FORESIGHT DOCUMENT

Scenarios on European Regional Issues

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Towards a Resilient Future of Europe

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TABLE OF CONTENTS

1 General Description

The work package 6 of the FutuRes projects implements the "FutuRes Policy Lab" as a collaborative platform at the interface of science and policy to compile research evidence, political perspectives, practitioner experience and citizens' perceptions. To do this, the consortium organizes several participatory events through the course of the project in order to establish a constant workflow of stakeholder and citizen engagement activities (scenario workshops, high-level policy expert meetings, stakeholder dialogue events). This will be worked out into a number of publications (strategic foresight documents, policy briefs, discussion paper) and communication activities (WP7). Among these are six participatory scenario development workshops organized and run by consortial partner VDI/VDE-IT. A first round of three workshops was conducted in 2024, resulting in the first Strategic Scenario Foresight, focussing on pan-european issues of resilient European societies (see Deliverable 6.2 First Strategic Foresight Documents/Scenarios on Pan-European Issues). The second round of scenario building workshop with a special focus on regional issues in Europe was conducted in September/October 2025 and the results of these workshops will be described in this document. The intention of scenarios is to outline multiple possible futures and to give the opportunity to stakeholders and policymakers to get an impression of key factors, driving forces and the resulting trajectories and outcomes representing developments derived from scientific findings and analysis. As an outcome of this process, the VDI/VDE-IT will deliver a set of qualitative scenarios for resilient European societies in demographic change that describe and illustrate possible future developments. This will then become a tool for the design process of policy strategies that both respond to resilience and demographic change and for the formulation of a comprehensive set of policy recommendations targeting crisis resilience.

2 Material and Method

2.1 Qualitative Scenario Building

Qualitative scenario building is a structured foresight method which focuses on creating narratives about how the future could unfold based on different driving forces, uncertainties, and trends. These scenarios are possible futures rather than predictions, which makes them a flexible tool for decision-making in uncertain contexts (VUCA/BANI). The method is particularly useful when quantitative data alone cannot capture the complexity or ambiguity of future developments.

Scenario thinking became highly productive and popular approach during the rise of the field of future studies in the 1960s and 1970s. Peter Schwartz, a key figure in the intellectual foundations of foresight, popularized the approach with his book *The Art of the Long View* (1991). Over the past two decades, qualitative scenario building has been a central tool in anticipatory governance processes at the EU level and worldwide. Since the 2010s, the Intergovernmental Panel on Climate Change (IPCC) has been using model-based scenario building to create pathways for understanding how different emissions trajectories could impact global climate change. These *Shared Socioeconomic Pathways* (SSPs) and *Representative Concentration Pathways* (RCPs) are examples of combining qualitative and quantitative foresight methods to shape international climate policy and anticipatory governance. In recent years, the European Commission has increasingly relied on qualitative scenario building as part of its Strategic Foresight initiatives as well. For instance, the 2020 report *Shaping Europe's Digital Future* used scenarios to anticipate the impacts of emerging technologies like artificial intelligence and 5G networks, ensuring that policies were forward-looking and adaptive to different possible futures. The VDI/VDE-IT team organized a series of participatory scenario building workshops with stakeholders from research, policy and civil society in order to describe a variety of futures for European societies in demographic change. The prospective scenarios include key factors determining future developments and are based on quantitative (fertility rate, migration scenarios,

economic forecasts and projections etc.) and qualitative (weak and diffuse signals, situational descriptions, case studies etc.) expertise of the FutuRes consortium. The outcomes of these workshops are provided as Scenario/Strategic Foresight Documents and flow into the policy dialogues and broader stakeholder events of the Policy Lab.

2.2   Morphological Box

The morphological box, introduced by the Swiss astrophysicist Fritz Zwicky in 1971, plays an important role in qualitative scenario building, particularly in helping to systematically explore a wide range of possible future scenarios. The morphological analysis (Tom Ritchey, *General Morphological Analysis*, 2002) is a method for structuring and investigating the relationships between different factors or dimensions that define a system or problem space. In scenario building, it serves as a tool to explore all potential combinations of variables and their interactions, ensuring that scenario developers consider a broad and diverse set of possibilities. The box serves as a framework holding key factors and a range of specific variations building on which the participants pre-cast scenario pathways by connecting specific variations of the key factors following the principle of logical consistency.

2.3   Identification of the Key Factors

The topics and analytical questions for all scenario workshops build on the work of the FutuRes research partners. Indeed, one of the goals of the scenario building process was to create synergies between research and policy advising, guarantee the utilization of the FutuRes research findings, and gather input from external experts to build on the work of the consortium.

During the initial phase of the process key influencing factors for resilience in European demographic development were identified and verified iteratively in consultation with the FutuRes consortium. Each project partner was asked to answer the following questions based on their expertise and research findings in order to constitute the evidence base for the discussion during the workshops:
1.   What are the key influencing factors for resilience in Europe's demographic development?
2.   What impact on policy-making do they have?
3.   Which different types of European countries do you identify in your research? Based on which social policy criteria should we cluster the different European countries at hand?

The preparatory consultation with the consortium partners for the first round of workshops in 2024 allowed to determine 12 key factors for the development of European policies around resilience and demography. In 2025 a second round of consolidation took place taking into account all updated results and input from the consortium partners. In this round, 11 key factors formed the overall framework for the workshops. The factors selected based on the scientific focus of the FutuRes consortium and their relevance for the resilience of European societies. Key influencing factors are those factors that have been identified as having an influence and are uncertain in their projection. Thus, other eminent external factors like climate change were left out purposefully, although their connection to other factors (migration, public finances, etc.) is evident and was also discussed in the workshops. Other eminent external factors that would constitute great shocks to the outcome of the scenarios (like scenarios of geopolitical security) were also left out in this scenario process as they could be used as wild cards in a later stage of working with the narratives. In this way, all scenarios were conducted under the assumptions of the EU being intact in 2045 and having to deal with ageing, shrinking labour force and other implications of demographic change. The VDI/VDE-IT team synthesized and consolidated the key factors provided by the consortium partners and formulated three plausible projections for each of them (cf. appendix 5.1). This gave a manageable set of projections for the planned workshops. The projections were revised iteratively with the consortium, shared with all workshop participants beforehand and used as building blocks for the scenarios during the events.

2.4   Workshops

In the second phase of the process, a total of 31 representatives from European countries attended the qualitative scenario building workshops. The invited participants were selected based on a comprehensive search for European experts on demography in the research, policy or civil society sector, as well as within the broad FutuRes network, and the project team is expressing their gratitude for the wide range of experts who provided their input.

We organised three regional workshops—Continental (DE/FR/Benelux/Central Europe), Northern/Anglo-Saxon (Nordics, UK/IE, NL), and Eastern-Mediterranean/Eastern Europe (IT/GR/BG/Southern periphery)—to capture distinct welfare-state traditions, labour-market institutions, housing/administrative capacity, and digital/care delivery logics that shape implementation and trust.

FutuRes Principal Investigator Prof. Dr. Arnstein Aassve and Prof. Dr. Agnieszka Chłoń-Domińczak as well as Work Package Lead representative Kate Dearden from Population Europe attended each workshop, in order to present the FutuRes project and integrate the specific expertise from the consortium into the discussion.

During the events, the invited experts discussed the key factors for resilience in European demographic development and policy based on the input of the project partners. They connected different projections in the morphological box in order to build various consistent future scenarios (for a visual representation see appendix 5.2).

Methodologically, the influencing factor of trust was treated as a derived, cross-cutting outcome rather than a standalone lever in the morphological box. In one workshop, starting with "trust" quickly broadened into all other determinants, confirming it was too global to steer directly. Accordingly, subsequent workshops anchored pathways in actionable factors—notably migration projections—together with pensions, housing, primary and long term care and prevention, digital access, skills/automation, and care capacity. From each internally consistent pathway, we then derived a trust trajectory via explicit interdependencies and simple proxies This kept trust comparable across scenarios and sensitive to sequencing and allowed regional lenses to surface where trust is most likely to strengthen or erode.

Given the cultural, political, economic and social diversity, the futures developed do not represent a homogeneous Europe, but rather show alternative futures with a special emphasis on regional differences, challenges and potentials that outline the average overall structure of the European Member States.

2.5   Results and Output

All three FutuRes workshops of the 2nd round were run successfully on the 30th September, the 7th and the 8th October 2025 online and each group developed one scenario collaboratively with the morphological boxes. All discussions in the workshops were recorded (with explicit consent from all participants and according to data protection regulations), transcribed and used in anonymised form as additional input afterwards. The implementation of the scenario building method resulted in different levels of appreciation, some participants being very positive and sharing thank you notes afterwards, while other showed more resistance. Based on these results of the workshop, the VDI/VDE-IT team developed and wrote integrated qualitative scenarios (s. below).

In this round of workshops regional aspects and future challenges and potentials for regions in Europe played an important role.

Given the tight calendar and our preference for depth over breadth, each workshop produced one fully specified scenario rather than three; viability and comparability were maintained by using the same morphological box, identical factor sets and projection options, and explicit internal-consistency/sequencing checks. During synthesis, we systematically ported regional observations across all scenario logics (e.g., portability enforcement, ring-fenced prevention, assisted access, key-

worker housing), coding comments and mapping them to the corresponding levers. This allowed us to present regional lenses for every scenario, even if each region authored only one pathway, and to preserve actionable nuance about where policies succeed or stall in real contexts.

The development of the scenarios draws directly from the results of the experts' consultation and the workshops discussions as well as from the morphological box, and integrates them into consistent narratives.

The scenarios facilitate an exchange on foreseeable, conceivable or plausible developments and the possible courses of action that can be derived from them. They produce manageable results for policymakers to allow undesirable developments to be identified at an early stage so that countermeasures can be taken in time, and/or desired developments to be initiated through targeted strategies, instruments and measures.

3 Scenarios

3.1 Fragmented Futures, Competitive Cohesion

#OpenTalent #PersonalizedPensions #HybridHealth #DigitalByDefault #HousingConstraint #PreventionFirst

Summary. By 2045, Europe is open and competitive in attracting talent, yet social outcomes vary markedly across regions. Personalized pensions and an inclusive—but uneven—rise in labour participation sustain performance in leading areas, where public–private health models and digital public services enhance efficiency. Smaller or less integrated regions, however, face affordability gaps, patchy prevention, and strained access.

A hyper-digitalized governance boosts transparency and service speed but also fuels debates on fairness, bias, and surveillance. In cities, innovative housing pilots—modular, community-based, or AI-managed—coexist with enduring price pressures and uneven inclusion. Universal care guarantees remain a shared European value, although continuity and quality diverge sharply by location. Where prevention and housing lag, resilience is fragmented. The promise of universal access to healthcare and public services endures, but its everyday reality depends on where people live and whether systems were prepared before recruitment and migration scaled. Europe's model powers strong regions forward—yet affordability, prevention gaps, and an uneven service quality remind citizens that resilience is not universal.

3.1.1 Core Scenario

In this future, Europe's labour market is shaped by open, competitive talent policies. Visas are agile, qualifications are recognised quickly, and regions use targeted strategies to attract global workers. Where policy is sequenced well, first recognition of qualifications, then housing and service capacity, then recruitment, hospitals are staffed, construction stays on schedule, and public services run predictably. Fast track credentialing and sector specific entry routes are normal. A nurse trained abroad passes a harmonised skills check and starts work with language coaching and peer mentoring.

The model, however, is unforgiving of weak links. Where authorities hired first and built later, openness fills waiting rooms and classrooms, strains local transport, and pushes wage gains into higher rents. The architecture is shared, but the load bearing parts, prevention budgets, childcare, transit capacity, and housing supply, were not raised equally. These measures ease ageing related shortages in technology, health, and green infrastructure, but the gains cluster in globally connected metropolitan areas. Smaller or less integrated regions struggle to compete in the race for talent.

Personalised retirement is the norm, and builds on an innovative public base plus individual digital accounts and flexible retirement ages. It works well for steady mid career earners and temporal or phased exits, partial returns after caring breaks, and small top ups are easy to plan. For people with cross border or discontinuous careers, the system depends on portability of benefits and contribution capture. Where payroll systems combine short contracts and cross border work into one record, confidence can hold and people do not need large precautionary savings. Where records fragment, those with the least margin save more and trust less. Employers that paired this pension design with ergonomic job changes and credible mid career learning extend healthy working lives of their staff. Where job design did not change, "later retirement" stayed a fiscal idea rather than a real option. All outcomes therefore depend on portability and literacy, and fragmented or cross border careers need automatic contribution capture and EU level standards to avoid wider inequalities in later life.

The workforce participation is higher and more diverse than a generation ago. Older workers stay active with ergonomic workplace redesign, phased retirement options, and accessible mid career training. Women's employment rises where childcare is reliable and affordable, while migrants do well where education credentials are recognized early and possible career pathways are transparent. However, progress for older cohorts is uneven and varies by economic sector.
In healthcare, public and private providers coexist in a hybrid system. Platform-based services, AI diagnostics, wearables, and genomics raise throughput for those with good access, while prevention weakens in regions with tight and low budgets.
Health systems have settled into a balance of public access guarantee complemented by platform diagnostics, remote monitoring, and urban centres of excellence. Regions that protected screening, primary care, and local community health managed to turn digital front doors into better outcomes, not just faster queues. Where prevention budgets were secured, health gaps narrowed. Where they were not, postcode inequalities returned, in waiting times, in chronic disease management, and in declining local trust. Universal access to care remains a European norm, but continuity and quality still differ a lot by place.

Public services are now hyper-digitalized and politically contested at the same time. Secure IDs, online case-handling, and proactive notifications make government feel more responsive, but public debates over data use, algorithmic fairness, and surveillance boundaries have become central to civic life and trust. The efficiency gains are evident, yet they are accompanied with a constant discussion over fairness and accountability in the digital state.
Housing is a huge binding constraint for all population inflow. Co-living arrangements, modular construction, and dynamic rents expand in some regions, but only sustained investment in housing and transport ultimately determines whether talent can live near jobs. Prices stay high in growth hubs, limiting mobility until infrastructure and supply catch up.
Public trust rises where the sequence is right: build capacity in primary care, childcare, transit, and housing, then recruit, protect prevention, and include assisted access in digital by default services. Trust falls in places that recruit before building capacity and where digital polish reveals rather than hides gaps in fairness and continuity.

3.1.2   Regional Discussion

Continental Regions
Participants from continental Europe repeatedly argued that openness only holds where its connective tissue is visible: mutual recognition of qualifications, portable social rights, and a tangible local dividend—such as a staffed clinic, a bus that arrives, or a childcare place that exists. Public-health experts stressed that prevention funding must be protected; otherwise, digital and hybrid delivery may raise throughput but risk polishing the surface while leaving prevention gaps intact. Housing emerged

as the "credibility threshold" for talent strategies: affordability ultimately determines whether people settle where they are needed. Municipal planners and social partners emphasized that outcomes depend on supply rather than communication. Labour-market economists supported more targeted pensions, provided portability for cross-border and fragmented careers is embedded and contribution capture automatic. Overall, continental participants agreed: openness works only when paired with portable social protection, serious housing supply, and hybrid (digital plus assisted) access.

Northern and Anglo-Saxon Regions

Participants from northern and Anglo-Saxon systems focused on internal unevenness even within otherwise strong institutions. Nordic city officials and UK devolved-administration representatives highlighted faster adoption of remote monitoring and risk-prevention tools in older-adult care than in children's and youth services, reinforcing the need for assisted channels alongside digital self-service. Dutch and Irish contributors underlined metropolitan housing constraints as a hard cap on recruitment. Several proposed portable benefits embedded directly in employment contracts and regional workforce agreements to manage tensions between local labour needs and national migration controls. Practitioners with a service-delivery background stressed the importance of sequencing: stabilize capacity—housing, prevention, and primary care—before scaling recruitment, or churn will erase gains. From a northern and Anglo-Saxon vantage point, internal unevenness is a structural reality to plan for, not a temporary phase. Resilience, they argued, depends on designing for these asymmetries rather than assuming they will fade.

Eastern-Mediterranean Regions

Participants from the Eastern-Mediterranean region consistently linked openness to everyday accessibility. Italian and Greek municipal representatives tied the promise of open and competitive talent markets to tangible reachability: sustainable mobility, transport links that older people can actually use, and assisted digital access where needed. Otherwise, they noted, "universal services remain out of reach," even if digital literacy among older adults will be far higher in 2045 than today. Clinicians and social-care managers warned that prevention is the first casualty when budgets tighten, especially in rural areas, widening outcome gaps quickly. On housing and mobility, Bulgarian and Southern Italian participants described these as preconditions for retention: vacancies can be refilled, but without places to live and reasonable commutes, they rarely stay filled. In short, from this regional perspective, openness is understood not as a visa regime but as a system of service and access.

3.2   Patchwork Adaptation

#CircularMigration #PortableRights #PatchyParticipation #FragmentedCare #DigitalDivide #SectorSkills

Summary. By 2045, Europe adapts to the demographic pressure "in pieces". Circular and partnership-based migration stabilizes seasonal and project-based labour but also generates continuous churn. Hybrid pensions personalize the risk yet leave mobile and lower-income workers exposed to contribution gaps.The gains of workforce participation concentrate in metropolitan and export-oriented regions, while health systems remain fragmented and digital divides persist beneath the layer of universal coverage. Housing pressures push workers outward, reshaping commuting patterns and settlement geography. Long-term care stratifies by income and locality. Upskilling becomes sector-focused and modular, expanding only where employers co-finance. The system functions—but not everywhere, and not in the same way.

3.2.1 Core Scenario

In this future of 2045, Europe uses a standard model of circular and partnership based migration that places workers in time limited roles. The design aims for predictability: fixed term inflows for care, agriculture, hospitality, and selected manufacturing sectors; standard contracts include skills recognition and basic portability; options for returning workers to come back. Where authorities and employers strengthened the "portability bundle" of social insurance, pensions, credentials, and enforcement, returning cohorts needed less onboarding and service quality stabilised. Still, short tenures remain the norm. Teams are reformed often, supervisors rely on clear operating guides rather than long relationships, and municipal housing teams keep modular units ready for rotating staff. The mechanism avoids acute shortages but, by design, creates churn and a constant in and out. Communities host rotating cohorts, and employers keep investing in onboarding. For steady contributors, the system feels predictable and fair. For low paid, short tenure, and mobile workers, eligibility and contribution collection still fail and policy struggles to close those gaps.

Pensions and labor participation form a visible loop. The hybrid pension model combines a public floor with personalised accounts and flexible retirement options. It looks fair for stable mid career earners. For low paid or mobile workers, fairness depends on automatic contribution capture across short contracts and borders. When payroll data do not follow the person, the problem shows up years later as a thinner retirement. Participation among older workers and women rises, but unevenly. Metropolitan and export oriented regions co-finance mid career training, flexible scheduling and ergonomic workplace changes, and so are able to put more workers into stable jobs. Where career pathways and employer co-funding are weaker, older workers and returners face fewer entry points into decent work, and the participation gap between regions persists.

Health systems remain fragmented and underfunded. Private health platforms grow in cities, while rural and low income areas face longer waiting times. As governments are under high financial stress, prevention is often cut first. Months later, avoidable admissions and overtime budgets rise again, crowding out the very training and housing initiatives that could ease the strain.

Housing pressure in growth hubs pushes workers outward. Co-living and modular units help in niches for students, project teams, and key workers, but they do not change the overall price trend. The commutes get longer, and some vacancies stay unfilled even after successful recruitment.

Despite near universal connectivity, a digital divide persists. It is shaped by device quality, digital skills, disability, and income. High end users experience personalised public services, while others work with thinner interfaces or drop out completely. The divide affects several systems: pensions (account updates and preferences), health (tele triage and remote monitoring), and skills (credential portals and training). Automation spreads unevenly: fast in logistics, manufacturing, and platform retail, slow in care, construction, and public services with tight resources. In response, sector focused micro credentials expand where employers can co-finance them. A modular, vacancy linked training approach delivers practical upskilling, especially in pressured sectors. At the same time, care markets stratify by income and place: Affluent households can assemble comprehensive care packages. Middle income families combine municipal services with out of pocket payments. Lower income households rely on overstretched public providers and informal support. Continuity, meaning the same carers week after week, is the scarcest resource under circular migration.

Trust becomes patchy and local. Where portability and enforcement follow circular workers, people experience fairness because entitlements travel with the person, and trust stabilises. Where prevention is cut first and portability leaks, users face churn, co-payments, and discontinuity, and local trust erodes even when coverage looks adequate on paper.

3.2.2   Regional discussions

Continental Regions

Participants from continental Europe described circularity as politically manageable when local service capacity and housing supply keep pace. German and French public-health practitioners emphasized that clear budgets for prevention and funded assisted digital access are the quickest ways to narrow gaps. Planners and social partners warned that without forward planning and active land policy, housing innovation arrives too slowly, reinforcing a map of winners and laggards. Labour-market specialists added that portability of benefits without enforcement is indistinguishable from churn, while portability with enforcement can turn repeat cycles into a stable and quality-controlled system.

Northern and Anglo-Saxon Regions

Participants from northern and Anglo-Saxon countries highlighted frictions at the individual level. Dutch and Irish contributors argued that benefits must travel with the worker; otherwise, pension promises evaporate when contracts end. Officials from regional governments noted that national categories often fail to reflect the occupations regions actually need to fill, creating persistent mismatches. Practitioners from UK and Nordic care systems anticipated faster diffusion of AI in older-adult services, such as fall and risk monitoring, while change in children's and youth services is expected to remain slower. Provider scale and leadership were repeatedly cited as key sources of heterogeneity within the same sector. On skills, Nordic and British participants converged on modular, employer-backed credentials that translate directly into wages rather than broad, generalist programs.

Eastern-Mediterranean Regions

Participants from the Eastern-Mediterranean region regarded circular migration as plausible in contractual form but difficult in practice. Return patterns often drift into serial short-tenure, keeping churn high unless portability and enforcement are both robust. They linked personalized pensions directly to this reality: portable contribution capture is decisive for mobile and low-paid workers; otherwise, gaps widen at retirement. On digitalisation, participants differentiated coverage from outcomes: usage continues to diverge by age, disability, income, and device quality, making assisted channels in public services a permanent feature rather than a temporary bridge. With fragmented and underfunded health systems, technology diffuses across public and private providers but cannot compensate for weak prevention and community health. Housing pressures in growth hubs continue to push people outward; municipal solutions and community-based models are as important as technological innovation for regional resilience.

3.3   Fortress Pragmatism

#RestrictiveMigration #PensionStrain #MainstreamAutomation #AffordableHousing #CareGaps #HybridAccess

Summary. By 2045, Europe has tightened labour migration while maintaining humanitarian and family channels under quota systems. Employers respond by mainstreaming automation and redesigning jobs, relying heavily on domestic workforce inclusion to fill essential roles. A prolonged pension crisis pushes retirement ages upward and increases old-age poverty risks for those with discontinuous careers. Health systems remain fragmented, and broad digital access still leaves expensive last-mile gaps. Large-scale housing programmes cool rents in major corridors but do not fully close affordability differences. Automation in the workplace spreads widely but with uneven uptake across sectors. Despite vouchers and remote monitoring, care system gaps persist. Industry-focused reskilling

supports continuity and performs best in metropolitan hubs where strong intermediaries link employers, training systems, and public services.

3.3.1   Core Scenario

By 2045, Europe follows protective and restrictive migration policies in a period of overlapping crises. The working-age population is small and old. Employers respond by redesigning jobs, automating routine tasks, and recruiting at home from older workers, returners, and people with disabilities due to the lack of migration of workforce. Where workplaces offer good ergonomics, flexible shifts, and reliable childcare and long term care, participation stays stable. But chronic gaps persist in care, construction, logistics, municipal services, and seasonal work. Large climate-adaptation programmes—heat-proofing buildings, greening cities, water management, coastal protection—absorb skilled labour for years and pull urgently needed workers away from health and social services. Heatwaves and extreme weather reduce productivity in outdoor and mobile work environments, shorten shifts, increase night work, and raise sick days. The result is less output per worker, even where machines are in place to help. Experiences with advanced humanoid robots are ambigious and vary from sector to sector.

A persisting pension crisis leads to benefit reductions in phases and higher, though flexible, retirement ages. Many older people add income through part time or platform work, and poverty in old age rises among low skilled workers with discontinuous careers. In systems with minimum pensions and care credits, longer working lives do not turn into poverty later on. Where those tools are weak, fragmented careers, especially for women with long care breaks, result in poverty in old age.

Health systems feel these pressures directly. When prevention and occupational health are weak, any financial gains for the government from later retirement are offset by higher illness and lower productivity. Where healthcare and heat prevention is maintained, working longer becomes a choice rather than a necessity. Even so, many regions keep fragmented and underfunded health services. When budgets tighten, prevention and rural provision shrink first, and familiar postcode differences in access and quality return.

Digital government is now widespread, yet the last access mile remains stubbornly difficult. Regions that combine staffed help points and mobile service units can include older residents and remote communities more effectively. This reduces unclaimed benefits and missed appointments. The hybrid model is costly but it works where full automation does not.

On the spatial side, housing shifts from bottleneck to enabler. However, it does not simply "ease." After steady investment in social and middle income housing, redevelopment of previously used sites, and higher density linked to public transport, rents fall along major corridors. Thus, shrinking areas see some relief, but growth corridors—including places attracting internal climate movers—remain tight. Automation has become mainstream in logistics, manufacturing, back-office administration, and selected clinical workflows, but the diffusion remains uneven. Large providers with investment capacity and strong IT infrastructure move ahead, while smaller municipalities and cash-constrained public services lag behind, preserving productivity gaps. In care, construction, and street-level operations, technical, legal, and quality limits cap what automation can replace. Low-value automation does not reliably remove labour needs; it can even shift burdens onto families and the informal economy. Care gaps thus remain persistent. Families, especially women in midlife, continue to carry the residual burdens even with cash for care programmes and remote monitoring. The most workable lever is sector focused upskilling into concrete roles such as retrofit construction, robot maintenance, clinical assistance, and public operations. These programmes perform best where intermediaries coordinate demand, ensure training quality, and guarantee placements.

Trust in institutions is fragile. If fiscal consolidation cuts prevention and last-mile support first, trust falls faster and further. A core political economy problem remains visible: when migration stays tight, pressure grows to rely on very low-wage domestic labour or grey arrangements rather than funding

robust—but costlier—automation, prevention, and care capacity. Where minimum pensions, care credits, and visible prevention are protected, trust holds better; where they are not, confidence thins and social gaps widen.

3.3.2 Regional Perspectives

Continental Regions

Participants from continental Europe viewed restrictiveness as electorally plausible in poly-crisis conditions but warned about its long-term trust implications. Even where automation is widespread, implementation capacity divides regions: small municipalities and tight budgets slow diffusion and limit service quality improvements. Several public-administration experts noted that "mainstreamed automation" often conceals these divides, leaving smaller providers behind. Personalised pension models without a guaranteed minimum—where outcomes depend on contributions and returns, and care breaks or short contracts are not automatically covered—amplify old-age poverty for discontinuous careers. As cohorts age, this issue gains political weight. Public-health and audit voices from the region linked credibility to steady prevention funding and enforceable minimum access standards across territories. They warned that fiscal consolidation which cuts prevention first will ultimately backfire through higher acute-care costs.

Northern and Anglo-Saxon Regions

Contributors from northern and Anglo-Saxon systems emphasized that hybrid access in healthcare—combining digital and assisted channels—must be treated as a permanent cost centre if older and rural citizens are not to be excluded. Practitioners from the UK and the Netherlands observed that routing public money through private long-term-care providers keeps services running but complicates accountability. Without clear wage ladders and staffing progression, households continue to absorb the gap between entitlement and delivery.

Eastern-Mediterranean Regions

Participants from Eastern-Mediterranean countries interpreted Fortress Pragmatism through a structural lens. As fertility rates in source countries decline, labour tightness becomes structural rather than policy-induced, reinforcing the long-term effects of restrictive migration. The result is deeper pension strain, later retirement, and spillovers into healthcare systems unless prevention and accessibility are strengthened. The group's core concern was fragmentation and underfunding in health, compounded by workforce shortages that push systems toward platform-mediated, technology-driven provision. While digital tools help, pension poverty and out-of-pocket costs keep access uneven. Gender and family policy outcomes were seen as mixed: female labour participation rises out of necessity, but elder-care duties and persistent workplace inequalities sustain structural disadvantages. Digital government is routine, yet usage divides remain; assisted channels and last-mile connectivity continue to matter, particularly for older cohorts and people with disabilities. Housing and sustainable mobility were repeatedly described as the hinge that enables older and lower-income residents to reach essential services—an operational definition of universality.

4 Conclusion and Outlook

As the output of the participatory scenarios building workshops, the scenarios describe different plausible and consistent futures of European societies based on key factors of resilience. The different narratives of the future developed here are intended to spark anticipatory thinking for decision-makers, provide guidance on possible developments and entanglements of phenomena, as well as stimulate reflection on current policies and future directions.

Taken together, the scenarios chart three distinct future scenarios in which Europe tries to manage demographic strain by 2045: open-but-conditional resilience (Fragmented Futures), adaptive but uneven mosaics (Patchwork Adaptation), and tight, domestically-driven aim towards equilibrium (Fortress Pragmatism). The cross-cutting lesson that becomes apparent across all future scenarios developed by the regional experts is the following: how regions adapt to demographic pressure, accordings to the scenarios developed, hinges less on any single policy lever than on sequencing and interdependence—specifically, how migration models are matched with housing, primary care and prevention; how pensions protect discontinuous careers; and how "digital by default" is paired with assisted access so coverage becomes use.

All scenarios are exploratory constructs, not a policy recommendation in themselves. The value of the scenario lies in exposing these **dependencies and costs**, enabling evidence-based debate rather than normative advocacy. It opens the way for discussion on how resilience as an overarching construct can be understood.

In Fragmented Futures, open talent markets, personalised pensions, and hybrid health systems aim at resilience—where capacity is built before inflow. Regions that ring-fence prevention, expand primary care and childcare, and deliver transit-linked housing retain staff and extend healthy working lives; laggards feel openness as crowding and churn. In Patchwork Adaptation, circular and partnership migration keeps the lights on but normalises short tenures; fairness in hybrid pensions rises or falls with automatic contribution capture. Participation gains cluster in metropolitan or export regions able to co-finance ergonomic redesign and mid-career learning, while fragmented care and a stubborn digital divide keep others behind. Fortress Pragmatism accepts persistent labour tightness, pushes participation via job redesign and mainstream automation, and relies on pension floors and care credits to avert old-age poverty; resilience is possible—but only if prevention and hybrid access are treated as permanent, funded infrastructure and housing supply is sustained.

The regional lenses sharpen these differences. Continental voices prioritise system integrity: portability by default, enforceable minimum access standards, and ring-fenced prevention so digital and hybrid models don't simply varnish old inequalities. They repeatedly warn that sequencing failure (recruitment before capacity; fiscal consolidation that cuts prevention first) erodes trust and invites backlash. Northern/Anglo-Saxon contributors foreground implementation realities inside otherwise strong systems: metro housing constraints as hard caps on recruitment; the necessity to budget for assisted access indefinitely; and portability that follows the worker at the person-level. Their preferred instruments are modular, employer-backed credentials tied to wages and pragmatic governance that reconciles regional needs with national rules. Eastern-Mediterranean participants translate "openness" into practical accessibility: coverage does not equal use unless transport, last-mile services, and contribution enforcement are in place. In more constrained fiscal contexts, they stress municipal housing, community health, and strict portability enforcement to prevent circular migration from collapsing into serial short-tenure and pension gaps.

The different narratives of the future developed here are intended to spark anticipatory thinking for decision-makers, provide guidance on possible developments and entanglements of phenomena, as well as stimulate reflection on current policies and future directions.
Across all scenarios, first policy implications can be drawn: First, sequencing is strategy: capacity (primary and long term care, childcare, prevention, transit, housing) must precede recruitment for openness to be durable. Second, portability and enforcement of qualifications and targeted pensions are the difference between circular migration that compounds skills and one that compounds churn. Third, prevention is macro-critical: where it is cut first, avoidable admissions, absenteeism, and shorter working lives quietly unpick fiscal and pension plans. Fourth, "digital by default" requires assisted

access as a permanent line item; without it, the apparent efficiency of digital government worsens participation gaps in pensions, health, and care. Fifth, housing remains the credibility test of any labour strategy; sustained social/middle-income supply and transit-linked densification are not side policies but the spine of retention. It seems, thar even in times of individual flexibility and advanced digital services, social infrastructure is a key for a cohesive society and a competitive economy.

5 Appendix

5.1 Key Factors

Key factors for resilience in European demographic development

Field of Impact	Key Influencing Factor with Projections
Global	**1. Trust in Institutions**
	Projection 1: High Trust and Strong Governance Transparent and accountable governance strengthens public trust in institutions, enabling swift and effective policy implementation. Citizens believe in the fairness and competence of democratic processes, supporting reforms that address demographic and social challenges. This trust creates a cooperative climate for adapting to aging populations, labor market changes, and migration.
	Projection 2: Declining Trust and Social Polarization A lack of transparency, perceived corruption, and the influence of misinformation undermine public confidence in institutions. Social polarization grows as citizens question the legitimacy of decisions, leading to protests, political gridlock, and resistance to necessary demographic policies. Governments struggle to implement reforms due to widespread skepticism and declining voter engagement.
	Projection 3: Local and Community-Driven Trust This projection is based on the assumption that Europe will be confronted with a significant increase in immigration, which will overstretch integration capacities and threaten social and political stability.
	2. International Migration to Address Immediate Labour Needs
	Projection 1: Open and Competitive Talent Markets Europe adopts flexible migration policies, actively attracting skilled and semi-skilled workers from around the globe through streamlined visa processes and international partnerships. Migration is seen as an asset, filling workforce gaps in healthcare, construction, and technology while boosting economic growth. Social integration programs ensure that migrant workers are welcomed and contribute positively to the labor market and local communities.
	Projection 2: Protectionist and Restrictive Migration Concerns over cultural integration, security, and domestic job markets lead to tighter border controls and restrictive migration policies. Labor shortages become acute in sectors reliant on migrant workers, forcing businesses to invest heavily in automation and AI solutions to compensate. Competition for talent intensifies among European countries, with many falling behind in attracting global expertise.
	Projection 3: Circular and Partnership-Based Migration

		Bilateral agreements with countries outside Europe create pathways for circular migration, where workers temporarily fill labor shortages and unskilled migrants can receive education/training in exchange for a specific amount of time spent in the European labor force. The migrant workers have the option to return home with new skills after a set amount of time or to start an application for legal status/residence permit. Migrants maintain strong ties to their home countries but are limited in their choices of private life arrangements. This projection focuses on opening more flexible labour migration channels in order to balance economic needs by promoting circular exchange models.
System		**3. Pension System**
		Projection 1: Sustainable pension reform and adaptation to demographic change This projection assumes that pension systems in Europe have been sustainably reformed to cope with demographic change. Productivity gains from digitalization are an important source of funding for the reform model, that is capable of providing adequate and financially sustainable benefits.
		Projection 2: Pension crisis and growing poverty in old age In this projection, public pension systems in Europe are under pressure. This is due to a combination of demographic changes, inadequate reforms and economic pressures. High levels of poverty and insecurity among older people dependent on pensions are widespread. Some population groups are excluded from adequate pension provision and there are high levels of social inequality.
		Projection 3: Innovative pension systems and the personalization of retirement provision This projection is based on the assumption that innovative pension systems, including personalized pension provision, will prevail in Europe. The promotion of flexible pension products, which provide incentives for private provision, has diversified pension provision. However, low-income earners remain structurally disadvantaged due to the individual share.
		4. Labour Force Participation of Women & Older Workers
		Projection 1: Inclusive Workforce Rise Governments and employers implement robust age-inclusive policies and flexible work arrangements, leading to significantly higher labour participation among older adults. Simultaneously, increased support for gender equality and inclusive hiring boosts the share of women in full-time employment. By 2045, both groups contribute substantially to stabilizing workforce numbers and closing productivity gaps.
		Projection 2: Patchy Participation Gains Some sectors and regions invest in inclusive labour policies, but others lag, creating uneven outcomes across population groups. While older professionals remain underutilized in fast-paced industries, women see modest gains thanks to targeted initiatives like returnships and leadership quotas. Workforce participation inches upward, but not enough to counteract demographic decline fully.

Projection 3: Entrenched Labour Gaps

Structural barriers such as ageism, inadequate work-life balance measures, and persistent gender discrimination remain unresolved. Many older adults are unemployed or retire early due to health concerns or lack of upskilling opportunities, while women continue to bear the brunt of unpaid care work. Labour force participation stagnates or even declines slightly, deepening demographic vulnerabilities.

5. Effectiveness & Accessibility of Health Systems

Projection 1: Resilient and Inclusive Healthcare

European healthcare systems are robust, well-funded, and supported by strong preventive care policies that prioritize early interventions and health promotion. Investments in medical innovation, digital health, and workforce training ensure widespread accessibility and shorter waiting times. People remain healthier for longer, enabling extended working lives and reducing public health care spending.

Projection 2: Fragmented and Underfunded Systems

Economic pressures and limited public budgets weaken healthcare systems, leading to declining quality and regional disparities in access to care. Rural and low-income populations face longer waiting times and fewer healthcare options, while overworked staff struggle with burnout. A lack of prevention increases demand for healthcare later on, but systemic inefficiencies prevent timely responses, leading to public dissatisfaction and rising health inequalities.

Projection 3: Privatized and Tech-Driven Healthcare

Healthcare becomes increasingly market-driven, with private companies leading innovations in personalized medicine, telehealth, and AI-based diagnostics. While wealthy and tech-savvy citizens enjoy rapid access to advanced treatments, public systems deteriorate, leaving vulnerable populations underserved or excluded. Digital health platforms dominate service delivery, creating efficiency gains for some but also reinforcing socio-economic divides based on affordability and digital literacy.

6. Gender Equality and Family-friendly Policies Influencing Fertility Decisions

Projection 1: Policy-Driven Recovery

Comprehensive gender-equal policies—including generous paternity leave, flexible work, and career re-entry support—normalize shared parenting and dual-earner households. These reforms reduce career-family trade-offs and make child-rearing more compatible with modern life. Fertility rates stabilize or even rise modestly by 2045.

Projection 2: Mixed Policy Impact

Some progress is made in making workplaces more family-friendly, but cultural norms and implementation gaps persist. Many couples delay or forgo parenthood

		due to fears over career impact and affordability. Fertility rates hover below replacement levels despite well-intentioned policy shifts.
		Projection 3: Structural Family Barriers Lack of meaningful reform leads to ongoing inequality in domestic and professional spheres. Women continue to face disproportionate career penalties for parenthood, and men are disincentivized from taking leave. Fertility decisions are increasingly postponed or avoided, accelerating population decline.
		7. Level of Digitalization & Access to Digital Services
		Projection 1: Broad and Inclusive Digital Access Digital infrastructure is widely accessible across Europe, with strong investments ensuring that a rural areas and older citizens benefit from online services. E-health, e-governance, and digital ec become standard, improving efficiency and accessibility. Digital inclusion programs reduce barri enabling citizens to engage with public services seamlessly.
		Projection 2: Growing Digital Divide Some progress is made in making workplaces more family-friendly, but cultural norms and implementation gaps persist. Many couples delay or forgo parenthood due to fears over career i and affordability. Fertility rates hover below replacement levels despite well-intentioned policy sh
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Surrounding		**8. Housing Affordability & Living Costs Impacting Mobility**
		Projection 1: Affordable and Stable Housing Markets Governments prioritize affordable housing through subsidies, social housing initiatives, and rent control policies, making cities and urban centers accessible to diverse income groups. Public investments in transport and infrastructure reduce living costs, improving mobility for both domestic and migrant workers. These measures enhance economic competitiveness by ensuring that workers can live near their workplaces.
		Projection 2: Escalating Costs and Displacement Housing shortages and speculative real estate markets drive prices to unaffordable levels, forcing workers and families to relocate to suburban or rural areas. This results in long commutes, increased social inequality, and a growing disconnect between where people work and where they can afford to live. Urban centers struggle to attract the labor they need, further exacerbating economic imbalances.
		Projection 3: Innovative and Flexible Housing Models New housing solutions emerge, including modular homes, co-living spaces, and shared ownership schemes supported by public-private partnerships. Housing

allocation is optimized digitally, making it easier for mobile workers and migrants to find affordable, temporary accommodation. This makes housing a more flexible arrangement and neighbourhoods are adaptable and innovative.

9. Adoption of Automation & AI to Offset Labour Shortages

Projection 1: Automation Mainstreamed

Automation and AI become deeply embedded across industries, from logistics and manufacturing to education and care. Human-machine collaboration is optimized, and AI is used not only to maintain but enhance productivity and innovation. Labour shortages are largely mitigated, although new ethical and governance questions arise.

Projection 2: Uneven Tech Uptake

Adoption of automation and AI is concentrated in capital-intensive and tech-savvy sectors, with SMEs and low-income countries struggling to keep pace. Productivity gains are localized and uneven, helping to offset shortages only partially. Many workers still face precarious transitions due to slow digital upskilling, non-inclusive technologies, and inadequate safety nets.

Projection 3: Innovation Stalled

Public mistrust, regulatory delays, and high implementation costs slow the integration of AI and automation. Firms remain dependent on human labour, and productivity suffers as demographic decline intensifies. The economy experiences diminished growth potential, with limited relief from technological innovations.

10. Availability of Affordable Childcare & Long-Term Care Services

Projection 1: Universal Care Access

Governments invest heavily in universal childcare and long-term care infrastructure, ensuring quality care and reducing financial and logistical burdens on working families. Women, in particular, benefit from increased employment continuity and career advancement. The economy sees rising female labour force participation and improved demographic stability.

Projection 2: Fragmented Care Markets

Private-sector innovation expands care service offerings, especially through digital platforms and home-based solutions. However, affordability remains a challenge, particularly for low- and middle-income families. Access becomes highly stratified, with benefits accruing mainly to wealthier and urban populations.

Projection 3: Persistent Care Gaps

Insufficient investment and policy fragmentation leave care systems overstretched and underfunded. Many families rely on informal care, limiting especially women's ability to work full-time or re-enter the workforce. Labour force participation remains constrained, and fertility rates continue to decline amid high care burdens.

11. Skills Development through Vocational Education & Reskilling

		Projection 1: Lifelong Learning Boom
Individual		Societies embrace a culture of lifelong learning supported by public investment and employer incentives for reskilling. Vocational education becomes seamlessly integrated with digital platforms and modular credentials, allowing individuals to pivot careers more easily. As a result, skill mismatches shrink, and labour market adaptability improves sharply by 2045.
		Projection 2: Sector-Focused Upskilling
		Policymakers and industry bodies focus on reskilling efforts in critical sectors such as healthcare, green energy, and digital services. Participation rates in vocational education rise, but access and quality vary significantly depending on socioeconomic background. The labour market becomes more efficient in high-demand areas, though pockets of mismatch remain.
		Projection 3: Reskilling Shortfalls
		Despite awareness of the need for reskilling, structural inertia and funding gaps hinder large-scale adoption. Vocational programs remain outdated or disconnected from employer needs, and participation lags among vulnerable populations. The result is persistent underemployment and a growing mismatch between available skills and job requirements.

5.2 Morphological box

Morphological box with all scenarios (outcome of the three workshops):

Key Factor	Global — Trust in Institutions	Global — International Migration to Address Immediate Labour Needs	Pension Systems	Labour Force Participation of Women & Older Workers	System — Effectiveness & Accessibility of Health Systems	System — Gender Equality and Family-friendly Policies Influencing Fertility Decisions	System — Level of Digitalization & Access to Digital Services	System — Housing Affordability & Living Costs Impacting Mobility	Surroundings — Adoption of Automation & AI to Offset Labour Shortages	Surroundings — Availability of Affordable Childcare & Long-Term Care Services	Individual — Skills Development through Vocational Education & Reskilling
Core Scenario 1 Projection 1	High Trust and Strong Governance	Protectionist and Restrictive Migration	Sustainable pension reform and adaptation to demographic change	Inclusive Workforce Rise	Resilient and Inclusive Healthcare	Policy-Driven Recovery	Broad and Inclusive Digital Access	Affordable and Stable Housing Markets	Automation Mainstreamed	Universal Care Access	Lifelong Learning Boom
Projection 2	Declining Trust and Social Polarization	Circular and Partnership-Based Migration	Pension crisis and growing poverty in old age	Patchy Participation Gains	Fragmented and Underfunded Systems	Mixed Policy Impact	Growing Digital Divide	Escalating Costs and Displacement	Uneven Tech Uptake	Fragmented Care Markets	Sector-Focused Upskilling
Projection 3	Local and Community-Driven Trust	Open and Competitive Talent Markets	Innovative pension systems and the personalisation of retirement provision	Entrenched Labour Gaps	Privatized and Tech-Driven Healthcare	Structural Family Barriers	Hyper-Digitalized but Diverse and Controversial Services	Innovative and Flexible Housing Models	Innovation Stalled	Persistent Care Gaps	Reskilling Shortfalls
Core Scenario 2 Projection 1	High Trust and Strong Governance	Protectionist and Restrictive Migration	Sustainable pension reform and adaptation to demographic change	Inclusive Workforce Rise	Resilient and Inclusive Healthcare	Policy-Driven Recovery	Broad and Inclusive Digital Access	Affordable and Stable Housing Markets	Automation Mainstreamed	Universal Care Access	Lifelong Learning Boom
Projection 2	Declining Trust and Social Polarization	Circular and Partnership-Based Migration	Pension crisis and growing poverty in old age	Patchy Participation Gains	Fragmented and Underfunded Systems	Mixed Policy Impact	Growing Digital Divide	Escalating Costs and Displacement	Uneven Tech Uptake	Fragmented Care Markets	Sector-Focused Upskilling
Projection 3	Local and Community-Driven Trust	Open and Competitive Talent Markets	Innovative pension systems and the personalisation of retirement provision	Entrenched Labour Gaps	Privatized and Tech-Driven Healthcare	Structural Family Barriers	Hyper-Digitalized but Diverse and Controversial Services	Innovative and Flexible Housing Models	Innovation Stalled	Persistent Care Gaps	Reskilling Shortfalls
Core Scenario 3 Projection 1	High Trust and Strong Governance	Protectionist and Restrictive Migration	Sustainable pension reform and adaptation to demographic change	Inclusive Workforce Rise	Resilient and Inclusive Healthcare	Policy-Driven Recovery	Broad and Inclusive Digital Access	Affordable and Stable Housing Markets	Automation Mainstreamed	Universal Care Access	Lifelong Learning Boom
Projection 2	Declining Trust and Social Polarization	Circular and Partnership-Based Migration	Pension crisis and growing poverty in old age	Patchy Participation Gains	Fragmented and Underfunded Systems	Mixed Policy Impact	Growing Digital Divide	Escalating Costs and Displacement	Uneven Tech Uptake	Fragmented Care Markets	Sector-Focused Upskilling
Projection 3	Local and Community-Driven Trust	Open and Competitive Talent Markets	Innovative pension systems and the personalisation of retirement provision	Entrenched Labour Gaps	Privatized and Tech-Driven Healthcare	Structural Family Barriers	Hyper-Digitalized but Diverse and Controversial Services	Innovative and Flexible Housing Models	Innovation Stalled	Persistent Care Gaps	Reskilling Shortfalls