

Module

Business and Evaluation Models on SHAPE

Working Group 5



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INTRO



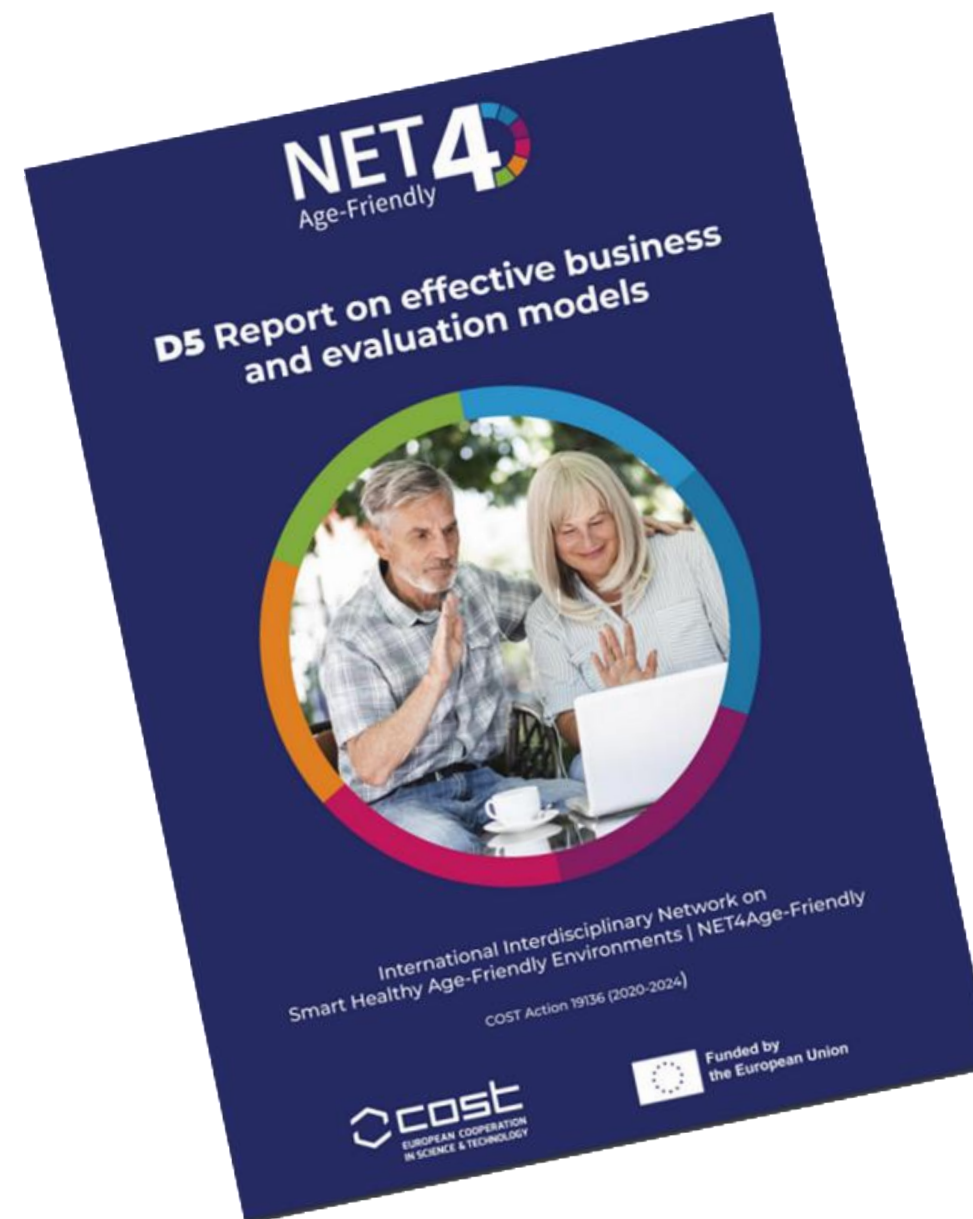
D5 – Report on Effective Business and Evaluation Models

The report opens with three key areas of instruments necessary to develop the sustainability of SHAFE:

1. For evaluating the SHAFE ecosystem implementation
2. For evaluating the effectiveness of the innovative programs
3. For Social, Economic and Environmental impacts of SHAFE

Further, business models for integrated health and care and for the new assistive technologies are presented. The conclusions section refers to business models and policy and funding recommendations that are relevant for offering the sustainability of the SHAFE ecosystems.

<https://www.net4age.eu/d5-evaluation-and-business-models-shafe>





Gap: Lack of awareness and know-how within local and regional authorities on methods to assess the impact of SHAFE initiatives.

Consequence: Challenges in scaling up and transferability of SHAFE initiatives to other localities and regions.

Main aspects to be addressed :

What are the benefits of SHAFE, and how can we measure them?

How can you define the impact of SHAFE, and who and what will be impacted?

Practical examples of business and evaluation models

Challenges and barriers to adoption

Templates to develop efficient business and evaluation models

Step-by-step guide to apply business and evaluation models

The SHAFE SEE-IT analysis process



SOCIETAL CHALLENGE



Why Business and Evaluation Models on SHAFE?

- Population ageing
- Established healthcare systems as reactive systems
- Social and healthcare are commonly disjoint
- Paradigm shift
- Only about 10% or less of breakthrough innovation projects succeed due to:
 - a) lack of vision market /misalignment with market needs
 - b) lack of support (leading to lack of funding)
 - c) not having the right tools and processes in place
 - d) lack of awareness and know-how within local and regional authorities on methods to assess the impact of SHAFE initiatives
 - e) lack to scale-up and transfer to other localities and regions



What needs to be changed, addressed and where?

- Integrate care in micro (clinical), meso (service/organizational) and macro (system) levels
- Promote person-centered care
- Improve reimbursement strategies
- Develop and promote training
- Foster technology efficacy assessment
- Encourage patient engagement
- Make data sharing broader and secure
- Connect R&D to inclusivity concerns



MAIN FINDINGS



OVERVIEW OF CARE MODELS

Collaborative
Care Model

Care
Coordination
Model

Population
Health
Management
Model

Hub-and-Spoke
Model

Managed Care
Organizations
(MCOs)



Collaborative Care Model

- Interdisciplinary teams working collaboratively to deliver patient-centered care.
- Teams typically include physicians, nurses, social workers, and other professionals.
- Assess and address individual medical, social, psychological needs - comprehensive approach.
- Particularly effective for patients with complex health and social care requirements, such as those with chronic conditions or mental health issues.

Care Coordination Model

- Improve the alignment of services across various healthcare and social care settings.
- Care coordinators play a key role in facilitating the seamless delivery of care - intermediaries, ensuring that services are delivered at the right time and place.
- Enhances care continuity, reduces fragmentation, especially beneficial for patients receiving care from multiple providers and across different care settings.

Population Health Management Model

- Analyses data to identify health and social determinants, and trends within a specific population.
- Interventions and services designed to address unique needs of different groups.



Hub-and-Spoke Model

- Central hub from which healthcare professionals coordinate services, including primary care clinics, specialist offices, and community organizations.
- Streamlines care delivery, ensuring patients have easy access to a range of services, improving care coordination and accessibility.

Managed Care Organizations (MCOs)

- Entities that oversee and manage healthcare and social services.
- Often contract with healthcare providers, social services, agencies, and other organizations to deliver integrated care.
- MCOs can be public or private entities and are known for their emphasis on cost-effectiveness and outcomes-based care.



Benefits of implementation

- Enhanced Quality of Life: Smart Healthy Age-Friendly Environments offer elderly individuals greater control over their daily lives, leading to increased well-being, autonomy, and improved mental health.
- Cost-Efficiency: By reducing the need for institutional care and hospitalizations, these environments can significantly reduce healthcare costs, lightening the financial burden on public healthcare systems.
- Social Inclusion: Technology fosters social connections, combating loneliness and isolation among the elderly, which can lead to better mental and physical health outcomes.
- New health and care pathways: Improved patient outcomes and experiences, while also optimizing the allocation of resources and reducing health and care costs.

Policy recommendations

- Investment in Infrastructure: Encourage investment in technology infrastructure to support SHAPE.
- Research and Development: Support research and development initiatives to develop cost-effective and user-friendly technologies for the elderly population.
- Training and Education: Promote digital literacy programs for the elderly and health and care professionals to ensure they can fully benefit from new innovations and smart solutions.
- Regulatory Frameworks: Develop standardized regulations and guidelines for the implementation and operation of the new models of health and care pathways.
- Public-Private Partnerships: Encourage collaboration between public and private sectors to accelerate the adoption of these innovative solutions.



Aiming at successful implementation of integrated person-centred pathways.

CORE PRINCIPLES:

- person-centred care
- strategic deployment of technologies

Paradigm shift driven by:

- advances in technology
- a rapidly ageing population
- increasing demand for patient-centric and integrated care



KEY ASPECTS FOR TRANSFORMING HEALTH & CARE SYSTEMS

- **Integrated health and care pathways** - coordination between professionals, services, and settings ensuring consistent, well-coordinated care, enhancing efficiency and improving health outcomes.
- **Person-centred care** - acknowledge the unique needs and preferences of each patient and ensure that care is tailored to them
- **The role of new technologies** - integration of technologies in the new health and care pathways that requires:
 - Interoperability
 - Telehealth and remote monitoring
 - Artificial intelligence and predictive analytics
 - Wearables and mobile apps
- **Budgetary realignment** - emphasises value-based care rather than fee-for-service, considering:
 - Shift from volume to value:
 - Investment in infrastructure and new environments
 - Training and education
 - Preventive and home-based care



- Despite projected growth of the health workforce, shortage is foreseen especially in developing countries.
- It is necessary to foster job creation in healthcare to adopt new models of care, expand the scope of practice, enhance interprofessional collaboration and leverage digital technologies.
- Job creation is key to foster the adoption of assistive technologies and capture their benefits (such as higher productivity; increased efficiency, safety and convenience) and avoiding widening inequalities.
- Some jobs are expected to grow in demand and popularity, such as nurses, physician assistants, physical therapists, home health and personal care aides, genetic counsellors, telehealth specialists and biomedical engineers.

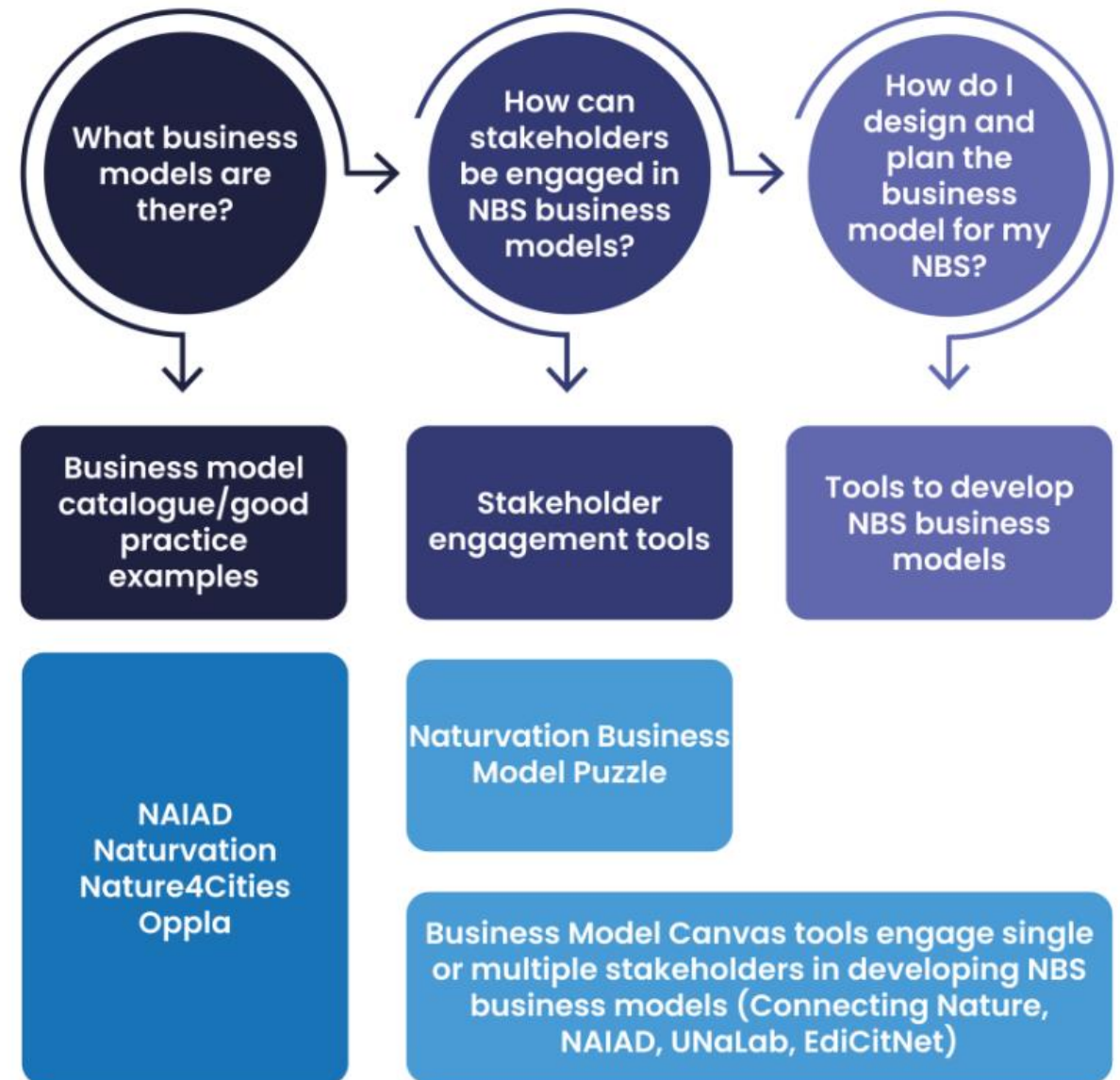


Tools for NBS Business Model Design and Implementation

- Business model catalogues and examples of good practices.
- Interactive approaches engaging stakeholders in the co-design of business models.
- Support tools offering more granular approaches to designing and planning business models.

See NAIAD's collection of "International Good Practices in Financing and Funding Nature Restoration":

http://naiad2020.eu/wp-content/uploads/2020/07/D7.4-NAIAD_International-Good-practices_FINAL.pdf





Business Models	Description
Risk reduction model	The risk reduction model reduces financial risks by building resilience towards adverse environmental events through infrastructure changes.
Green densification model	The green densification model increases real estate value through greening cities.
Urban offsetting model	The urban offsetting model captures monetary flows from negative environmental impacts, re-routing this to re-invest into urban nature.
Green health model	The green health model employs active involvement with green spaces to improve citizens' physical and/or mental health.
Local stewardship model	The local stewardship model empowers citizens and local businesses to foster nature in their local area by offering their resources (money, time).
Vacant space model	The vacant space model facilitates the well-being of citizens through low-cost access to underutilised terrains.
Green heritage model	The green heritage model enables preservation and utilisation of pre-existing natural heritage sites through recreational access.
Green education model	The green education model facilitates the environmental education of (often young) citizens, building a culture of connectedness to nature.



ARCHITECTURE AND URBAN NATURE-BASED SOLUTIONS

Stakeholders	Value Proposition	Value Delivery	Value Capture
Values associated with green roofs and walls			
Public administration	Reduction of heat island effect	Creation of milder microclimate	Improvement of citizens health and comfort
Firms	Implementation of investments	Business opportunities (for utilities, it depends on public incentive schemes)	Increase of revenues
Citizens	Energy savings	Reduction of heating and cooling systems	Savings in energy bill
Values associated with sustainable urban drainage systems			
Public administration	Reduction of water run-off	Decrease in flooding events	Reduction of restoration costs
Firms	Protection of natural assets	Decrease in flood events	Insurance value
Citizens	Protection of residential areas	Decrease in flood events and well-being improvement	Improvement of overall neighbourhood and increase of property value
Values associated with tree planting			
Public administration	Reduction of the heat island effect	Increase of urban areas' liveability	Health improvement
Firms	Improvement of brand recognition	Business opportunities	Increase in area attractiveness and in the economic activity
Citizens	Tree cover in residential areas leading to health, aesthetic, and biodiversity benefits	Health benefits	Improvement of overall neighbourhood
Values associated with parks			
Public administration	Regeneration of neglected areas	Improvement of urban well-being and social cohesion	New businesses and new economic opportunities
Firms	Implementation of investments	Business opportunities (for utilities, it depends on public incentive schemes)	Increase of revenues
Citizens	Recreation	Improvement of health and well-being	Increase in value properties
Values associated with edible city solutions			
Public administration	Urban regeneration and social impacting edible space	Integrative and inclusive social impact in the urban area	Cost-benefit of micro and macro-economic harness
Firms	Resilient economic activities from small-scaled solutions to larger investments	Business and social entrepreneurship opportunities	Independent local economic structure providing local identity and socio-economic welfare
Citizens	Social cohesion and opportunities for interaction within and with nature in cities	Social well-being and areas of trust, neighbourhoods, and communities	Ecosystem and socio-economic services



Challenges and Barriers for NBS adoption

- Lack of funding
- Difficulty in capturing benefits from cost-efficiencies
- Involve public and private stakeholders in financing
- Land-usage regulations and competing land uses
- Public policies in certain domains (e.g., water quality)
- Immediate revenues vs long-term benefits
- Taxes vs value-creation
- Distribution of roles and responsibilities



EXAMPLES OF MODELS AND FRAMEWORKS

The LEED® (Leadership in Energy and Environmental Design) rating system provides a framework for healthy, efficient, cost-saving green buildings. It has 7 areas: Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality, Innovation in Design Process and Regional Priority.

BREEAM (Building Research Establishment Environmental Assessment Method) is a sustainability assessment method that is used to masterplan projects, infrastructure and buildings.

LEED is the most widely used green building rating system in the world.

LEED is dominated by the American ASHRAE standards.

BREEAM takes its cue from European and UK legislation.

MISSION AND VISION
- Transforming buildings and communities to advance human and environmental wellbeing.



SHAFE IN PRACTICE



BUSINESS MODELS

- Example of business models of public services in smart cities: <https://doi.org/10.1016/j.future.2017.01.032>
- Business Models Catalogue for urban nature-based solutions: <https://networknature.eu/product/22725>
- Business Model Generation: A handbook for visionaries, game changers and challengers: <https://www.semanticscholar.org/paper/Business-Model-Generation%3A-A-handbook-for-game-and-Osterwalder-Pigneur/f9af326fc7bb8b25b62ad5e7e6dfc92079f33edc>
- Business Models, Business Strategy and Innovation: <https://doi.org/10.1016/j.lrp.2009.07.003>
- Overview of sustainable business models (SBM): <https://doi.org/10.1016/j.spc.2018.06.004>

EVALUATION MODELS

- Evaluating Socio-economic Impact of Age-Friendly Environments: https://doi.org/10.1007/978-981-10-6017-5_7
- Social, Economic and Environmental Impacts of SHAFE - explaining the SEE-IT scale: <https://zenodo.org/records/10210296>



SHAFE PEOPLE



The main aim of **Smart Healthy Age-Friendly Environments** (SHAFE):

To improve the well-being and health of citizens by implementing combined user-centred digital, physical and social solutions for inclusive environments.

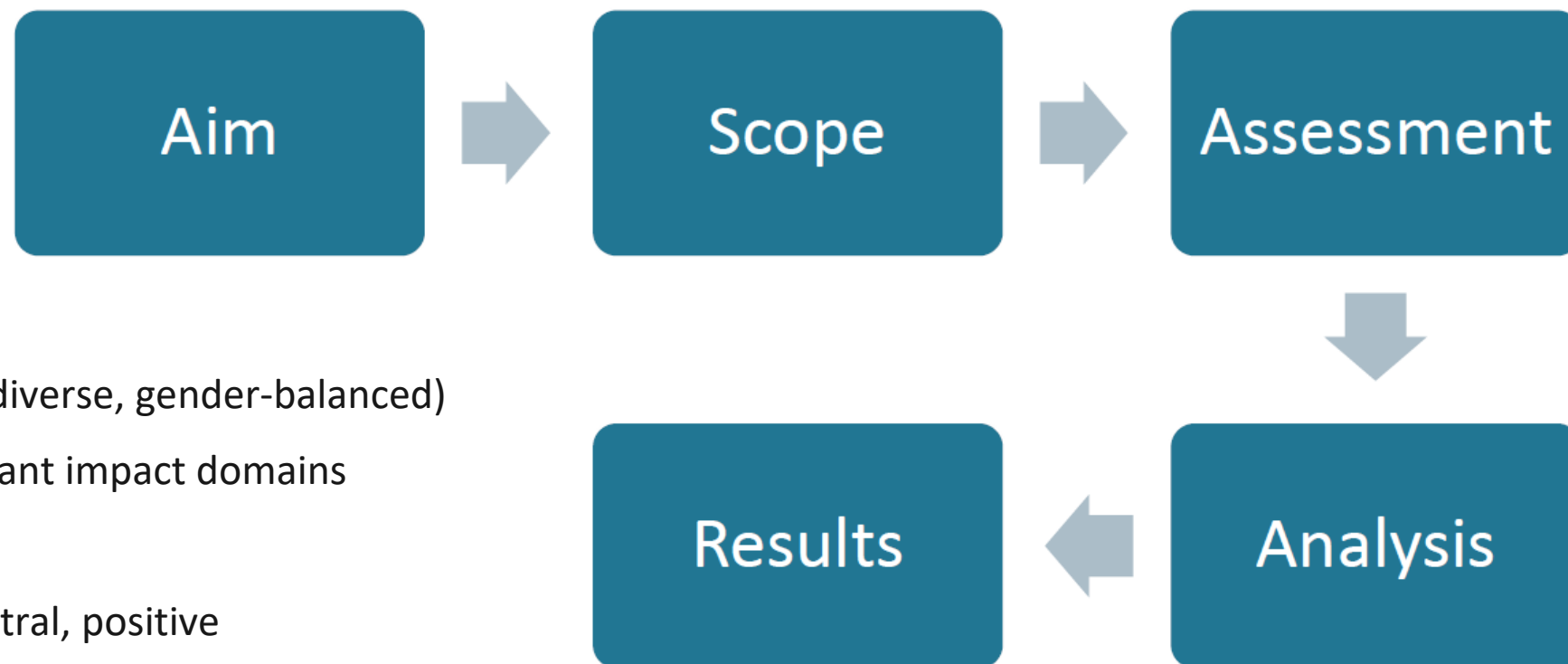
How can we **define the impact** of SHAFE?

What are the impacts of **SHAFE socially, economically and environmentally**?

In 2014 and 2015 the consortium of AFE-INNOVNET, Towards an age-friendly Europe, worked on a tool to enable local and regional authorities to do better ex-ante and ex-post evaluations of age-friendly environments: the Social Economic Environmental Impact Tool (SEE-IT).

For SHAFE we revisited the tool and developed the

SHAFE SEE-IT



1. Create an assessment team (diverse, gender-balanced)
2. Identification of the key relevant impact domains
3. Assessment:
 - a) Direction: negative, neutral, positive
 - b) Intensity: neutral, strong, very strong etc
 - c) Who/what is directly or indirectly impacted
 - d) Monetisation and quantification of impacts
4. Analysis
5. Defining the results



What

- Smart, inclusive healthy environments
- SHAFE practices and SHAFE policies

Who

- Citizens of all ages in a society for all

Where









- Neighbourhood
- Community
- Local
- Regional
- National








When

- Initiative
- Programme
- Policies
- Project











SHAFE SEE-IT SOCIAL AND ECONOMIC IMPACTS

Domains social impact	Possible impacts for consideration
Health & longevity 	<p>Does the solution support a healthy lifestyle and/or increase life expectancy? Consider the following potential impacts:</p> <ul style="list-style-type: none"> Increasing physical activities and mobility Preventing falls and chronic diseases Improving mental wellbeing
Safety 	<p>Have all safety aspects of the solution been taken into account? This includes:</p> <ul style="list-style-type: none"> Safety indoors Safety outdoors Data security in digital devices and services
Meaning & inclusivity 	<p>Is the initiative meaningful and inclusive? Were the following topics considered:</p> <ul style="list-style-type: none"> Employment, voluntary work and opportunities for leisure Enabling / improving informal care Respect for different perspectives and lifestyles Social inclusion
Education & lifelong learning 	<p>Does the solution pertain to education (levels) in any way? Is it equally accessible for all people? Think of:</p> <ul style="list-style-type: none"> Literacy (health, digital, data) skills Access to higher education Educational attainment and opportunities for lifelong learning
Quality of social interactions 	<p>Have social interactions been considered? How does the solution relate to:</p> <ul style="list-style-type: none"> Social networks and friends Loneliness and isolation Social and religious participation Impact of migration, ethnicity, language on the individual and on society
Private & family life 	<p>Have impacts been considered on all levels of life?</p> <ul style="list-style-type: none"> Impacts on individuals Impacts on households Impacts on families
Personal data 	<p>Does the solution make use of data? Consider the following topics:</p> <ul style="list-style-type: none"> Access to information Safe-guarding identity and regulating identifiers Protection of data and the sharing of information
Basic rights & responsibilities 	<p>Have all basic rights been taken into account? Such as:</p> <ul style="list-style-type: none"> Human dignity and equality Freedoms and justice Solidarity Citizens' rights (EU Charter of Fundamental Rights)

Domains of economic impact	Possible impacts for consideration
Standards of living 	<p>Does the solution account for the basic standards of living?</p> <ul style="list-style-type: none"> Financial means should be sufficient to cover the basic needs of living Appropriate housing should be available and accessible
Economic prosperity 	<p>Does the solution pertain to economic prosperity in the following fields?</p> <ul style="list-style-type: none"> Gross national / regional income Number of employed / unemployed people Household savings
Public budgets 	<p>Are there public budgets involved? Such as those for:</p> <ul style="list-style-type: none"> Community support Health and social care Information and communication Education Transport Public services
Market mechanisms 	<p>How does the solution impact the market? What are the effects on:</p> <ul style="list-style-type: none"> Private sector business opportunities / SMEs Private social enterprise opportunities Transactions between sectors
Innovation & R&D 	<p>What are the expected outcomes in research and development? Are these topics involved:</p> <ul style="list-style-type: none"> Investment in R&D Intellectual property Accelerated time to market
Sustainable consumption & production 	<p>Does the solution fit current sustainability standards in the following areas?</p> <ul style="list-style-type: none"> Household structure and expenditure Household energy use Car ownership Persons at work in private sectors
Property rights 	<p>Are the relevant rules and regulations for property use considered? Does the solution deal with:</p> <ul style="list-style-type: none"> Homeownership Social housing



SHAFE SEE-IT ENVIRONMENTAL IMPACTS

Domains environmental impact	Possible impacts for consideration
The natural environment 	How does the solution impact the natural environment? Think e.g.: <ul style="list-style-type: none">The quality of the local environmentThe nature of environment: urban, rural, suburbanBio-diversity
Culture, heritage & leisure 	What are the potential effects on culture, heritage and leisure activities? <ul style="list-style-type: none">Availability of cultural assetsHeritage sitesEvents / festivals and other opportunities to participate
Land use 	Does the solution make use of land and in what way? <ul style="list-style-type: none">Geographic contextZoning (agricultural, forestry, marine, industrial, retail, residential, educational, health service, mixed-use)Conservation
Climate & Energy 	How does the solution impact the climate and/or <u>vice versa</u> ? Consider: <ul style="list-style-type: none">Energy conservationAlternative energy sourcesEnvironmental energy controlSeasonal variation / weather / drainageClimate change hazards (sea level, heat, cold, floods)
Renewable resources & waste 	Is the solution renewable in any way? Can resources be: <ul style="list-style-type: none">Re-usedReducedRecycled
Settlement 	Does the solution deal with settlement issues in the following areas? <ul style="list-style-type: none">Spatial hierarchyZoningDensityPublic spaces
Housing 	Does the solution deal with housing in the following areas? <ul style="list-style-type: none">Households by type of accommodationQuality of housingAccessibilityHeating / Water / Drainage / Electricity / WasteInternet, broadband
Transport 	Are transportation methods and accessibility important? Think of: <ul style="list-style-type: none">Means / modes of travel and journey timesAvailability / frequency of transportationSafety

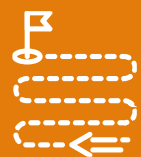


- **Scale and significance**
 - Scale: how widespread the outcomes and impacts are likely to be
 - Significance: the importance, or value, of those benefits
- **Monetisation of non-market impacts**
 - Link to market prices, such as decrease of hospital admissions or medicine = X €
- **Timing, sensitivity and incremental considerations**
 - Short, mid and longer term, incremental improvement of SHAFE strategy
- **Costs**
 - Setup, operational costs and administrative burden
- **Gains and losses**
 - Direct and indirect market gains and losses



- **Quantitative analysis**

- Non-monetary approaches
 - Quality Adjusted Life Years (QALY): a year of life in perfect health is counted as 1.0
 - Disability Adjusted Life Years (DALY): counted as years lost
 - Healthy Life Years (HLY): measures the number of quality adjusted remaining life years per person (+2 was aim of EIP on AHA)
- Monetary approaches
 - Cost of Illness (COI): medical expenses related to illness
 - Human Capital: the eventual loss of future earnings
- Preference Based approaches
 - Value of Statistical Life (VOSL): value on willingness to accept higher or lower levels of risk
 - Value of Statistical Life Year (VOLY): increase of one additional year of life expectancy
- Life Cycle Assessment approach (LCA): evaluating a product or service's effects on the environment over the entire period of its life. Cradle to Grave



LOOKING AT THE FUTURE



BUSINESS MODELS and FUNDING RECOMMENDATIONS

The intersection of business and social innovation offers fertile ground for job creation and economic growth. By coupling the power of entrepreneurship, creativity, and community engagement, new opportunities emerge to address societal challenges and drive positive change.

As we navigate the complexities of healthcare delivery, urban development, and social and care services, it is important that we continue to explore, innovate, and collaborate.

In our emerging and transformative society, the business models presented foster an ecosystem of innovation that can support the development of more resilient, inclusive, and sustainable communities for generations to come.

- National funding
- Investor funding
- Public-Private Partnerships

- EU R&D funding
- Research grants and competitions
- Community and municipal contributions

- Corporate sponsorships and CSR initiatives
- Impact investment funds
- Educational and research institutions

- Private insurance programs
- Knowledge sharing and networking
- Charity and philanthropic funding

MODULE INFORMATION

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THE END!