to a low-carbon economy. RPD Measures that can provide support include advice and training (M1 and M2), business development (M6), afforestation and management of forests (M8 and M15), investment support (M4) and basic services and village renewal (M7). The LEADER implementation and cooperation Measure (M19) can also be used as a catalyst to support smart village initiatives across an entire region.

The Spanish LEADER cooperation project 'ENFOCC' on page 22 is successfully changing hearts and minds to increase energy efficiency and the use of biomass.

At least as significant as the direct carbon savings that many of these initiatives are achieving are the wider impacts: the awareness-raising; social cohesion; creation of local livelihoods and retention of wealth in local economies; and the feelings of empowerment that can come through working together to bring about change.



Restoring a hydropower plant to generate community funds in Scotland, UK

A community project, financed mostly through crowdfunding, renovated a hydropower site in a national park. The site is now generating renewable energy that is sold to the grid with profits going to further the sustainability of the community.

The idea of restoring a disused hydropower plant was the brainchild of a member of the Braemar Community Development Trust which represents the 450-strong community in Aberdeenshire, UK. Having struggled to secure a bank loan to finance the venture, the trust tried a different approach. It turned, with success, to crowdsourcing to fund the project. A community-benefit company was created, Braemar Community Hydro Ltd., to manage the project.

Additionally, the company manages a community-benefit fund. The hydropower plant is expected to generate more than half a million euro for the fund over its lifetime, with the first funds becoming available in 2017. The project's income flows from feed-in tariffs covering the supply of power to a major electricity supplier. Feed-in tariffs enable power generation from diverse renewable sources such as wind, solar or biogas by providing a cost-based price for the electricity supplied to the grid.

Those who contributed via the crowdfunding initiative are receiving a return on their investment. In addition to interest payments, the creditors' loans will be fully repaid after 20 years. There are also plans to possibly extend the project's life by a further 20 years, in the knowledge that income will be reduced as feed-in tariffs will have ceased by that point. Such tariffs are typically designed to decline over time to track and encourage technological change.

"Community land ownership offers a distinct advantage over lengthy and challenging lease negotiations with landowners for schemes such as this."

Nick Mardall

Part-time development officer,
Braemar Community Hydro Ltd

The leaders of the project say that its success was built on seeking professional help whenever required. The initiative also benefitted from harnessing the skills of members of the community. For the people of Braemar, the project has represented a steep learning curve, but by accessing the right expertise, the old hydropower station is once again generating renewable energy to the benefit of the environment and the community. Something that makes the community proud.



© Braemar Community Hydro Ltd.

Crowdfunding means that an old hydropower station is once again generating renewable energy, this time with profits going to the local community.

"Do not take no for an answer and use all the skills within your community."

Alastair Hubbard

Chair, Braemar Community Hydro Ltd

Project Name	Braemar Community Hydro Ltd
Type of beneficiary	Commercial enterprise
Period	2011 to 2036
Funding	<ul style="list-style-type: none"> • Total cost: €946 000 • Crowdsourced: € 795 000 • Loan: € 117 000 • Feasibility grant from Braemar Community Hydro Ltd: € 11 333 • Cairngorms National Park: € 11 333 • Deeside Donside Development project: € 11 333
Further info	http://braemarhydro.org.uk
Contact	Alastair.hubbard@gmail.com

Making sustainable energy and forestry practices a reality in Spain

The 'ENFOCC' project shows how adopting a progressive attitude towards energy consumption and sustainable forestry can have a beneficial impact on the energy security of rural areas.

During the 2007-2013 programming period, several Local Action Groups (LAGs) coordinated a project on strategic energy and forest management elements in the villages of Catalonia, Spain. Noting that a key objective of the EU's Rural Development policy for the 2014-2020 period involved mitigation of and adaptation to climate change, a follow-up project idea was launched. The resulting project, ENFOCC, covered three axes: energy management; forest management; and biomass and climate change.

Led by the Spanish LAG 'Ripollès Ges Bisaura', the LEADER project demonstrated the steps that can easily be taken to decrease environmental impacts and stimulate the local economy. In total, all 11 LAGs in Catalonia were involved. A further four LAGs from other regions in Spain and a French LAG have also shown interest in the project and have proposed to their Managing Authorities to work with a similar methodology.

The ENFOCC project's areas of action – energy transition, forest management and biomass, and climate change action – cover such topics as energy savings and renewables, sustainable forestry and climate change mitigation and adaptation.

The aim is to show local authorities and private sector actors how to realise energy savings, how to create and implement climate change plans, how to share good practices for renewable energy based on endogenous sources, and how to promote sustainable forest management.

Smart monitoring

As part of its aim to raise awareness of energy consumption, the project developed 'EneGest', a computer programme that allows small enterprises and public bodies to monitor their energy use. The programme was shared with 100 SMEs, 47 town



halls and 10 schools, and advice was given on energy management. The towns engaged were then able to draw up management plans that have already led to energy cost savings of €250 000. Moreover, one private company has reported a €8 000 reduction of its annual energy costs.

Using the EneGest tool, the project also calculated the carbon footprint of eight agri-food products – ranging from dairy products to extra virgin olive oil – in the cooperating areas. These producers were able to analyse the lifecycle of their manufacturing processes, thus take steps to reduce their footprint, and then share their experiences at conferences and meetings.

Biomass and sustainable management

Under the second strand of the project, ENFOCC ran three courses on the installation of biomass boilers. The courses covered areas such as sustainable sourcing and certification, i.e. ELFOCAT label for sustainably sourced wood. The emissions from 13 boilers were then checked in preparation for a follow-up climate change initiative in Catalonia.

Over the next four years, additional biomass boilers will be installed in the region through another project, 'BM-CAT'. The project also organised a visit to the Berga industrial park to further understanding of bioenergy. Through these actions, two technical guidelines on biomass use were drawn.

Additionally, to further support sustainable forestry practice, three pilot initiatives to assess the feasibility of grazing in forested areas as a management measure were carried out. Technical sessions were also held to foster a positive attitude towards sustainable livestock management and pasture recovery.

Other notable achievements included a study of the energy solutions in small rural towns and villages and the development of a methodology for calculating the carbon footprint of events organised by LAGs.

"Many enterprises have saved a lot of money by receiving training on energy responsibility despite initial reservations."

Eduard Paredes Victori
LAG manager 'Ripollès Ges Bisaura'

Long-term legacy

ENFOCC's activities will be continued in a follow-up transnational cooperation project with French LAGs, 'Resilient Territory'. This project will address the concept of 'ecological footprint', an extension of carbon footprint that includes water and social impacts. A specific focus will be to encourage a transition to sustainable energy use in one of the municipalities covered by the previous project. The viability of changing to an electric fleet of public



Pilot initiatives assessed the feasibility of grazing as a way to support sustainable forestry practice.

© ENFOCC

transport vehicles has been assessed under ENFOCC and recommended for a local municipality.

While ENFOCC ran over a two-year period, the project's legacy is long-term. The full value of its impact will become apparent over time. It is challenging the mindsets of local administrators, as well as those of business leaders. Follow-up initiatives are therefore much needed to continue the process of change and to build on the impetus already generated by ENFOCC and its predecessor project. Smart villages take energy security and sustainability seriously. The ENFOCC approach is embedding good habits.

Project Name	ENFOCC (Energia Forest i Canvi Climàtic)
Type of beneficiary	LAG
Period	2016-2017
Funding	<ul style="list-style-type: none"> • Total cost: € 469 181 • EAFRD contribution: € 201 748 • National / regional contribution: € 267 433
RDP Measure	M19: LEADER
Further info	www.ripollesgesbisaura.org
Contact	mailto:eif@ripollesgesbisaura.org

6. Digital ecosystems

Smart villages maintain and enhance the supply of different services in rural areas. From business hubs, to healthcare, to energy production, community-led initiatives are deriving benefits for their respective villages and contributing to the European digital economy. Getting the digital ecosystem right is the best guarantor of long-term success.

There are three main pillars of the rural digital divide: broadband infrastructure; available digital services; and the digital literacy of residents. To be successful and to deliver sustainable services, all three elements need to be in place.

The policy discussion is often dominated by an understandable focus on Next Generation Access (NGA) networks. While 80% of EU households have access to such fast broadband networks, this figure falls to just 47% of households in rural areas.

See the transformative effect of broadband on a previously disconnected mountain village in Portugal on page 25.

The effect of ultra-fast broadband on remote areas can be profound, especially where it contrasts sharply with what went before. It drives up digital literacy and stimulates a panoply of local services. However, ultra-fast connectivity is not a prerequisite of success.

While moving from no internet connection to high-speed connectivity is rather extreme, most rural areas will find themselves somewhere in between. A key message emanating from rural development practitioners is that smart villages do not simply wait for the optimum digital infrastructure.

The most successful projects develop a strategy that encompasses their entire digital ecosystem in order to support sustainable digital transformation. The digital ecosystem refers to the community actors, services required, the technical platform for delivery and the underlying infrastructure being used.

To get the most out of the digital ecosystem, planning at an early stage is required. By involving the whole community, the outcomes will usually be better. 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. Furthermore, they provide an environment where potential partners from industry can explore their solutions quickly having real end-users involved.

The German 'Digital Villages' project utilised a 'living lab' approach to developing and delivering user-centred services, see page 26.

Consideration of the digital ecosystem guides the processes of co-creation, exploration, experimentation and evaluation of innovative ideas. It keeps ideas grounded in reality and thereby gives them greater chance of long-term success.



Connecting a remote Portuguese village

The Portuguese mountain village of Sabugueiro, located in the Serra da Estrela nature park, has undergone a digital transformation. It is now a showcase for a range of digital innovations which enhance services, improve the environment and increase community engagement.

The first challenge was connecting the village – the highest in the country. The nearest fibreoptic cables were 7 km away. The Vodafone Foundation, a not-for-profit entity set up by Vodafone in Portugal, decided to test out the feasibility of digitising the village. They worked with the municipality to engage the residents, provided the funding, installed the cables, including the extra 5 km of cables needed to connect homes, local shops and other buildings within the village. A total of around 400 access points were made available, with 9 disadvantaged families receiving computers and a digital service pack that includes TV, internet and phone connection.

Though the villagers expressed some initial reservations, attitudes changed quickly thanks to the new sense of engagement the connectivity made possible. Many locals, particularly the elderly, had no prior experience of using the internet, but they are now enjoying a new-found connection with the 'outside world'.

Faster internet connection also enabled new services to be delivered such as remote health checks. A monitoring system, 'Intellicare', which digitally checks blood pressure and blood sugar levels, is being used by 39 residents at the village's retirement home and by 18 households. The safety of locals has also been improved through the installation of 24 energy-efficient LED lights in the village.

"The project enhances the benefits of new technology to improve people's quality of life."

Célia Gonçalves
Technical coordinator,
City Council of Seia

Energy efficiency

A second major focus of the 'Smart Mountain Village' project is on saving energy. Monitoring devices provide information about the amount of energy being consumed in real time. The energy consumption habits of 40 households, as well as the retirement home are improving as a result. Moreover, an eco-taxi service consisting of two electric vehicles has been launched to further lower the area's carbon emissions and to provide increased mobility for people with social vulnerabilities and healthcare needs.



© Sabugueiro Aldeia Inteligente

Enhancing the digital infrastructure was the driver behind a series of new rural services.

Though the project is not part of a wider initiative, it has inspired other endeavours such as the creation of an energy savings shop by the City Council of Seia, which targets inhabitants of the entire municipality. This provides advice on how to reduce household energy bills.

"Connectivity is a catalyst for all other dimensions of success. I think this is an absolutely brilliant initiative."

José Mendes
Assistant Secretary of State and Environment

Project Name	Smart Mountain Village
Type of beneficiary	Local authority
Period	2016-ongoing
Funding	Private source: € 300 000
Further info	https://cm-seia.pt
Contact	gai@cm-seia.pt

Getting the digital ecosystem in place in Germany

The 'Digital Villages' project is adapting some of the concepts of smart cities to rural areas. It is operating at the level of the entire digital ecosystem from which a range of rural services can be delivered. New ways to deliver local goods, communicate, test mobility solutions and roll out e-government are being implemented.

The Rhineland-Palatinate region of Germany has many rural areas and is home to more than 2 000 villages. The regional government teamed up with the Fraunhofer Institute for Experimental Software Engineering (IESE), a pioneer and companion for future-oriented ideas, to study and develop solutions for integrating mobility and logistics with smart technology in order to add value for local people and businesses.

Digital togetherness

The initial phase of the Digital Villages project was to select three demonstration areas. A competition process was set up with an emphasis on local supply of goods and services and new forms of voluntary participation. An independent jury determined the winners.

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 utilises 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 project has also been mindful to create the right digital platform from which digital services can be developed. In this way, many different services can be connected, ranging from mobility and communications to local supply of goods and education.

"The project aims to show in practice how intelligent interconnection of different domains can support young and old residents in rural areas, by creating an attractive living environment within the context of demographic change."

Roger Lewentz

Home secretary, Rhineland-Palatinate municipality

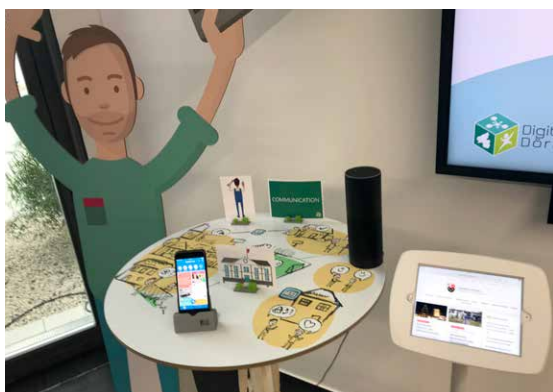
The creation of digital ecosystems is the focus of research on smart rural areas carried out by the



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The goal of Digital Villages is to strengthen social cohesion. The strong emphasis on public consultation means that the services developed have community buy-in.

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New services include a local news portal, an online marketplace for local service providers and an app to manage the voluntary delivery of parcels.

Fraunhofer IESE. The project thus allows the institute, working alongside the regional government and local stakeholders, to test out a range of digital services. It has produced a series of prototypes that are adjusted to respond more accurately to local residents' needs.

Many services are already up and running. One example is a local online news portal 'DorfNews' on which news and events can be quickly and easily distributed. Ordinary residents, club representatives or business leaders use the site to share information about opening times, happenings and other points of interest. They simply enter their news into a content management system and editors at the municipality then release the items with the click of a button.

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 to 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.

"The DorfFunk app is a success. It is user-friendly and sophisticated."

Lars Denzer
Local resident

Broadening the project's reach

From a communications perspective, the fact that up to 3000 residents in a rural community can be reached with a single message is clearly a major benefit. The take-up of the services has been encouraging to date, with 500 users downloading the communication app in the first two weeks of launch. For an area that is not densely populated, numbering only 15000 residents, such figures are encouraging and are still increasing.

Furthermore, 35 local vendors are using the digital marketplace app, making more than 1500 products available for online purchase. More than 800 items were sold within a three-month test period.

The digital concept relies to a large extent on the involvement of the local community and already around 700 residents have registered to deliver parcels to their neighbours voluntarily. Such neighbourliness not only enhances community spirit, but also solves very real practical problems for those with reduced mobility or with busy schedules and who are unable to collect parcels for themselves. In addition, new social contacts have been created through these deliveries.

The digital services developed by the project are now being made available to a wider community. Other villages can get involved through a small contribution to technical operating costs. The project coordinators report that they are most proud that this possibility is being taken up by other areas, reaffirming the decision to start with three pilot areas and grow from there.

"With the project Digital Villages, we have selected the right path to improve life in rural areas with digital solutions."

Randolf Stich
State secretary, Rhineland-Palatinate

Project Name	Digital Villages (Digitale Dörfer)
Type of beneficiary	Local municipalities
Period	2015 to 2020
Funding	<ul style="list-style-type: none"> • Total cost: € 4 360 400 • Rhineland-Palatinate Regional Government: € 2 280 200 • Fraunhofer IESE: € 2 080 200
Further info	www.iese.fraunhofer.de
Contact	steffen.hess@iese.fraunhofer.de

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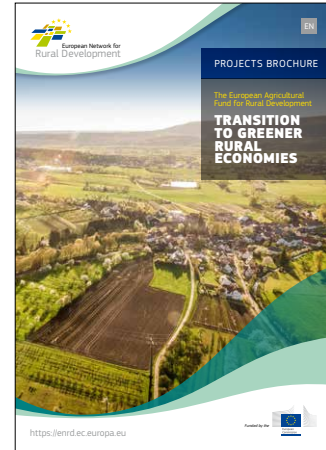
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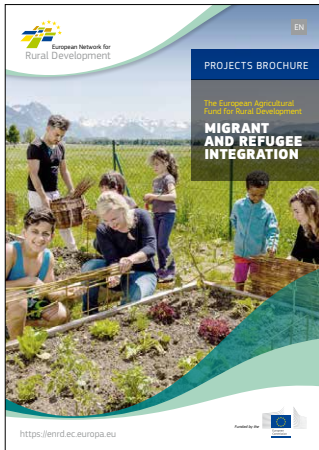
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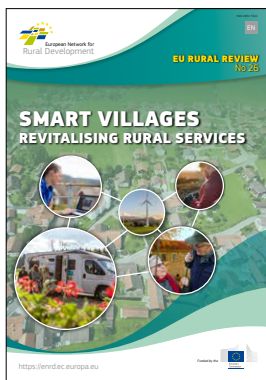
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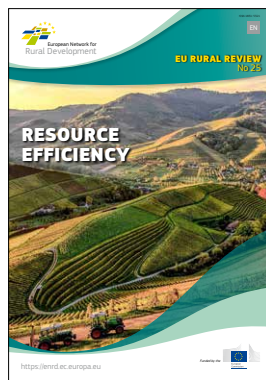
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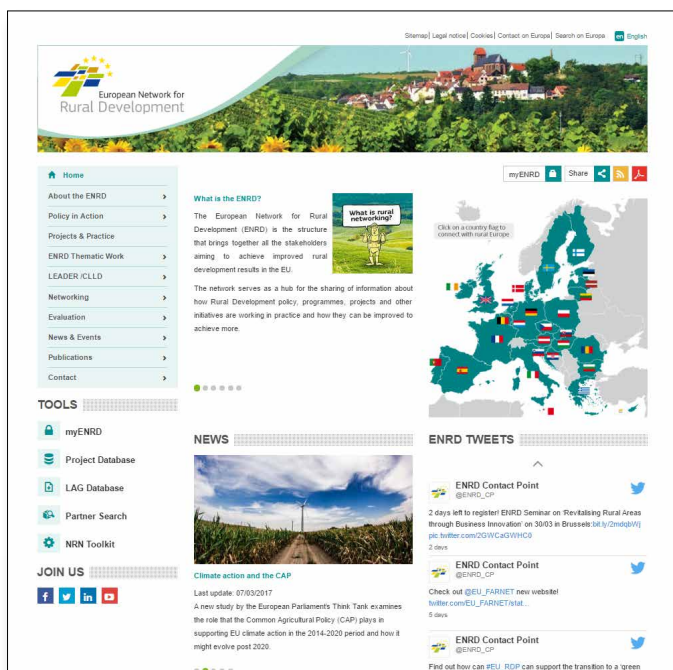
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