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Smart and inclusive environments for all – SHAFE explained

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Abstract. The meaning and notion of Smart Healthy Age-Friendly Environments (SHAFE) as a holistic approach that promotes the alignment of policies and strategies across domains is a unique roadmap for the implementation of inclusive communities in and across Europe, improving and supporting independent life throughout its entire course, regardless of age, gender, disabilities, cultural differences and personal choices. When we acknowledge the serious challenges especially those related to demographic change and the COVID-19 pandemic, it is not possible anymore to still work in silos or to keep positions for individual interest. Before any other role, we all are citizens and we have a duty as researchers, academics, policy makers, practitioners, industry and business to work together for a better world. In this paper, the SHAFE concept is explained and an overview of running initiatives is presented. Also the alignment within current policy initiatives of the European Commission is explored and the recognition of SHAFE implemented through NET4Age-Friendly addressed.

Keywords. SHAFE, inclusive environments, healthcare, built environments, digital inclusion, age-friendly

Introduction

The journey of Smart Healthy Age-Friendly Environments (SHAFE) started with the naivest enthusiasm, as all small things start. Thanks to so many committed organizations and individuals in Europe, a very small conviction and dream has grown into a solid movement. And even into a new word: SHAFE. This only happens when ideas make sense and come in the right historic time. The meaning and notion of SHAFE as a holistic approach that promotes the alignment of policies and strategies across sectors is a unique roadmap for the implementation in and across Europe.

This very small conviction and dream that innovation can improve health equity, caring communities and foster sustainable development started in the European Innovation Partnership on Active and Healthy Ageing and grew in alignment with EU policies and coherent development towards Horizon Europe. Smart, adaptable and inclusive solutions can help improve and support independent life throughout the course of life, regardless of age, gender, disabilities, cultural differences and personal choices.

A holistic approach that optimizes social and physical environments, supported by digital tools and services, allows to provide better health and social care, promoting not only independent living, but also equity and active participation in society. This approach follows the United Nations' line-up, with the Sustainable Development Goals (in particular Objectives 3 and 11), stating that sustainable environments for all ages represent the basis for ensuring a better future for the entire population and addressing most of the growing issues of the ageing population [1].

The challenges of different sectors, such as ICT, the building industry and urban planning, as well as the ones concerning health and social care, either at the citizen level as well as those of citizens and their communities are interlinked. The paradigmatic mind-shift required to respond to these challenges can take advantage of the awareness and support for the creation and implementation of smart, healthy and inclusive environments for present and future generations that enable them to learn, grow, work, socialise and enjoy a healthy life, benefiting from the use of digital innovations, accessibility solutions and adaptable support models in the European context.

The community is the physical, social and cultural ecosystem closest to people, built on relationships of trust, sharing, solidarity and intimacy, where people find social, cultural and identity references, socialise and live their daily lives. The objective conditions of the environment (pollution, accessibility, mobility, safety, comfort) affect the quality of life and wellbeing of citizens, particularly in the context of climate change and thus affect the whole community circle.

Thus, we foster actions that promote partnerships between technological and digital innovation, architecture, urban planning, social studies and health sciences to design and simulate communities of belonging that leverage on the potential of each sector to promote the existential dignity of all persons, regardless of their age, gender, health, social, educational, economic, cultural and identity conditions, as well as the levels of development of the region where they live.

This is SHAFE.

This new concept was created since 2017, based on the desire to implement Smart Healthy Age-Friendly Environments (SHAFE) across Europe, fostering happier and healthier people in all communities. This idea took shape and became a solid movement.

SHAFE began as a Thematic Network [2], approved by the European Commission, to draw policy makers, organisations and citizens' attention to the need of better alignment between health, social care, built environments and ICT, both in policy and funding and delivered a Joint Statement and a Framing Paper in December 2018 to the European Commission and Member States.

After this, SHAFE evolved to a European Stakeholders Network, which currently has over 170 partner organisations and is coordinated by Carina Dantas and Willeke van Staalduinen.

It is working to build capacity and achieve better COOPERATION and IMPLEMENTATION, as the major challenges for the next period, as stated in the Position Paper released in 2020, with recommendations that aim to promote healthier environments for

all citizens and make environments accessible, sustainable and reachable for all, with the support of ICT.

The pandemic has uncovered the major opportunities and benefits of turning digital. However, single digital solutions are not the panacea to all the societal challenges. Citizens across different age groups also need personal human contact; they need to meet, to talk to each other, to hug and to love. Digitalization cannot replace this human need but can be a powerful vehicle to support people. The scenario during 2021 is an opportunity for the digital revolution to be well thought and implemented, if all the adequate challenges are well considered and tackled.

The Smart Healthy Age-Friendly Environments Network thus focus on the narrative, debate, disclosure and knowledge translation of solutions to optimize the physical and social environments of individuals in a concerted manner.

From the early concept, several projects have been implementing SHAFE in the field: NET4Age-Friendly [3] is one of the most recent.

1. Working on the realisation of SHAFE

Since the launch of SHAFE as thematic network in 2018, several initiatives and projects took place, namely co-funded projects developed by Action members.

1.1.1. COST Action 19136 International Interdisciplinary Network on Smart Healthy Age-Friendly Environments (NET4Age-Friendly)

The main aim of NET4Age-Friendly is to establish an international and interdisciplinary network of researchers from all sectors to foster awareness, and to support the creation and implementation of smart, healthy indoor and outdoor environments for present and future generations.

NET4Age-Friendly further aims to overcome fragmentation and critical gaps at both conceptual and pragmatic innovation level on responsive, age-friendly and sustainable environments in order to address the research-policy future requirements of Europe.

The main approach of NET4Age-Friendly is the establishment of new local or regional ecosystems or by expanding existing ones in each country involved, according to the quadruple helix of innovation [4],[5], to work on health and wellbeing in an age-friendly digital world.

The ecosystems will consist of citizens, public authorities, businesses/NGOs and research and will be supported by four thematic Working Groups:

- User-centred inclusive design in age-friendly environments and communities
- Integrated health and well-being pathways
- Digital solutions and large-scale sustainable implementation
- Policy development, funding forecast and cost-benefit evaluations

The outcomes of the five thematic Working Groups will be obtained in the work of a 5th one, creating a synergised output - the Reference Framework.

NET4Age-Friendly will be used as a connector for involving and hosting regular themed sessions with local and regional stakeholders and users' representatives from various countries and backgrounds, as well as for fostering the knowledge creation and sharing among researchers.

Besides the COST Action, other projects related to SHAFE were approved.

1.2. Erasmus+ projects

Erasmus+ is the EU's programme to support education, training, youth, and sport in Europe in multinational consortia [6]. These areas are key to support citizens' personal and professional

development. High quality, inclusive education and training, as well as informal and non-formal learning, ultimately equip participants of all ages with the qualifications and skills needed for their meaningful participation in a democratic society, intercultural understanding, and successful transition in the labour market. Within the frame of Erasmus+, training and education is developed to empower facilitators to implement smart healthy inclusive environments in their community. Projects such as “Hands-on SHAFE”, “Educational game BIG”, “Bridge the Gap!”, “DESIGN for all methods to cREate age-friendly housing” (DESIRE) and STEP_UP: Stop Epidemic Growth Through Learning, supported by the Erasmus+ programme, include adult learners in the field of inclusive environments and solutions.

“Hands-on SHAFE” [7] aims to deliver online training packages for informal learning experiences and hands-on tools to improve the skills of people of all ages and especially seeks to enable persons with lower skills or qualifications to choose and implement SHAFE in their own homes or neighbourhoods. In this way, the project fosters and promotes social inclusion for people of all ages and genders, including those ones with cognitive or physical impairments or disabilities. It also aims to enable citizens to become innovators and trailblazers in their own neighbourhoods or to become entrepreneurs in the field of SHAFE services and products.

The educational game “Building Inclusive environments for all Generations” (BIG) [8] elaborates further on the training about SHAFE by developing an online game. The player can meet and solve the challenges of characters during the play, such as inaccessible housing for a wheelchair, loading goods in a car while taking care of a child, or visiting a restaurant with impaired sight. The project will also develop a workshop methodology to use the game in joint training settings.

The “Bridge the Gap!” project [9] focuses on the training of older people to create and improve their own living environments to support independent living and participation in society. On the one hand, the training offers traditional means to advocate their interests. On the other hand, it will mainly focus on the capacity building of older adults to use digital skills. Such digital actions include accessing social media, building online advocacy accounts, or sharing photos to express to stakeholders and decision-makers specific local needs to improve the local living environment.

The DESIRE project [10] is developed by an international partnership involving four countries working on a design for all (D4ALL) concept applied to age-friendly housing. DESIRE aims to provide professionals in the building industry as well as furniture and home furnishings sector with the tools and skills to apply D4ALL methods as an integral part of the design process, with the aim to create or adapt age-friendly housing as a solution for the well-being, comfort and autonomy of older adults or people in situation of dependency at home. The project will develop an innovative training course on D4ALL to meet the emotional, cognitive, and social needs of older adults while driving new opportunities in the habitat sector, fostering interactions and knowledge exchange in the design process between cross-cutting fields such as science, social sciences, and arts.

STEP_UP [11] intends to develop a training tool for social care and community stakeholders, where they are introduced to the impact of behaviours in the spread of a pandemic/emergency situation and trained, through gaming strategies, to prevent and cope. The STEP_UP game and toolkit will enable learners to build on competences and increase resilience to improve their communities in crisis situations. Professionals in municipalities and welfare organizations as well as social and health care providers, mainly those in auxiliary positions and lower skills, will be encouraged to better understand where to look for reliable information, to learn how to deal with pandemic contexts and to better empathize with policy decisions. Volunteers in

associations, initiatives, and other community organisations are provided with options and strategies to contribute for public awareness.

1.3. Interreg Europe

Within the Interreg Europe programme of funding [12], another SHAFE initiative was granted: the EU_SHAFE project (2019-2024) [13]. The EU_SHAFE project aims to improve policies and practices in 6 European regions by developing a comprehensive approach to Smart Healthy Age-Friendly Environments (SHAFE). Through a 'learning by sharing' methodology, this robust multi-disciplinary and intersectoral consortium is building a four-helix European community to exchange experiences and practices to improve multilevel policy instruments. The consortium creates a cooperative, inclusive ecosystem between public authorities, European networks and user's associations, embedding their experience and skills with research & design knowledge from academia and SMEs for the growth of community-based services and "ageing at home" around Europe. EU_SHAFE invests in policy design and adaptation of regional instruments derived from ETCF (R&I priorities) and ESF (Social Inclusion), through the creation of a large Euro-local network of stakeholders that will work together in ecosystems towards a common model – a White Paper on SHAFE. Select and re-design concrete and scalable interventions in the area of social innovation for SHAFE, that may be implemented as realistic innovative models for the future, is a major goal.

2. Methods and discussion

As referred in the SHAFE Position Paper released in 2020 [14], it is important to acknowledge the serious societal challenges in current times, especially those related to demographic change and the COVID-19 pandemic, implying it is not possible anymore to work in silos or to keep positions for individual interest. Before any other role, we all are citizens and we have a duty as researchers, academics, policy makers, practitioners, industry and business to work together in a bid for a better world.

SHAFE will aim to continue providing its contributions, most of all to maintain and continue to collate and collaborate the innovative contributions from its partners with the view of a shared vision: to implement Smart Healthy Age-Friendly Environments around Europe and promote happier and healthier people in all communities.

2.1. Areas of focus

1. CITIZENS

- To be digitally skilled
- To be aware and understand the benefits and challenges on the sharing of their data
- To be engaged in healthier lifestyles (including through increased health literacy)
- To participate and engage (in the democratic life)
- To maintain or improve as much as possible their social networks and relationships

2. ENVIRONMENTS

- To retrofit and adapt the housing stock
- To foster accessible and adapted public spaces and transport
- To implement climate neutral solutions
- To promote health & wellbeing in the workplace

3. HEALTH AND CARE

- To promote reliable, safe and accessible big data

- To implement robust and interoperable digital infrastructures
- To foster integrated, personalized, affordable and person-centered solutions (new pathways)
- To implement guidelines and long-term funding solutions/business models
- To train care professionals on digital skills.

By 2022, the Stakeholders Network on SHAFE aims to achieve mainly COORDINATION and IMPLEMENTATION of SHAFE solutions including dealing with public health emergencies such as pandemic outbreaks, specifically the following higher-level goals:

- Promote training of formal and informal caregivers (communities) on SHAFE, creating a toolkit and implementing training actions in multiple countries (building on the Erasmus+ project hands-on-SHAFE main outputs);
- Raise awareness on the need to enhance prevention, social care, building infrastructure and environment conditions in order to move Health and Wellbeing provision to the home and towards community and personalized prevention — to a Health and Wellbeing value-based approach (through COST Action NET4Age-Friendly);
- Jointly develop sustainable business cases with insurance companies and investors and support public authorities and health and social care providers on implementing SHAFE, especially regarding building or restructuring the built environment to include ICT solutions with integrated health and care provision and safe human interrelations, to foster future investments on smart healthy environments;
- Organise education and raise awareness of urban planners, architects and ICT-developers in general to focus on PEOPLE and PLACES and focus research on lifelong learning, evidence-based design, smart healthy environments and empowerment, and social distancing (with SHAFE and EIPonAHA stakeholders).

2.2. United Nations Sustainability Development Goals

SHAFE / NET4Age-Friendly recognised by the United Nations as a good practice

The United Nations launched an Open call for good practices, success stories and lessons learned by all stakeholders in the implementation of the Sustainable Development Goals and the 2030 Agenda.

More than 700 submissions were reviewed by a team of experts from United Nations entities and “SHAFE implemented through NET4Age-Friendly” [15] was one of the recognized good practices from all over the world.

SHAFE and NET4Age-Friendly are international networks that engage all levels of society with the intrinsic aim of promoting the development of local, regional or national inclusive ecosystems (composed of a quadruple helix of citizens, public authorities, companies, and researchers) which interact and coordinate at the international level. This strategy allows them to literally become viral, by exponentially increasing the networking, the dissemination and knowledge exchange among scientists, business, public, local administrations, policy makers, professionals, and citizens. This brings an inspiring and fruitful new way of cooperation that fosters knowledge and promote grassroots implementation at a broader scale, combining top-down and bottom-up perspectives.

The meaning and notion of SHAFE as a holistic approach that promotes the alignment of policies and strategies is a unique roadmap for the implementation in and across Europe. When we acknowledge the serious challenges, especially those related to demographic change and the COVID-19 pandemic, it is not possible anymore to still work in silos or to keep positions for individual interest. Before any other role, we all are citizens and we have a duty as to work

together in a bid for a better world. COVID has not directly impacted the implementation of SHAFE, *au contraire*, the inclusive environments proposed by NET4Age-Friendly would be adequate solutions to minimise the effects of the pandemic and relieve the pressure on health and care systems, as SHAFE's ambitious goals include strengthening evidence-based policy making.

2.3. EU policy on SHAFE

The demographic trends that have been ongoing worldwide are deeply influencing the organization and delivery of social and health services, in the effort of addressing the growing complexity of citizens' needs and to further complicate the challenge, the current Covid-19 pandemic has been increasing the risk of exclusion, poverty, inequalities in the access to health, social care, other public services and, moreover, increasing the digital divide.

Europe has been making an unprecedented effort for a concerted action towards a more Equal EU and this implies supporting collaborations to develop and implement a shared vision to strengthen EU research and innovation, and bringing together all the relevant actors at European, national and regional levels, across different policy areas to handle these societal challenges and involve all levels of the innovation chain.

The life-course approach that is at the heart of SHAFE is now embedded in the European Green Paper on Ageing [16], that focuses on a life-cycle approach and on individual and societal implications of ageing. Innovations are a key enabler for accessibility, sustainability, integration and equity of social and health services: hence the need to ensure adequate, multidisciplinary approaches to education and learning of the professional workforce across sectors, and life-long learning to foster intergenerational solidarity and fairness between both young and old.

The same approach is reflected in the EU4Health 2021-2027 strategy [17]: our vision for a healthier Union, the response to improve the resilience of European Health systems. Such program coherently supports international cooperation through its 10 objectives, that focus on disease prevention and health promotion, preparedness for cross border health threats, strengthen health data and accelerate the digital transformation. New knowledge and evidences will be generated, as a basis for the development of informed political and strategic interventions translating the good practices and tools into services for the citizens.

A life course, proactive approach, overcomes the boundaries of the health sector and spans in the environment where we live and thrive: hence the pillars of the European planning for 2021-2027, focusing on the "twin transitions": green and digital, where advances in robotics and smart tech are going to speed up the circular economy and implement the European Green Deal from recovery to social innovation.

3. Conclusions

From the work developed on SHAFE in partner countries a shattered picture is still existing in Europe. Many countries work on topics of independent living, healthy ageing, digital transformation and social participation. Income support to older adults and economy opportunities are additional findings. Holistic approaches as the SHAFE concept (or the WHO AFE concept) stands for, are not very often found.

Thus, the following actions are proposed to SHAFE and NET4Age-Friendly members:

- Partners invest in the creation of networks with stakeholders from the quadruple helix of innovation and maintain ecosystems. Being a member of NET4Age-Friendly also includes the building of networks and ecosystems at local, regional or national level. We will continue to support peer-to-peer knowledge and learning exchange, to build up networks with citizens, housing companies, urban planning, health and social care.

- Create small groups of buddy or mentor systems for creating ecosystems (e.g. also twinning). Deliver support to partners to build and maintain local, regional or national ecosystems or networks and jointly explore opportunities from holistic approaches, with the support of training actions.
- Business modelling to identify opportunities on SHAFE is essential, outlining different types of models according to the type of support identified. Webinars about the topic and training schools on this theme shall be developed.
- Funding opportunities will be further sustained and need to be further explored to achieve effective implementation throughout Europe.

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