



SHERPA
Rural Science-Society-Policy
Interfaces

MAP Position Paper

ALTERNATIVE RURAL FUTURES (FORESIGHT)



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1. Headline messages

The Hungarian FORESIGHT MAP was based on the AKIS MAP, which covers horizontal issues. The MAP is expected to have considerable impact since the relevance of the topic 'digitalisation' is justified also by the fact that it is embedded into the CAP strategic planning, thus it requires the cooperation of policy makers, researchers and farmers or in broader context the whole society.

Main messages of the FORESIGHT MAP:

Vision: The entire rural population is expected to be more digitally skilled than today's population, by the time we reach 2040, the future vision for rural areas is, however, twofold. The lagging-behind areas will need outside help to be able to avoid complete depopulation, while rural areas with more favourable conditions will attract urban out-migrants. Furthermore, a significant shift towards service sector jobs is bound to happen. These two kinds of area belong to 'Rurbanities' and 'Rural Specialisation scenarios' defined by JRC.

Challenges: Major challenges in the Hungarian rural areas are linked with the aspects of digital gap, better coordination of existing institutions and platforms, and the retention and expansion of the intellectual strata. Further significant challenges are to create adequate roads and other infrastructure, to find digital solutions, and to develop digital knowledge, skills, and competencies. Local decision-making is still often based on intuition, but in the future local development and the optimisation of public and business services need to be based on big data analysis of user needs. Thus, data on users' needs should be widely collected and analysed. Digitalisation in agriculture risks leading to concentration as the necessary investments pay off only by reaching a certain business size, therefore small settlements and small businesses cannot "afford" it on their own which means that they need to be supported by the government.

Enablers: Digitalisation will fundamentally change the way rural areas operate in economic, environmental, and social contexts. The main enablers are capacity building for knowledge transfer, adaptation for job creation and provision of better quality of life in rural areas, community building for collaborations and strengthening of local identity in rural areas. The introduction and spread of data-based approaches in rural decision-making and services, the establishment of public data management in some areas, basic big data services provided by the government to reduce inequality of opportunities. A common toolkit for measuring digital economy; knowledge exchange and better cooperation among stakeholders of different rural areas to avoid increasing development gaps; and policies to support digitalisation of business models, shaping and enabling policy environment for Artificial Intelligence (AI) are all needed.

The main goals to be reached in a broader context of digitalisation are the following:

1. Increasing living standard and well-being.
2. Maintaining quality of ecosystem services.
3. Improving local cooperation and communities.
4. Development of transport including public transport.
5. Positive migration.
6. Extended digital infrastructure.
7. Increased standard of education and training.
8. Extensive availability of local public and private services.

These goals cannot be reached by individual actions alone, and continuous development is required.



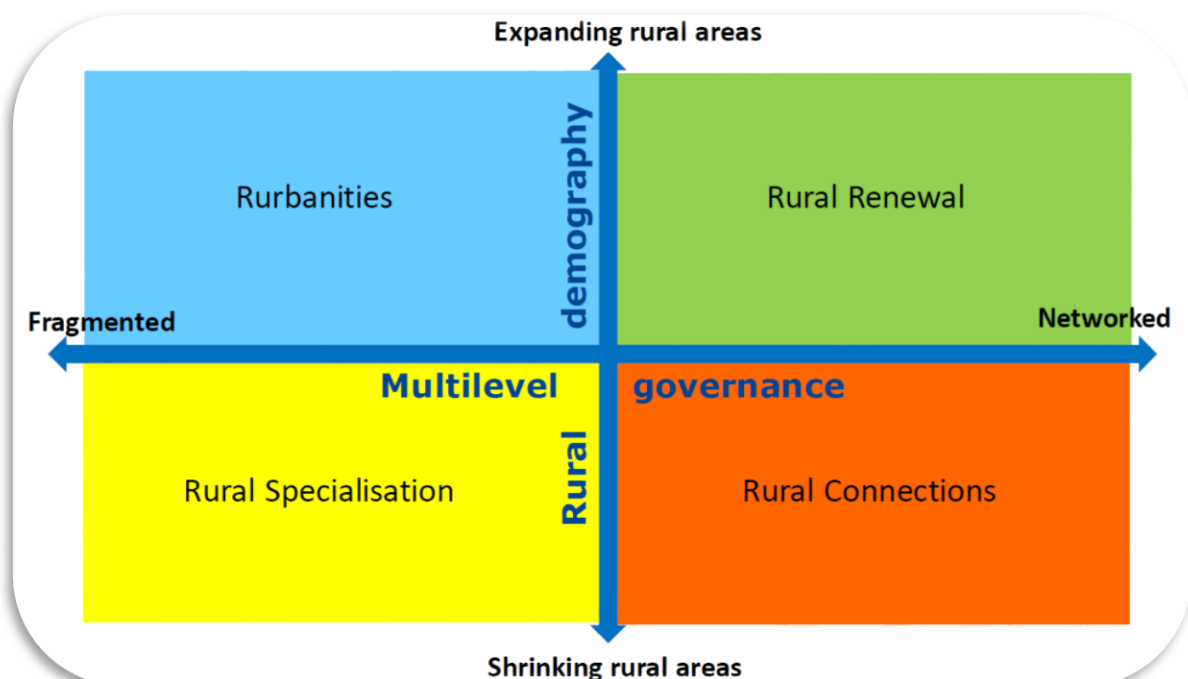
Keywords: AKIS, rural development, digitalisation, smart solutions

2. Outcomes of the foresight exercise

2.1. Current context of the MAP

As a first step to be completed in the Hungarian foresight exercise during Workshop 1, we started to get familiar with the four scenarios elaborated by the Joint Research Centre (JRC) of the European Commission. Our overall opinion was that the scenarios are very interesting, but difficult to be put into practice. The rural areas in Hungary are very diverse and polarised, with very dissimilar settlements and sub-regions. So, the conclusion is that none of the scenarios could appropriately describe the whole Hungarian rural region. None of the scenarios was really convincing and realistic for Hungary, as they were created only based on two aspects: governance and demography. Furthermore, the detailed description and features given to each scenario do not seem to be evidently concluded from these two aspects. For example, an area which is in a very bad situation from the economic point of view, and the population of which is dominated by older and uneducated inhabitants cannot be easily classified into these categories. As another example of the dilemmas faced by our MAP members': the population is growing in a less developed settlements in Hungary because the Romani people have significantly more children than average families.

Graph 1: JRC scenarios.



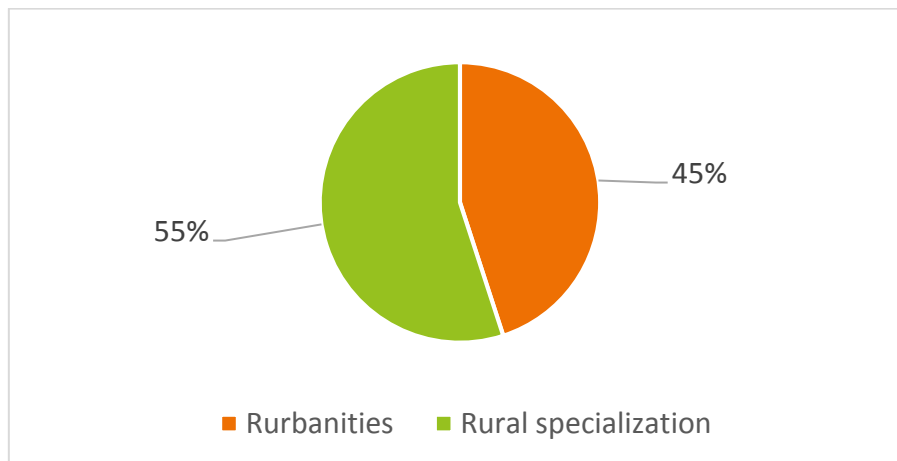
Source: FORESIGHT EXERCISE – ALTERNATIVE RURAL FUTURES: HOW TO GET THERE? SHERPA DISCUSSION PAPER, 2021.

In the first MAP cycle, the members elaborated in the context of digitalisation a future vision for rural areas which is twofold. The lagging-behind areas will need outside help to avoid complete depopulation, while rural areas with more favourable conditions will attract urban out-migrants. This duality was reflected by the

answers to the following question: Which scenario would you choose for the majority of rural areas in Hungary? Please take into consideration the contexts of governance and demography!

The participants agreed that the majority of Hungarian rural areas belong to the "Rural specialisation" scenario, show a low level of development and are faced with several economic, demographic, social, and environmental problems. The smaller part of rural areas belongs to the "Rurbanities" scenario characterised by cities and their agglomerations. The responses were based mainly on the personal and professional experiences of the participants, and on rural research results.

Graph 2: Which scenario would you choose for the area you live and work in?



Source: Own results.

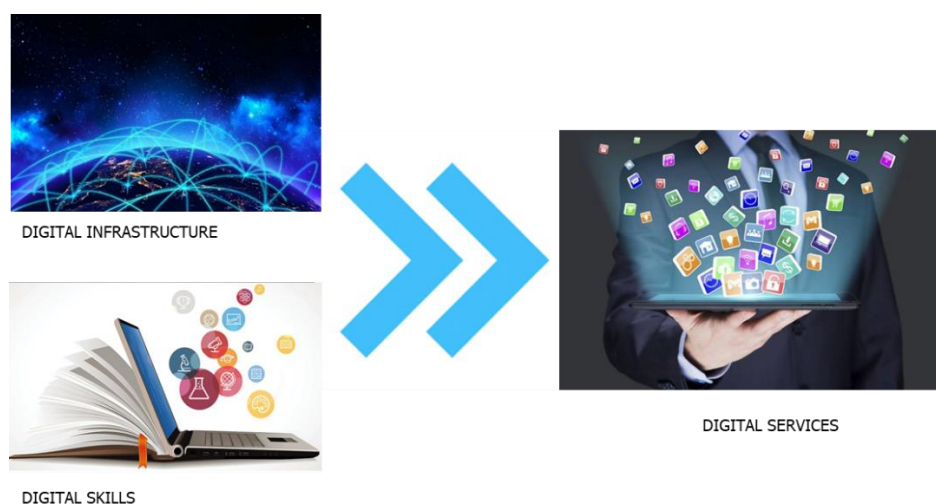
None of the participating MAP members stated that the current situation is satisfactory, however many of them could not decide. According to the participants, the question was too general, as in the widely polarised rural areas there are a lot of good examples and sometimes even surprising developments can be seen. For the question on what could be improved, the following answers were received:

- Development of digital infrastructure.
- Development of digital skills.
- Development of digital services.
- Development of advisory system for supporting digitalisation.
- Improving efficiency.
- Ensuring equal opportunities.

The most important was the triad of digital infrastructure, skills and services. The appropriate infrastructure provides a basis, which is not evident in all rural areas and agricultural lands. The digital infrastructure is provided mostly by profit oriented large companies, and for them it is more important to cover the large proportion of the population instead of covering the large percentage of areas (e.g., it is cheaper to cover 95% of the population with broadband internet connection than covering 95% of the rural areas). This is why the wider coverage of areas should be supported by the government. Digital skills are most often developed in school education financed by governmental sources, which is essential to enable the population to use digital tools. It must be taken into account, that it is more difficult to reach digital education and training for the older generation,. The digital infrastructure together with digital skills are preconditions, and cannot be used for anything but to ensure the background to digital services. Locally available digital services

are the main tools which can trigger development in all dimensions of rural life. There are two main types of digital services: the public services financed/run by government or local authorities (e.g. education, public administration, public transport), and the private services run by entrepreneurs offering a wide scale of digital businesses (e.g. in relation to a physical service like commerce or hairdresser, or to a purely electronic service like consultancy or information services).

Graph 3: Preconditions and results of digitalisation.



Source: Own creation.

Not surprisingly, several actions have been mentioned in relation to the question: what measures have been taken to address the problems? These measures are embedded into digital strategies and programs (among others, Digital Wellbeing Program, Digital Agriculture Strategy) and the CAP in which the support of precision farming and digitalisation is included. However, these were not considered to be sufficient by the participants.

2.2. Desirable future of the MAP

In the first MAP cycle, a vision of rural areas for 2040 have been elaborated, which can be summarised as follows:

- **Vision:** The entire rural population is expected to be more digitally skilled than today's population by the time we reach 2040. The future vision for rural areas is, however, twofold. The lagging-behind areas will need outside help to be able to avoid complete depopulation, while rural areas with more favourable conditions will attract urban out-migrants. Furthermore, a significant shift towards service sector jobs is bound to happen. These two kinds of area belong to 'Rurbanities' and 'Rural Specialisation' scenarios defined by JRC.
- **Challenges:** Major challenges in the Hungarian rural areas are linked with the aspects of digital gap, better coordination of existing institutions and platforms and the retention and expansion of the intellectual strata. Further significant challenges are: to create adequate roads and other infrastructure, to find digital solutions, and to develop digital knowledge, skills, and competencies. Nowadays, local decision-making is still often based on intuitions, but in the future the local development and the optimisation of public and business services need to be based on big data analysis of user needs. Thus, data on users' needs should be widely collected and analysed. Digitalisation in agriculture leads to concentration as the necessary investments pay off only by reaching a certain business size. Therefore, small settlements and small businesses cannot "afford" it on their own, which means that they need to be supported by the government.
- **Enablers:** Digitalisation will fundamentally change the way rural areas operate in economic, environmental, and social contexts. The main enablers are: capacity building for knowledge transfer,

adaptation for job creation and provision of better quality of life in rural areas, community building for collaborations and strengthening of local identity in rural areas. The introduction and spread of a data-based approach in rural decision-making and services, the establishment of public data management in some areas, and basic big data services provided by the government to reduce inequality of opportunities. A common toolkit for measuring digital economy, knowledge exchange and better cooperation among stakeholders of different rural areas to avoid increasing development gaps, policies to support digitalisation of business models, and shaping and enabling policy environment for Artificial Intelligence (AI) are all needed.

A more in-depth, elaborated version of the results

In the next 20 years, experts see the **opportunity** in competitive agriculture shifting towards high-tech sustainable agriculture based on innovation, digitalisation and modernisation, in the retention and expansion of the intellectual strata i.e., of a highly skilled labour force, in increased demand for local products, a strengthened role of short supply chains, and in strengthening the role of rural areas in producing goods and providing services.

According to experts, Hungary will be faced with several **challenges** and weaknesses until 2040. It was confirmed that the major challenge is to find digital/smart solutions to facilitate rural living, especially in terms of adapting to climate change and extreme weather conditions; to improve digital knowledge, skills, and competencies and to figure out the proper application and use of technical improvements i.e., to educate and train farmers and consumers to use digital technologies in a proper way; and to find ways to keep the young generation in the rural areas. It was emphasised that both the problem of depopulation and the diversity/heterogeneity of rural areas (in terms of e.g., closeness to the capital, density, carrying capacity, capacity for population attraction and retention) should be expressed explicitly. Furthermore, raising awareness about social responsibility and environmental protection and strengthening local identity seemed to be important aspects.

As regards desirable future for 2040, some of the experts approached the vision from the aspect of the Common Agricultural Policy (CAP) and thought that the cessation of the CAP would be a shock for rural areas, since the CAP can help the transition to economic and environmental sustainability. Others pointed out the importance of green policy in shaping sustainability. However, according to this vision, there will always be winning and losing rural areas. To reduce differences, the importance of equal opportunities was emphasised as a solution. Other participants placed more emphasis on digital and technological development in their vision as it can convince and motivate young people to become farmers and not to leave rural areas. Furthermore, the popularity of healthy (chemical-free) food production and lifestyle is expected to be higher. As a vision for 2040, some interviewees highlighted the role of skilled individuals with digital knowledge in rural areas and the development of the countryside as an innovative space close to nature and utilising its environmental endowments.

Based on the differences, two visions unfolded: one for the remote, lagging-behind, struggling rural areas where aging, lack of skilled individuals and depopulation are typical, and another for the more attractive rural areas with desirable natural resources as well as more promising demographic and economic conditions. Some rural areas will provide habitation for people moving out from urban areas to enjoy a more peaceful natural environment, as well as a place for home office and for home delivery. For the lagging-behind regions the threatening vision of complete depopulation could be avoided with outside help: with the community building efforts of civil and faith-based organisations, with the introduction of ecotourism or cross-border cooperation, where possible. According to a little brighter vision, the entire rural population will be more digitally skilled as today's population by the time we reach 2040.

Participant experts agreed that digitisation and digitalisation will fundamentally change the way rural areas operate and pointed to 'adequate knowledge transfer', 'adaptability and flexibility', the 'potential of

community building’ and ‘deeper government involvement’ as enablers. As regards the **enablers** to achieve the vision, Hungarian rural areas are strong, mainly because of the availability of natural resources and thanks to certain initiatives that are in place to promote knowledge-transfer, digitalisation, and innovation. The availability of knowledge such as grid-level data is considered also a strength. Mainly the culture of problem solving and policy systems enabling good partnerships should be improved. Regarding agricultural production, digitalisation and increased efficiency will require fewer human resources, and lead to fewer job opportunities in this sector, while through internet connections, other sectors will open up for the rural population (e.g., service sector).

Among **hinderers**, digital and management skills shortage, lack of agricultural consultants with proper knowledge about digital agriculture and innovation were mentioned. Furthermore, missing or outdated environmental and economic data, data ownership and data rights related questions, and unequal access to digitalisation and information were also listed as limiting factors. The implementation of policies supporting smart adaptation in Hungary is hindered by lack of collaboration among different levels and sectors, a lack of interconnectedness of strategies among policy fields, a lack of resources, instruments, local knowledge and data availability. Implementation of smart adaptation policies will be supported through opportunities emerging within the national policy framework, interconnectedness between policy levels, availability of local knowledge and small-scale data, and trust between authorities and society.

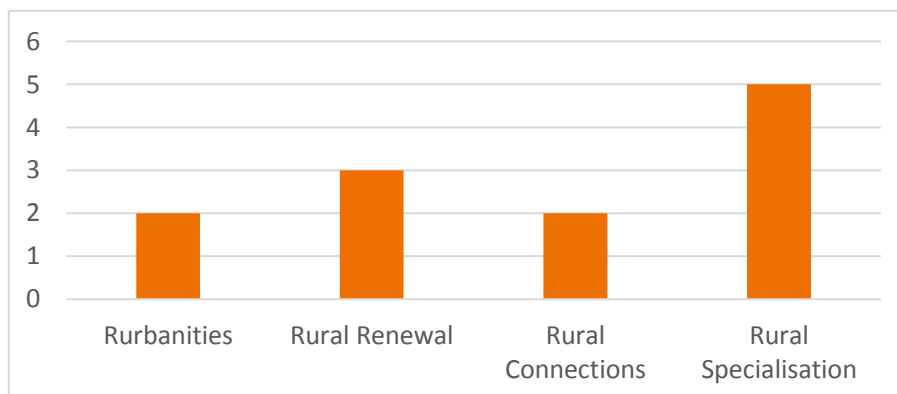
The revised vision

In the frame of the foresight exercise in MAP cycle 2 the participants agreed that the vision elaborated earlier was still appropriate, and basically no change or addition was needed. However, during the discussions several new aspects emerged.

MAP members agreed that for 2040 reaching the “Rural Renewal” scenario would be favourable, but any shift from the “Rural Specialisation” scenario was considered nice and promising. It must be mentioned here that participants thought that lagging-behind problematic rural areas belong to the “Rural Specialisation” scenario.

The vision created in MAP cycle 1 could be completed by the importance of the available public services, and the recreational possibilities offered by rural areas, supplemented by social and cultural aspects. It was also mentioned that the introduction of local best practices and some kind of mentoring system would be useful. The local decisions should be based on data analysis of the inhabitants’ real needs, and local public and private services should be optimised based on customer habits. A cooperation and knowledge exchange of stakeholders and decision-makers in rural settlements and sub-regions would be necessary to avoid a growing gap between more developed and lagging areas.

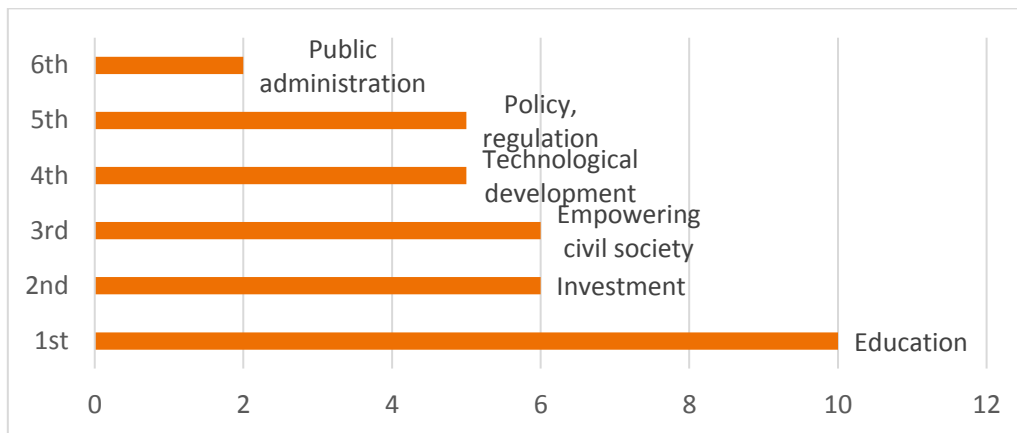
Graph 4: In which scenario would you place your vision?



Source: Own results.

Participants fundamentally agreed that there are two basic types of rural areas in Hungary (Rural Specialisation and Rural Renewal), when they were asked where they would place our vision for 2040 among the JRC scenarios.

Graph 5: What should be done/changed to realise our vision?



Source: Own results.

Our next question was: what should be done/changed to realise our vision? Education was ranked to the first place, most participants thought that this is the most important to develop for a digital breakthrough. It must be considered that education and training should be continuous and available for every age group, as knowledge - especially regarding digitalisation - is rapidly changing and expanding. Development of entrepreneurial skills should be ensured. In the framework of education, the development of other platforms of knowledge sharing is needed, together with attitude formation.

Technological development is not possible without investments. The two actions together are the second most important for reaching the aims. It would be favourable to invest in multi-functional community (shared) facilities. However, some participants emphasised that policy and regulation are very important, because presently everything is financed by the policy actions including investments and education. Policy regulation can have different tools, it can provide direct support, or it can encourage actions. Others noted that empowering civil society is essential, as nowadays, even the pubs are closed in lagging settlements, there are no events and local communities, and in general the rural areas are going towards individualisation. Therefore, community development and networking must be supported. Regarding public administration, the role of local self-governments is emergent. Lastly digital tools are needed to offer a more pleasant and liveable environment in rural areas.

2.3. Goals and targets of the MAP

In STEP3 of the foresight exercise in MAP cycle 2, the participants defined achievable goals and targets. These are the followings:

1. Increasing living standard and well-being.
2. Maintaining quality of ecosystem service.
3. Improving local cooperation and communities.
4. Development of transport including public transport.
5. Positive migration.
6. Extended digital infrastructure.
7. Increased standard of education and training.
8. Extensive availability of local public and private services.

Generally, MAP members detected dynamic rather than static goals. This means that we are not aiming to reach a given higher or better level of a goal, but to have a continuous improvement.

Our first detected aim is to increase living standards, which does not mean purely an increased GDP and higher incomes, but also a higher level of well-being, and consequently better living conditions for rural inhabitants. The development of local economy in a sustainable way is crucial for reaching this target. As an important indicator, the change of GDP per capita could be demonstrated, but there are new well-being indicators in use (alongside subjective ones) in the main categories of satisfaction with life, mental well-being, personal relationships and social participation, living conditions, trust in institutions, confidence in the future.

For taking a step forward to an improved level of well-being, good quality environment or ecosystem services have great importance. A nice landscape and healthy natural environment offering recreational opportunities such as outdoor sport and leisure activities contribute significantly to better life conditions. Environmental indicators could be used in this context (e.g., air and water pollution, size of green areas, size of parks, degree of biodiversity etc.). Widespread precision farming can contribute to an improved state of the environment, through reduced use of input materials. Regarding digitalisation, applications, such as information portals on what to see in the area, a detailed hiking map etc., and services can be useful. Environmental databases (e.g., soil, erosion map, etc.) are considered useful digital tools, too. However, a better situation cannot be reached without higher consumer awareness and successful attitude formation (e.g., extensive selective garbage collection).

Another important goal is the improvement of local cooperation and communities, and stronger social cohesion. This can be reached by means of local social media channels, digitally organised physical and online events, podcasts and blogs, local identity formation, and by creating more social spaces e.g., playgrounds, restaurants, sport facilities, and even nightclubs, which are important for the younger generation. The improvement can be measured, for example, by the number of local events, number of participants, number of NGOs and their members. A demonstrative indicator could be the number of local friends and acquaintances.

The availability and quality of transport facilities including public transport is a significant factor for people. Remote settlements with poor transport facilities are not attractive for the majority. There can be several digital solutions for optimising the service, such as online ticket sales, digital timetables and information services. The achievement of the goal can be easily measured by the time that is needed to reach a larger city or the capital, frequency of public transport, share of inhabitants using it, and by the satisfaction of local inhabitants.

Reaching all of the above listed goals can foster a positive migration, which can be measured by the increase in local population, the number of newcomers, and the number of apartments or houses built. There was a debate in the MAP on how important it is to achieve this goal, as it can be controversial. There are a lot of settlements and areas where an improvement could occur without an increase of the population, and at the same time in some lagging-behind regions the population is growing mainly because of the Romani population which has more children than average families. These people are segregated from other parts of the society, while there is a strong cohesion among them. Overall, the goal is to improve population retention and to decrease migration from rural areas. Positive migration to rural areas can be enhanced by moderate real estate prices and by supported construction activities.

As already mentioned, MAP members agreed that digitalisation can be functional if the digital infrastructure is ensured, there is a large share of technology users, and based on these, a wide scale of digital services is available. Thus, in this context our first goal is to have a high-quality digital infrastructure ensured for a large proportion of rural population. Indicators based on bandwidth, coverage, and internet access can measure this. The MAP members think that this must be supported by state funds; it probably cannot be accomplished on a business basis. The extended digital infrastructure enables the widespread homebased work, and the proliferation of precision farming.

The improvement of education and training is a key goal according to the opinion of MAP members. A better school education would ensure appropriate living conditions in rural areas for families with children, while professional and adult education would ensure the availability of human resources for local employers. Besides these, the education and training should focus on digitalisation, which would ensure higher demand for digital services, and it would serve as the engine of digital development. The extension of e-learning is

very important opportunity in this context. Participants explained that a new teaching attitude, openness, and leisure time programs are also needed. Workshop participants agreed that the following indicators could be used for monitoring the achievement of the goals: rate of children equipped with devices, rate of digital education and digitally available trainings, number of adults involved in trainings etc.

For a more liveable rural area it is important to ensure a wide range of services is available locally. This can be reached through digitalisation. MAP members thought that the extensive availability of local public services must be ensured and financed by state funds. Besides, it is important to have fully, or partly private digital services run by entrepreneurs. This can be related to food ordering, booking for services, convenience functions or purely digital services like consultancy or information services. Indicators could be the number of services and the proportion of the population served. Specific service providers (like Google) make huge amount of data (big data) available on the consumers and their habits, which provides an enormous opportunity for improving efficiency. All public and private services should take advantage of this solution. In agriculture, there are many opportunities for analysing precision data for higher efficiency. A consultancy sector analysing this kind of data should be established partly on business basis, partly supported by state funds. Besides this, of course the traditional methods of consumer research (e.g., surveys) should be widely used. In case of local businesses in smaller settlements, the extension of multi-functional services is expected to happen (e.g., shop, post office, café, pub, etc.).

2.4. Pathways identified by the MAP

The aim of this step was to develop pathways with milestone initiatives (e.g., policy actions) by taking into account the future drivers, barriers, opportunities, and trade-offs.

The following questions have been asked from the participants of the Workshop 2:

If we were to attain [each step] what would we need to do/have in place for that to be possible?

What obstacles/limitations/dilemmas would we need to overcome at each step?

At this step we experienced a significant level of uncertainty on the part of the participants. Despite the efforts of the facilitators the task could not be fully clarified. However, there was a good and fruitful discussion on the topic. Finally, the following steps were detected to be necessary to reach the targets:

1. Implementation of policies, programs, and strategies.
2. Local regulatory actions, financial supports, change of attitude, change of mindset, cooperation.
3. Education and developing digital skills.
4. Provision of basic public services to which locals can connect.
5. Developing network collaborations, strengthening synergies among people.

As there are existing national policies, programs and strategies for rural development, and for digitalisation, MAP members think that it is a major step to implement the actions described in them (e.g. Common Agricultural Policy, Digitalisation Strategy) for reaching the goals detected. These contain a number of support possibilities and related actions, and for the implementation an appropriate budget is available.

These national actions must be supplemented by the actions of local governments. The national plans should be broken down to regional and local levels, which would be the basis for a conscious local development. Thus, cooperation among regions and different local rural areas is needed. In the frame of this cooperation local leaders and stakeholders could exchange views and share knowledge, and good practices. This is important, because the attitude, knowledge and possibilities are widely different at the settlements' level, which can cause a different path and pace of development for each of them. The performance of different settlements should be made easily comparable. Along with enhancing local economic growth, a change of attitude (e.g., by communication, introducing good examples, supports and penalties) is necessary, in which

local organisations have a leading role. The higher level of digitisation can significantly support the change of attitudes, and the improvement of rural living conditions.

Development of education for the better future of rural areas is one of the key tools. For reaching our target, we need to make steps for higher quality education, with a focus on the development of digital skills and the facilitation of e-learning. To reach that, different sub-steps need to be made, starting from training the trainers, provision of digital equipment for teachers, pupils and students, creation of e-learning materials, and supporting the participation in these programs.

Basic public service should be provided to which locals can connect. Digitalisation can cause concentration in business, as the cost of the developments are compensated only if the revenues are higher. As a consequence, small markets and municipalities need governmental support. For providing easily available digital tools for smaller businesses and municipalities, it would be useful to create basic systems, which could be used for example in taking care of elderly people (e.g., sensors settled in their homes, checking if help is needed), or settlement operation (e.g., using sensors if something needs to be corrected, filled, etc.).

Synergies among people can be strengthened, local governments and NGOs can enhance network collaborations through organising local events, programs, and thematic groups, and people could take advantage of knowledge sharing and cooperation for common goals.

2.5. Adjustment(s) towards the vision

The guiding question to be answered at this step was the following:

How well is the area positioned to start walking the outlined path? Is the current situation in line with the trajectories identified in the process?

The participants had a very little to add to this point. It was mentioned that cooperating with social development programs, and the provision of basic digital training is recommended. If the Digital Agriculture Strategy and other digital strategies are realised, then by 2040 the goals will be achieved. The support instruments must be pointing in the right direction to improve environmental conditions. Independent measures cannot be effective, and comprehensive measures must be coordinated. For the strategies it is very important to elaborate action plans, and to provide the necessary resources.

3. Recommendations and conclusions

According to the views of the workshop participants in Hungary there is a possibility to reach the vision created for 2040 by the MAP members in the first cycle. It is unavoidable that some subregions will develop faster, while others will not be able to stop relapsing. The areas around larger cities are doomed to success regarding economic development and positive migration, and they have a good opportunity to be leaders in digitalisation. Stepping forward to a more cooperative and networking future is feasible, however this is the largest challenge for them. On the other side, lagging-behind remote areas will have a lot of problems, but foreseeably the most support and governmental attention will be provided for them, and the possibility of them taking on good practices from more developed areas. The big question is whether the gap between the more developed and the lagging-behind rural areas will continue to grow, or it will shrink.

In the MAP members' opinion, the cooperation and knowledge exchange among rural regions and municipalities should be strengthened and facilitated by national and international organisations. This should be made at professional level, by trying to avoid the disagreements and inconsistencies based on political differences.

The good news is that there are already a lot of programs, strategies and plans, which are ready to be implemented. Digitalisation provides a great opportunity for development for a lot of presently lagging-behind areas. In small and remote settlements, there could be a wide scale of services available thanks to digitalisation, offering better living conditions and local job opportunities. From home office, with stable and fast internet connections it is already possible to work together with others from anywhere, even if they are in a different country. The COVID pandemic caused many problems, inconvenience and suffer for people, but made a new situation, which is very promising for rural areas. In Hungary according to statistical data, there was a fast growth in demand for real estates in rural areas, as many people who used to work in a city were able to choose rural residences. As an impact of quarantines, many people choose to leave the small apartments in the city and move to a family house in the agglomeration or in rural areas instead. As people spend more time in their homes, they spend more money locally, which can boost the local services.

4. Acknowledgement

This Position Paper was created by the monitor and facilitator of the MAP with a valuable contribution of the MAP members. We have used the data and information collected and analysed in the first MAP cycle, executed by the Hungarian AKIS MAP and its facilitator and monitor. We reviewed relevant programs and strategies and the related literature. However, the main basis was the FORESIGHT EXERCISE – ALTERNATIVE RURAL FUTURES: HOW TO GET THERE? SHERPA DISCUSSION PAPER created by Authors: Sabrina Arcuri and Gianluca Brunori (University of Pisa) Contributors: Elodie Salle (Ecorys) and Michael Kull (NordRegio). We tried to complete our tasks by following the steps and tips written in this document.

5. References

5G Strategy /5G Stratégia/

Accenturedigital (2017): Digital agriculture: improving profitability

www.accenture.com/_acnmedia/accenture/conversion-assets/dotcom/documents/global/pdf/digital_3/accenture-digital-agriculture-point-of-view.pdf

Analytical factsheet for Hungary: Nine objectives for a future Common Agricultural Policy

https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/by_country/documents/analytical_factsheet_hu.pdf

Artificial Intelligence Strategy of Hungary /Magyarország Mesterséges Intelligencia Stratégiája/ <https://ai-hungary.com/api/v1/companies/15/files/146072/view>

BioEast Initiative /Bioeast kezdeményezés/ - <https://bioeast.eu/>

Declaration - A smart and sustainable digital future for European agriculture and rural areas (2019)

<https://ec.europa.eu/digital-single-market/en/news/eu-member-states-join-forces-digitalisation-european-agriculture-and-rural-areas>

Digital Economy and Society Index (DESI) 2019 Country Report, Hungary - <https://ec.europa.eu/digital-single-market/en/scoreboard/hungary>

Digital Education Strategy -

<https://digitalisjoletprogram.hu/files/0a/6b/0a6bfcd72ccbf12c909b329149ae2537.pdf>

Digital Export Development Strategy of Hungary -

<https://digitalisjoletprogram.hu/files/a5/23/a523883ca591ddd299de3fafe5bdfbec.pdf>

Digital Start-up Strategy of Hungary - (2016)

<https://digitalisjoletprogram.hu/files/89/ea/89eac5ce5f74178f3f527945f7edd08f.pdf>

Digital Welfare Program 2.0 (2017) [https://2015-](https://2015-2019.kormany.hu/download/6/6d/21000/DJP20%20Strat%C3%A9giai%20Tanulm%C3%A1ny.pdf)

[2019.kormany.hu/download/6/6d/21000/DJP20%20Strat%C3%A9giai%20Tanulm%C3%A1ny.pdf](https://2015-2019.kormany.hu/download/6/6d/21000/DJP20%20Strat%C3%A9giai%20Tanulm%C3%A1ny.pdf)

EC (2019a): A smart and sustainable digital future for European agriculture and rural areas. Declaration.

https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=58563

Hamza E., Rác K., Szabó D., Vásáry V. (2019): Contribution of agricultural vocational training to the labour supply 2018 /Az agrárszakképzés szerepe a munkaerő-utánpótlásban 2018/. NARIC Research Institute of Agricultural Economics /NAIK Agrárgazdasági Kutatóintézet/ <http://repo.aki.gov.hu/3471/>

Juhász, A (2019): National Digital Agriculture Strategy (NDAS) - https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Documents/Events/2019/Telecom19/3-Juhasz%20Aniko_AGMF.pdf

Ministry of Agriculture (2017): The Concept of Food Economy of Hungary 2017-2050. Quality food for Hungary and for the world.

Ministry of Innovation and Technology (2019): Strategy of Strengthening of the Hungarian SMEs 2019-

2030 https://2015-2019.kormany.hu/download/6/f7/b1000/KKV_Strategia.pdf

Ministry of Innovation and Technology (2020): Research, Development and Innovation Strategy of Hungary 2021-2030. Draft version

National Digital Agriculture Strategy -/Magyarország Digitális Agrár Stratégiája/ - [https://2015-](https://2015-2019.kormany.hu/download/3/fb/a1000/Magyarorsz%C3%A1g%20Digit%C3%A1lis%20Agr%C3%A1r%20Strat%C3%A9giai%20A1ja.pdf)

[2019.kormany.hu/download/3/fb/a1000/Magyarorsz%C3%A1g%20Digit%C3%A1lis%20Agr%C3%A1r%20Strat%C3%A9giai%20A1ja.pdf](https://2015-2019.kormany.hu/download/3/fb/a1000/Magyarorsz%C3%A1g%20Digit%C3%A1lis%20Agr%C3%A1r%20Strat%C3%A9giai%20A1ja.pdf)

National Info-communication Strategy /Nemzeti Infokommunikációs Stratégia/ -

https://www.kormany.hu/download/a/f7/30000/NIS_végleges.pdf

https://nisz.hu/sites/default/files/u1/nemzeti_infokommunikacios_strategia_2014_2020.pdf

Pesce M., Kirova M., Soma K., Bogaardt M-J., Poppe K., Thurston C., Monfort Belles C, Wolfert S., Beers G.,Urdu D. (2019): Research for AGRICommittee – Impacts of the digital economy on the food-chain and the CAP, European Parliament, Policy Department for Structural and Cohesion Policies, Brussels

[https://www.europarl.europa.eu/RegData/etudes/STUD/2019/629192/IPOL_STU\(2019\)629192_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2019/629192/IPOL_STU(2019)629192_EN.pdf)

Vocational training 4.0 Strategy /Szakképzés 4.0 stratégia/ -

https://www.nive.hu/index.php?option=com_content&view=article&id=1024:szakkepzes-40-strategia&catid=10:hirek&Itemid=166

Annex 1. Methodology used in the MAP

Basically, we followed the detailed instructions laid down in the SHERPA DISCUSSION PAPER FORESIGHT EXERCISE – ALTERNATIVE RURAL FUTURES: HOW TO GET THERE?

Our FORESIGHT MAP was based on the HUNGARIAN AKIS MAP created in the first MAP cycle; however, several changes were made. There was a change in the person of both the monitor and the facilitator. Besides, some MAP members left, and new members had to be invited into the group. Altogether, we had 14 MAP members, although some members were inactive and did not participate in the work. The distribution of participating MAP members in the workshops and the interviews can be seen in this table:

Table 1: Number of workshop and interview participants

Workshop 1		Interview 1		Workshop 2		Interview 2	
Science:	3	Science:	1	Science:	2	Science:	2
Society:	2	Society:	2	Society:	3	Society:	1
Policy:	1	Policy:	1	Policy:	1	Policy:	0

The participants came from the Ministry of Agriculture (Policy), Agricultural Chamber and private companies (Society), the Institute of Agricultural Economics and other scientific organisations (Science).

Before the Workshop 1 we shared the results of the first MAP cycle as a reminder, and the main documents related to the Foresight exercise (SHERPA Discussion Paper, and materials on JRC scenarios) to let the participants prepare for the tasks.

We followed the instructions of the SHERPA Discussion Paper and tried to facilitate the workshops, accordingly by using Microsoft TEAMS and recorded the meetings. However, we had to make additional interviews after the workshops, because the number of participants was lower than required. We did these interviews mostly by Microsoft TEAMS or by phone, and recorded the meetings when it was possible or relevant. We could organise group interviews for 2-3 MAP members, this way we could do additional small workshops where the participants had the possibility to exchange views and work together. Regarding the tools to be used in the SHERPA Discussion Paper there were only recommendations and tips, in practice we used Mentimeter in Workshop 1 and a shared excel table in Workshop 2. Both tools were very useful and convenient, they supported adequately the task implementation.

In spite of the effective and supportive facilitation which was provided by the Facilitator and the Monitor in cooperation, and the thorough preparation for the workshops, at some steps there was some hesitancy and the MAP members had certain difficulties with understanding the requests.

First of all, there were problems with the JRC scenarios. Understanding the coordination system was easy, but placing the Hungarian rural areas was problematic, as the rural areas in Hungary's single region are very diverse and polarised, very different settlements and sub-regions can be found which show very different spots in this coordinate system. The MAP came to the conclusion that there is no scenario which could fit the whole country, however the most typical ones could be identified. It increased the uncertainty that the detailed description of the scenarios was not evidently concluded from the status of these two aspects.

In STEP 3 we had to define goals and targets to be reached by 2040. In this case it was easier for the participants to detect dynamic goals.

This means that we are not aiming to reach a given higher or better level of a goal, but to have a continuous improvement of the current situation.

At STEP 5, all participants became uncertain, and did not understand what was requested and why.

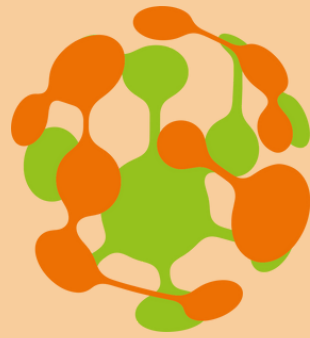
Although the requests were not always clear for participants, technically the detailed instructions and tips of the SHERPA Discussion Paper made it easier to organise and facilitate the workshops.



The scenarios seem to be interesting and inspiring at first, but after a short time we recognised its limits and problems, and it was less useful afterwards.

We asked MAP members to review and share their opinion on the first version of the Position Paper, which was revised based on the comments. The Position Paper will be shared with high level policy makers, and we are planning to share our results on the website and social media channels of our institute.

Key learning regarding foresight methodology can be that different aspects need to be represented in the workshops. An ideal size of the group is important, in which some members already know each other. This helps the participants to think freely, and everybody has enough time to express their opinion. In our MAP there was a good collegial and friendly atmosphere, which had a positive impact on teamwork and effectiveness.



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