

DELIVERABLE

Project Acronym: AFE INNOVNET

Grant Agreement number: 620978

Project Title: Thematic Network for age-friendly environments in the European Union

D4.2 i Methodology and indicators for LRAs to assess socio-eco impact of investing in AFE developed in coordination with WHO Europe technical work

A protocol for European Regions, Local Authorities, and Communities Social, Economic and Environmental Impact Tool (SEE-IT)

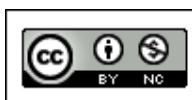
Revision: Final version

Authors:

- Rood Bond, Netwell Centre, DKIT University
- Mireia Ferri Sanz, Polibienestar Research Institute
- Willeke van Staalduinen, TNO
- Jordi Garcés Ferrer, Polibienestar Research Institute
- Menno Hinkema, TNO

Dissemination level: Public

Citation: Bond, R.; Ferri, M.; Van Staalduinen, W.; Garcés, J.; Hinkema, M. (2015). A protocol for European Regions, Local Authorities, and Communities i Social, Economic and Environmental Impact Tool (SEE-IT). D.4.2. Methodology and indicators for LRAs to assess socio-eco impact of investing in AFE developed in coordination with WHO Europe technical work. AFE-Innovnet project (grant agreement 620978) funded by the European Commission within the ICT policy Support Programme.



Project Co-funded by the European Commission within the ICT policy Support Programme

CONTENTS

Executive Summary.....	5
1. Introduction.....	6
1.1. Background to the development of SEE-IT Tool	6
1.2 Considerations and Influences in designing the tool	7
1.3. Related initiatives and supports	7
1.4. Characteristics of the SEE-IT as an approach	7
1.5. Performance criteria	8
1.6. Target users for this AFE-SEAI tool.	9
1.7. How to use this SEE-IT guide.	9
2. The AFE Socio-Economic Impact Assessment Protocol	10
2.1. A Generic Impact Assessment Process.	10
2.2. The AFE-SEAI Process.....	10
2.2.1. The overall AFE-SEAI process.	10
2.2.2. Stage 1 – The Aim and objectives of an SEE-IT.	11
2.2.3. Stage 2 – The Scope and scenarios of an SEE-IT.....	12
2.2.4. Stage 3 – Assessing the Impacts.....	14
2.2.5. Stage 4 – Interpreting Options and Drawing Conclusions	15
2.2.6. Stage 5 – Presenting Results	16
2.2.7. Future stages – On-going monitoring and evaluation.....	17
3. Exploring Possible Impacts	18
3.1. Overview.....	18
3.2. Defining a canvas of social, economic and environmental impacts.	18
3.2.1. Considerations.....	18
3.2.2. SEE-IT Layers of detail.....	20
3.3. Analysis	22
3.3.1. Comparing scenarios.....	22
3.3.2. Distributional effects.	23
4. Monetising an SEE-IT	25
4.1. Overview.....	25
4.2. Monetisation of non-market impacts.....	25
4.3. Quantitative analysis of health impacts.	25
4.3.1. Non-monetary approaches.	25
4.3.2. Monetary approaches	26
4.3.3. Preference Based approaches.	27
4.3.4. Life cycle assessment approach.....	28
4.4. Timing, sensitivity and incremental considerations.....	28

4.5. The costs	28
4.6. The gains and losses	29
4.7. Additional financial considerations - Discounting.....	29
5. A regional Level SEIA Methodology, Protocol and Indicators.....	31
5.1. Stages	31
5.1.1. Stage 1: The aim and objectives of the SEE-IT at regional level.....	31
5.1.2. Stage 2: The Scope and scenarios of an SEE-IT.....	31
5.1.3. Stage 3: Assessing the Impacts.....	32
5.1.4. Stage 4: Interpreting options and drawing conclusions	34
5.1.5. Step 5: Presenting results.....	34
6. A Local Level SEE-IT Methodology, Protocol and Indicators	35
6.1. Stages	35
6.1.1. Stage1: The aims and objectives of the SEE-IT at local level	35
6.1.2. The Scope and scenarios of an SEE-IT.....	36
6.1.3. Stage 3: Assessing the Impacts.....	37
6.1.4. Stage 4: Interpreting, preference, conclusions.....	39
6.1.5. Stage 5: Presenting the AFE-SEIA results.....	40
7. Application Considerations and Related Exemplars	41
7.1. Some related impact assessments approaches from on-going practice	41
7.1.1. Health Economic Assessment Tools (HEAT) for Walking and for Cycling (WHO Europe).....	41
7.1.2. Cost Benefit Analysis Framework for Home Adaptation (Canada)	43
7.1.3. Review of evidence base for Telecare – Department of Health UK.....	44
7.1.4. An Impact Assessment of the EU proposal on organ donation.	45
7.2. Possible variations between Regional and Local level applications.....	46
8. Next Steps	48
9. Appendix A: Impact Reference Sources	49
9.1. EC Reference set.....	49
9.2. Capabilities	50
9.3. Sustainable Development	51
9.4. Fundamental Rights.....	53
10. Appendix B. Data Sources and Data Gathering	55
10.1. International sources of data.....	55
10.2. National Agencies.....	55
10.3. Community Audit Models	55
10.4 Asset Mapping Models / tools	56
10.5 Primary resources:.....	56
11. Appendix C. Abstract Scenario Concepts for Consideration	57
12. References	58

List of Figures

Figure 1. Relationship between AFEE and AFE-INNOVNET projects.....	6
Figure 2: Diagram of influences synthesised within the SEE-IT framework.....	7
Figure 3. Framework proposed for the Post 2015 Development Agenda - Road to Dignity 20148	
Figure 4: The overall SEE-IT process.	10
Figure 5. Key activities within stage 1 of the SEE-IT process.....	11
Figure 6: Key activities with stage 2 of the SEE-IT process.	13
Figure 7: Key activities with stage 3 of the SEE-IT process	14
Figure 8: Key activities within stage 4 of the SEE-IT process.....	15
Figure 9: Key steps within Stage 5 of the SEE-IT process.	16
Figure 10: The SEE-IT relationship to implementation	17
Figure 11: Variability of impact intensity	18
Figure 12. The SEE-IT Impact Model Canvas.....	19
Figure 13. The SEE-IT model applied to Age-Friendly Environments.	19
Figure 14. Comparing scenarios.....	23
Figure 15. Visualising distributional effects	24
Figure 16 Possible variability between regional and local application.....	46

List of tables

Table 1: General, specific and operational objectives.....	12
Table 2: Domains and possible impacts for consideration	20
Table 3: Possible costs.....	28
Table 4: Gains and losses	29
Table 5: Potential regional AFE impacts	33
Table 6: Potential local AFE impacts.....	37
Table 7: Local AFE Initiative example	39
Table 8: Logic model ĩ Cost Benefits Analysis Framework for Home Adaptation.....	43
Table 9: Effectiveness outcomes and savings of the Scottish Telecare Development Programme.....	44

Executive Summary

To enable national, local and regional authorities to do better ex ante and ex post evaluations of age-friendly environments innovations, we have developed SEE-IT: **Socio Economic Environmental Impact Tool**. With SEE-IT a conceptual framework is provided that can support cyclic, iterative processes of improvement and fine-tuning. Also SEE-IT can be used as a tool for co-design partnership that creates support among stakeholders and others.

The SEE-IT has its origins within D4 Age Friendly Environments Action Plan of the European Innovation Partnership on Active and Healthy Ageing (EIP-AHA) and has inputs from existing EC models and guidelines for socio-economic impact assessment, human capabilities and functioning, sustainable development and fundamental rights. Integrating these frameworks, the SEE-IT model highlights the areas of impact from social, economic and environmental perspectives. Within the realm of Age Friendly Environments and the experiences of older persons in our buildings, communities, cities and regions, it is possible to apply a demographic filter to the generic impact model canvas to support analysis from an active and healthy ageing view point.

The areas of economic, social and environmental impact each consist of detailed layers. Like economic prosperity, public budgets and services, consumption, health and longevity, education, climate and energy and natural environment. When evaluating how an innovation or initiative may impact on the range of social, environmental and economic considerations, we define whether their impacts are strong or weak, and whether they are direct or indirect. By doing this we attempt to gain a holistic perspective of the interactions.

The process of impact assessment consists of five stages. The first stage of the SEE-IT process is the most critical as it sets the overall direction and extent for the impact assessment exercise. The two key tasks to undertake in this stage are to identify and define the core problem or goal to be addressed by the impact assessment and to define the principal aims and objectives to be addressed by the proposed policy, programme or project. The bulk of the creative and generative work of SEE-IT is in stage two: the work-plan is developed, the baseline scenario is set out, the boundaries of the work are defined, and several future state scenarios and actions are developed and described. The next step, stage 3, is the identification and assessment of the Age Friendly Environments impacts. In these stage direct and indirect impacts, costs and benefits, qualitative and quantitative assessment, administrative burden and additional data gathering will be identified. At stage 4 all the found options and data will be compared and interpreted, and conclusions will be drawn. At the final stage the results of the assessment will be presented.

Part of the SEE-IT process is the analysis. This is a cyclic process of evaluating the qualitative and quantitative impacts across the range of impact domains that are relevant. Judgment about the intensity (neutral, strong, very strong, etc.) and direction of impact (negative, neutral, positive) have to be made. The analysis will also contain a comparison of scenarios, to detect the overall effectiveness and efficiency of the option/scenario in relation to meeting the objectives and the level of coherence with related objectives, strategies and priorities. It is also important to examine the distributional effects of a policy, programme or project as it impacts on different individuals and groups of people within a territory, region or local authority.

Another feature of SEE-IT is the valuation, quantification and monetisation of the impacts. Monetisation of non-market impacts is easiest when the values can be directly linked to market prices. When a direct market price is lacking, the monetary costs and benefits can be reflected by the willingness to pay or the willingness to accept. Another approach is to make a quantitative analysis of health impacts. Non-monetary approaches (like QALY), monetary approaches (f.e. cost of illness) and preference based approaches (like value of statistical life year) are available.

The protocol concludes with practical sections of SEE-IT used by local and regional authorities. In the regional section a general example is followed to show how to implement the SEE-IT to this approach. In the section about the local level we follow the use of SEE-IT in Rainbowtown that will uplift two neighbourhoods to make them liveable again for the ageing population.

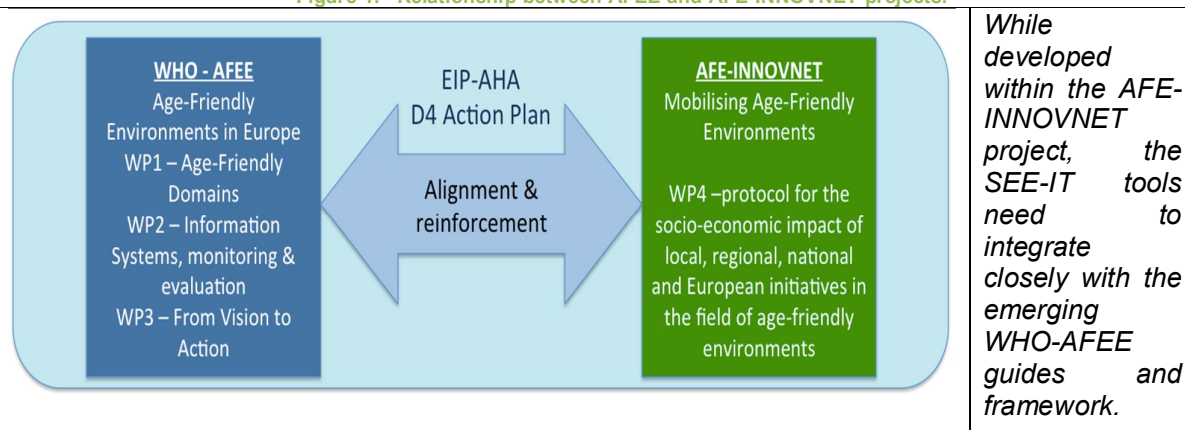
1. Introduction.

1.1. Background to the development of SEE-IT Tool

The need for a tool to support Local and Regional Authorities (LRAs) in Europe to undertake socio-economic impact assessments of Age-Friendly Environment (AFE) initiatives has evolved from several starting points. The EU2020 vision of a smart, sustainable and inclusive society, calls for innovation to address the challenge of demographic change as a key priority¹. The European Innovation Partnership on Active and Health Ageing (EIP-AHA) is a pan-European, multi-stakeholder collaborative response to this challenge². The EIP-AHA has set the goal of extending the healthy life expectancy of European citizens by 2 years by 2020, through improving well-being, quality of life and health, improving the effectiveness and sustainability of health and care systems and services, and enhancing economic competitiveness and employment. Within the EIP-AHA, the D4 Action Group on Age-Friendly Buildings, Cities and Environments are undertaking a range of actions to implement commitments towards innovation and change³. In parallel, several WHO initiatives including the Global Age-Friendly Cities movement⁴, the Healthy Cities movement⁵ and the WHO Strategy and Action Plan for Healthy Ageing in Europe⁶ are framing and reinforcing efforts to make Europe more age-friendly.

Under the framework of the EIP-AHA D4 Action Plan, two inter-related EU-funded projects are tasked with developing guidelines and tools to support the mobilisation and implementation of effective age-friendly practices throughout Europe. While the AFEE (Age-Friendly Environments in Europe) project⁷, led by the WHO in Europe, is addressing an updated guide, and a monitoring and evaluation framework for Age-Friendly Environments that is adapted to the European context, the AFE-INNOVNET (Thematic Network for Age-Friendly Environment Innovations) project⁸, led by Age-Platform, is raising awareness and mobilising stakeholders to drive towards a European Covenant on Demographic Change. A Social, Economic and Environmental Impact assessment Tool for AFE (SEE-IT) can be a valuable support to assist LRAs to ex-ante assess strategies, policies and intervention scenarios to guide investment, implementation and on-going monitoring and evaluation. As such, it is important that the tool aligns with, and reinforces, the WHO-AFEE guides.

Figure 1. Relationship between AFEE and AFE-INNOVNET projects.



This tool has been designed as a close collaboration between Netwell Netwell Centre (DKIT University) and Polibienestar Research Institute (University of Valencia) with the participation of TNO and AGE Platform. Moreover contacts between external stakeholders of on-going initiatives have been built (AAI, WHO, etc.). First of all, an overview of the tool was shared with Consortium Members of the AFE-Innovnet project in a Consortium Meeting. Members were encouraged to provide their feedback about the structure. Then a draft version with the complete tool was presented in a webinar organised the 15th January 2015 where and expert of the AAI was invited to foster the synergies between to SEE-IT and the AAI. After the webinar, members of the consortium were encouraged again to provide their feedback in order to build the final version that is presented

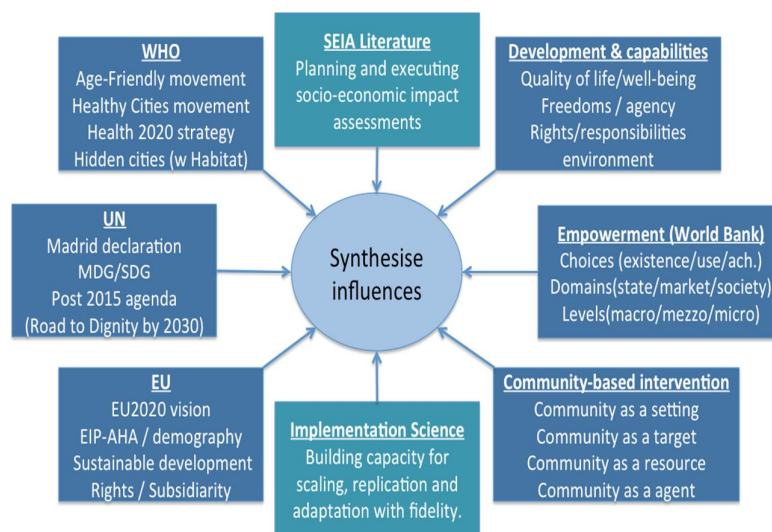
in this document.

1.2 Considerations and Influences in designing the tool

Along with the EU and WHO policies and programmes that are directly affecting the momentum for AFE development and take-up in Europe, the SEE-IT tool's design and development has been influenced and guided by the following related concepts, theories, frameworks and development programmes:

- The UN Madrid International Plan of Action on Ageing 2002⁹
- The Post 2015 Development Agenda (the Road to Dignity 2014 in draft)¹⁰
- The URBACT programme promoting sustainable urban development¹¹
- EU programmes and actions supporting smart and sustainable cities¹²
- The EU Charter on Fundamental rights¹³
- Literature on planning and executing socio-economic impact assessments^{14, 15, 16}
- Implementation Science and methods to promote the integration and adaptation of research findings and evidence into healthcare policy and practice with fidelity¹⁷
- Human development and the capabilities approach addressing well-being, quality of life, freedoms and agency¹⁸
- The World Bank approach to empowerment addressing choice, domains and levels¹⁹
- Community-based interventions and the role of communities as settings, targets, resources and agents for improvement.²⁰

Figure 2: Diagram of influences synthesised within the SEE-IT framework



The SEE-IT tool needs to address scales from large regional territories to small local communities, and needs to explore impacts on older people's well-being, systems, services and resource effectiveness, and environmental quality. It is therefore necessary to try to accommodate a multi-faceted, whole-systems approach.

1.3. Related initiatives and supports

The following initiatives provide additional valuable resources and supports to planning and undertaking the AFE impact assessment work.

- Liveable Communities²¹
- Research and evaluation framework (Manchester)²²
- Active Ageing Index²³
- Global AgeWatch Index²⁴
- Cost Benefit Analysis for Adaptations CMHC (Canada)²⁵

1.4. Characteristics of the SEE-IT as an approach

It is envisaged that the SEE-IT tool will need to address a wide range of applications in a wide

variety of use contexts. It provides a holistic framework that can support cyclic, iterative processes of improvement and fine-tuning, undertaken by teams comprising multiple stakeholders from different sectors and disciplines and including strong community participation.

As a holistic framework it addresses:

- What is considered: Social, economic, and environmental considerations.
- Who is considered: Inclusive and inter-generational across life-course of older persons in a society for all.
- Where is considered: Spatial hierarchy from member states within, and across, Europe down to local neighbourhoods and communities.
- Timelines considered: Short, medium and/or long term change and transformation policies, programmes and projects.

As an iterative process it supports:

- Multiple loops - converging from overview and feasibility analysis through to detailed planning
- Multiple entry points to stages depending upon use-context and the status of initiatives
- Act as a bridge between research and policy development, action plans, implementation, and new, or improved practice and evaluation/monitoring
- Continuous knowledge development and improvement processes

As a co-design partnership it involves:

Multiple stakeholders across different sectors and disciplines

Wide consultation and supporting data

Collaborative decision-making around open and transparent assessments

Figure 3. Framework proposed for the Post 2015 Development Agenda - Road to Dignity 2014



'The Road to Dignity by 2030: Ending Poverty, Transforming All Lives and Protecting the Planet' is the Synthesis Report of the UN Secretary-General. On the Post-2015 Agenda, it highlights six key underlying development principles²⁶

- *Dignity: to end poverty and fight inequalities*
- *People: to ensure healthy lives, knowledge, and inclusion*
- *Prosperity: to grow a strong, inclusive, and transformative economy*
- *Planet: to protect our environment and ecosystems for all societies and our children*
- *Justice: to promote safe and peaceful societies, and strong institutions*
- *Partnership: to catalyse global solidarity for sustainable development*

1.5. Performance criteria

To support impact assessment for age-friendly initiatives in a wide variety of settings, the tools needs to accommodate the following performance requirements:

- Flexible - to adapt to a broad range of use case scenarios (strategies, policies and planned interventions) with multiple entry points.

- Time sensitive - to recognise sequencing and un-folding over organic development time, as an important dimension alongside social, economic and environmental considerations.
- Applicable in setting specific AFE strategies/policies and also as a support to AFE in all other policies at regional and local levels.
- Responsive - closely aligned and reinforcing to evolving WHO-AFEE guidelines.
- Simple - easy to use across different scales and stakeholder/ participant audiences yet sufficiently detailed and inclusive to provide comprehensive and robust impact assessment conclusions to inform implementation

1.6. Target users for this AFE-SEAI tool.

The target users of the SEE-IT tool are those involved in commissioning, designing, undertaking or reviewing social, economic and environmental impact assessments of specific age-friendly initiatives, or proving the age-friendliness of policies and plans in other related domains. While regional policy officers, researchers and consultants may work with the tool at large scales, it is envisaged that the tool can also be used by local communities in planning and assessing the impacts of proposed local level projects and improvements.

1.7. How to use this SEE-IT guide.

The focus of the SEE-IT tool is to support the effort to assess or estimate, in advance (ex-ante), the social, economic and environmental consequences that are likely to follow from specific AFE policy, programme or project actions at regional and local levels within Europe. The tool lays out a 5 stage process, and while many groups will start at the first stage of problem or goal definition and work through the process, for those who have already developed objectives and explored scenarios, they can start to work with the tool at later stages that align with their level of project development.

2. The AFE Socio-Economic Impact Assessment Protocol

2.1. A Generic Impact Assessment Process.

SEE-IT is essentially an assessment or appraisal tool to aid collective decision-making in relation to advancing age-friendly policies, programmes or projects under consideration. Fundamentally, SEE-IT is an iterative process supporting a comparative exercise, where a development team compare a baseline assessment of the current situation (today) with some future state(s) defined as functions of various proposed actions or interventions. The current state, or baseline, represents a situation where no explicit actions are taken (in-action), and existing forces or trends that are currently in play continue to interact and unfold. The goal of the appraisal is to try to *ex-ante* predict, or forecast, the possible impacts and consequences, direct and indirect, positive and negative, of proposed future policy or project actions (scenarios). Changes, nor the confidence in predictions, do not always unfold in a linear fashion, and SEE-IT supports a process that follows several iterative stages, accounting for emergent properties that evolve through dynamic systems understanding and development.

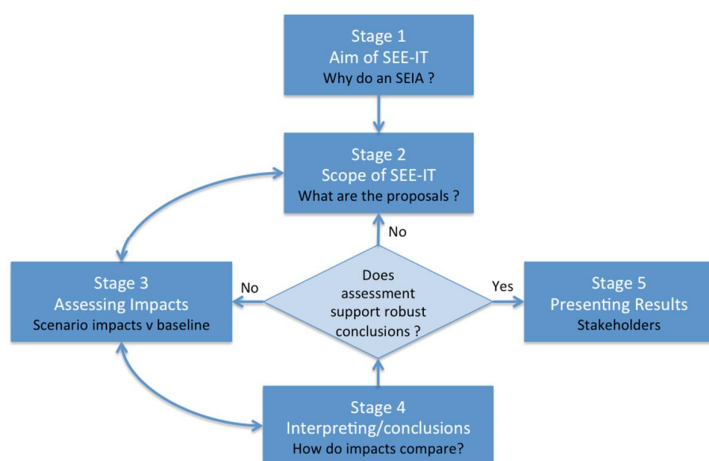
AFE initiatives are often very holistic and inter-connected, resulting in multi-faceted, inter-acting social, economic and environmental impacts. In almost all cases, AFE initiatives are designed to try to improve active and healthy ageing—impacting positively on older persons—participation in society, their safety and security, and their health and well-being. In many situations, scenarios and actions will need to be considered within a frame of resource constraints. In such situations, impact assessments can be used to evaluate a range of options with a view to identifying the approach with the greatest cost/benefit balance.

2.2. The AFE-SEAI Process.

2.2.1. The overall AFE-SEAI process.

The relationships between the stages of the overall SEE-IT process are illustrated in Figure 4. Depending upon the development team's assessment of the robustness of the conclusions, the process may iterate between stages 2, 3 and 4. The circulated results of the impact assessment at stage 5 form the spring-board for implementation action planning, detailed design, and project/practice improvement. The impact assessment will also provide the reference point for on-going project evaluation and monitoring.

Figure 4: The overall SEE-IT process.

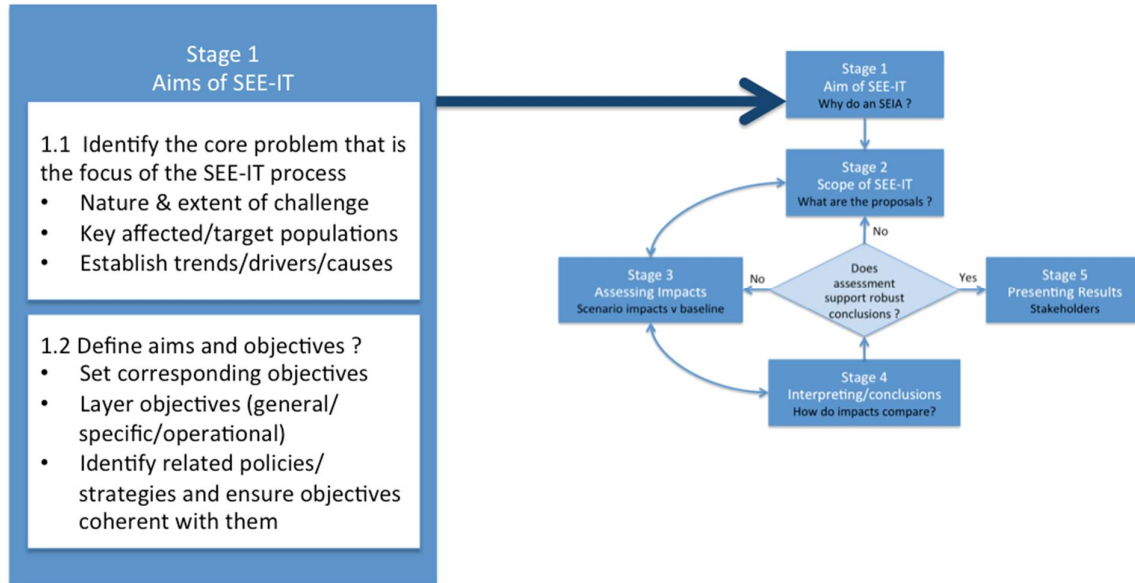


Many project assessment teams will work their way systematically from stage 1 to stage 5, cycling as necessary between stages 2, 3 and 4 as they gain a greater understanding of the inter-relationships between impacts, and gather or generate additional data to strengthen confidence and certainty in assumptions and predictions. Where AFE strategies, policies and projects already exist, development teams may join the assessment process at stages 2 or 3.

2.2.2. Stage 1 – The Aim and objectives of an SEE-IT.

The first stage of the SEE-IT process is the most critical as it sets the overall direction and extent for the impact assessment exercise. The two key tasks to undertake in this stage are to identify and define the core problem or goal to be addressed by the impact assessment and to define the principal aims and objectives to be addressed by the proposed policy, programme or project.

Figure 5. Key activities within stage 1 of the SEE-IT process.



1.1 Identify the core problem that is the focus of the study.

The initial identification of problems can come from many sources, including national regional and local strategies and their reviews, consultations with experts, citizens' councils and representative NGO organisations, and mainstream and specialised media reporting. In relation to AFE, they can come from sources such as:

- a review or audit of community experiences and considerations for improvements across the 8 domains of the WHO age-friendly cities guide i housing, transport, the outdoor environment, respect and inclusion, social participation, civic participation and employment, information and communications, community and health services;
- consideration of cross-cutting themes in the AFEE guide in areas such as physical activity, falls and fractures, diet and nutrition, social connectedness, loneliness and isolation, depression and cognitive health, chronic illnesses, dementia and dementia awareness, empowerment and choice, access to ICT, health and care service availability, adequacy and quality, and universal access and inclusive design; and
- higher level systemic problems such as market failures (in-equities/access to care and assistive technologies), regulatory failures (right, responsibilities, benefits and entitlements), organisational failures (sectorial, agency and departmental silos, lack of coherence and service fragmentation), resource constraints (availability and quality of care and supports including shortage of skills), technical capabilities (infrastructures including transport, ICT, energy, water, waste, etc.) and public awareness and attitudes (education, better and different choices, personal planning and greater tolerance, etc.).

When identifying the core problems to be addressed, it is also important to consider who are the **targeted or affected populations**. Is it a wide societal policy area addressing everyone, or is it targeted at particular groups such as the younger old, the older old, frailty, cross-generational families, specific ill-health cohorts, income variations, ethnic variations, people with dementia and their families, service provision, or populations organised by geographic location i urban, sub-urban, rural or remote, and maybe down to neighbourhood level.

In considering both the problem and target groups, the problem can be elaborated in terms of drivers, trends and root causes - such as population aging profile and distribution, in-equalities and its distribution, deficits in capabilities, poor resource utilisation, or weak partnership due to a lack of common vision and values about a shared future across all stakeholders and groups.

1.2 Define the strategy/policy aims and objectives

Once the key problem or problem areas have been identified, the next step is to set objectives that address the problem's root causes. Objectives should be set ranging from the general to the specific and to the operational. It is important to check the levels of coherence of the objectives with other regional and/or local strategies and plans across the main authorities and public service providers.

Table 1: General, specific and operational objectives

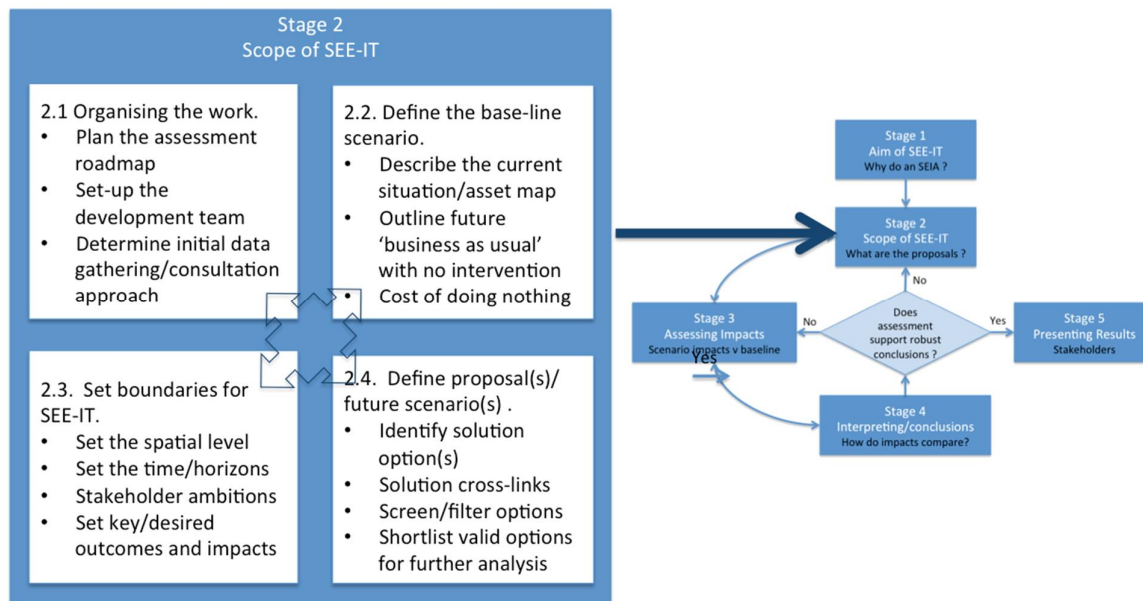
General objectives	<i>These are high level goals to which the policy/strategy/plan aims to contribute.</i> <i>They are generally linked to existing policies, but may open up new policy collaboration arenas.</i> <i>They may be linked to high-level commitments to action such as covenants, declarations, partnerships or implementation networks</i> <i>They relate to impact indicators</i>
Specific objectives	<i>They consider the specific envisaged domain(s) and particular nature of the strategy/intervention under consideration</i> <i>Specific objects are vital – setting out what is to be achieved in concrete terms</i> <i>They correspond to results indicators</i>
Operational objectives	<i>These are objectives defined in terms of deliverables or objects of actions</i> <i>They will vary considerably depending upon type of policy under examination</i> <i>They have a close link to output indicators.</i>

A clear set of objectives that directly relate to solving the problems that has been identified will show the ambition of the policy, plan or intervention, show that it is within the competence and reach of the stakeholders working together, show that it is coherent and aligned with related policies and allow for the identification and comparison of options and future scenarios.

2.2.3. Stage 2 – The Scope and scenarios of an SEE-IT.

The bulk of the creative and generative work in an impact assessment process is undertaken in stage 2 where the SEE-IT work-plan is developed, the baseline scenario is set out, the boundaries of the work are defined, and several future state scenarios and actions are developed and described.

Figure 6: Key activities with stage 2 of the SEE-IT process.



2.1. Organise the Impact Assessment Work

Much of the success of an impact assessment will be based upon the quality and make-up of the development team and how well they work together. The key is to balance a mix of ownership, passion and commitment to improvement with objectivity, impartiality and tolerance. In many cases the commissioning group may be a multi-stakeholder committee and the ideal team leader will be able to direct and manage a group from different sectors and disciplines dealing with diverse types of information and analytical techniques. It is important that there is an adequate representation of older persons in the team who can help further engage older people when exploring options. Guidelines of how to involve elderly people in the co-production of AFE solutions are presented in the Deliverable 4.3. of the project AFE-INNOVNET. Depending upon composition, the group may wish to access additional experts to augment the teams strength.

When drawing up the plan of work to undertake the assessment in terms of activities, resources, allocations and scheduling, early consideration needs to be given to the type and nature of data needed so that it is proportionate to the level of analysis required of the problem at hand and to avoid too much un-necessary effort.

2.2. Defining the baseline.

The baseline represents the 'business as usual' case where no explicit intervention is introduced, and existing trends and forces continue to interact and unfold. It models the costs of doing nothing different. Several techniques such as community audits and asset mapping can be used to describe and document the current situation. There are a range of data gathering options available, ranging from accessing existing survey sources to gathering targeted data through specialised surveys, questionnaires and focus groups. Appendix B describes a range of data gathering options to describe the baseline situation.

Existing policies and initiatives that are currently in place and which influence the current state of the baseline should be highlighted. This should also reflect any expected effects of recent policies or plans that have been adopted but not yet implemented. Essentially, the baseline description should set out how serious the problem is if it is not addressed, and whether there are irreversible consequences if it is not addressed soon.

2.3. Setting the boundaries on the study

AFE initiatives are often sensitive to spatial location, stakeholder ambition, timelines to implementation and impatience for action. Although AFE initiatives are often very organic, and richly

connected to other policy domains, themes and actions in the form of an open eco-system of effects, it is important that the boundary conditions on the problem are as clear as possible in terms of direct and indirect outcomes. Boundary dimensions could include:

- Vertical scale ĩ ranging across community, neighbourhood, district, city, county, region
- Horizontal thematic areas ĩ social, economic and/or environmental focus
- Horizontal organisational ĩ some, or all, of the following - local authority, health service , industry, commercial and retail, education and learning, rural development, crime prevention, community groups
- Domain specific ĩ housing, transport, education, employment, etc.
- Cross-cutting health and well-being ĩ physical activity, diet and nutrition, stress, chronic conditions, social isolation, dementia, etc.
- Timelines for action ĩ short, medium or long term.

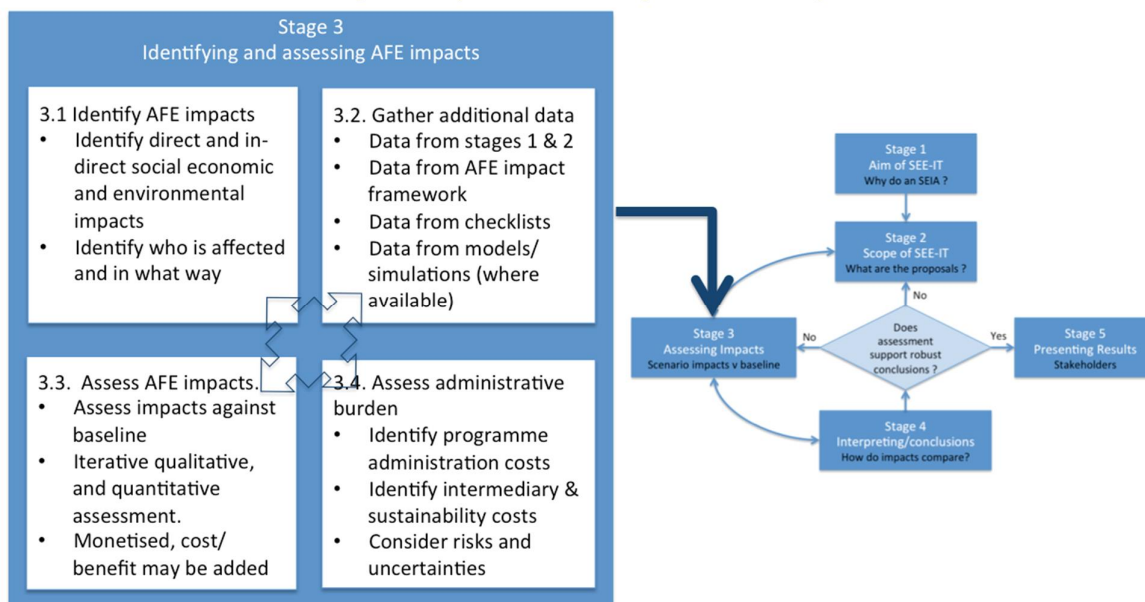
2.4. Define Proposals / future scenarios.

Successful policies, programmes, projects, practices, environments and community responses are often created where groups apply creative and innovative thinking to reconcile issues that are sometimes considered to be in tension or in conflict. These solution scenarios are often conceived within a context of constrained resources ĩ aiming to enhance the quality of life of older persons while managing resources effectively and sustainably. In parallel with this tool, the EIP-AHA D4 Action Group, the AFE-INNOVNET thematic network and the WHO Global Network are managing repositories of practices and designs where development teams can access descriptive details of innovative solutions as exemplars to inform local innovation. While generating solutions to AFE challenges is beyond the scope of this tool, appendix C contains a pointer to several abstract solution concepts that often animate AFE responses.

Once a range of alternative scenarios have been generated, it is usual to filter the selection through an initial set of evaluation criteria to create a shortlist of the most valid and viable options for further analysis and impact assessment within stage 3 of the process. Initial high-level screening criteria could address effectiveness, efficiency and coherence.

2.2.4. Stage 3 – Assessing the Impacts.

Figure 7: Key activities with stage 3 of the SEE-IT process



In this step the team analyses the AFE initiative from the three high level domains: social, economic and environmental. First, the **direct and indirect impacts** should be identified, for that, the experience and knowledge of the stakeholders involved in the process is crucial. Exploring impacts

is described in greater detail in chapter 3. Some examples of AFE initiatives impacts are listed:

- Social impacts: health and longevity, safety, life-long learning, quality and social integration, etc.
- Economic impacts: investment flows, public budgets, market mechanisms, innovation, property rights, etc.
- Environmental impacts: natural environment, culture, housing, sustainable transport, etc.

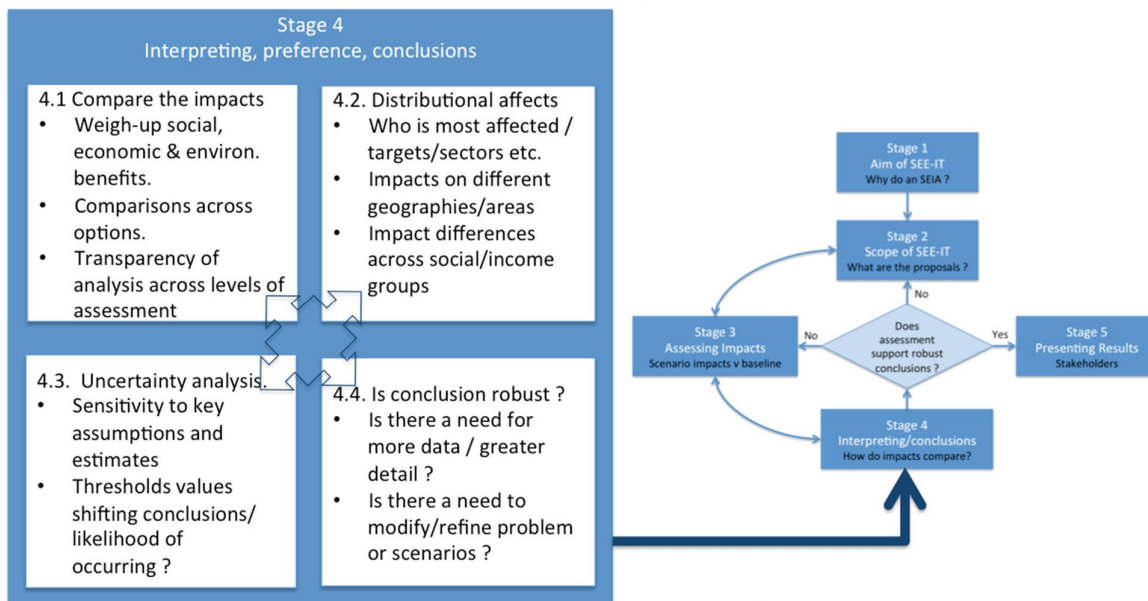
The team may need to gather additional data from the previous stages, from the AFE impact framework where the AFE is implemented, data from checklists and data from models / simulations (where available). Then, the AFE impacts should be assessed using **indicators** that respond to the following characteristics: to represent relative importance, to provide an appropriate level of detail, to respond to the timeline agreed at the beginning of the process, and to be reliable. Some of the proposed indicators to measure the above high level domains are taken from the AAI (table 1). However, the data required in the AAI is not always available at regional/local level, so local and regional authorities should collect their own data following the process detailed in this tool.

While some impact assessments can be restricted to qualitative considerations, where the goal is to support investment appraisal, it will be necessary to bring all considerations onto a common cost base which is generally money. For capital costs of AFE initiative development, the approximate number of workers and days of work, subcontracting, infrastructures needed, financial costs, potential extra costs, etc. should be estimated. Costs should be projected at market prices or estimated by a using proxy.

Clearly, not all the impacts can be measured directly in monetary terms, for those impacts (such as impact on professionals'skills or technological benefits, health outcomes, environmental protection, etc.), the SEE-IT team should express each impact in the more suitable unit of measure (Monacciani et al., 2012) and convert them to money. Chapter 4 discusses approaches to monetising non-market goods and describes a range of mechanisms for conversion.

2.2.5 Stage 4 – Interpreting Options and Drawing Conclusions

Figure 8: Key activities within stage 4 of the SEE-IT process.



In stage 4, the SEE-IT team should compare the impacts achieved in the three different domains (social, economic and environmental) between the situation before and after the proposed AFE initiative/policy intervention, and across alternative scenarios. The goal is to bring forward a robust conclusion to the impact assessment and where confidence is lacking, to return to earlier stages to strengthen either the information base, the quality of the scenarios, or the assumptions underpinning the impact analysis. The key steps are to:

Compare the impacts

- Å Weigh-up the social, economic & environmental effects - positive and negative
- Å Undertake comparisons across options and with the baseline situation
- Å Ensure that there is transparency of analysis across all levels of assessment

Investigate the distributional affects i are there differences in effects for different groups ?

- Å Explore the impacts across those most affected by the proposal / targets/sectors etc.
- Å Explore if the impacts vary according to different geographies or areas
- Å Explore and impact variations across different social/income groups

Uncertainty analysis - investigate the risks associated with uncertainty in assumptions and judgements

- Å Sensitivity to key assumptions and estimates
- Å Is there a likelihood of any thresholds values that might shift conclusions

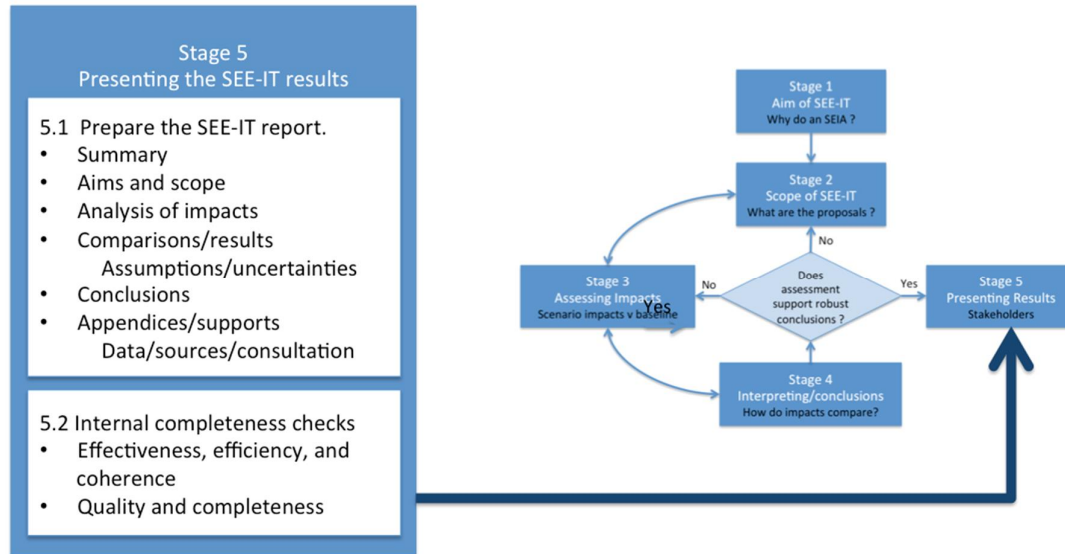
Are conclusions robust?

- Å Is there a need for more data / greater detail?
- Å Is there a need to modify/refine problem or scenarios?

Chapter 3 discusses impact analysis in greater detail and chapter 4 discusses the need to undertake sensitivity and uncertainty analysis to accommodate risks associated with assumptions and judgements.

2.2.6. Stage 5 – Presenting Results

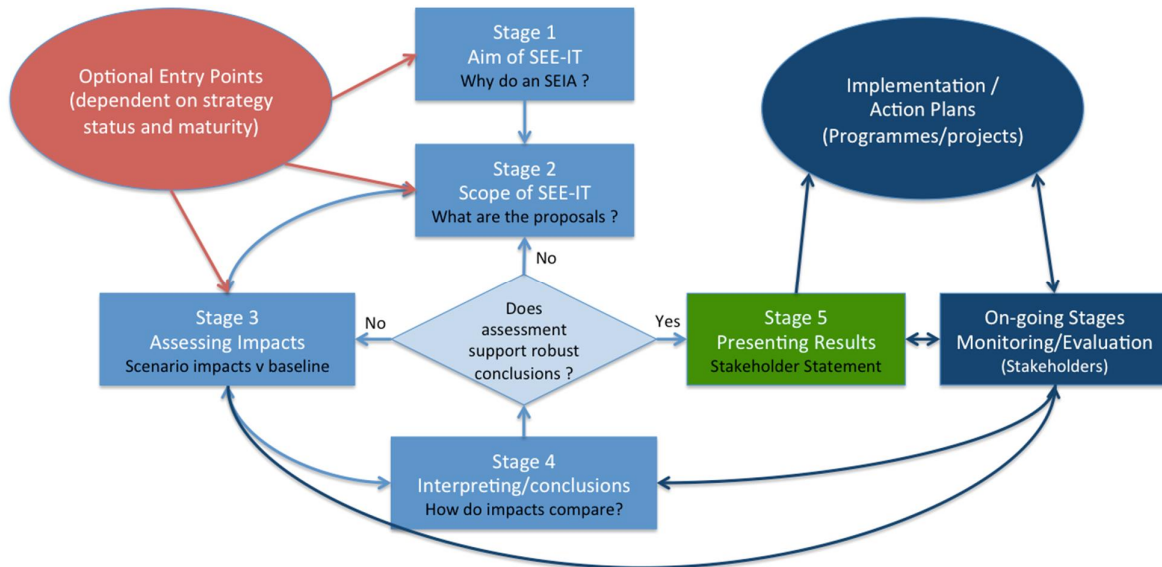
Figure 9: Key steps within Stage 5 of the SEE-IT process.



The final stage 5 step consists in presenting the report of the SEE process to the stakeholders, and in some cases, the wider general public. The report should summarise all the aspects that have been detailed throughout the SEE-IT process including the aims and scope, the team, the relevant impacts, the comparison of results, the assumptions and un-certainties, and the conclusions. Appendices can be provided to identify data, data sources and consultation processes employed. The team should also undertake an internal quality and completeness check to confirm effectiveness, efficiency and coherence.

2.2.7. Future stages – On-going monitoring and evaluation

Figure 10: The SEE-IT relationship to implementation



Finally, the SEE-IT results report can form a bridge from the impact assessment process into programme/project implementation action plans, and establishes the key performance and outcome measures that form the basis of on-going monitoring and evaluation.

3. Exploring Possible Impacts

3.1. Overview.

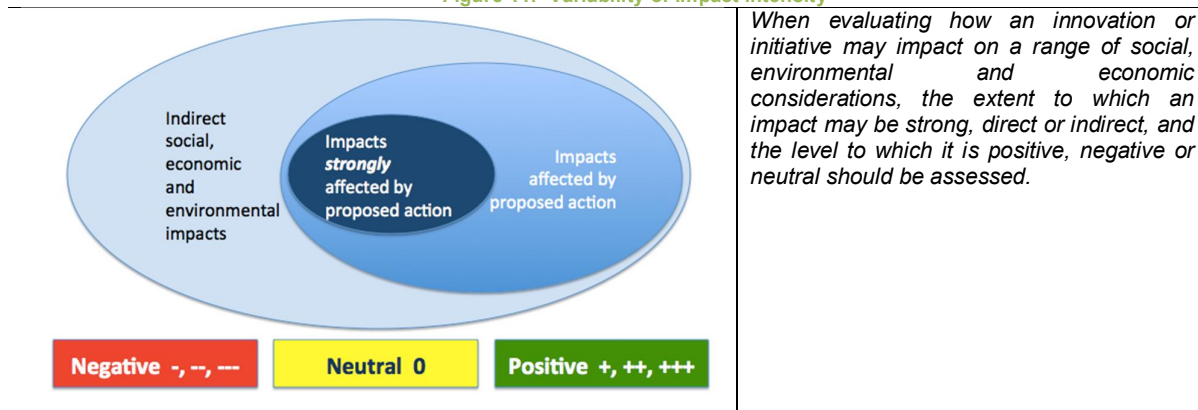
The identification and selection of appropriate areas for consideration in impact assessment needs to strike a balance between:

- factors that may provide the most insight into the potential performance of a policy, programme or project within its local operating context and zone of influence, and
- factors that can provide wider comparability of proposals across multiple territories, regions or national boundaries.

Impacts need to be comprehensive but relevant, and supporting detail needs to be proportionate but not burdensome. Where projects have a local or regional focus, accessing appropriate resolution data, and undertaking specialised studies may take a priority. For larger scale projects requiring cross-border comparisons, higher order, aggregated, commonly shared data may take priority. An assessment teams' approach to achieving this balance will be largely framed by the nature of the problem and objectives under consideration, availability of resources (funding and data), and the study timelines.

The approach adopted within SEE-IT, is to attempt, as far as is possible, to gain a holistic perspective of the interactions between social, economic and environmental considerations, whether their impacts are strong or weak, and whether they are direct or indirect. The diagram in figure 7 illustrates how the intensity of impacts may vary from being very negative to very positive.

Figure 11: Variability of impact intensity



3.2. Defining a canvas of social, economic and environmental impacts.

3.2.1. Considerations.

The SEE-IT assessment tool has its origins within D4 Action Plan of the EIP-AHA. The Partnership aims to increase by 2 the average number of healthy life years (HLYs) in the European Union by 2020. This is approached by securing a triple win for Europe:

- Improving the health status and quality of life of European citizens, with a particular focus on older people.
- Supporting the long-term sustainability and efficiency of health and social care systems.
- Enhancing the competitiveness of EU industry through an improved business environment providing the foundations for growth.

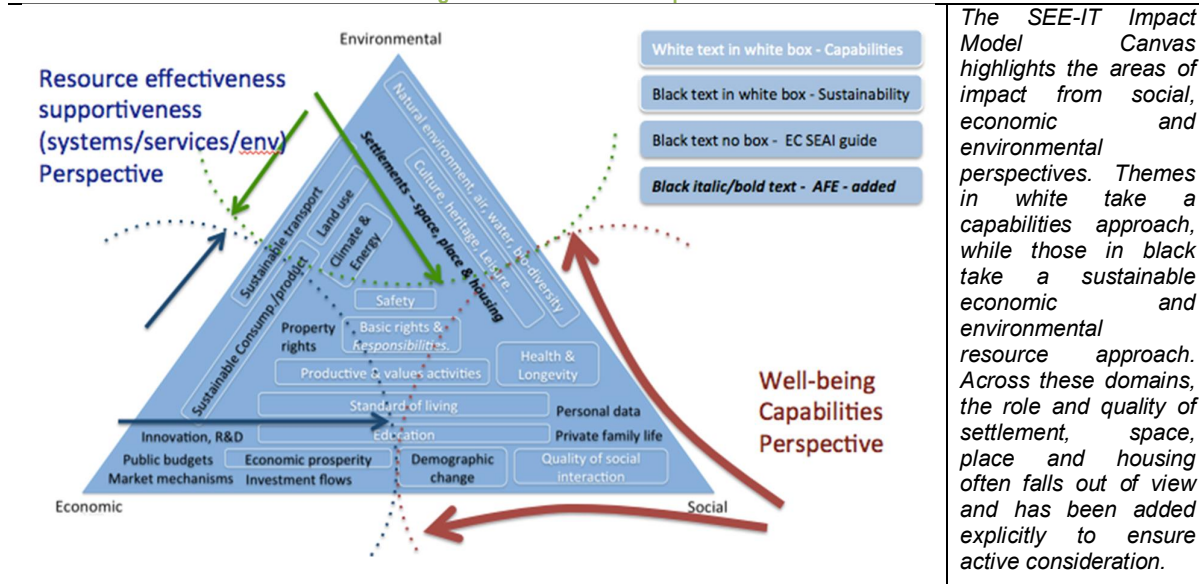
These objectives warrant a dual approach to impact assessment that accommodates both human well-being and quality of life, and resource effectiveness and sustainability. To address this, SEE-IT lays out a triangular social, economic and environmental canvas of inter-connected impact considerations, fusing a capabilities approach to well-being with a sustainability approach to

resources. As such, the primary inputs to shaping the design and content of the impact canvas are:

- EC models and guidelines for socio-economic impact assessment. (see appendix 9.1)
- Human capabilities and functionings (see appendix 9.2)
- Sustainable development (see appendix 9.3)
- Fundamental rights (see appendix 9.4)

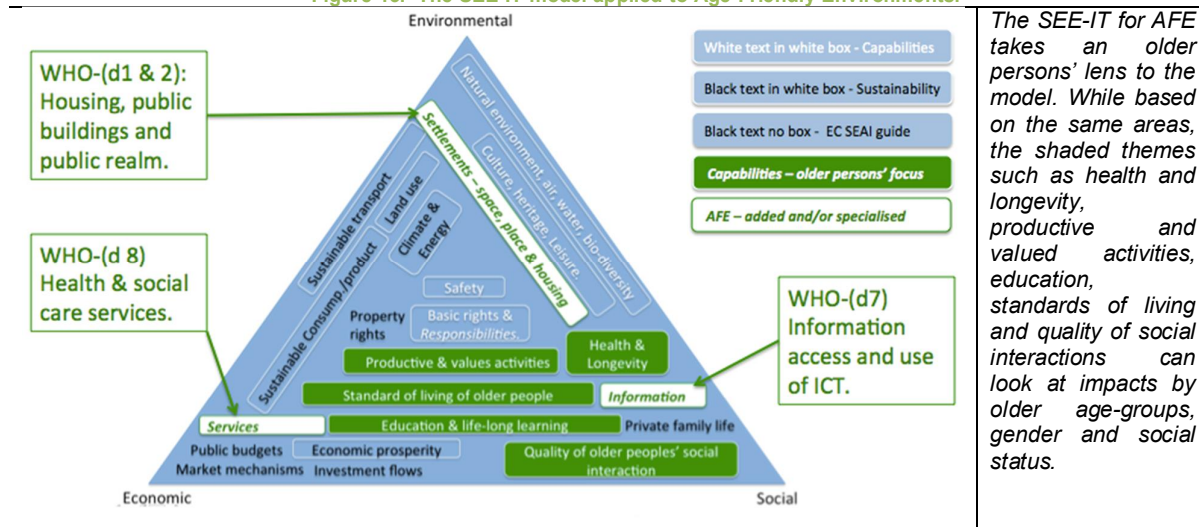
Integrating these frameworks into a unified impact model provides a coherent and common reference point from which to explore specific AFE policy, programme and project impacts.

Figure 12. The SEE-IT Impact Model Canvas



Within the realm of AFE and the experiences of older persons in our buildings, communities, cities and regions, it is possible to apply a demographic filter to the generic impact model canvas to support analysis from an active and healthy ageing view point.

Figure 13. The SEE-IT model applied to Age-Friendly Environments.



Within the context of the EIP-AHA, three impact areas are of particular importance are:

- The ability to access and use information, enhanced by the use of ICT, to achieve greater choice;

- The existence, availability and effective performance of health and community services for older people ĩ including health promotion and disease prevention, home supports, long term care and tele-healthcare services; and
- The availability of, and access to, appropriate housing, housing supports and assistive technologies that can promote and sustain ageing-in-place.

3.2.2. SEE-IT Layers of detail.

The impact canvas provides a consolidated top layer view of areas of impact and how they may align and interact. The following table explodes possible impacts at a lower layer of detail. This can be further exploded, depending upon level of detail required. Some sources of data are highlighted in appendix 10.

Table 2: Domains and possible impacts for consideration

	Domains of Impact	Possible impacts for consideration
Economic Impacts	Economic prosperity	Regional GDP/capita and Disparities by sub-areas (Nuts3) Older people in employment (age/gender) Unemployment (age/gender) Household savings ĩ older people
	Investment flows	Cross-border flows ĩ import/export/ access to age-related products / services Cross-border jobs / mobility
	Public budgets/ services	Public agency-specific budgets (hospital / community services / older peoples services / housing / transport / welfare benefits, etc.) Service quality / person/citizen-centeredness Cross-agency budget re-adjustments / sharing / pooling
	Market mechanisms	Effects on private sector business opportunities / SMEs Effects on private social enterprise opportunities & structures Balance/transactions across sectors (PPP)
	Innovation, R&D	Investment in R&D related to active & healthy ageing Pre-commercialisation / Intellectual property Accelerated time to market
	Sustainable consumption & production	Household structure and expenditure, energy use, car ownership Persons at work by sectors: industry / manufacturing, professional / services, agriculture / farming. Food production/supply: organic farming / intensity / urban farming
	Property Rights	Home ownership - / private renting / social housing / Residential / nursing homes Legacy / transfers / asset release / leans
	Domains of Impact	Possible impacts for consideration
Social Impacts	Health and Longevity	Life & healthy life expectancy, age-dependency Physical activity, nutrition, mental wellbeing Causes of death / chronic diseases, places of death, Accidental injuries / falls
	Safety	Criminality, safety of social environment Protection of older people against abuse Protection against risks / in emergencies Feelings of safety
	Productive and valued activities	Employment opportunities (also ex. market-volunteering) Absence of discrimination Working conditions/quality of work environs. Amount of leisure Care for others (informal care)

Environmental Impacts	Standard of living of older people	Principal status, private consumption, real income / transfers Poverty and deprivation Mobility (also for disabled/impaired) / GALI i activity limitation Choice/control over where/how one lives i tenure status
	Education / Life-long learning	Literacy (incl. digital literacy) Opportunity to go to higher education Educational attainment Life-long learning
	Quality of social interaction	Extent of social networks / connectivity Absence of loneliness /isolation Social participation i volunteering Migration, ethnicity, languages and religious participation
	Private and family life	Families by family cycle Marital status - widow/widower One person households
	Personal data	Access to information i availability / restrictions Identity/identifiers Protection of data / sharing information
	Basic rights and responsibilities	EU Charter on Fundamental Rights: Human dignity, Equality, Freedoms, Justice, Solidarity, Citizens' rights. Moral outlook / responsibilities
	Domains of Impact	Possible impacts for consideration
	Natural environment	Quality of local environment i air / water etc. (toxins) Nature of environment i urban/sub-urban/rural Landscape: Typology features i hills/mountains Waterways/lakes/coast Bio-diversity i common/rare flora/fauna
	Culture, heritage and leisure	Availability and quality of cultural assets (music / arts / drama / literature) Heritage sites Events / festivals Opportunities to participate: artists / performance
	Land use	Geographic context Zoning - Agricultural, Forestry, Marine, industrial, retail, residential, recreational, Educational, health service, mixed use Conservation i natural, archeologically, architectural
	Climate & energy	Energy conservation Alternative energy sources Environmental / energy control Seasonal variation / weather / drainage Climate change hazards i sea levels/heat/cold/floods
	Renewable resources/waste	Resource re-use Resource use reduction Resource recycling
	Settlement i urban/rural	Spatial hierarchy i connection and access Zoning / mixed use Density / proximity to amenities / retail / services Public spaces: streets/squares/parks i furnishings: lights/seats

	Housing	Households by type of accommodation Quality / age of housing / parking / garages Accessibility Gardens / pets Heating / Water / Drainage / Electricity / waste Broadband / Internet
	Sustainable transport	Means/modes of travel / availability/frequency Time leaving/returning to work/amenities, etc. Journey times Safety / accidents

In some cases, only several of the above considerations may be relevant. However, as a checklist, they provide an opportunity to do a quick overall evaluation to determine if they should be included for further assessment. In some cases several impacts may be indirect but extensive, influencing and overall evaluation. It should be noted that neutral impacts are not the same as irrelevant ones. Issues that are neutral should be retained in an analysis as their impact may vary in response to fine-tuning a scenario.

The impact model has been kept as broad as possible to accommodate a wide range of possible AFE policies, programmes, projects and interventions from a broad range of origins, and at a wide range of scales. While strengthening environmental bio-diversity may not be an obvious AFE consideration, it may be an important element, or an attractive force, of a business case to improve a tourism amenity and asset, encouraging older persons to engage in greater physical activity and exercise, providing opportunities for extending social connectivity, strengthening affinity with nature and increasing employment in the tourism sector.

Introducing a programme of home-adaptation supports may not only enhance accessibility, safety, health and longevity, and participation, it can also reduce pressure on public resources through inappropriate hospital/long term care admission avoidance and accelerated discharge. If combined with energy conservation, and alternative sources of energy, it can address fuel poverty and thermal comfort while also contributing to reduced carbon emissions.

Sections 5 and 6 describe possible applications of the model at regional and local levels, and the approach is compared with several related impact assessments from research and practice in section 7.

3.3. Analysis

Analysis is a cyclic process of evaluating the qualitative and quantitative impacts across the range of impact domains that are relevant to the problem, objectives and solution scenarios under consideration. Once the key relevant impact areas for assessment have been identified, the assessment team will need to make judgements about the intensity (neutral, strong, very strong, etc.) and direction of impact (negative, neutral, positive) from the baseline case, based on the data at hand, their expertise in the field, and any additional data that may be needed to inform decision-making. In innovative situations, where practices are novel, confidence in predicting the possible future impact of a policy is often dependent upon learning from any evidence from similar interventions in different settings, and translating their results into the specific context under consideration. In the absence of related evidence, it may be necessary to use modelling and simulation techniques. Appendix B in section 10 provides some guidance on sources of data and data gathering to inform analysis. There are two particular analytical functions that will be of interest to assessment teams, scenario comparisons and distributional effects.

3.3.1. Comparing scenarios.

At a minimum, the assessment development team will want to compare the likely impact of a scenario with the initially described baseline. However, in many instances, teams will want to explore the comparison of 2 or 3 alternative scenario approaches to meeting the identified objectives. The table in figure 10 provides a template of what a comparative analysis might look like. The rows may be reduced to include only the most relevant impacts, although some may be exploded to include

higher resolution issues i.e. for an older adults sports programme, health and longevity may be exploded to include both physical activity and mental health. As a key goal of SEE-IT is to support collaborative decision-making, it is important to describe the nature of the impact (its anticipated advantage, dis-advantage or improvement) so as to make the basis of any judgement or assumption transparent to all involved.

Figure 14. Comparing scenarios.

	POLICY/PROPOSAL/SCENARIO A		POLICY/PROPOSAL/SCENARIO B	
Economic Domains of Impact	Nature of impacts on resources/assets	Impact Assessment	Nature of impacts on resources/assets	Impact Assessment
Economic prosperity	Advantages/disadvantages/improvements	++	Advantages/disadvantages/improvements	++
Investment flows	Advantages/disadvantages/improvements	++	Advantages/disadvantages/improvements	++
Public budgets/services	Advantages/disadvantages/improvements	++	Advantages/disadvantages/improvements	++
Market mechanisms	Advantages/disadvantages/improvements	++	Advantages/disadvantages/improvements	++
Innovation, R&D	Advantages/disadvantages/improvements	0	Advantages/disadvantages/improvements	0
Sustainable consumption & production	Advantages/disadvantages/improvements	++	Advantages/disadvantages/improvements	++
Property Rights	Advantages/disadvantages/improvements	0	Advantages/disadvantages/improvements	0
Social Domains of Impact	Nature of impacts on capabilities		Nature of impacts on capabilities	
Health and Longevity	Advantages/disadvantages/improvements	++	Advantages/disadvantages/improvements	++
Safety	Advantages/disadvantages/improvements	+++	Advantages/disadvantages/improvements	0
Productive and valued activities	Advantages/disadvantages/improvements	+++	Advantages/disadvantages/improvements	++
Standard of living of older people	Advantages/disadvantages/improvements	++	Advantages/disadvantages/improvements	++
Education / Life-long learning	Advantages/disadvantages/improvements	+++	Advantages/disadvantages/improvements	++
Quality of social interaction	Advantages/disadvantages/improvements	++	Advantages/disadvantages/improvements	++
Private and family life	Advantages/disadvantages/improvements	++	Advantages/disadvantages/improvements	++
Personal data	Advantages/disadvantages/improvements	0	Advantages/disadvantages/improvements	0
Basic rights and responsibilities	Advantages/disadvantages/improvements	0	Advantages/disadvantages/improvements	0
Environment Domains of Impact	Nature of impacts on Environment		Nature of impacts on Environment	
Natural environment	Advantages/disadvantages/improvements	++	Advantages/disadvantages/improvements	++
Culture, heritage and leisure	Advantages/disadvantages/improvements	++	Advantages/disadvantages/improvements	++
Land use	Advantages/disadvantages/improvements	0	Advantages/disadvantages/improvements	0
Climate & energy	Advantages/disadvantages/improvements	0	Advantages/disadvantages/improvements	0
Renewable resources/waste	Advantages/disadvantages/improvements	-	Advantages/disadvantages/improvements	-
Settlement – urban/rural	Advantages/disadvantages/improvements	++	Advantages/disadvantages/improvements	++
Housing	Advantages/disadvantages/improvements	++	Advantages/disadvantages/improvements	++
Sustainable transport	Advantages/disadvantages/improvements	++ to +++	Advantages/disadvantages/improvements	++ to ++
OVERALL EVALUATION		++ to +++		++ to ++

Requires consideration – not simple aggregation as impacts may want to be weighed .

When making an overall evaluation, a first step is to make an initial, simple aggregation to see if the scenarios are adequately positive in relation to the baseline, and to see if one scenario fares better than another. However, it should be recognised that some impacts may be more important, or have a higher priority, than others. In such cases, it may be necessary to weigh several impacts differently, to bias an overall evaluation in the direction of a priority outcome. Once again, it will be important to make any such weighting transparent to all involved, so that sensitivity to the weighting schema can be examined. Overall, it should be possible to apply the following criteria to the comparison of options, and explain how they have been applied:

- The overall effectiveness of the option/scenario in relation to meeting the objectives,
- The overall efficiency of the option/scenario in relation to achieving the objectives,
- The level of coherence of the option/scenario with related objectives, strategies and (priorities in the region or local authority).

3.3.2. Distributional effects.

It is also important to examine the distributional effects of a policy, programme or intervention as it impacts on different individuals and groups of people within a territory, region or local authority. How an assessment may differentiate between groups will be dependent upon the problem under consideration, but any of the following breakdowns may be worthy of consideration:

- Grouping by smaller areas within a spatial boundary (zoning)
- Grouping by spatial hierarchy i urban / rural
- Grouping by socio-economic status
- Grouping by employment status
- Grouping by gender
- Grouping by age i cross-generational
- Grouping by age i younger old / older old
- Grouping by functional ability (frailty)
- Grouping by proximity to amenities i (i.e. walking / cycling / transport / cars)
- Grouping by access to entitlement / benefit
- Grouping by isolation status
- Grouping by digital access status

Figure 15. Visualising distributional effects

Groups may be different populations segments or different geographic areas.

	Group A		Group B		Group C	
Economic Domains of Impact	Explanation	Impact Assessment	Explanation	Impact Assessment	Explanation	Impact Assessment
Economic prosperity	Qualification	+	Qualification	+	Qualification	+
Investment flows	Qualification	+	Qualification	+	Qualification	+
Public budgets/services	Qualification	++	Qualification	++	Qualification	++
Market mechanisms	Qualification	++	Qualification	0	Qualification	++
Innovation, R&D	Qualification	0	Qualification	0	Qualification	0
Sustainable consumption & production	Qualification	+	Qualification	+	Qualification	+
Property Rights	Qualification	0	Qualification	0	Qualification	0
Social Domains of Impact	Explanation		Explanation		Explanation	
Health and Longevity	Qualification	+	Qualification	+	Qualification	+
Safety / confidence	Qualification	+++	Qualification	0	Qualification	+++
Productive and valued activities	Qualification	+++	Qualification	+	Qualification	+++
Standard of living of older people	Qualification	++	Qualification	0	Qualification	++
Education / Life-long learning	Qualification	+++	Qualification	++	Qualification	+++
Quality of social interaction	Qualification	++	Qualification	++	Qualification	++
Private and family life	Qualification	+	Qualification	+	Qualification	+
Personal data	Qualification	-	Qualification	-	Qualification	-
Basic rights and responsibilities	Qualification	0	Qualification	0	Qualification	0
Environment Domains of Impact	Explanation		Explanation		Explanation	
Natural environment	Qualification	+	Qualification	+	Qualification	+
Culture, heritage and leisure	Qualification	+	Qualification	+	Qualification	+
Land use	Qualification	0	Qualification	0	Qualification	0
Climate & energy	Qualification	0	Qualification	0	Qualification	0
Renewable resources/waste	Qualification	-	Qualification	-	Qualification	-
Settlement – urban/rural	Qualification	+	Qualification	-	Qualification	+
Housing	Qualification	++	Qualification	++	Qualification	++
Sustainable transport	Qualification	+	Qualification	+	Qualification	+
OVERALL EVALUATION		++ to '+++		+to '++		++ to '+++

In many situations, it will have been possible to model some of the diversity within the primary analysis i so that distributional effects can be restricted to three or four additional groupings. The impact development team will need to apply their judgement as to how best to break-out the different distribution groupings so as to balance insight, variability and complexity within the resources available to the assessment process.

4. Monetising an SEE-IT

4.1. Overview

For several AFE programmes, it may be possible to restrict impact assessment to the evaluation of qualitative or directly quantitative criteria. However, many policies or programmes will include several non-market impacts, such as health or environmental impacts, where it will be necessary to work with the valuation, quantification and monetisation of the impacts.

Placing quantitative and monetary figures on these types of impacts can be difficult, and it is important to set out clearly the basis of assumptions and the mechanisms that are used. The following section is based on the Annexes to Impact Assessment Guidelines developed by the EC²⁷.

As many of the individuals, teams and groups undertaking age-friendly impact assessments in their communities may not have experience in the options available, much of section 9 from the annex guide is repeated here for convenience.

4.2. Monetisation of non-market impacts

Monetisation of non-market impacts is easiest when the values can be directly linked to market prices. For example, air pollution damage to crops might reduce crop yields, thus allowing for relatively straight-forward monetisation. Similarly, a deficit in primary and home care services might result in an increase in hospital admission and delayed discharge costs. However, where values of impacts are not directly revealed in market prices other techniques may have to be used.

There are ways of calculating monetary costs and benefits of goods that do not have a direct market price. They either reflect the willingness to pay for, or the willingness to accept a particular outcome and consist of both stated preference, and revealed preferences methods.

- Revealed preference methods are based on evidence from real market transactions such as correlations between environmental disturbances and house prices. As such, they are based on real actions by people that are incurring real actual costs.
- Stated preference methods, on the other hand, involve the construction of hypothetical markets and asking people via questionnaires and interviews how they value a given outcome.

Notable uses include finding estimates for reductions in risk of premature deaths or non-fatal injuries, or to determine values for environmental outcomes including the use of public parks or historic buildings.

4.3. Quantitative analysis of health impacts.

AFE policies and programmes can have an impact on health and well-being, either directly, if changing health outcomes is a stated objective, or indirectly, as a result of tackling another, related issue, such as housing, social isolation or transport. Health impacts are most commonly encountered in environmental protection, health care, product safety, safety at work, consumer protection etc. While there is no uniform methodology for their analysis, it is important to ensure that impact assessments are backed by sound analysis and that they are consistent. This does not mean reliance on a single methodology but rather that similar cases are handled in a consistent manner. Bearing in mind proportionate analysis, it is desirable to use quantitative approaches where possible to allow for a more transparent comparison of costs and benefits.

Several methods exist for quantitatively evaluating proposals with potential health impacts. A distinction can be made between monetary and non-monetary methods.

4.3.1. Non-monetary approaches.

Non-monetary approaches are potentially less controversial and may be more suitable in a cost effectiveness analysis, whereas monetary approaches are needed if the aim is to present a comprehensive cost benefit analysis. In many cases, non-monetary approaches can sometimes be monetised by placing monetary values on their results. The following paragraphs outline the most

common non-monetary approaches, followed by a brief introduction to the most standard monetary approaches.

Quality Adjusted Life Years (QALY).

The QALY method uses available information on objective improvements in health / life quality and combines it with the duration of that improvement. A year of life in perfect health is counted as 1.0 whereas years spent in less than perfect health are given values of less than 1.0. Values are generally derived from surveys of patients and doctors (stated preferences) and represent an average among different social groups. QALYs allow aggregation over the number of individuals affected by an intervention. One can use equal weights for each individual or adjust weights to reflect preferences for particular target groups. Future life years may be discounted using a common discount factor. Further information on QALYs can be examined in the following recent studies:

- Weighting and valuing quality-adjusted life-years using stated preference methods: preliminary results from the Social Value of a QALY Project²⁸
- Extending life for people with a terminal illness: a moral right or an expensive death? Exploring societal perspectives²⁹

Disability Adjusted Life Years (DALY)

A DALY is very similar to a QALY, effectively being its negative value. It measures the number of quality adjusted years lost in comparison to the benchmark scenario. In all other respects it is not conceptually different from QALY and should lead to the same assessment. Data on DALY can be found at:

http://www.who.int/healthinfo/global_burden_disease/estimates/en/index2.html

Healthy Life Years (HLY)

Improving HLY by 2 years for European citizens is the high-level goal of the EIP-AHA, and it is included in the set of indicators used in the Lisbon strategy. The HLY approach measures the number of quality adjusted remaining life years per person. It is similar to QALY, and also here, life years in the future should be discounted, and weights can be used when aggregating across individuals. HLY is technically a sum of QALYs, using the remaining life expectancy as the upper bound for summation. However, when done correctly, QALY and HLY should lead to the same conclusions. Previous studies in the health sector have used values of €50.000 – €80.000 Euros for a QALY. This range can be used as an initial indication for the purpose of an impact assessment but should be adjusted for a concrete policy proposal to reflect the specific context. Data on HLY can be found at the Eurostat database - Health - Health status - Healthy life years.

<http://ec.europa.eu/eurostat/data/database>

4.3.2. Monetary approaches.

Many decisions lead to a reduction in risk but not to its complete elimination. The aim of monetising health impacts is not to place a monetary figure on someone's life, but to compare the benefits of a reduction in risk against the costs. Any decision in this context means placing an implicit monetary value on health benefits. Decision-making will be easier and may be more consistent and transparent if we have a monetary estimate of the value of health benefits. The following monetary approaches are standard methods for this purpose.

Cost of Illness (COI).

The Cost of Illness method is a rather simple measure comprising only the medical expenses related to the incidence of an illness. If an option lowers the rate of occurrence of an illness the saved medical expenses can be estimated and constitute a benefit. Conversely, if an option leads to an aggravation of a health situation, one can state the associated direct costs. However, the usefulness of this method is limited as it does not include other indirect costs to society such as loss of hours worked, or how people value their own health. Also, in some situations it leads to perverse results: for example, an action that kills somebody who otherwise would have spent time in hospital would be seen as a benefit using the COI approach. Studies on COI include:

- OECD Final Report – Estimating Expenditure by Disease, Age and Gender under the System of Health Accounts (SHA) Framework. December 2008.
- Who Guide to Identifying the Economic Consequences of Disease and Injury. WHO 2009.

Human Capital.

The human capital method tries to measure the loss of future earnings in case of disability or premature death. It can also be interpreted as a measure of the loss to social welfare caused by death / disability / lower productivity. Potential criticism can be that this method leads to different values of lives depending on the projected future earnings, which could be seen as immoral, and places no value on people who are outside, or are on the edge of the workforce (such as older people). Average values could be used to lessen these concerns or if the individuals affected by an option cannot be identified precisely enough.

4.3.3. Preference Based approaches.

Another method to evaluate health impacts is to analyse individuals' stated or revealed preferences with respect to being exposed to a particular situation that involves a health risk. This can be measured by using the concepts of Willingness To Pay (WTP) for an improvement, or Willingness To Accept (WTA) compensation for a worsening. Two concepts that make use of these methodologies are the Value of a Statistical Life (VOSL/VSL) and the Value of a Statistical Life Year (VOLY).

Value of Statistical Life (VOSL).

The VOSL is derived by investigating individuals' WTP for a lower risk of mortality, divided by that risk reduction. As such, the VOSL method does not measure the value of a life per se, instead it puts a monetary value on the willingness to accept slightly higher or lower levels of risk. Of course, if taken to the extreme, everyone's life is priceless and cannot be monetised.

Value of Statistical Life Year (VOLY).

The VOLY measures more generally the WTP for an increase of one additional year of life expectancy. It should be noted that neither VOSL nor VOLY provides a measure of the quality of life. To do that one would have to combine them with other measures outlined above such as QALY/DALY.

The use of the above mentioned valuation concepts can lead to moral criticism. The idea of 'putting a value on someone's life' is seen as unethical. However, the goal is not to place a monetary value on our own lives or on other individuals' lives. Changes in risks are a different matter. While no one would trade their life for a sum of money, most people will be prepared to choose between safety equipment with different prices and offering different levels of safety, or between different ways of crossing a street compared to the saving of time. We can therefore identify the value individuals place on small changes in risk.

Examples: Suppose that a particular safety feature of a car (such as an airbag) reduces the risk of fatal injury in case of an otherwise fatal accident by 50% and that the likelihood of having such an accident is 0.1 % for the average driver (meaning that statistically one out of 1,000 drivers will have such an accident). If the price for an airbag is 500 Euros and 70% of the cars are equipped voluntarily with an airbag, this means that 70% of the drivers are willing to pay 500 Euros for a 0.05% reduction of the likelihood of having a fatal accident. This in turn means that the value the drivers of these cars attach to a life is at least $2,000 \times 500 = 1$ million Euros on average.³⁸ This illustrative example also shows that the valuation of risk differs between individuals. While 30% of the drivers (those not fitting the car with an airbag) implicitly attach a lower value (given their budget constraint), some of the drivers buying the additional safety feature may attach a substantially higher value to their life but still only have to pay 500 Euros for the airbag.

Where policy-specific estimates of the health impacts can be obtained, such as through external studies, they should be used in the Impact Assessment. However, where no such research has been undertaken, prior estimates from other policy areas should be used as approximations. Research undertaken in the past has resulted in values of 1-2 million Euros for VOSL and 50.000 - 100.000 Euros for VOLY in Europe. These ranges should be used for the purpose of an Impact Assessment if no more context specific estimates are available.

4.3.4. Life cycle assessment approach

Finally, one of the tools commonly used in assessing environmental impacts is Life-Cycle Assessment (LCA). This is the process of evaluating the effects that a product or service has on the environment over the entire period of its life. It can be used to study the environmental impact of either a product or the function or service the product is designed to perform. LCA is commonly referred to as a ‘cradle-to-grave’ analysis and can be used to ensure that maximum resource-use efficiency has been achieved and that environmental problems are not simply being shifted from one part of its life to another.

This approach can also be used for products: for example, any AAL consumer electrical goods will have had environmental impacts (such as energy use) in its production, transport to market and disposal, over and above its impacts during use.

4.4. Timing, sensitivity and incremental considerations

A consideration when setting out the costs and benefits of a policy or intervention is the timeline involved and how the costs and gains manifest themselves over the period of the policy or programme. Some points for investigation include:

- Is the intervention planned over the short, medium or long term – or is it, to all practical considerations not time-bound – i.e. lasting forever (i.e. a park or a river walkway)?
- Are there specific stages to its development that need to be considered - i.e. set-up, build-up/phasing, on-going/duration?
- Are there on-going maintenance and close-down/replacement/depreciation cost to consider – particularly in relation to projects that involve high capital equipment or ICT technology?
- How are the benefits evaluated and compared – particularly if different scenarios are running over different timescales (see section 4.7 below on discounting)?

When aggregating the costs and benefits it is important to ensure that the analysis recognises the incremental nature of the intervention over the existing base-line and on-going development trends without any intervention. As an example, ‘housing care and repair’ and ‘personal home-help’ services may already exist in a base-line situation. The introduction of a local AFE strategy may strengthen connectivity, communications and collaboration between these services and may make it easier for more clients to access enhanced, ‘joined-up’ services in a more integrated and convenient manner. The AFE strategy cannot take credit for all the service provision, but only for the ‘incremental improvement’ as a result of the connectivity dimensions of the strategy.

In many cases, several of the variables used in the analysis will be subject to uncertainty, and will be based upon assumptions that may spread over a range (upper or lower bound values). In these situations, it is strongly advised that such uncertainties are made explicit and that ‘sensitivities’ to the variability of the values is carried out by undertaking the calculations with both high and low estimates.

4.5. The costs

Based on the definition of the scenarios/solutions, the following table provides a brief summary of possible cost element headings that can be considered within an AFE cost/benefit assessment:

Table 3: Possible costs

Setup costs	
Once off / set-up period (intermediary)	Once-off costs associated with implementing the interventions – recruitment, training, design services, etc.
Initial capital investment	Once-off capital costs associated with construction, buildings, landscaping, equipment, technology, etc.
Annual programme operational costs	
Services / supports	Re-current programme costs in providing the services and supports – predominantly labour, overheads, etc.

Compliance costs	Any incremental costs associated with service providers having to meet new regulations or specifications, etc.
Maintenance / monitoring / evaluation	Costs associated with maintaining services/equipment, monitoring delivery and on-going performance improvement evaluation.
Annual costs of funds / capital	Any costs of funds/borrowings to service interest payments, depreciation, etc.
Administrative Burden	Administrative costs associated with managing an AFE programme, staff, meetings- distributed across multiple stakeholders/partners.
Total costs: by period / over period	Aggregation of costs, aligned by period.

4.6. The gains and losses

Based on the range of impacts that have been considered as relevant and necessary for the type of solution/scenario under investigation, the following table provides a brief summary of possible incremental gains/losses headings that can be considered within an AFE cost/benefit assessment (the descriptions are as exemplars only and will be dependent upon the scenario, its impact identification and analysis):

Table 4: Gains and losses

Direct gains/revenues	market	Changes to patterns and volumes of hospital admissions and accelerated discharges? (ALOS Average Lengths of Stay, and AEP – Admission Evaluation Protocol) Changes to patterns/volumes of nursing home admissions? Changes to patterns and volume of home support and care services - formal and informal?
Indirect gains/revenues	market	Changes to transportation patterns (journeys/parking) - modes and volumes. Neighbourhood/housing valuation – as a result of retaining inter-generational community?
Displacements		Any reductions/displacements - i.e. reduction in fixed-line telecoms rentals with transfer to mobile/pay-as-you go? (related to home monitoring)
Valuation of impacts	non-market	Health - Consideration of QoL in terms of QALY or VOSL? Safety - Consideration of Safety/Security (reduced risk) in terms of WTP/WTB?
Total gains/losses by period / over period		Aggregation of gains/losses, aligned by period.

4.7. Additional financial considerations - Discounting

As with many policy domains, often AFE policies and programmes will result in costs and benefits that arise at different times. Building a housing scheme, renovating an urban park with exercise equipment, adding cycle lanes, or investing up-front in an adult literacy programme have immediate costs, but they provide benefits over a longer and extended period. When people receive a constant value over a set period of time, their benefit will be worth more on the first year than on the last year of the programme because of the time value of money—such as the costs of funds. The discount rate is a correction factor that reflects this situation. Discounting allows the direct comparison of costs and benefits occurring in different points in time, valuing immediate costs and benefits more highly than those that occur later. When 'discounting' is used, it should be applied both to costs and benefits. Financial analysts will use a Net Present Value (NPV) formula to account for these changes in cost over a period based on an agreed discount rate. For the EU and many

member states public organisations, a discount rate of 4% is often recommended.

In situations where it is necessary to compare policies with different time horizons, NPV is not appropriate on its own, and it is often useful to calculate the Annualised Value or Equivalent Annual Cost of alternative policies. This is defined as the fixed annual stream of income that would be paid by a fixed-interest annuity with the same net present value as the policy. There are several sources of further information on applying discounting calculations which include:

- Net Present Value: <http://accountingexplained.com/managerial/capital-budgeting/npv>
- Equivalent Annual Cost: http://en.wikipedia.org/wiki/Equivalent_annual_cost

Over time, the AFE-INNOVNET repository will assemble a range of Impact Assessment examples that will illustrate the application of these discounting techniques.

5. A regional Level SEIA Methodology, Protocol and Indicators

Applying the SEE-IT at regional level is very useful to identify regional problems and to face regional challenges related to AFE; analysing at the same time the impact of the AFE initiatives/programmes/policies implemented in response to these problems or challenges. This section describes how to implement the SEE-IT at regional level on the basis of previous sections. Each regional authority should adapt the guidelines given in this section and along the whole document to its AFE initiative, reality, objectives, etc.

5.1. Stages

As mentioned in the section 1.4, the entry point for each regional authority may vary depending upon the status or maturity of the AFE initiative. Below the analytical steps described previously are adapted to regional authorities:

5.1.1. Stage 1: The aim and objectives of the SEE-IT at regional level

1.1. Identify the core problem or challenges

A detailed definition of the AFE initiative and the problem addressed at regional level should be identified at the beginning of the process. The problem can come from many resources (regional strategies, consultations with regional experts, regional citizens' councils, etc.). The regional promoter should explain to the rest of the SEE-IT team the AFE initiative, the regional problem/challenge addressed (e.g., long-term care costs, burden of informal caregivers), the potential regional impacts (e.g. reduction of long-term care costs, increase of quality of life of informal caregivers), the groups objective (e.g. elderly people, families of dependent people), timeline (e.g. short action, annual action), etc. Moreover, the resources to implement the AFE initiative at regional level should be estimated (human resources, physical infrastructures, associated services, etc.). They will imply costs to be taken into account in the regional budgets.

1.2. Define the strategy/policy objectives

If the regional AFE initiative has not still been implemented or do not have this information not defined, the SEE-IT team with the promoter should:

- Establish objectives ranging from the general to specific; e.g. if the aim of the regional AFE initiative is to reduce long-term care costs at regional level its specific objectives could be increment the efficiency of health and social systems, maintain the quality of the services provided, maintain the coverage of elderly people attended, improve the skills of health and social professionals working in long-term care, etc.
- Ensure objectives are coherent with other local/regional/national strategies, or can influence them; the government regional representatives should identify the programmes or policies aligned with the AFE initiative to support and reinforce it. For example, following with the objective of reducing long-term care costs: has the regional authority developed a training programme for health professionals to raising their awareness about the costs of misuse of health material?; there are policies at national level that follow the same objectives?...

5.1.2. Stage 2: The Scope and scenarios of an SEE-IT.

2.1. Organising the Impact Assessment Work

In order to consider all potential effects of the regional AFE initiative, the following targets should be involved in the SEE-IT regional process with interviews, focus groups or questionnaires:

- Developer: the promoter of the regional AFE initiative should be involved in order to transfer to the team involved in the SEE-IT process a deep description of the AFE initiative that is going to be implemented or had been implemented at regional level. He or she will determine the target groups affected, identify initial socio-economic components that may be impacted, define the scope of the activity, etc.

- Affected groups: participatory methodologies¹ involving all affected groups are highly recommended in order to respond successfully to their needs and requirements. They will provide regional expertise and contextual information, and they will identify key concerns. Some of the target groups that should be involved representing the region are: elderly associations, NGOs, health sector, social system and entities active in silver economy at regional level.
- Government: sometimes government representatives will be involved as promoters. If not, some regional representatives should be enrolled to inform about potential regional legislation or procedural requirements.

In this step, the SEE-IT should identify the persons that will be involved and how. Preliminary contacts should be made to involve the number of people desired.

2.2. Defining the baseline

The SEIA team should be aware about the past development experiences in the region because it can influence the region attitude to the AFE initiative: historic background, demographic characteristics, political structures, existing goals in this field, etc. Moreover risks should be predicted and their related solutions agreed. At regional level, some of the potentials risks during the SEIA process can be:

- Lack of involvement of regional representatives or target groups
- High regional bureaucracy
- Lack of communication with local authorities who finally implement the initiative
- High geographic coverage
- Reluctant attitude of regional target groups
- Regional legislative barriers
- Budget constraints at regional/local level

2.3. Set boundaries for the SEE-IT

For the development of the SEE-IT the scope should be established. As this section describes the steps for regional authorities the geographical scope in this case will be regional. Also the timeline should be determined (short, medium or large term), the key outcomes (reduction of long term costs), etc.

2.4. Define Proposals / future scenarios

The regional AFE initiative should be clearly defined; identifying how their implementation will achieve the objectives defined in the previous step at regional level and involving the stakeholders identified: how are we going to reduce the long term costs? Are we going to train professionals in a new method? Are older people aware parts of the process? How are we going to involve them?

In this sense, using regional experts from government, communities and social sciences is highly recommended. The people to be involved and the way to involve them have been identified; so here the SEE-IT team should contact them and ask their opinions, suggestions or recommendations to face the challenge or problem defined. For that, the team can use surveys, questionnaires, focus groups, etc. The recruitment strategy should consider the potential loose of participants along the process.

5.1.3. Stage 3: Assessing the Impacts

In this step the team analyses the AFE initiative from a three perspectives: social, economic and environmental.

¹ You can consult the rD.4.3 Participatory method to involve end-users (older people) in co-production of AFE solutions by LRAs and older people to be used for future Covenantòresult of the AFE-Innovnet project.

3.1. Identify AFE impacts

Table 5: Potential regional AFE impacts

	Impact domain	Key issues (examples)	Direct / Indirect	Advantage/ disadvantage	Impact
Economic Impacts	Functioning of the market	Creation of SMEs Revitalization of silver economy Promotion of elderly consume	Direct	New model of Long term care that reduce the associated costs and create business: advantage	++
	Public budgets/burdens	Home adaptations Administrative costs Effectiveness of the social and health care systems	Direct	Care at home i new business, less administrative costs: advantage. More burden for informal caregivers? - Disadvantage	+ -
	Innovation, R&D	ICT provisions New services User design	Direct	Use of ICT to provide care at home, new business: advantage Are the ICT adapted to the needs and demand of older people? If not: disadvantage	+ -
	Specific regions and sectors	Regional coverage Impact at regional level and indirect impact at local and national level	Direct / Indirect	Is the new model provided along the whole region? Or there are inequalities?	+/-
	Macro-economic environment	Health and social system variables	Direct	Quality of life of older people and their families	+/-
Social Impacts	Employment and labour markets	Employment of young people providing services/products to silver economy	Indirect	Less burden for families? More capacity to employ?	+/-
	Social inclusion & protection of particular groups	Participation of older people at regional level Reduction of loneliness	Direct	Social inclusion of older people at their homes?	+/-
	Individuals, private and family life, personal data	Independent living Caregiversöburden	Direct		+/-
Environmental impact	Transport and the use of energy	Accessibility Responsible consume	Indirect	Accessible transport for elderly to attend to the doctor?	
	Air quality		Indirect	Do you measure the air quality at patient's home?	
	Bio-diversity, flora, fauna and landscape	Accessibility Conservation			

The indicators used to measure the above impact should respond to the following characteristics: to represent relative importance, to provide an appropriate level of detail, to respond to the timeline agreed at the beginning of the process, and to be reliable.

3.2. Gather additional data

Sometimes it will be necessary to have more detailed information about the impact. In these cases we use data from several resources as described in the next section 5.2. Some relevant additional data is for example:

- What is the current burden of informal caregivers in our region?
- What is the profile of older people in our region? Do they want to be monitored at home or in residential homes?
- What is the current cost of long term care?
- Are our health professionals well trained?

3.3. Assess AFE impacts

The total estimated capital costs of the regional AFE initiative development, the approximate number of workers and days of work, subcontracting, infrastructures needed, financial costs, potential extra costs, etc. should be estimated. Cost should be estimated at market prices; however not always exist a market price so it should be estimated by a proxy.

3.4. Identify and assess related administrative burdens

At regional level the bureaucracy can cause delays and negative implications when an initiative is trying to be implemented. All these obstacles and their related costs should be recorded to be included in the SEIA; e.g.: communication barriers, local interests, licences, diffuse person responsible, etc.

5.1.4. Stage 4: Interpreting options and drawing conclusions

The impact identified in previous stage should be compared with the objectives defined at the beginning of the process: have we achieved the objectives defined? How much are the objectives achieved? Are some of them more relevant than others? Have many budgets we need for achieving the objectives? Are older citizens satisfied with the initiative promoted? Do we need more data to obtain a robust conclusion? Should we redefine the challenges addressed?

Moreover, the SEE-IT team can also compare the impact achieved with other initiatives implemented in this region or in other regions using additional data collected in order to compare the effectiveness of this initiative among others.

5.1.5 Step 5: Presenting results

The team should prepare a report with:

- Summary
- Aims and scope
- A regional framework where these results have been achieved
- Analysis of impacts
- Comparisons/results
- Conclusions and limitations

Also the team should analyse if the process has been developed with quality standards of if there is something that should be improved for further processes.

6. A Local Level SEE-IT Methodology, Protocol and Indicators

Also at a local community level (municipality, city, village, neighbourhoods, rural areas) it will be very useful to apply social economic impact analyses. These help to identify local problems and to consider the social, economic and environmental impacts (direct and indirect) of policy interventions and strategies. We have to make a note here that local level impact assessments are very bound to the local contexts. Probably even the neighbourhoods in the same city are not comparable with each other. When making social economic impact assessments, these local differences have to be considered as well.

Social economic impact analyses at a local level are used by local policy makers to decide which policy interventions or measures are best to be taken. SEIA helps to decide whether or not and when interventions have to take place. Interventions can be compared with each other in the SEIA. SEIA will also help to define the phases of the interventions and will support the planning process. SEIA can be used to convince politicians to support the proposed measure/intervention.

To demonstrate the working of AFE-SEIA in a local community, we will analyse a for most local authorities recognizable challenge: to support older people with ageing in place and to avoid high level health care expenditures. The description of the used example of Rainbowtown, Bluewood and Greenwood is based on local experience and expert opinion. The city and neighbourhoods don't really exist, although elements of them are based on real experience.

6.1. Stages

6.1.1. Stage1: The aims and objectives of the SEE-IT at local level

1.1. Identify the problem or challenge

In our city Rainbowtown we identify that a majority of the people aged 80 and over has problems to continue independently living in their own homes. In two neighbourhoods (Bluewood and Greenwood) with an ageing population (N=1,000) there is already a shortage of suitable housing and the shortage will become bigger in the coming years. Also the older people in these neighbourhoods increasingly express feelings of loneliness and depression. It turns out that health care expenditures enhance.

The neighbourhoods are built in the seventies and are mainly suburban: a lot of single family homes, big shopping areas, schools and parks. The neighbourhoods need an uplift: local shops run out of business and schools remain unoccupied.

1.2. Define the strategy and policy objectives:

Our main, *general* objective is to revitalize the two identified neighbourhoods Bluewood and Greenwood to address the challenges of demographic change: shortage of suitable housing, loneliness and depression and increase of healthcare expenditures. To achieve a higher quality of life and continued participation in society of elderly people, we want to make use of the age-friendly environments concept.

Our specific objective is to involve the stakeholders of both neighbourhoods in this identifying and joint action process: older people, shopkeepers and the local schools and make an inventory of the age-friendly environments domains and the missing parts (conform the AFE-checklist WHO).

Jointly we identify the following shortlist of objectives (based on expert opinions) concerning the neighbourhoods Greenwood and Bluewood:

- a. The development of suitable housing for 75% of the older people aged 80 and over.
- b. Walkability and accessibility in and around the central shopping area.
- c. Redevelopment of the school into a meeting place.
- d. The settlement of a general practitioner and physical activity therapist in the neighbourhoods.

- e. Provision of ICT and home technology in every home in the neighbourhood. Connection with nearby residential care.

The operational objectives are:

- Each house of an older person aged 80+ is accessible by wheelchair. The number of houses is 70 in Greenwood, 250 in Bluewood.
- The shops in the shopping area are accessible by wheelchair. Number of shops is 50.
- Split level dwellings of older persons have an elevator if needed.
- One school will be built into a restaurant and meeting corner before the end of year 1.
- Each house in the neighbourhoods will be provided with wifi. For free and for a small grant.

After the AFE-SEIA we are able to set priorities and phases in this project. We will come back to it.

6.1.2. The Scope and scenarios of an SEE-IT

2.1. Organising the Impact Assessment work

We set-up the development team with older people, architects, shop keepers, local civil servants and so on. We organise a meeting with each group to speak about the roles and expectations. We plan a joint kick-off meeting of the project and set the agenda for the coming months or year.

2.2. Define the baseline scenario

If we do nothing the neighbourhoods Bluewood and Greenwood will face population decline, empty housing, empty schools and shops running out of business. Young people in Rainbowtown don't want to move to Bluewood and Greenwood. They occupy the attractive apartments in the city centre and want to stay there. Rich and vital older persons also want to move to the city centre, because that is the place where it all happens. Other less vital older people will be sent to nursing homes and residential care homes. People with less possibilities to move have to stay in the neighbourhoods. The only newcomers in the neighbourhoods are people with low incomes. Economic prosperity disappears. Shops and schools will be closed.

The costs of doing nothing are that Bluewood and Greenwood will turn into no-go areas.

2.3. Set boundaries for SEE-IT

On a spatial level the AFE-SEIA is for the whole city of Rainbowtown, with special attention to the impact for the neighbourhoods Bluewood and Greenwood. Time level is a 3 year development programme for both neighbourhoods. The ambitions of stakeholders vary from quality of life, independent living, business opportunities and vitality of the neighbourhoods.

Key outcomes: improved quality of life of the inhabitants of Bluewood and Greenwood, independent living for 1,000 older persons, vital businesses and shops.

2.4. Define proposal(s)/future scenario(s)

Together with the older people and architects we compare the needs and possibilities for extended independent living. We make an analysis of the public and private costs and benefits of home adaptations. We plan a programme for home adaptations for the coming 3 years.

Together with older people and urban planners we inspect the shopping area. We define which measures have to be taken to make the shopping area more accessible and walkable. The next year we redevelop the area. With shop keepers we make an inventory of the needed adaptations of the shops and an appropriate costs and benefits analysis.

Together with older people, restaurant and shop keepers, architects and health care we define a meeting point in the school building. We clear legal barriers to give way to private initiatives within the school building.

6.1.3. Stage 3: Assessing the Impacts

3.1. Identify AFE impacts

Table 6: Potential local AFE impacts

	Impact domain	Key issues	Direct/indirect	Advantage/disadvantage Narrative	Impact --, -, 0, +, ++
Economic Impacts	Economic prosperity	Revitalisation of two neighbourhoods Uplift of the shopping area Creation of new business in former school Decrease health care expenditures (private health care costs)	Direct	Positive on prosperity and public health care expenditures	++
	Investment flows	Investment in rebuilding/refunctioning school facility by private investors	Direct	Investments lead to return on investment	+
	Public budgets	Outdoor spaces: roads, pave ways, street lighting improvements Home adaptations Administrative costs increases Health care expenditures diminish (public health care costs)	Direct	Public expenditures rise by these measures. Health care expenditures are expected to decrease	0
	Market mechanisms	Growth of sustainable number of customers, shops and businesses	Direct	After the programme the neighbourhoods are able to attract private capital and spending. Public expenditures are not needed anymore	++
	Innovation, R&D	ICT provisions is made available. Social networks, networks health care institutions, etc.	Indirect	State of the art and innovation is encouraged by this programme	+
	Sustainable consumption & production	Household expenditure	Indirect	The neighbourhoods remain attractive to higher income groups	+
	Property Rights	Home ownership Increased value of homes	Indirect		+
Social Impacts	Health and Longevity	Increase of physical activity and mental wellbeing Decrease loneliness/depression	Direct	Quality of life of older persons and other inhabitants increase	+
	Safety	Investments in outdoor spaces and housing increase feelings of safety (physical and mental)	Direct	Costs and benefits	0

Environmental Impacts	Productive and valued activities	Participation in society by older people Older people as consumers	Direct	Older people remain active and add value to society	++
	Standard of living of older people	Independent living Delay of hospital/residential admissions Quality of life	Direct	Investments have social benefits	++
	Life-long learning	-			
	Quality of social interaction	Meeting and shopping facilities	Indirect	Meeting facilities are available, quality is encouraged	+
	Private and family life	Independent living	Indirect	Encouraged by better housing	+
	Personal data	-			
	Basic rights and responsibilities	Civil participation older people	Indirect	Encouraged by remaining active	+
	Natural environment	-			
	Culture, heritage and leisure	Culture and leisure facilities might be enhanced	Indirect	Not in the programme, but could be spin-off	+
	Land use	Revitalisation already built environments Walkability	Direct	Vivid attractive areas	++
	Climate & energy	Sustainability increases by better equipment and material	Indirect	Prosperity could encourage interest for sustainability	+
	Renewable resources	-	-	-	-
	Settlement i urban/rural	Suburban	Indirect	Suburban areas remain attractive for all kind of people	++
	Housing	More suitable housing for older people Independent living	Direct	Design for all	++
	Sustainable transport	Attractive living areas lead to mobility to and from the neighbourhoods (work, shopping, social networks)	Indirect		+

3.2. Gather additional data

In above scheme we detected if there is a positive or negative impact of our plans on the economic, social and environmental levels. It will be necessary to have more detailed information about the impact we want to achieve. Therefore we use data from several resources, like the data from stages 1 and 2, data from the AFE impact framework, data from checklists and data from models/simulations (if available). Additional data is for example:

- What is the current state of the housing of older persons? How many houses in fact need adaptations? What are the expected costs of the adaptations?
- Is the population of Bluewood and Greenwood willing and capable to pay a small grant for

- their wifi? What is the amount and how many people?
- Is it possible to offer wifi for free? Which provider has the best offer?
- What are the costs of refurbishing the outdoor spaces and restoring of the pathways?
- What is the current state of the entrances of the 50 shops in the neighbourhoods? How many need adaptations?
- How many people are willing to make use of the meeting place annex restaurant?
- What are the walking distances from the houses to the shopping centre and health care provisions?

3.3. Assess AFE impacts

With all additional data we are able to make an assessment of the impacts against the baseline. We iterate a qualitative and quantitative assessment and try to monetise it (cost/benefit).

For example housing adaptations: 170 of the 250 houses in Bluewood where older persons live are single family homes, the rest are apartments of different sizes. 60 of the single family homes are big enough to build in an elevator. 20 houses are already adapted by the older persons themselves. Estimated costs for an elevator are from € 14,000.-. Sanitation adaptations in the single family homes may vary from € 1,000.- to € 3,000.-. Our budget for housing adaptations is calculated on € 100,000.- per year. To make a plan of the renovations an inventory of the needed adaptations and estimated costs and benefits is needed.

Table 7: Local AFE Initiative example

Housing total	No	Element	Adaptation needed	Est. costs per piece	Minimal costs total	Benefits / contribution
Single family homes Type A	35	Sanitation	30	1,000	30,000	10,000
		Elevator	1	15,000	15,000	0
		Entrance	20	500	10,000	10,000
		Kitchen	40	750	30,000	20,000
Single family homes Type B	80	Sanitation	40	1,500	60,000	0
		Elevator	4	14,000	56,000	0
		Entrance	70	300	21,000	21,000
		Kitchen	35	700	24,500	5,000
Etc.	é	é	é	é	é	é
Total					246,500	66,000

In above table qualitative and quantitative assessments of the housing and the needed home adaptations are made. In this example it will take 2 years to make the necessary home adaptations for half of the houses in neighbourhood Bluewood. Probably the actions for housing adaptations have to be accelerated to fit in time into the entire programme.

3.3. Identify and assess related administrative burdens

It is necessary to identify programme and administration costs and other intermediary and sustainability costs. Risks and uncertainties also have to be considered.

6.1.4. Stage 4: Interpreting, preference, conclusions

6.1. Compare the impacts

In this example the impacts are not compared with each other. The gathering of additional data makes it possible to determine the phases we want to develop in the revitalisation programmes. For example to decide if we start to work on all objectives in one time, or start with a, b and e, or only work on objective c.

6.2. Distributional affects

The whole neighbourhood will be affected by the objectives.

6.3. Uncertainty analysis

To pay attention to the sensitivity to key assumptions and estimates. Also to know if thresholds values shifting conclusions and likelihood of occurring.

6.4. Is conclusion robust?

Look if there is a need for more data and greater detail. And if there is a need to modify or refine the problem or scenarios.

6.1.5. Stage 5: Presenting the AFE-SEIA results

5.1. Prepare the AFE-SEIA report

- Summary
- Aims and scope
- Analysis of impacts
- Comparisons/results
- Assumptions/uncertainties
- Conclusions
- Appendices / supports Data / sources / consultation

5.2. Internal completeness checks

- Effectiveness, efficiency, and coherence
- Quality and completeness

7. Application Considerations and Related Exemplars

7.1. Some related impact assessments approaches from on-going practice

To-date, the range of literature and examples of socio-economic impact assessments in the AFE domain is quite small, and it is a goal of this study to stimulate and support the wider take-up of an evaluation-oriented approach to AFE policy, programme and practice design. Over time, the AFE-INNOVNET programme will see its on-line repository of AFE best practices evolve and grow as LRAs undertake impact assessments, guided by this, and other related tools. In this chapter, several exemplar socio-economic impact assessments are outlined to highlight the relationships across the approaches and the types of data and work involved in undertaking the studies. The examples are:

- Health Economic Assessment Tools (HEAT) for Walking and for Cycling.
- A Framework for Cost-Benefit Analysis of HASI and RRAP-D (Housing adaptation)
- Benchmarking Tele-healthcare in Scotland
- The impact assessment of the EU-proposal on organ donation

While each of the examples addresses very different situations, they illustrate a common methodological approach which is very consistent with the overall SEE-IT framework.

7.1.1. Health Economic Assessment Tools (HEAT) for Walking and for Cycling (WHO Europe)

The HEAT tool (updated 2014) has been designed to apply to a range of situations such as making the business case for investment when planning a new piece of cycling or walking infrastructure, valuing the reduced mortality from past or current levels of cycling or walking, or in providing input into more comprehensive economic appraisal exercises or prospective health impact assessments. The tool is designed to answer the following question:

- *If 'x' people cycle or walk for 'y' minutes on most days, what is the economic value of the health benefits that occur as a result of the reduction in mortality due to their physical activity?*

The tool is designed to be use by transport planners, traffic engineers and special interest groups working on transport, walking, cycling or the environment. Several of the key methodological issues considered in the design of the physical activity assessment tool include:

Walking and cycling data availability and quality: In many cases systematic data may not be available, particularly at the local level, where they are needed to support local transport interventions or infrastructures. Supporting studies will need to cover sufficient periods of time and span sufficient locations to address spatial, seasonal and time-based variations in cycling and walking.

Time needed to reach full levels of walking or cycling: It may take some elapsed time before an infrastructure may affect a behaviour change, and additional time before a behaviour change affects a health outcome (HEAT assumes a period of 5 years or 20% improvement per annum).

Interaction between transport-related physical activity, air pollution and road traffic injuries: Positive gains from physical activity may need to be balanced with possible negative effects from exposure to ambient air pollution, particularly traffic exhausts and/or road traffic injuries. Scenario issues such as *safety in numbers* and *cycle/car route separation* may be important. HEAT acknowledges that in most of Western Europe, the health benefits are likely to greatly out-weight the negative effects.

Mortality or morbidity: Physical activity has beneficial effects on many aspects of morbidity (i.e. CHF, stroke, diabetes, frailty and mental health), the benefits to improved health and well-being often accrue faster than reductions in mortality, and these benefits can be important motivators for behaviour change. However, evidence on morbidity impacts is more limited than on mortality, and introduces greater uncertainty. HEAT adopts an *all-cause mortality* approach which is likely to generate more conservative estimates as it doesn't

account for disease related benefits.

The relationship between physical activity and health: HEAT adopts a strong consensus that physical activity has a continuous dose-response relationship with health outcomes, and while the nature of the curve is uncertain, a linear function is deemed to represent a good fit.

Distributional effects: The HEAT tools consider the distribution of physical activity in the population under consideration. Along with age and gender, it cautions against groups being disproportionately composed of sedentary or very active individuals.

Activity substitution: To-date, much of the literature on disease risk assesses total physical activity in terms such as energy expenditure (kilocalories/week), or time spent active (including a wide range of non-transport physical activity such as leisure, sport and occupational activity). As opposed to new activity behaviour, HEAT needs to accommodate potential substitution of one form of activity for another – i.e. is there an increase in the overall level of activity.

Applying costs – Monetisation: The HEAT development team considered many of the calculation models discussed in section 4 including VOSL, COI, HLY, QALY and DALY. As the target audience is towards transport planning, and as QALY estimations were not currently available, the VOSL (Value of a Statistical Life) is used. HEAT provides a range of country specific VOSLs based on OECD data. The default EU-27 value is €3.387m.

Discounting and Sensitivity Analysis: The HEAT tool recognises health effects may be just one component of a more comprehensive cost-benefit analysis, and that discounting will be necessary to arrive at an overall calculation of net present value. The approach also acknowledges the complexity of the undertaking, involving a number of assumptions and judgements by experts. The uncertainties that are introduced need to be made explicit by assessing the sensitivity of the results to high or low estimated settings for key variables.

The tool focuses solely on the economic value of the health benefit, and is based on the relative risk data from published studies, controlled for leisure-time physical activity, as well as demographic variables (age, gender, smoking, etc.). The input data to the model is as follows:

- Estimated average volume of walking/cycling per user.
 - (duration – e.g. 30 mins time/day),
 - (distance – e.g. 10km cycled/day),
 - (trips - average / person, or total across a population eg 250 cycle trip/year),
 - (steps e.g. 9000 steps/day)
- Mortality rate (may be fine-tuned for younger or older population)
- VSL: Value of a Statistical Life – EU value, but may be adapted to agreed national/regional value.
- The period of time over which the benefit is to be calculated
- A discount rate to calculate net present value.

The model uses several basic variables derived from a meta-analysis of the literature:

- An applicable age range (20-74 for walking and 20-64 for cycling)
- A relative risk (0.89 for walking and 0.90 for cycling)
- A reference (base-line) volume (168 min/week for walking and 100 min/week for cycling)
- A benefit cap (30% - 458 minutes for walking and 45% - 450 minutes for cycling)

As an example, the relative risk (RR) for cycling is 0.9 for regular commuters cycling for 100 min/week for 52 weeks/year (the equivalent of 87 hours/year). In a year, a regular cyclist will receive a protective benefit of 10% (1 minus 0.9). As such they are 10% less likely to die from any cause than non-cyclists. Applying a linear dose-response curve, if the cycling volume is reduced to 29 hours/year (3 times less), the protective benefit will be roughly 3%. If, on the other hand, the volume is increased to 174 hours (twice the reference value), the protective benefit will increase to 20%. The cap is provided to avoid inflated values where effects are seen to taper off. Overall, the calculation progresses as follows:

- Read planned volume of walking/cycling in scenario

- Calculate benefit reduction as a result of walking/cycling = $(1-RR) \times (\text{volume}/\text{reference volume})$
- Apply to population that stands to benefit
- Apply intervention effect - mortality rate / period etc
- Estimate economic saving using VOSL

7.1.2. Cost Benefit Analysis Framework for Home Adaptation (Canada)

The Canadian Mortgage and Housing Corporation (CMHC) operate two housing adaptation programmes, Home Adaptations for Seniors Independence (HASI) and the Residential Rehabilitation Assistance Programme for Persons with Disabilities (RRAP-D). The RRAP-D programme provides financial assistance for the repair, improvement or modification to existing homes to better meet the needs for people with disabilities. Loans range from \$16,000 to \$24,000 (2010 prices). HASI provides low-income persons over 65 with forgivable loans up to \$3,500 to help pay for minor work that contribute to being able to remain in their own homes. Informed by the Benefit-Cost Analysis Guide of the Canadian Treasury Board Secretariat, the CMHC framework addresses the cost-benefit analysis of the two programmes, with a view to including all effects on applicants, their caregivers and their community.

The study identified an impact logic model of 16 programme effects grouped into four categories:

Table 8: Logic model – Cost Benefits Analysis Framework for Home Adaptation

Effects on the local community/economy	Changes in availability of affordable/low income housing Changes in renovation trades (jobs/skills) Changes in the value of the adapted housing unit Changes in community diversity (age / income) Programme costs / admin and net disbursements
Effects on the applicant	Changes to quality of life, satisfaction or longevity Changes in time in home v&s re-location v&s institutionalisation Changes to healthcare costs (public and private) Private time and cash costs for adaptation
Effects on caregiving family and friends	Changes in difficulty or risk to caregivers Changes in caregiver time needed Changes in out-of-pocket costs for caregiving Changes in respite services for caregivers
Effects on professional / commercial services (public/private)	Changes in amount of in-home services Changes in type of in-home services Changes in difficulty/risk to service providers

The costs identified for the two programs were:

- Loan forgiveness (and minor write-offs)
- Administrative costs (administrative burden)
- Time costs to make applications (applicant and/or caregiver)
- Time costs for contracting and supervision (applicant and/or caregiver)
- Time costs for activities of daily living and associated living costs
- Overruns
- Stress and disruption costs (applicant and/or caregiver)
- Possible social isolation
- Financial contribution (if any)
- Time/caregiving costs due to extension of tenure in the present dwelling
- Service fees (changes in type/amount of in-home services)
- Under-utilisation of the housing stock
- Specific or unsightly external adaptations

Benefits/gains were calculated using two methods a) where direct estimates were made of the 16 programme effects above, and b) where indirect (contingent) estimations of benefits were made using a willingness to pay/willingness to accept approach. The study was applied to 15 case-studies with a view to understanding the implications of applying it at a larger scale. One benefit to

which the team paid particular attention was improvement to the quality of life of the applicant, other residents of the dwelling and caregivers. The study considers how QALYs might be applied and describes a mechanism by which a well-informed panel of experts could apply the Delphi Method and benchmarks from health research literature to determine quantitative estimates of quality of life impacts.

The researchers noted several important findings related to the challenge of data gathering when working with HASI/RRAP-D clientele, that the renovations did not materially lessen the amount of care-giving but that it was made easier and safer in many cases. While participants could answer concrete questions about the effects of renovations, they had difficulty when addressing questions seeking a dollar(euro) value for those effects.

7.1.3. Review of evidence base for Telecare – Department of Health UK.

In 2008, the Department of Health in the UK prepared a paper as a tool to support the development of a Telecare Business Case for Change across London. The tool addressed three key areas, changing demographics, cash releasing savings, and the quality of life impact Telecare can make. The tool notes:

‘Around 17.5 million people in the UK live with chronic conditions such as arthritis, asthma, diabetes, heart disease and depression. Prevalence is increasing because survival across a wide spectrum of diseases and traumas has improved due to medical advances. Sixty per cent of GP consultations relate to chronic conditions, which in total account for roughly 70 per cent of all healthcare costs. Chronic disease has an impact not only on health but it also affects social inclusion, employment and mobility, at a huge cost to society. There is therefore a growing concern to manage chronic disease as far as possible in the community and calls for individuals to take more responsibility for their healthcare’ (Wanless, 2004; cf. House of Commons, 2002a).

and

‘There are two main reasons why the current system of care and support, without significant change and new approaches to the delivery of care, is unsustainable in the future: its rising cost and the lack of sufficient human resources to deliver care in the same way as today’.

West Lothian, Scotland is seen as a leading exemplar in the implementation of telecare, and the Bow Group³⁰ study highlighted the follow key lessons from the West Lothian experience:

- Smart technology is effective in a model of care promoting independence, choice and capacity building and in supporting older people and informal carers
- For staff, smart technology can be a catalyst in a cultural change regarding service delivery
- A mainstreaming strategy can offer wider support, reduce the stigma of using services and facilitate additional support if needed
- Costs can be controlled, ensuring effective use of limited budgets alongside improvements in services

The Scottish Telecare Development Programme (TDP) evolved from the West Lothian achievements, and in the 1st year of the programme (2007-2008) reported the following service effectiveness outcomes and savings:

Table 9: Effectiveness outcomes and savings of the Scottish Telecare Development Programme

Outcome	Saving	Value	% Contribution
Hospital bed days saved by facilitating speedier hospital discharge	5,668 days 517 discharges	£1.70m	15.5%
Reduced unplanned admissions i bed days saved	13,870 days 1,220 admissions	£3.34m	30.0%
Care home bed days saved by delaying entry to care/nursing homes	62,993 days 518 admissions	£3.42m	30.7%
Nights of sleep-over care saved	Info. n/a	£0.55m	5.0%
Home check visits saved	Info. n/a	£1.79m	16.1%

Locally identified savings - reduced waking nights	Info. n/a	£0.30m	2.7%
No of TDP funded telecare users	7,902		
Verifiable savings through Scottish TDP		£11.15m	100%

In a similar fashion to the West Lothian experience, the examples throughout the Department of Health tool concentrate on highlighting the service efficiency gains as a result of the Telecare intervention. While they allude to quality of life gains for the service recipients, no effort is made to evaluate the QALY improvement or the monetary value of such individual gains. As such, the economic gain is measured as the direct and in-direct cost difference between a traditional model, and a new, alternative model of care.

7.1.4. An Impact Assessment of the EU proposal on organ donation.

While the impact assessment of an organ donation policy is somewhat peripheral to age-friendly environment policy innovations, the study under consideration represents a novel application of the capability approach to policy making and is therefore closely aligned to the framework proposed in the SEE-IT model. The abstract to the source paper states:

'We show that the Capability Approach can greatly facilitate ex-ante policy evaluation, in particular those that are geared towards multiple goals. It enables a structured discussion on policy benefits, distributional issues, freedom and ethics. We illustrate our general ideas with a real-world application, the impact assessment of an EU-proposal on organ donation.'

The study discusses the rich and multi-dimensional concept of individual well-being inherent in the capability approach and the extent to which it can form a natural starting point for laying down a methodological foundation for policy evaluation at several levels. Based on the work of Sen and Nussbaum, the study team proposed a first layer of fundamental and universal applied basic capabilities involving nine basic dimensions of impact. This top layer is made operational by defining a pragmatic and flexible second layer with specific indicators. The capability approach also naturally supports three additional features: the importance of freedoms, the integration of deontological and ethical considerations, and distributional issues.

The approach is applied to the problem of organ donation where there remains a gap between supply and demand for organs. The shortage has a range of causes including lack of public awareness, lack of confidence in organ quality, lack of donor protection, lack of possibilities for cross-border exchange, and organisational challenges within hospitals. In 2008 the EC proposed an Action Plan to enhance coordination and cooperation between member states, supplemented by a legal instrument, a Directive, containing common quality and safety requirements. Compared to a baseline, the study evaluates two options: the Action Plan (AP) and the Action Plan with Flexible Directive (APFD). The EC identifies various objectives of the policy initiative in terms of enhancing efficiency, quality, safety and the number of successful transplants. But from a broader societal perspective, they are really intermediary, with the ultimate goal being how the proposals influence people's well-being: essentially the basic capabilities. Of these, five are relevant to the policy area: health, safety, standard of living, quality of social interactions and productive and valued activities (employment). In relation to health, organ transplantation can yield QALYs ranging from 5.2 for lung transplants to 11.5 for liver transplants. The monetary value for a QALY can range from €20,000 to €100,000 per QALY. The study notes that QALYs typically take into consideration benefits in terms of standard of living, so this dimension is not considered separately.

Looking to data sources and existing practices/programmes across Europe, and applying the policy across the EU27 member states, the team established an initial cost-benefit addressing:

- Start-up and running costs
- Authorisation/licensing
- National coordinators
- A register

- Administrative Burden
- The QALY gains monetised
- The net gains

Upper and lower estimates were calculated to test the sensitivity to the assumptions. The two scenarios (the Action Plan and the Action Plan with Directive) were then compared in relation to their impacts on the identified relevant capabilities:

- QALYs (Health and standard of living)
- Safety
- Quality of social interaction
- Employment

While the AP scenario showed some improvement effects due to exchanges in best practices and awareness raising, the APFD scenario had stronger effects due to improvements in quality and safety standards. Distributional effects were also evaluated across the different member states, characterised by size and level of development.

It can be seen that the SEE-IT tool provides a flexible framework that can be applied across the range of example impact assessment approaches discussed above and that can accommodate their variability. Over the next period, members of the AFE-INNOVNET thematic network can start to apply the SEE-IT approach to AFE assessments in their own regions and localities. In parallel with this, the AFE-INNOVNET repository, along with other aligned repositories within the EIP-AHA and WHO AFC programmes will need to promote further research to develop a stronger inventory of studies to elaborate coefficients to support the translation of health outcomes into non-market monetised frameworks such as QALYs and DALYs.

7.2. Possible variations between Regional and Local level applications

There is little doubt that undertaking social, economic and environmental impact assessment is a complex task requiring holistic thinking, reliable data, transparent assumptions, collaborative discourse, sound judgement and clear presentation. In designing the SEE-IT framework, the development team have tried to balance a comprehensive approach with simplicity and user-friendliness. This is difficult to achieve in practice, and when in tension, the team have leaned towards completeness, with a view that it will be easier to remove considerations that are not relevant, reducing AFE impact assessments to manageable proportions, rather than to have blind spots where important impacts may be missed due to specific disciplinary, sectorial or agency perspectives.

AFE strategy and policy development and implementation is also happening at a range of different governance and spatial scales i national, regional and local, where there is considerable diversity both horizontally and vertically throughout Europe. As a result, the future application to the SEE-IT tool is likely to vary significantly from place to place.

Figure 16 Possible variability between regional and local application.

	Regional (EU, National, Regional)	Local Local, County, City, Municipal, Neighbourhood	<i>Some possible dimensions of variability when applying SEE-IT at regional and local levels, based on a cursory review of several impact assessments at different scales in non-AFE domains.</i> <i>The extent to which this may be born out in practice within the AFE community will be monitored as members of the AFE-INNOVNET start to use the SEE-IT tool.</i>
The team	Characteristics of territorial teams (leadership)	Characteristics of local teams (leadership)	
Data / sources	Tendency to existing aggregated data sources	Tendency to collect new local area data	
Consultation	Tendency to consultation workshops	Tendency to more participative co-design	
Meetings/iterations	Tendency to more formal processes	Opportunity for more iterations	
Setting objectives	Coherence with related/higher order policies	Addressing local needs (balance priorities)	
Proposals/action areas	More general and specific objectives	More specific, operational objectives	
Impacts	Broad social, economic and environmental	Tendency to social/environmental outcomes	
Distributive effects	All populations across all territories	Assess specific groups in targeted areas	
Monetisation	Broad assumptions, longer timeframes	Details costs, benefit accrual difficult	
Presentation	Directed to partners /stakeholders	Orientation towards public	
Implementation	Resources / but delivery challenges	Implementation capacity but resource bound	
Evaluation & monitoring	E&M culture well institutionalised	Cross-agency/shared responsibilities challenges	

While providing a common approach across regional and local scales, the development team anticipate that the experience of using SEE-IT may vary across some of all of the dimensions in Figures 16 as its practical application grows. Of these, perhaps the most critical will be the composition of the multi-disciplinary assessment team and its adaptive leadership. SEE-IT brings a technical approach that should be repeatable and transferable, particularly as the quantity and quality of exemplars in the related AFE-INNOVNET repository of practice starts to grow. However, much AFE innovation requires local action which is very context dependent, and the extent to which local energies and resources can be aligned towards shared problem-solving, through leadership and cooperation, is likely to be a critical mark of future AFE success.

8. Next Steps

The SEE-IT tool is emerging at a very intensive time in the evolution of the age-friendly movement both in Europe and globally. As a result of its holistic approach, there is a lot of activity on-going in the eco-system in which it is targeted, and to which it must relate. At this stage in its development, there are several key targets on its horizon that will be important to achieve, if the tool is to reach its full potential.

- A. *Build a case-load of AFE Impact Assessment application experience:* It needs to be recognised that the tool has only just been developed and currently lacks a bulwark of application experience and post application feedback improvement. It is now necessary to encourage and support LRAs within the AFE-INNOVNET network to consider and apply the tool to their own AFE policy and programme assessment and development activity.

- B. *SEE-IT alignment with the development of related initiatives:* To an extent, the SEE-IT tool could be viewed as a companion resource to both the work of the WHO in the AFE in Europe project (AFEE) and the on-going development of the Active Ageing Index (AAI) as it develops in the direction of greater regional and local supports. The AFE-INNOVNET, AFEE and AAI teams can now start to explore how best to progress the further development of the tool to maximise these synergies and opportunities.

- C. *Repositories of practice and evidence:* While there is considerable harmonisation activity in relation to the development of on-line repositories of practice within the AFE and EIP-AHA eco-systems, the development of the SEE-IT tool has highlighted the shortage of reference studies that can help inform approaches to quantifying health, well-being and environmental outcomes and translating these gains into comparative monetary terms. Without further development in these areas, it will continue to be difficult to undertake impact assessments without high levels of un-certainty, requiring a subsequent dependency upon specialist subject-matter experts to mitigate risks.

- D. *Accelerating application and co-design partnership:* An aim of the AFE-INNOVNET network, and the work-package within which this SEE-IT tool has been developed, has been to promote an evaluation culture and enhance opportunities for co-design partnership with older people in progressing AFE policies, programmes and projects. As we build upon progress in the stands above, the application of SEE-IT through a future on-line digital social platform (DSP) may provide a mutually reinforcing support infrastructure to broaden take-up, democratise engagement, and simplify inherent complexity.

The SEE-IT protocol is now at a stage where it is ready to be trialled across a range of LRAs throughout Europe to test its applicability, flexibility and responsiveness to AFE policy, programme and project innovation in differing spatial contexts. The SEE-IT development team look forward to further developing and refining the resource as it is informed by feedback from practical application in diverse situations.

9. Appendix A: Impact Reference Sources

9.1. EC Reference set

Set of high level impact areas identified in the EC guide to socio-economic impact assessment.

Social:

- Employment and labour markets
- Standards and rights related to job quality
- Social inclusion & protection of particular groups
- Gender equality, treatment and non-discrimination
- Individuals, private and family life, personal data
- Governance, participation, administration, justice, ethics
- Public health and safety
- Crime, terrorism and security
- Access/effects on social protection, health and education
- Culture & heritage
- Social impacts on 3rd countries

Economic:

- Functioning of the market / competition
- Competitiveness trade / investment flows
- Operating costs and conduct of SME/MME
- Administrative burden on businesses
- Public authorities's budgets / burdens
- Property rights
- Innovation and research
- Consumers and households
- Specific regions and sectors
- 3rd countries/ international relations
- Macro-economic environment

Environment:

- The climate
- Transport and the use of energy
- Air quality
- Bio-diversity, flora, fauna and landscapes
- Water quality and resources
- Soil quality or resources
- Land use
- Renewable on non-renewable resources
- Environmental consequences of firms and consumers

Waste production / generation / recycling
Likelihood/scale of environmental risks
Animal welfare
International environmental impacts

9.2. Capabilities

(Based on paper addressing the application of the Capabilities Approach to EC Policy Impact Assessment) by Canoy, Lerais and Shokkaert. Capabilities levels are closely related to the capabilities proposed by Martha Nussbaum based on the approach developed by Amartya Sen.

C1. Health & longevity

Being able to live to the end of human life of normal length; not dying prematurely; or before one's life is so reduced as to be not worth living; in good health, including reproductive health.

- Life expectancy, Healthy life expect
- Causes of death / Places of death
- Subjective/objective health indicators

C2. Safety

Being able to move freely from place to place; be secure against violent assault including sexual assault and domestic violence; adequate shelter and feeling safe.

- Criminality / safety of social environment
- Abuse
- Protection against risks/disasters
- Feelings of safety

C3. Education

Being able to use the senses; being able to imagine, to think and to reason-and to do these things in a fully human way informed and cultivated by an adequate education; being able to use imagination and thought in connection with experiencing, and producing expressive works and events of one's own choice; forming a conception of the good, to critically reflect about the planning of one's own life

- Basic education - literacy
- Opportunity to go to higher education
- Objective educational outcomes

C4. Standard of living

Material control over one's environment; being able to hold property; having the possibility to seek employment; able to purchase goods and services beyond the basics.

- Private consumption, net income
- Choice/control over where/how one lives
- Mobility (also for disabled/mob-impaired)
- Share in the benefits of scientific progress

C5. Productive & valued activities

Able to find a keep a job at an adequate level; adequate working conditions; good work-life balance, able to develop oneself within one's job, able to develop valued activities outside the job.

- Employment opportunities (also ex. market)

- Absence of discrimination
- Working conditions/quality of work environs.
- Amount of leisure
- Care for others

C6. Quality of social interactions

Being able to live for, and in relation to others, to recognise and show concern for others, to engage in various forms of social interaction; to imagine and have compassion for the situation of others; the capability for justice and friendship. Being able to be treated as a dignified being equal to others. Feelings of social justice.

- Quality of social networks
- Feelings of justice
- Civil participation i voting / volunteering
- Develop moral outlook

C7. Environment

Being able to live with concern for, and in relation to animals, plants, and the world of nature. Being able to contribute to sustainable world.

- Quality of local environment i air/water
- Quality of global environment i climate
- Control over one's environment

C8. Culture & entertainment

Being able to enjoy oneself, to play, to enjoy and engage in recreational, sporting and cultural activities.

- Quality of cultural/heritage 'supply'
- Opportunities to participate (demand)

C9. Basic rights

Having freedom of speech and religion, absence of discrimination, freedom to move..

- Political rights (freedom of speech)
- Freedom of religion and expression
- Freedom about one's own body
- Freedom to move

9.3. Sustainable Development

Economic prosperity

- Economic development
- Innovation, competitiveness eco-efficiency
- Employment
- (real GDP/capita)

Sustainable consumption/production

- Resource use and waste
- Consumption patterns

- Production patterns
- (resource productivity)

Social inclusion

- Monetary poverty and living conditions
- Access to labour markets
- Education
- (risk of poverty or social exclusion)

Demographic changes

- Demography
- Old-age income adequacy
- Public finance sustainability
- (Employment rate of older workers)

Public health

- Health and health inequalities
- Determinants of health
- (Life expectancy and healthy life years)

Climate change and energy

- Climate change
- Energy
- (Greenhouse gas emissions)
- (Consumption of renewables)

Sustainable transport

- Transport and mobility
- Transport impacts
- Transport energy consumption

Natural Resources

- Bio-diversity
- Freshwater resources
- Marine eco-systems
- Land use

Global partnership

- Globalisation of trade
- Financing for sustainable development
- Global resource management
- Official development assistance

Good Governance

- Policy coherence and effectiveness
- Openness and participation

- Economic instruments

9.4. Fundamental Rights

Title 1. Dignity

- Human dignity
- Right to life
- Right to the integrity of the person
- Prohibition of torture and inhuman treatment
- Prohibition of slavery and forced labour

Title 2. Freedoms

- Right to liberty and security
- Respect for private and family life
- Protection of personal data
- Right to marry and right to found a family
- Freedom of thought, conscience and religion
- Freedom of expression and information
- Freedom of assembly and of association
- Freedom of the arts and sciences
- Right to education
- Free to choose an occupation/right to work
- Freedom to conduct business
- Right to property
- Right to asylum
- Protection in removal, expulsion / extradition

Title 3. Equality

- Equality before the law
- Non-discrimination
- Cultural, religious and linguistic diversity
- Equality between women and men
- The rights of the child
- The rights of older people
- Integration of persons with disabilities

Title 4. Solidarity

- Workers' rights to information
- Right of collective bargaining and action
- Right of access to placement services
- Protection in the event of unjust dismissal
- Fair and just working conditions
- Prohibition of child labour and protecting young at work

- Family and professional life
- Social security and social assistance
- Health care
- Access to services of general econ. Interest
- Environmental protection

Title 5. Citizens' rights

- Right to vote and stand as candidate in the European Parliament
- Right to vote and stand as candidate in local elections
- Right to good administration
- European ombudsman
- Right to petition
- Freedom of movement and of residence
- Diplomatic and consular protection

Title 6. Justice

- Right to an effective remedy / fair trial
- Presumption of innocence/defence
- Principles of legality/proportionality
- Right not to be tried twice / same offence

10. Appendix B. Data Sources and Data Gathering

10.1. International sources of data

World	Health	Survey:
http://apps.who.int/healthinfo/systems/surveydata/index.php/catalog/whs/about		
Global Health Observatory: http://www.who.int/gho/en/		
Cause-specific		mortality:
http://www.who.int/healthinfo/global_burden_disease/estimates/en/index1.html		
Projections of mortality and causes of death		2015-2030:
http://www.who.int/healthinfo/global_burden_disease/projections/en/		
WHO mortality database: http://apps.who.int/healthinfo/statistics/mortality/whodpms/		
Eurostat database: http://ec.europa.eu/eurostat/data/database		
Regional health observatory: http://rho.emro.who.int/rhodata/		
Eurostat Statistical Atlas: http://ec.europa.eu/eurostat/statistical-atlas/gis/viewer/		
Eurostat regional yearbook 2014: http://ec.europa.eu/eurostat/web/products-statistical-books/-/KS-HA-14-001		
Eurostat regional	Statistic	Illustrated:
http://ec.europa.eu/eurostat/cache/RSI/#?vis=nuts2.labourmarket		
OECD Regional Database: http://stats.oecd.org/Index.aspx?datasetcode=REG_DEMO_TL2		
OECD Regional Well-being: http://www.oecdregionalwellbeing.org/		
OECD "How's Life in Your Region?" http://www.oecd.org/gov/how-s-life-in-your-region-9789264217416-en.htm		

10.2. National Agencies

Germany: <https://www.destatis.de/EN/Homepage.html>

Austria: http://www.statistik.at/web_en/

Belgium: <http://statbel.fgov.be/en/statistics/figures/>

Spain: <http://www.ine.es/>

Cyprus: http://www.mof.gov.cy/mof/cystat/statistics.nsf/index_en/index_en?OpenDocument

Croatia: http://www.dzs.hr/default_e.htm

Denmark: <http://www.dst.dk/en.aspx>

Finland: http://www.stat.fi/index_en.html

France: <http://www.insee.fr/en/>

Greece: <http://www.statistics.gr/portal/page/portal/ESYE>

Ireland: <http://www.cso.ie/en/index.html>

Portugal: http://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_main

UK: <http://www.ons.gov.uk/ons/index.html>

Sweden: http://www.scb.se/en_/About-us/Official-Statistics-of-Sweden/

10.3. Community Audit Models

Document	from	the	Scottish	Government:
http://www.scotland.gov.uk/Topics/People/engage/HowToGuide/CommunityAuditing				

An overview of community audits: http://www.doleta.gov/layoff/pdf/Conducting_a_Community_Audit-Overview.pdf

Conducting a community audit: http://www.doleta.gov/layoff/pdf/conducting_a_community_audit.pdf

10.4 Asset Mapping Models / tools

National tools to measure the burden of disease study: http://www.who.int/healthinfo/global_burden_disease/tools_national/en/

Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies: <http://www.who.int/healthinfo/systems/monitoring/en/>

Indicator and Measurement Registry: http://apps.who.int/gho/indicatorregistry/App_Main/browse_indicators.aspx

10.5 Primary resources:

Self-perceived health: SF-12, SF-36, SF-12³¹

Quality of life: WHOQOL

Physical exercise: AAI [(i)How often do you exercise or play sport?, And how often do you engage in a physical activity outside sport such as cycling or walking from a place to another, dancing, gardening?]³²

Mental wellbeing: AAI [I have felt cheerful and in good spirits/ I have felt calm and relaxed/ I have felt active and relaxed/ I woke up feeling fresh and rested/ My daily life has been filled with things that interested me - Responses categories are: (1) all of the time/ (2) most of the time/ (3) more than a half of the time/ (4) less than a half of the time/ (5) some of the time/ (6) at no time]

Social connectedness: AAI [How often socially meet with friends, relatives or colleagues? - Responses categories are: (1) never/ (2) less than once a month/ (3) once a month/ (4) several times a month/ (5) once a week/ (6) several times a week / (7) every day] (Zaidi et al., 2013)

Independent living: Lawton and Brody index³³

Caregivers burden: Caregiver strain index³⁴

11. Appendix C. Abstract Scenario Concepts for Consideration

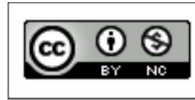
There are many sources and techniques to generate ideas that can be considered when designing policies, plans, interventions and projects that can form creative responses to the objectives detailed during the SEE-IT process. When considering options and scenarios, the following list of abstract concepts are often found at the heart of alternative solutions to environmental problems. They can be explored dynamically at the early stages of scenario development.³⁵ They may affect different groups in different ways.

- Priority - importance / values
- Hierarchy ĩ order, organisation, authority (matrix / network)
- Character ĩ quality / ambience
- Density ĩ space use/levels of interaction ĩ low, medium, high
- Service Groupings ĩ centralised / de-centralised
- Activities Groupings ĩ integrated / compartmentalised
- People Groupings ĩ individual, small, large groups
- Home base - territoriality, address, contact (living, work)
- Relationships ĩ functional affinities
- Proximity ĩ closeness in time and/or space
- Communications ĩ networks / patterns of connection
- Neighbours / neighbourhood ĩ (inter) - independent
- Accessibility ĩ mobility, sensory, financial
- Flows (separated, mixed, sequential)
- Orientation ĩ points of reference
- Flexibility ĩ expansion, conversion, versatility
- Tolerance ĩ tailored or loose fit
- Safety ĩ activity / movement / hazards / fire / health / food
- Security ĩ personal and property protection / threat / abuse
- Energy conservation ĩ zoning / heat flows / sources
- Environment ĩ thermal, ventilation, light, sound, water, waste
- Phasing ĩ stages / fixed v organic development

12. References

- ¹ European Commission. (2010). *Europe 2020 A European strategy for smart, sustainable and inclusive growth*.
- ² European Commission. (2011). *Strategic implementation plan for the European Innovation Partnership on active and healthy ageing. Operational Plan*. Brussels: European Commission.
- ³ European Commission. (2012). *Action Plan on Innovation for Age - friendly buildings, cities and environments*. Brussels: European Commission.
- ⁴ WHO. (2007). *Global age-friendly cities: a guide*. Geneva: WHO.
- ⁵ WHO. (2013). *WHO European Healthy Cities Network. Phase VI (2014 - 2018) of the WHO European Healthy Cities Network: goals and requirements*. Copenhagen: WHO.
- ⁶ WHO. (2012). *Strategy and action plan for healthy ageing in Europe 2012 - 2020*. Malta: WHO.
- ⁷ WHO. (2015). *Age-friendly environments in Europe (AFEE)*. Retrieved February 2015, from <http://www.euro.who.int/en/health-topics/Life-stages/healthy-ageing/activities/age-friendly-environments-in-europe-afee>
- ⁸ AFE-INNOVNET. (2014). *AFE-INNOVNET. Towards and Age-friendly Europe*. Recuperado el 2015, de <http://www.afeinnovnet.eu/>
- ⁹ United Nations. (2002). *Political declaration and Madrid international Plan of action on ageing*. New York: United Nations.
- ¹⁰ United Nations. (2014). *The road to dignity by 2030: Ending poverty, transforming all lives and protecting the planet. Synthesis report of the Secretary-General on the Post 2015 Agenda*. New York: United Nations.
- ¹¹ European Commission. (2014). *URBACT Programme 2014-2020*. Retrieved February 2015, from Connecting cities building successes: <http://urbact.eu/en/about-urbact/urbact-2014-2020/#overview>
- ¹² European Commission. (2015). *Smart cities and communities*. Retrieved February 2015, from The European Innovation Partnership on Smart Cities and Communities: <http://ec.europa.eu/eip/smartcities/>
- ¹³ Conference of NGO's of the Council of Europe. (2008). *The Charter of Fundamental rights of the European Union. Reading Guide*. Strasbourg: Council of Europe.
- ¹⁴ European Commission. (2009). *Imapct assessment guidelines*. European Commission.
- ¹⁵ Environmental Protection Agency - EPA. (2002). *Social, cultural, economic impact assessments: a literature review*. United States: Galisteo Consulting Group.
- ¹⁶ European Commission. (2005). *REACH . further work on impact assessment. A case study approach. Final Report*. Amsterdam: KPMG Sustainability.
- ¹⁷ Fixen D.L. & Blase K.A. Implementation: Science, Practice, and Policy. National Implementation Research Network. Frank Porter Graham Child Development Institute. University North Carolina at Chapel Hill.
- ¹⁸ Nussbaum, M. (2011). *Creating capabilities: the human development approach*. Cambridge MA: Harvard University Press
- ¹⁹ T Murthy, R., Raju, K., & Kamath, A. (2002). *Towards Women's Empowerment and Poverty Reduction: Lessons from the participatory impact assessment of South Asian Poverty Alleviation programme in Andhra Pradesh, India*. Retrieved 2015, from The World Bank: http://siteresources.worldbank.org/INTEMPowerment/Resources/13338_murthy_et_al.pdf
- ²⁰ McLeroy, K., Norton, B., Kegler, M.C., Burdine J.N., Sumaya, C.V. (2003). Community Based Interventions. Editorial. American Journal of Public Health, 93(4): 529-533.
- ²¹ Kihi, M., Brennan, D., Gabhawala, N., List, J., & Mittal, P. (2005). *Livable communities: An evaluation guide*. Washington: AARP Public Policy Institute.
- ²² Handler, S. (2014). *A research and evaluation framework for Age-friendly cities*. Manchester: UK Urban Ageing Consortium.
- ²³ Zaidi, A., Gasior, K., Hofmarcher, M., Leikes, O., Marin, B., Rodrigues, R., et al. (2013). *Active Ageing Index 2012. Concept, methodology and final results*. Vienna: European Centre Vienna.
- ²⁴ HelpAge International. (2014). *Global AgeWatch Index 2014. Insight report*. HelpAge International.

- ²⁵ MacLeod S., Davidson B., Ricketts, B., and Wilson C. (2005). A Framework for Cost-Benefit Analysis of HASI and PRAP-D. Research Highlight. Socio-economic series 05-038.
- ²⁶ United Nations (2014). The Road to Dignity by 2030: Ending Poverty, Transforming All Lives and Protecting the Planet. Synthesis Report of the Secretary-General. On the post-2015 agenda. New York
- ²⁷ European Commission. (2009). *Part III: Annexes to impact assessment guidelines*. European Commission.
- ²⁸ Donaldson, C., Baker, R., Mason, H., Jones-Lee, M., Lancsar, E., Wildman, J., et al. (2011). The social value of a QALY: raising the bar or barring the raise? *BMC Health Services Research* , 11 (8).
- ²⁹ McHugh, N., Baker, R., Mason, H., Williamson, L., Van Exel, J., Deogaonkar, R., et al. (2014). *Health Economics Working Paper Series. Extending life for people with a terminal illness: a moral right or an expensive death? Exploring societal perspectives*. Glasgow: Yunus Centre for Social Business and Health.
- ³⁰ Yeandle S (2009) "Telecare: a crucial investment for our social care system" *Homecarer*. : 6-7.
- ³¹ Ware, J.E.; Kosinski, M.; Turner-Bowker, D.; Sundaram, M.; Gandek, B. y Maruish, M.E. (2009). SF 12v2 Health Survey: Administration guide for clinical trial investigators. Lincoln, RI: Quality Metric Incorporated.
- ³² Zaidi, A., Gasior, K., Hofmarcher, M.M., Lelkes, O., Marin, B., Rodrigues, R., Schmidt, A., Vanhuysse, P., and Zolyomi, E. (2013). Active Ageing Index 2012. Concept, Methodology and Final Results. Project "Active Ageing Index (AAI)" UNECE Grant No: ECE/GC/2012/003. European Centre Vienna.
- ³³ Lawton M.P. and Brody, E.M. (1969). Assessment of older people: self-maintaining and instrumental activities of daily living. *Gerontologist*, 9: 179-186.
- ³⁴ Robinson, B. (1983). Validation of a Caregiver Strain Index. *J Gerontol* , 38 (3), 344-348.
- ³⁵ Pena, W., & Parshall, S. (2012). *Problem Seeking: An Architectural Programming Primer*. New Jersey: John Wiley & Sons.



This document is protected by a **Creative Commons Attribution-NonCommercial 4.0 International Public License**

Credit: Thematic Network AFE INNOVNET – EU Project funded by the CIP PSP ICT

You are free to:

- **Share:** copy and redistribute the material in any medium or format
- **Adapt:** remix, transform, and build upon the material

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

- **Attribution:** You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.
- **Non Commercial:** You may not use the material for commercial purposes.

No additional restrictions: You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.

Notices:

- You do not have to comply with the license for elements of the material in the public domain or where your use is permitted by an applicable exception or limitation.
- No warranties are given. The license may not give you all of the permissions necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material.