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“CASI policy directions for sustainable innovation, while not being in contradiction with state-of-the-art priorities found in publicly-led initiatives, go beyond these. The main value-added of CASI’s contribution can be summarised along three lines:

- First, the broadening of the now common concept of “quadruple helix” integrating civil society as a fourth pillar in stakeholders’ platforms, viewing these not only as users and target groups, but as actors and shapers of new developments towards a more sustainable society.*
- Second, the enlargement of the existing ideas around “integrated policies” towards domains that may seem more far away from the traditional domains concerned by sustainable innovation, but are nevertheless crucial for this transition. Prominent among these are the fields of education/training and agro-food.*
- Third, the broadening of the innovation concept to give a more prominent place to the concepts of social innovation and public sector innovation, seen as integral part of the sustainability challenge.”*

Claire Nauwelaers, Advisor to the CASI Project

Executive summary

This report provides a summary of all the activities carried out within the CASI Project (Public Participation in the Development of a Common Framework for Assessment and Management of Sustainable Innovation). CASI was a 42-month coordination and support action (CSA) financed by Framework Programme 7. It was conceived as a response to Societal Challenge 5 “Climate action, environment, resource efficiency and raw materials” of Horizon 2020, and thus strived to provide useful insights for the successor of FP7 – Horizon 2020, and represented an EU-wide cross-sectoral partnership on sustainable innovation-related challenges. CASI considered not only the impacts of social and technological sustainable innovations, but also the types of actors involved and their inherent interests. It thus effectively integrated the perspectives of government, business, civil society, and research and education actors.

CASI’s main objective was to develop a methodological framework for assessing sustainable innovation and managing multi-disciplinary solutions through public engagement in the RTDI system by ensuring the commitment of a broad spectrum of societal stakeholders into its implementation, including industry, policy-makers, research organisations and academia, civil society organisations and the general public. It was designed as a **Mutual Mobilisation and Learning Action Plan (MMLAP)** – a complex project, featuring a large number of interdependent tasks and seeking to involve societal actors into joint activities so as to encourage co-creation and share learning centred around the notion of sustainable innovation. It generated a number of lessons and developed a set of policy recommendations.

CASI comprised 11 work packages and more than 40 tasks. It promoted several strands of knowledge generation that were then synthesised in the development of the Common Framework for Assessment and Management or CASI-F, and contributed to the elaboration of new research priorities and agendas, annual policy reports, as well as policy recommendations to different levels of governance.

One such knowledge strand was based on the extensive mapping of sustainable innovation practices from the whole of Europe and beyond. A second knowledge strand emerged from the many ideas found through the engagement of citizens in the 12 EU countries of the Consortium in vision-development workshops. These citizen consultation panels enabled the CASI Consortium to generate insights on sustainability and innovation based on people’s own aspirations. The visions were then analysed by a panel of experts, who “translated” them into research and policy priorities, oriented to the future. This approach proved useful beyond Societal Challenge 5 of H2020, and was largely seen as evidence of CASI’s versatility. Furthermore, public engagement was the key pillar in CASI. The project designed the methodology, prepared all necessary materials, developed effective citizen recruitment strategies, processed the citizens’ ideas and experts’ recommendations, and further promoted the policy implications of public engagement. Yet another knowledge strand emerged from the analysis of current policies on sustainability and innovation across the EU, thus ensuring a complete range of mutually reinforcing sources that enabled the elaboration of the CASI-F.

CASI involved 19 partners from 12 EU countries, as well as 16 country correspondents in the remaining countries, thus effectively ensuring an EU-wide coverage for its major activities. Country correspondents contributed with national policy briefs, identification of relevant stakeholders, and with dissemination of major CASI results. The work of the partners was supported by an Advisory Committee of 5 highly renowned experts in innovation, environment and climate change, transition management, forward-looking studies and RTDI policy advice.

Description of project context and objectives

The CASI project (“Public participation in Developing a Common Framework for Assessment and Management of Sustainable Innovation”) was conceived with an ambition to respond to one of the Societal Challenges set out in the Horizon 2020 programme of the European Union, namely “Climate action, environment, resource efficiency and raw materials”. It represented an EU-wide cross-sectoral

CASI pursued the following **five specific objectives**:

Specific Objective 1: Development of a working definition of sustainable innovation, building on the most common definitions, academic literature, as well as expert advice internal and external to the project consortium.

This objective has been fully met. The project has prepared a comprehensive overview of the state-of-the-art in sustainable innovation and has proposed a working definition of sustainable innovation that underwent several incremental iterations, starting from a more generic definition at the beginning and progressing to one that considers the lessons learned throughout the implementation of the project.

Specific Objective 2: The inclusion of general public concerns in assessing the social impact of this kind of innovation on society in consultation workshops. Issues such as participation in the development of innovation, inclusiveness, ethics, gender and open access will be considered in these sessions.

In attaining this objective, CASI demonstrated one of its main achievements and strongest impacts. 230 EU citizens were involved in consultation processes designed to elaborate visions on sustainable futures (following an enhanced methodology initially developed within the FP7-funded CIVISTI project). The original CIVISTI method was further developed by performing content analysis of the citizen visions vis-à-vis the Societal Challenges, as specified in Horizon 2020. A fundamental conclusion from the content analysis of citizen visions is that sustainability requires actions to reconcile technological innovation, new business models and alternative economic principles with models for inclusive societal development, which envisage the active participation of citizens as drivers for change. Not only did this method demonstrate the significance of public engagement as a pillar of sustainable innovation, but it also presented a solid approach to integrating citizens' values and concerns into research designs and policy development initiatives. The CASI approach, which was designed entirely in support of a mutual mobilisation and learning strategy, was well-documented, presented at a number of external conferences, was an underlying theme in the CASI Policy conference in November 2016, and proved itself as one of CASI's main contributions.

Specific Objective 3: Development of a common understanding of best practices in sustainable innovation management.

CASI has put together a large and comprehensive repository of sustainable innovation cases from across the EU (CASIPEDIA), which was based on detailed mapping of each identified practice. As a result, the analysis of CASIPEDIA data improved significantly the understanding of how sustainable innovation happens, and provided solid grounds in the development of the CASI-F.

Specific Objective 4: Development of a framework for assessment and management of sustainable innovation.

CASI-F, the framework for assessment and management of sustainable innovation, was developed by combining multiple knowledge strands, underlying the advantages of a mutual mobilisation and learning. It considered the knowledge that emerged from the analysis of the CASIPEDIA cases, from the citizen-elaborated visions, and from the continuing monitoring of policy initiatives (policy watch). The CASI-F development concluded with a thorough online training course that introduced the project logics, the solid theoretical framework developed on the assessment and management of sustainable innovation, and offered support on the practical steps on how to apply the CASI-F.

Specific Objective 5: Development of specific policy recommendations on how to improve innovation management and how sustainability considerations can be incorporated into it based on the findings of the assessment framework and public consultations.

CASI has had a strong focus on policy, and has carefully considered all policy implications of its activities. Being a mobilisation and mutual learning action plan, the project was able to involve numerous stakeholders, including policy-makers, as well as to engage them in constructive debates. In November 2016 CASI teamed up with another FP7-funded project, PE2020 (Public Engagement

Innovation for Horizon2020), and attracted more than 160 participants to a joint Policy Conference under the title of “Public Engagement for Research, Practice and Policy: Exploring Policy Options for Responsible Research, Sustainability and Innovation”, held in Brussels and hosted by the Committee of the Regions. In addition to this, CASI produced a Final Policy Recommendations report, which considered all CASI results and their policy implication, and proposed 9 recommendations, along with supporting evidence base.

CASI Legacy

CASI’s legacy is observable in the variety of research and innovation policy, and practice outcomes it produced. These include the following:

CASIPEDIA and Ideas Bank – a unique bank of 500+ sustainable innovation practices mapped by the CASI project, where experts and supporters of sustainability agendas can find various initiatives combining the environmental, economic and social dimensions of sustainability. CASIPEDIA supports the mapping of practices, outcomes and players related to seven types of sustainable innovation, namely product, service, social, organisational, governance, system or marketing innovations. The bank of sustainable innovation-related critical issues/considerations (Ideas Bank) resulted in the following outcomes:

- 548 nominated sustainable innovation cases
- 202 of which have been fully mapped in terms of practices, outcomes and players
- 4 dimensions for sustainable innovation management identified
- 10 key aspects for sustainable innovation management identified
- 50 critical factors for sustainable innovation management identified
- 60 critical considerations from the assessment of 1500+ critical issues identified
- Working definition of sustainable innovation

CASI-F and online training - CASI Framework (CASI-F) resulted from an extensive and comprehensive analysis of 500+ case studies, 40+ pilots with innovators, participatory workshops and focus groups, supported by desk research and knowledge crowd-sourcing strategies enabled by web-based tools for the systematic assessment and management of sustainable innovation. It is a holistic framework that supports forward-looking decision making at strategic, tactical and operational levels for the quadruple helix actors of sustainable innovation (government, business, civil society and research and education).

To promote CASI-F and to train as many innovation managers to use it as part of their management practices, a special professional online training was designed and developed. The training includes detailed presentations, as well as distributable handouts. It offers a set of modules that are best taken in succession. To enhance learning, the online training features a set of personal assessments to guide the users towards the most critical parts they need to understand and to determine their progress. Upon successful completion of all modules, the user is presented with a certificate. The online training is particularly useful as it makes CASI-F more accessible and helps potential users deal with its inherent complexities from an early stage, thus ensuring they could make the best use of it.

Definitions of sustainable innovation - several working definitions of sustainable innovation were developed during the lifetime of the project in order to advance the overall understanding of sustainable innovation and improve its management. The definition of sustainable innovation agreed and endorsed by the CASI consortium is:¹

¹ Popper, R., Velasco, G., Bleda, M., Amanatidou, E., Ravetz, J., Damianova, Z., Kozarev, V., Chonkova, B., Tsin, S., Avarello, A., Martin, L., and Morris, D. (2016). Sustainable Innovation Conceptual Framework. CASI Project report. Deliverable 2.2.

- “Sustainable Innovation is any incremental or radical change in a socio-technical system leading to positive environmental, economic and social transformations without compromising the needs, welfare and wellbeing of current and future generations”²

CASI mobilisation and mutual learning (MML) approach - CASI relied on an approach which demonstrated that both policy and research could be done in a participatory way, and emphasised how citizens could contribute to the gathering of solid evidence base, for consideration by both researchers and policy makers. It further provided valuable methodological lessons about engagement so that the methods used could be improved in the future. Thus CASI ensured multi-directional and cross-disciplinary mutual learning, and demonstrated that engagement is not about outsourcing decision-making. One should not expect to get ready-made policy advice out from it. Mutual learning results from the process of co-creation of the final results as different stakeholders are involved at different stages of the process. In CASI this was exemplified through the engagement of citizens, innovators, researchers, policy-makers and policy influencers, as well as businesses and NGOs.

CASI citizens' engagement approach - CASI introduced a number of novelties in engaging citizens, both in terms of enhancing already tried engagement methods, and in terms of expanding methodological scope to subsequent analytical work, in addition to the engagement method as such. Not least, CASI demonstrated how citizen engagement methodology could be a useful tool when elaborating policy advice (in this case – on research priorities) thus highlighting not only democratic aspects of participation, but also its constructive and normative potential in policy design. This assertion was backed up by quantitative analysis that legitimised the use of CASI engagement results as a “knowledge strand” within the whole CASI construct. Being a part of an MML process CASI required reconciling knowledge paradigms – one coming from science and research, and another rooted in experience-generated tacit knowledge from non-scientific actors. Therefore, a major conclusion from this process was such a paradigmatic dichotomy (i.e. giving equal weight to scientific and non-scientific inputs) could also produce credible and valid results. Thus CASI not only built on the tradition of the CIVISTI project, but developed its own methodological legacy and outreach.

CASI Policy Watch - in the course of the CASI project, project partners established an innovative mechanism for monitoring of and interchange with current EU and national policy initiatives – the so called Policy Watch. Through a series of policy briefs, annual policy reports and online policy blog articles, the Policy Watch aimed to enable the streamlining of sustainable innovation measures into organisational, national and European strategic and policy planning processes. In the course of the project, 14 EU level and 115 national level policy briefs, 3 annual reports on policy developments and initiatives, and more than 80 contributions to the CASI online policy blog were published. The Policy Watch continues in the [Sustainnovation group of the CASI project in LinkedIn](#) with more than 250 members. Membership in the group includes representatives from the extensive CASI network of stakeholders and collaborators and is open to newcomers.

CASI Policy Recommendations – in its Final Policy Recommendations Report CASI offers several suggestion/recommendations for ways in which sustainable innovations and futures can be promoted by policy makers, business leaders, civil society organisations, foundations, and universities alike. The recommendations are clustered in three thematic chapters, which are: i) Multi-stakeholder collaboration in sustainability research and innovation; ii) sustainable innovation strategies; and iii) citizen participation in sustainable innovation.

CASI Impact Summary

The CASI Project has built a rich legacy of accomplishments, and has generated new knowledge in terms of both its thematic scope, as well as its methodological approaches. The CASI Framework (CASI-

² Popper, R., Velasco, G. and Popper, M. (2017). CASI-F: Common Framework for the Assessment and Management of Sustainable innovation. CASI Project report. Deliverable 6.2.

F) for the assessment and management of sustainable innovation evolved to become a versatile tool for innovation management that is gaining on popularity not only in the EU, but also in other regions of the world. Thanks to a content-rich and online training, anyone could learn about how CASI-F was conceived and how it can be used, and then could get a professional certificate. This makes CASI-F accessible to any interested stakeholder, including policy institutions, business and social entrepreneurs, educators and researchers, seasoned or aspiring innovators.

CASI has also successfully demonstrated how citizen engagement can enrich policy processes, especially with regards to research and innovation, and particularly when debating contentions and complex issues such as sustainability. It proved that inclusive policy making can be done responsibly and could be sourced in innovative, creative and shared thinking among different actors, bringing in various levels of experience, aspirations, values, and knowledge.

CASI mobilised a wide range of societal actors through a variety of engagement formats, thus allowing direct collaboration among stakeholders, and created multiple avenues for mutual learning. As a mobilisation and mutual learning (MML) process, CASI was particularly instrumental in aggregating input from a variety of sources, combining them to deliver a truly participative, open and transparent process that linked sustainability to innovation development.

Not least, CASI made significant progress towards the understanding of sustainable innovation as a societal phenomenon. Not only did it build a repository of practical cases of sustainable innovations across the EU, but it also produced specific management advice, and delivered the tools and protocols so that each potential innovator could him- or herself map their innovation and come up with a detailed picture of critical issues they need to address, as well as the steps they could take, and what strategic partnerships might be helpful.

Greater details of specific impacts and achievements in this report are grouped into three categories, based on the expectations laid out in the Working Programme set out by the European Commission:

- Improving the governance of research and technological development to better facilitate sustainable and inclusive solutions.
- Incorporating Science in Society issues into research and innovation systems to include the values, needs and interests of EU citizens, thus promote Responsible Research and Innovation.
- Improving transnational cooperation on sustainable innovation research within the European Research Area.

Main S&T results of the CASI project

This chapter summarises the work accomplished during the lifetime of the CASI project as well as the major achievements in terms of formal deliverables and other project results (which do not constitute formal deliverables or milestones). The work is presented by workpackages, which are logically grouped by knowledge-generation strands. This is deliberately done so as to emphasise in greater detail the relevance of each CASI achievement. Below the reader can see the different workpackages and tasks within CASI which contribute to the generation, implementation and results of the specific CASI knowledge-generation strands.

	CASI Work Packages included in the knowledge-generation strand	Specific WP tasks included in the knowledge-generation strand
Knowledge-generation strand 1: Development, piloting and validating, and finalisation of CASI-F	WP2 State-of-the-art in sustainable innovation	<i>Tasks 2.1</i> To systematically Identify and review key sustainable innovation (sustainable innovation) case studies <i>Tasks 2.2</i> To map key practices in sustainable innovation case studies <i>Tasks 2.3</i> To map key players in sustainable innovation case studies <i>Tasks 2.4</i> To map key outcomes of sustainable innovation case studies <i>Tasks 2.5</i> To use reviewed activities/practices/players/outcomes to develop robust Si conceptual and methodological frameworks
	WP3 Dialogue and participation	<i>Tasks 3.1</i> Capacity building workshops for the consortium partners and country correspondents
		<i>Task 3.2</i> Stakeholder mutual learning seminars for knowledge generation and knowledge sharing
	WP4 Common framework for assessment and management of sustainable innovation (CASI-F)	<i>Task 4.1</i> Online survey on the characteristics of sustainable innovation <i>Task 4.2</i> Draft proposal of common framework for the assessment and management of sustainable innovation (CASI-F) <i>Task 4.3</i> Stakeholder workshops on the draft proposal of CASI-F
	WP5 Pilot projects on testing and validating CASI-F	<i>Task 5.1</i> Technology innovation cases to be assessed via the CASI-F <i>Task 5.2</i> Social innovation cases to be assessed via the CASI-F
	WP6 Management of sustainable innovation	<i>Task 6.1</i> Interviews/working meetings with the developers of the innovation cases, assessed during the pilot actions <i>Task 6.2</i> Revision and finalisation of CASI-F
	WP9 Heritage	<i>Task 9.1</i> Online training for the application of CASI-F
Knowledge-generation strand 2: Citizen & Multi-actor Engagement in Deliberating	WP10 Communication and dissemination	<i>Task 10.6</i> CASI-F tutorials
	WP3 Dialogue and participation	<i>Task 3.4</i> Citizens and experts meetings
	WP7 Policy watch	<i>Task 7.1</i> EU-level policy debates monitoring <i>Task 7.2</i> National policy debates monitoring <i>Task 7.3</i> Reports on policy developments and initiatives

	CASI Work Packages included in the knowledge-generation strand	Specific WP tasks included in the knowledge-generation strand
		<i>Task 7.4</i> Online policy blog
	WP8 Policy recommendations	<i>Task 8.1</i> Policy dialogues among relevant stakeholders <i>Task 8.2</i> European-level policy conference on identifying common European priorities <i>Task 8.3</i> Final report on national and European-level policy recommendations
Knowledge-generation strand 3: Communication, dissemination and sustainability of CASI achievements	WP3 Dialogue and participation	<i>Task 3.3</i> Webinar for wider societal learning and participation
	WP9 Heritage	<i>Task 9.2</i> Promotion of CASI results and sustainable innovation
		<i>Task 9.3</i> Strategy to ensure the sustainability of the project and its results
	WP10 Communication and dissemination	<i>Task 10.1</i> Project web portal, homepage widgets, main modules and CMS access
		<i>Task 10.2</i> CASI knowledge platform
		<i>Task 10.3</i> CASI library
		<i>Task 10.4</i> CASI community – with social networking interfaces
		<i>Task 10.5</i> Communication strategy
<i>Task 10.7</i> Final national promotional events		
		<i>Task 10.8</i> Participation in EU-level events
Knowledge-generation strand 4: Management and evaluation	WP1 Management	<i>Task 1.1</i> Technical management <i>Task 1.2</i> Financial management <i>Task 1.3</i> Management procedures <i>Task 1.4</i> Action networks <i>Task 1.5</i> Sustainability of the project
	WP11 Evaluation	<i>Task 11.1</i> External evaluation, made by independent experts <i>Task 11.2</i> Internal observer <i>Task 11.3</i> Internal evaluation by consortium partners

Knowledge-generation strand 1: Development, piloting and validating, and finalisation of CASI-F (the common framework for assessment and management of sustainable innovation)

The work on developing, piloting and validating, and finalising CASI-F encompassed the following, strongly interlinked, workpackages of the CASI project:

WP2 State-of-the-art in sustainable innovation

The specific objectives of WP2 were:

- To articulate what sustainable innovation is within the context of the project
- To develop a conceptual framework for sustainable innovation so as to position sustainable innovation within the framework of Societal Challenge 5 of Horizon 2020, namely “Climate change, environment, resource efficiency and raw materials”
- To develop the theoretical framework, which will prepare the grounds for further analysis and assessment of sustainable innovation management

At the very onset of the CASI project the CASI partners agreed to follow a two-step approach in WP2 as follows (i) **nomination** of sustainable innovation cases in the **four thematic domains of Societal**

Challenge 5 of Horizon 2020 (“Climate action, environment, resource efficiency and raw materials”), and across **7 innovation types** (service innovation, social innovation, product innovation, governance innovation, organisational innovation, system innovation and marketing innovation), then followed by (ii) a **fully-fledged mapping** of sustainable innovation cases vis-à-vis a set of criteria. Thus, the CASI partners (from 12 EU Member States) and the country correspondents (from the rest 16 EU Member States) nominated a total of 548 sustainable innovation cases, which were prioritised using five criteria (Public Participation and Mobilisation; Sustainability and Cross-Sectorial Linkages; Multi-(F)actor Transformations; Deployment and Diffusion; and Novelty and Originality) and a final set of 202 cases was selected for the fully-fledged mapping exercise. The overall mapping exercise (which encompassed nomination and fully-fledged mapping of sustainable innovation practices, players and outcomes) followed an established methodology developed by The University of Manchester (UNIMAN) for the analysis of sustainable innovation practices, outcomes and players; however, some mapping criteria were adapted to the specific needs of the CASI project. Results from the nomination and fully-fledged mapping were synthesised and presented in Deliverable 2.2 Sustainable innovation conceptual framework.

Major achievements of WP2

➤ **CASIPEDIA and Ideas Bank**

The results of the state-of-the-art work in WP2 fed the CASI database of sustainable innovation initiatives (CASIPEDIA, <http://www.casi2020.eu/casipedia/cases/>) and the bank of related critical issues/considerations (Ideas Bank) resulted in the following outcomes:

- 548 nominated sustainable innovation cases
- 202 of which have been fully mapped in terms of practices, outcomes and players
- 4 dimensions for sustainable innovation management identified
- 10 key aspects for sustainable innovation management identified
- 50 critical factors for sustainable innovation management identified
- 60 critical considerations from the assessment of 1500+ critical issues identified
- Working definition of sustainable innovation

➤ **Sustainable Innovation R&I Agendas**

The assessment of the nominated 500+ sustainable innovation cases, namely the short-medium-to-long-term goals/objectives of innovators, also helped to identify some 10 R&I policy agendas that emerged as a by-product of the analysis.

1. Sustainable innovation Agenda 1: Strengthening eco-community empathy and crowd-driven development
2. Sustainable innovation Agenda 2: Developing sustainable bioeconomy, human settlement and infrastructure systems
3. Sustainable innovation Agenda 3: Deploying responsible environmental and water management strategies
4. Sustainable innovation Agenda 4: Creating sustainable bio-fuel and renewable energy solutions
5. Sustainable innovation Agenda 5: Promoting foresightful governance and sustainability intelligence
6. Sustainable innovation Agenda 6: Advancing recycling and circular use of waste and raw materials
7. Sustainable innovation Agenda 7: Embedding sustainability in cultural heritage, education and lifestyles
8. Sustainable innovation Agenda 8: Fostering eco-local-agriculture and bio-resources efficiency

9. Sustainable innovation Agenda 9: Implementing sustainable transport and smart mobility innovations
 10. Sustainable innovation Agenda 10: Dealing with climate issues and managing greenhouse gas emissions
- **Deliverable 2.1 Report: “Climate action, resource efficiency and raw materials: State of the art in research and innovation”.** The report is based on research and innovation related to Societal Challenge 5 ‘Climate action, environment, resource efficiency and raw materials’ of Horizon 2020 as well as on the results of a comprehensive review, analysis and mapping of 500+ sustainable innovation initiatives from across Europe and beyond. The report provides an overview of the sustainability R&I priorities in ‘Climate action, environment, resource efficiency and raw materials’ of Horizon 2020, complemented with selected examples and a featured case studies from CASIPEDIA. It then presents the results of the analysis of 548 sustainable innovation initiatives by type of innovation and introduces the results of an inductive approach undertaken to analyse CASIPEDIA database in order to identify some key sustainable innovation management dimensions. Some critical considerations and lessons from major technological, economic, environmental, political, social, ethical and spatial (TEEPSES) issues are also discussed and mapped against some 10 key aspects of sustainable innovation management.
- **Deliverable 2.2 report “Sustainable innovation conceptual framework”.** D2.2 considers sustainable innovation theory and practice through a broad lens that was able to capture the perspectives of five sustainable innovation principal actors: Environmental scholars; EC environmental research programmers; Pan-European sustainable innovation stakeholders; Sustainable innovators; and Citizens. A comprehensive analysis of these actors’ perspectives has served to come up with three conclusion pillars:
- a. Sustainable innovation may be conceived as ‘any incremental or radical change in the social, service, product, governance, organisational, system and marketing landscape that leads to positive environmental, economic and social transformations without compromising the needs, welfare and wellbeing of current and future generations’.
 - b. There is notable convergence between sustainable innovation actors’ priorities. Some minor differences and nuances of meaning or presentation have been however recognised and studied. Together with the identification of ten grand R&I policy agendas aligned with innovators’ agendas and citizens’ visions the CASI project successfully raised the level of discussion about the future European Research and Innovation Framework Programme’s priorities on climate action, environment, resource efficiency and raw materials.
 - c. Significant knowledge gaps still exist in businesses and institutions with regard to sustainable innovation assessment and management tools. This situation is further fuelled by the lack of serious and systematic analysis of real sustainable innovations in Europe and the world.

WP3 Dialogue and participation

(Tasks 3.1. Capacity-building workshops for the consortium partners and the country correspondents and Task 3.2. Stakeholder Mutual Learning Seminars (MLS) for knowledge generation and knowledge sharing)

The overall objectives of the **capacity-building workshops** (task 3.1) was to build a common understanding of sustainable technological and social innovation, as well as a common approach concerning the societal challenge "Climate action, environment, resource efficiency and raw materials" among the project partners and country correspondents. The objective of the **stakeholder mutual learning seminars** (task 3.2) was to enhance the dialogue among consortium partners, country

correspondents and relevant stakeholders across Europe on sustainable innovation and environment-related issues. Detailed information on all activities and achievements of *WP3 Dialogue and participation* is available under section '[Citizen and Multi-actor Engagement in Deliberating Innovative Research and Policy Priorities on Sustainability](#)' of the current report.

➤ **Capacity-building workshops for the consortium partners and the country correspondents**

Three capacity-building workshops were organised for the CASI partners and country correspondents in the period May – June 2014. These workshops laid the foundation for the successful collaboration among partners as they helped bring all partners to the same page, and further introduced the CASI concept to the network of country correspondents. The presentations covered the following topics: the essence of mobilisation and mutual learning action plans (MMLAP) and why CASI belongs to the MMLAP family, the challenges before sustainable innovations, the relevance of technological and social innovations to sustainability. The main focus in the workshops' agenda were the mapping process of sustainable innovations and the mapping criteria (developed in WP2 State-of-the-art in sustainable innovation). Thus, the workshops ensured uniformity not only in the understanding of CASI's intention and ambitions, but also in the way major CASI tasks were performed. **Deliverable 3.1 Capacity Building Workshops Report** provides the details for the three workshops, including agendas, topics presented and lists of participants. It was an internal document that partners could refer to.

➤ **Stakeholder mutual learning seminars for knowledge generation and knowledge sharing**

In line with the project's mandate, a total of 12 national Mutual Learning Seminars (MLS's) focused on the topic of sustainable innovation were held in January -March 2016. Each partnering country was responsible for organising one such event, inviting a wide range of stakeholders (incl. policymakers, civil society, businesses and the scientific community). Among other topics, the workshops' agenda included as well **CASIPEDIA** (WP2) and **CASI-F** (WP4). **CASIPEDIA** was considered to be a rich database of easy-to-compare cases of sustainable innovation, of cross-border character, offering various insights regarding the management and assessment of sustainable innovation practices, more generally. The draft **CASI-F** was commonly appreciated as a valuable framework that supports sustainable innovation assessment and management activities. Participants largely acknowledged it to be a great tool for facilitating an intelligence-based process that could transform critical issues and ideas into actionable advice and roadmaps. The feedback of stakeholders was considered important input to the finalisation of **CASI-F** in WP6. **D3.2 Mutual Learning Seminars – Aggregated Report** is a synthesis report based on the national reports from each mutual learning seminar.

WP4 Common Framework for Assessment and Management of Sustainable Innovation (CASI-F)

The overall objective of WP4 was to develop the concept of a common framework for assessing the advantages, disadvantages, relevance, benefits and risks of sustainable innovation, particularly social, environmental and economic dimensions, while taking into account general public concerns. The overall objective was achieved through the implementation of the following activities:

The **online survey** on the pertinent characteristics of sustainable innovation had the objectives to i) identify the constituent elements of existing definitions of sustainable innovation, and suggest a consistent uniform CASI-wide construct through analysis of the results; ii) identify the distinctive characteristics of sustainable innovation in terms of practice; compare how these fit with the common theoretical construct, and iii) identify the factors for successful management of sustainable innovation. In total 1,793 responses (an average of 62.3 responses per EU member state) were received from all EU member states.

The **CASI-F draft** was developed to assess the relevance of sustainable innovation evidence (sustainable innovation practices nominated and mapped in WP2). The **assessment of relevance** was focused on 4 target groups – Governance, Business, Civil society, Research and education – and 3 types of actions – strategic, programming and operational. In this early draft of CASI-F **effectiveness** was to be assessed in terms of implementability (i.e. soundness) and feasibility (e.g. technical, economic, environmental, political, social and ethical). The effectiveness in terms of sustainability was to be done from a social, economic and environmental perspective.

12 workshops with stakeholders affiliated to government, business (incl. social enterprises), civil society, research and educational institutions and one workshop with the CASI country correspondents (coming from the 16 EU member states, which are not represented within the CASI consortium) were conducted between September and November 2015 in order **to achieve a general feedback to CASI-F draft**. The stakeholder workshops were held in Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, Germany, Italy, Poland, Portugal, Slovenia, and the United Kingdom. The workshops aimed at eliciting strengths and weaknesses of CASI-F and at gathering stakeholders' suggestions for improving the effectiveness and usability of the framework. In total 158 stakeholders participated in this consultation process. The findings of the consultation process were further considered in WP5 and WP6.

Major achievements of WP4

➤ **Online survey on the characteristics of sustainable innovation – D4.1 report “Online survey questionnaire”** presents all the questions and answer options of the CASI online survey on sustainable innovation. The survey results were presented in an internal, but comprehensive report, entitled **‘CASI Online Survey Thematic Report’** and also integrated in WP2, Deliverable 2.2 Sustainable innovation conceptual framework. The **key findings of the online survey are:**

- Sustainable innovation forms a separate strand of innovation, which is characterised by: i) simultaneously integrating environmental, social and financial considerations into the innovation processes; ii) having beneficial effects on the environment regardless of whether such effects were anticipated or not; iii) having participatory element and mobilising stakeholders; iv) having a longer-term perspective to measuring innovation's impacts.
- Sustainable innovation is considered as being particularly well suited to contribute to protecting the environment, sustainably managing natural resources, water, biodiversity and ecosystems, as well as enabling the transition towards a green economy and society.
- Stakeholders – business actors, CSOs, policy makers and research and education actors – need to be included in the process of design and development of the innovation. Furthermore, interdisciplinarity of expertise is essential as it allows for considering the various possible impacts of innovation and thus improving its sustainability. These collaborations also improve the potential for generating innovative ideas and developing working solutions.
- The assessment of sustainable innovation is an integral part of the process of sustainable innovation management and needs to be implemented throughout the innovation cycle. Assessment needs to be strongly anchored to the sustainable innovation management processes within organisations and oriented towards pre-defined sustainability-oriented goals.
- Management of sustainable innovation is perceived to refer to integrating sustainability in the entire innovation value chain, and needs to be positioned within companies' strategic plans.
- Reinforcing gender principles in the field and strengthening women's capacities in sustainable innovation, as well as more directly involving women in the process can foster the

sustainability of innovations by bringing in a more gender-balanced perspective to the process.

The results were synthesised and integrated in D2.2 Report “Sustainable Innovation Conceptual Framework” and as well presented in the ‘CASI Online Survey Thematic Report’.

➤ **Deliverable 4.2 report “Draft proposal of Common Framework for Assessment and Management of Sustainable Innovation (CASI-F)”**

CASI-F draft has been developed to assess the relevance of sustainable innovation evidence, visions and policies for governance, business, as well as civil society and research and education actors. It also assesses the effectiveness of sustainable innovation in terms of implementability (i.e. soundness) and feasibility (e.g. technical, economic, environmental, political, social and ethical). Further, it provides multi-level advice on sustainable innovation management issues at strategic, programming and operational level.

➤ **Stakeholders’ workshops on the draft proposal of CASI-F**

The development of CASI-F was further informed by the feedback and recommendations of stakeholders, through mobilising 158 stakeholders through consultative workshops in 12 EU countries organised in Sept – Nov 2015. **D4.3 “Stakeholder workshops report”** is a synthesis of the CASI partners’ reports about the national stakeholder workshops and of the workshop with the country correspondents. Overall, it discusses the stakeholders’ requirements, needs and expectations towards the CASI-F and in particular its strengths and weaknesses. Furthermore, the stakeholders’ suggestions for improving the effectiveness and usability of the framework were described.

The elicited feedback showed that already the first draft of CASI-F had a lot to offer to potential users. The most important strengths of the CASI-F were considered to be the following:

- It is a well elaborated concept, understandable, detailed, pragmatic, holistic, in depth going, coherent, and useful.
- It serves as an inspiring knowledge pool and provides a good collection of sustainable innovation cases (CASIPEDIA).
- It is a useful framework for structuring sustainable innovation processes.
- It brings together different stakeholders, supports networking and enables the exchange of information and knowledge.
- It improves the users’ understanding of sustainable innovation.

WP5 Pilot projects on testing and validating CASI-F

The overall objective of this workpackage was to test CASI-F (the draft proposal of CASI-F from WP4) through applying it to real-life practices of sustainable innovations, which were fully mapped in WP2 (sustainable technological and social innovations or the combination of the two), so as to contribute to the further development and finalisation of CASI-F framework through **the provision of feedback to its assessment methodology** of sustainable innovations.

CASI partners indicated, based on their fully-mapped sustainable innovation practices in WP2, those sustainable innovation practices they wanted to include in the pilot application of CASI-F. After careful consideration a pool of 102 cases of sustainable innovation practices was nominated, presenting social or technological innovation, or integrating several types of innovation, and having a large geographical spread. Finally, 43 cases of sustainable innovation were selected to be piloted by the consortium partners (25 social, 11 technological and 7 both social and technological). The actual pilot application of CASI-F was done by CASI partners and owners of sustainable innovations between November 2015 and January 2016. At first, a pre-test phase was organised in which 4 CASI partners - two partnering municipalities (Monza, Italy and Espinho, Portugal) and two SME partners (iTime, Portugal and Technologica, Bulgaria) - applied CASI-F on their own sustainable innovation practices, and provided

feedback in order to fine-tune the methodology before piloting it with the 43 sustainable innovation cases, so as to make sure all planned outcomes would be achieved. During the pilots the CASI partners and the innovators worked in partnership and looked at each sustainable innovation from two perspectives (multi-level typology): (i) four types of stakeholders (government, business, civil society, research and education) and (ii) three management levels (strategic, tactical and operational) and developed specific actions meant to help the innovators to further implement, improve or diffuse their innovation. The multi-level typology as well as the criteria to assess the actions in terms of importance, feasibility and impact (economic, social and environmental) were defined based on the analysis of sustainable innovation practices accomplished in WP2. For each sustainable innovation practice these specific actions were presented in an Action Plan.

Major achievements of WP5

➤ **D5.1 Report “Pilot application of CASI-F for assessing sustainable technology innovation” and D5.2 Report “Pilot application of CASI-F for assessing sustainable social innovation”**

These two reports present the experience of 43 different approaches of applying CASI-F. 25 pilots have been characterised as social innovations, 11 as technological innovation and 7 as both technological and social. Selection process, methods and templates are outlined in both D5.1 and D5.2 reports. The pilot application of CASI-F to the 43 practices of sustainable innovation resulted in almost 700 actions being added to CASIPEDIA, making it an increasingly valuable resource for innovators seeking to find out how others overcame barriers, or for policy makers could explore if there were further ways which might be exploited to help with the achievements of the EU climate targets.

In regard to the four stakeholder groups in the focus of the CASI project, the different contributions, priorities and additional activities can be summarised as follows:

- One important role for government and the public sector is related to changing and/or adapting the innovation-related infrastructures in a way that would support the implementation, scaling up, diffusion and institutionalisation of sustainable innovation.
- Businesses’ tasks and responsibilities are mostly concerned with the provision of financial, promotional and marketing resources, as well as learning and training resources (e.g. through the development of learning tools).
- Civil society focusses on the rising of awareness, multi-stakeholder collaboration, fostering engagement, knowledge sharing, best practice exchange and participation in public policy.
- Research and education activities are linked with traditional tasks related to the conduction of research and development activities as well as proper education on the issue at hand.

WP6 Management of sustainable innovation

WP6 aimed to gather feedback on the usability and relevance of CASI-F applied during the executed pilot actions in WP5, through intervening directly with the sustainable innovation case studies’ actors (of technology or social innovations, or the combination of the two) and placing the focus on the **management aspects** of sustainable innovation. The overall objective of WP6 was to deliver the final version of CASI-F.

Based on the process of applying CASI-F, the work package also envisioned the implementation of improvements to the management-related part of CASI-F and the revision of the assessment methods and indicators, if deemed necessary.

Work package 6 has run largely in parallel with work package 5. While WP5 has focused on the application of the CASI-F methodology to a set of pre-selected technology and social cases of sustainable innovation, WP6 required a direct intervention from partners with the innovators in order to extract valid feedback on the usability and relevance of the CASI-F methodology and, as such, measure its potential impact, and finally, consider possible refinements based on the comments and

recommendations collected. Under WP6, partners conducted the final stage of the pilot implementation of CASI-F which consisted of the development of an Action Roadmap for the innovators participating in the pilots under WP5.

In detail, WP6 was first focused on a more in-depth consideration/definition of management aspects of the Sustainable Innovation through the development of an Action Roadmap; second, the consultation on usability/relevance of CASI-F, and third, the revision/improvement of CASI-F. The core set of criteria that framed the tasks or sub-actions in the resulting 46 Action Roadmaps around 4 sustainable innovation dimensions (context, people, process and impact) and 10 sustainable innovation key aspects (momentum, foresight, resources, mobilisation, aptitude, attitude, catalysts, fosterers, transformations and sustainability), as well as the timeframe options (short-term - up to 12 months, medium-term – 12 – 24 months and long-term – 24+ months) were based on the analytical work accomplished in WP2.

Major achievements of WP6

➤ **Deliverable 6.1 “Report on CASI-F implementation”**

The main objective of *task 6.1 Interviews / working meeting with the developers of the innovation cases* (assessed during the pilot actions in WP5) was to develop an Action Roadmap to each pilot innovation case using the Framework for Assessment and Management of Sustainable Innovation (CASI-F) methodology, and then collect first-hand feedback on that methodology. This deliverable explains the concept of action roadmaps, reviews experiences from its first piloting, and provides suggestions that focus on the user interface of CASI-F as a tool for management and assessment of sustainable innovation. An **action roadmap** is a detailed plan focusing on the implementation of one or several actions from a management perspective considering four management dimensions identified in the CASI-F methodology: context, people, process and impact. The innovators created their Action Plans by filling out a dedicated Action Roadmap Template, which allowed them to identify 10 different types of tasks that helped them manage their sustainable innovation. In total, 46 action roadmaps were created during the one-on-one sessions between pilot innovators and CASI partners in March-April 2016. The analysis of the action roadmaps reveals that almost half the roadmaps (48%) address business-related actions. In general, business roadmaps were more focused on building strong and justified practices and measuring their success: many of the tasks in the roadmaps were directed at improving business models, personnel developments, incentive systems and evaluation methods. The findings show that stakeholder management is considered as an important aspect at all management dimensions of the action roadmaps by the business innovators. The second most popular type of action roadmap was created for civil society (28% of all roadmaps). These roadmaps were mainly focused on citizen engagement at all management levels, both with direct and indirect tasks. Another core theme of these roadmaps was the emphasis on knowledge-exchange and knowledge-generation between relevant stakeholders. Interestingly, a number of political tasks were considered relevant on strategic level, even though most of the tasks were addressing bottom-up activities. Research and education action roadmaps (20% of all roadmaps) had one major theme: the importance of cross-sectoral collaboration. Especially tasks supporting business/industry collaboration were seen as an important source for opportunities, development, innovation and funding. Otherwise the main themes varied from management to funding, adaptability and piloting. Governmental action roadmaps were the least common (4% of all roadmaps) with total of two roadmaps developed. This is due to the fact that the innovators found it unlikely that they could make an impact on governmental actions. These roadmaps were not analysed further due to their low number. After completing the action roadmap, the innovators were asked to fill in a survey analysing their experience in using the action roadmap methodology.

➤ **Deliverable 6.2 report “Final version of CASI-F”**

The CASI Framework (CASI-F) resulted from an extensive and comprehensive analysis of 500+ case studies (WP2), 40+ pilots with innovators (WP5 and WP6), participatory stakeholder workshops (WP3 and WP4), supported by desk research and knowledge crowd-sourcing strategies enabled by web-based tools for the systematic assessment and management of sustainable innovation. It is a holistic framework that supports forward-looking decision making at strategic, tactical and operational levels for the quadruple helix actors of sustainable innovation (government, business, civil society and research and education). The core of the CASI-F theoretical framework consists of five mutually reinforcing sets of protocols, namely:

1. **(Step 1) sustainability relevance and scanning:** identifying ‘innovations’, ‘policies’ and ‘aspirations’ relevant to the societal challenge of ‘climate action, environment, resource efficiency and raw materials’ at national and EU levels;
2. **(Step 2) multi-criteria analysis and assessment:** selecting or prioritising nominated innovations, policies and aspirations using a set of criteria that are relevant to the aforementioned societal challenge and the mobilisation and mutual learning nature of CASI;
3. **(Step 3) critical issue analysis and assessment:** analysing selected innovations, policies and aspirations so as to identify and prioritise critical issues, such as barriers, drivers, opportunities and threats;
4. **(Step 4) multi-level advice management:** generating and prioritising multi-level and multi-actor actions to manage prioritised critical issues; and
5. **(Step 5) action roadmaps management:** developing roadmaps for the most important and urgent actions.

➤ Working definition of sustainable innovation

The initial working definition of sustainable innovation was based on literature review, online survey on the pertinent characteristics of sustainable innovation and consultations with stakeholders in 12 EU countries, and was presented in the CASI project report “Sustainable Innovation Conceptual Framework”.³ As the work under WP2, WP3, WP4, WP5 and WP6 evolved, the working definition of sustainable innovation was further developed in order to advance the overall understanding of sustainable innovation and improve its management. By the end of the CASI project the working definition of sustainable innovation agreed by the partners is as follows:

“Sustainable Innovation is any incremental or radical change in a socio-technical system leading to positive environmental, economic and social transformations without compromising the needs, welfare and wellbeing of current and future generations” (Popper, R., Velasco, G. and Popper, M. (2017). CASI-F: Common Framework for the Assessment and Management of Sustainable innovation. CASI Project report. Deliverable 6.2.)

WP9 Heritage

(Task 9.1 Online training on the application of CASI-F)

The specific objective of task 9.1 was to build capacity on the proper and efficient implementation of CASI-F. The objective was achieved through the development of training methodology on CASI-F and

³ Popper, R., Velasco, G., Bleda, M., Amanatidou, E., Ravetz, J., Damianova, Z., Kozarev, V., Chonkova, B., Tsin, S., Avarello, A., Martin, L., and Morris, D. (2016). Sustainable Innovation Conceptual Framework. CASI Project report. Deliverable 2.2

its application, as well as launching it online and promoting it in all EU Member States and other countries beyond the EU.

WP10 Communication and dissemination

(Task 10.6. CASI Tutorial – Joint activities and education materials)

The activities were focused on developing the concept as well as on the web presence of the online training. Task 9.1 and task 10.6 were implemented in parallel.

Link to the online training: <http://www.casi2020.eu/tutorial/>

Major achievements of WP9 and WP10 related to capacity building on the use CASI-F beyond the life-time of the project

➤ **CASI-F tutorial and online training on the application of CASI-F**

Upon finalising CASI-F the project partners continued to the development of online training on the application of CASI-F so as to ensure the sustainability of the framework for assessment and management of sustainable innovation beyond the life-time of the project. The main aim of the CASI-F online training course is to become a “living” and “self-sustainable” **mobilisation** and **mutual-learning** tool that can facilitate, amongst the quadruple helix of sustainable innovation stakeholders (i.e. government, business, civil society and research and education), a better understanding of the CASI experience and a more effective uptake of **CASI-F as a common framework for the assessment and management of sustainable innovation** after the project ends, thus contributing to sustainability of the CASI project’s main results. The online training is a free 2-day online course which offers a comprehensive review of sustainable innovation related topics studied within the context of the CASI project, which are organised around 6 modules, each of which has 2 units.

- Module 1: CASI-F in action
- Module 2: Sustainable Innovation Concepts
- Module 3: Sustainable Innovation in the EU
- Module 4: Sustainable Innovation State-of-the-art
- Module 5: Sustainable Innovation Pilot Study
- Module 6: Sustainable Innovation Advice

The course has been designed and tested in collaboration with CASI project partners, in a number of online and face-to-face meetings and activities. **Deliverable 9.1 “Online training methodology”** explains the rationale of the online training and its strategic value, details the methodology and the overall content structure, and describes the intended web functionalities (i.e. navigation, assessments, as well as certification). It also lists the modules comprising the training, their learning objectives, duration, and assessment requirements. **Deliverable 10.3 “Online educational guide and online training package for the application of CASI-F: concept and web presence”** presents the activities related to the development of the concept as well as the development of the web presence of the online training.

In the first semester of 2017 CASI-F and the online training have been largely promoted not only in Europe, but in Latin America as well (in Suriname, Costa Rica, Peru, Colombia, Panama and Uruguay) during seminars and high-level meetings, with over 1000 attendees. The immediate impact of these activities is evident in that two Latin American countries (Colombia and Peru) are in the Top-5 in terms of number of participants and certificates in the CASI online training course, and various institutions are exploring the application of the CASI Framework in different contexts, as well as the potential translation of CASI-F and the CASI Tutorial to Spanish.

We strongly recommend that readers visit the CASI web-site and explore the CASI online tutorial at www.casi2020.eu/tutorial/

Knowledge-generation strand 2: Citizen and Multi-actor Engagement in Deliberating Innovative Research and Policy Priorities on Sustainability

Public engagement was a cornerstone of all CASI activities. CASI itself has provided an exemplary methodology that built upon various engagement methods and approaches, thus demonstrating the powerful interactions and complementarities among stakeholders, across knowledge disciplines, and within the CASI consortium itself.

CASI extended its ambition over policy developments as well, by introducing a mechanism for regular monitoring of policies affecting sustainability and innovation on both national and European levels. The results of this process were presented regularly in succinct policy briefs, which turned out to become an important knowledge source in the development of CASI-F. In addition to this, CASI carefully aggregated policy-relevant knowledge emerging from the project, and presented that into comprehensive annual reports.

WP3 Dialogue and participation, WP7 Policy watch and WP8 Policy recommendations and their achievements encompassed the core of the citizen and multi-actor engagement activities and deliberations on policy priorities.

WP3 Dialogue and Participation

The objectives of WP3 were:

- To build a common understanding of sustainable technological and social innovation among the CASI consortium partners and country correspondents
- To build a common approach concerning the societal challenge "Climate action, environment, resource efficiency and raw materials" among the project partners and country correspondents
- To enhance the dialogue among consortium partners, country correspondents and relevant stakeholders across Europe on sustainable innovation and environment-related issues
- To involve citizens in research and innovation policy-making
- To discuss and identify topics and opportunities for future cooperative multi-actor research

WP3 was oriented towards mobilisation and mutual learning on several levels. Internally, it set the foundation of the project by bringing together all partners and country correspondents in capacity development workshops in order to ensure a common and shared understanding of the project's scope, as well as to provide the conceptual foundation with regards to sustainable innovation, and how this foundation will be enriched by the CASI activities. On an external level, WP3 featured two tasks that targeted stakeholders and citizens, respectively, as well as a task addressing members of the public by designing and providing a webinar on topics relevant to innovation and sustainability.

Externally, WP3 successfully mobilised a diverse range of stakeholders of sustainability and innovation, including members of the academic and business communities, policy-makers, innovation practitioners, providing them with an opportunity for mutual learning based on a CASI-inspired agenda. In this workpackage, priority was given to national contexts, thus also helping extract nationally-relevant knowledge and take into account peculiarities of the national contexts. The majority of stakeholder discussions were centred on major CASI products and contributions, thus effectively engaging national audiences into cross-sectoral and cross-disciplinary debates, and providing CASI partners with a useful loop of feedback.

Major achievements of WP3

WP3 was a major component of CASI and it is also a building stone of the entire CASI methodology, underlying the usefulness of mutual mobilisation and learning approaches. The activities encompassed by WP3 each had different target groups and stimulated dialogues and engagement on different levels and of different scopes:

➤ Stakeholder mutual learning seminars

A total of 12 national Mutual Learning Seminars (MLS's) focused on the topic of sustainable innovation were held in January -March 2016. Various national stakeholders were engaged over discussions of CASI progress, but the workshops also fostered more focused dialogues on sustainable innovation, on existing policies and gaps therein on sustainability, and on positioning sustainability within the public discourse on innovation in each of the partnering countries. **D3.2 Mutual Learning Seminars – Aggregated Report** is a synthesis report based on the national reports from each mutual learning seminar held in task 3.2. It summarised the key insights generated in the process of dynamic and participatory learning across individual countries, which have been thematically clustered and codified so as to capture contextual dynamics and assist with the development of important aspects of CASI's multiscale framework for engaging with, managing and assessing sustainable innovation. The report featured recommendations on the core results and outcomes of CASI as of the end of 2015, on the role and impact of sustainable innovations, a forward looking discussion of CASI strengths and opportunities, as well as an open discussion of the early working definition of the term "sustainable innovation" as put forward in the project.

➤ Citizens' and experts' meetings

A major achievement of CASI, and of WP3 in particular, was the innovative mobilisation of citizens - 230 citizens participated across 12 citizen panels and developed in total 50 elaborated visions for a sustainable future in a first round of meetings. In a follow-up workshop 22 experts from across Europe reviewed all 50 visions and elaborated 27 research priorities and policy recommendations. In a second round of meetings the citizens in each national panel ranked these 27 research priorities and policy recommendations in terms of importance and urgency and came up with a list of top-10 research priorities. Thus, CASI presented a complex, but highly organised and methodologically solid effort to mobilise citizens across the 12 participating countries into a common endeavour at generating "visions" of sustainable futures, thus generating valuable input for public policy implications and further expert analysis. The task demonstrated successfully how powerful public engagement can be, as well as the inherent value of citizens' input for research and in policy development. The collaboration between citizens and experts, facilitated by project partners within the devised methodology, has proven to be a successful means for integrating citizens' and users' views into what is typically "dominated" by expert debate – i.e. policies and solutions related to sustainability, environment, and innovation. Even though CASI was focused on a single Societal Challenge, it quickly became evident that the same engagement approach could be applied to issues underlying other societal challenges. ARC Fund developed a separate paper that detailed the strategic opportunities in this regard, emphasising the value of interdisciplinarity, multi-actor collaboration, and also demonstrated the opportunities for integration of the task's results into future working programmes of the European Commission. Citizens' visions were also analysed further and integrated into the CASI-F development. **D3.3 European Citizens Visions for Sustainable EU Future: Research Priorities and Policy Recommendations** presents the method and the key results from the national citizen workshops, as well as the generated list of 27 research and policy priorities. The content analysis of the citizen visions vis-à-vis the Societal Challenges, as specified in Horizon 2020, identified a number of cross-sectoral issues, which link the thematic areas covered by the challenges. Recognising these cross-linkages and taking them into account during the last strategic programming cycle of Horizon 2020 can contribute to further enhancing the H2020 approach in addressing these complex societal

challenges. A fundamental conclusion from the content analysis of citizen visions is that sustainability requires actions to reconcile technological innovation, new business models and alternative economic principles with models for inclusive societal development, which envisage the active participation of citizens as drivers for change. As citizens made multiple references to a number of socially and culturally relevant themes, a trend emerges that could be of great importance to sustainability as it implies a rethink (re-organisation) of the way concrete solutions are being developed and tailored to specific social contexts.

WP7 Policy Watch

The objective of WP7 was to establish a common interface for easy monitoring of and interchange with current EU and national policy cycles in order to enable the streamlining of sustainable innovation measures into organisational, national and European strategic and policy planning processes.

Specific objectives included:

- Review of EU's strategic priorities and relevant policies, with a focus on innovation for addressing the Horizon 2020 grand challenge "Climate action, environment, resource efficiency and raw materials"
- Identify relevant EU and national policy debates and their specific policy outputs within the framework of sustainable innovation
- Spur new policy debates on issues integral to the "Climate action, environment, resource efficiency and raw materials" grand challenge at the local and national level, and seek to frame the latter within sustainable innovation terms
- Build awareness among the stakeholders and the public at large of policy commitments to supporting sustainable innovation

Major achievements of WP7

➤ **Policy briefs at the EU level (Deliverable 7.1) and Policy briefs at the national level (Deliverable 7.2)**

Policy briefs formed a key contribution in CASI Policy Watch. **During the project, CASI policy briefs progressed from identifying policy developments for CASI to providing CASI contributions to policy debates.** Policy developments and initiatives relating to societal challenge 5 were first examined throughout Europe and findings connected to project activities in other CASI work packages. Examples of the latter included sustainable innovation initiatives (WP2), citizen-expert involvement (WP3) and the CASI-F framework (WPs 4-6). To achieve policy impact, the contributions from the policy briefs were used in project stakeholder events (T3.2 Stakeholder mutual learning seminars for knowledge generation and knowledge sharing, T8.1 Policy dialogues among relevant stakeholders and T10.7 Final national promotional events). WP7 and its policy briefs also supported WP8 (Policy recommendations) by providing policy contributions, WP9 (Heritage) as part of promoting CASI results and WP10 (Communication and dissemination) in project dissemination activities.

The CASI policy brief process built connections between policies at European, national and local levels within the Societal Challenge 5 focusing on climate change, environment, resource efficiency and raw materials. Special focus was given to sustainable innovation and public participation. The briefs provided policy advice at European and national levels as well as formed an integral part of CASI contributions.

During the first years of the CASI project, key issues such as policies on smart cities, eco-innovation and environmental policy, growth with a focus on resource efficiency, and crowdfunding in sustainable innovation were addressed in a joint effort to analyse on-going policy developments. These issues guided to their part the policy connections and relevance of the CASI project. In latter project stages,

CASI contributions such as Top-10 research priorities based on citizens' visions, sectoral analysis of sustainable innovation and tools for strengthening sustainable innovation policy formed key contributions of the policy briefs. This, in turn, reinforced the connection between CASI contributions to ongoing policy debates and needs in the realm of the assessment and management of sustainable innovation.

Alongside, a process to monitor how policies develop in European, national and local levels was developed. Much attention was given to the procedural interaction of bringing together the expertise of 19 CASI partners representing 12 countries and country correspondents representing 16 countries. Practicalities in these processes were continuously developed to ensure improved policy relevance and quality.

The European level policy analysis formed the starting point for addressing national and local levels in the CASI policy brief process. In this procedure, EU-level policies were first monitored and connections to national and local level policies thereafter constructed. While this procedure connected the levels well, it arguably represented a top-down approach and could potentially have limited the emergence of cross-cutting policy agendas at national and local levels. To alleviate this concern, contributors of national level policy briefs were instructed to select relevant policy developments based on their best expertise.

➤ **Annual reports on policy developments and initiatives**

Annual reports on policy developments and initiatives formed an integral part of CASI policy analysis and contribution. **Three reports were published**, and they focused on wider policy contexts, policy advice and policy impacts.

The **first annual policy report** positioned the CASI project in its policy context (Damianova, Kozarev, Chonkova & Dimova Eds., 2015: CASI in the Wider Policy Context). The report observed that misalignments between policy developments across countries limited the emergence of potential policy agendas at national and local levels.

Civil society and changing behavioural norms was not seen as just the target of innovations, but might also be a valuable source of innovation. Despite the growing trend and increasing popularity of public engagement, the report noted that there were still barriers to overcome to fully exploit its potential for sustainable innovation, for gaining support for policy measures amongst society and for changing the consumer-production system.

Finally, the report stressed that more research and experimentation was necessary to better comprehend the nature, barriers, drivers and diffusion of sustainable innovations across Europe. It foresaw that the CASI project could shed light on the importance of sustainability and its consideration on policy levels by improving understanding of both social and technological aspects of sustainable innovations.

The **second annual policy report** provided sustainable innovation policy advice particularly through the in-project developed framework of CASI-F (Popper and Velasco Eds., 2016: Sustainable Innovation Policy Advice). CASI-F facilitates the assessment and management of sustainable innovations by drawing on the analysis of the critical issues linked to sustainable innovation initiatives, policies, and citizens' aspirations. The report noted that the development of CASI-F had already enabled the formulation of sustainable innovation relevant and evidence-based advice, which was formulated as policy messages.

The first message highlighted the potential of conceptual and methodological frameworks for assessing and managing sustainable innovation and, in particular, the benefits of exploiting the versatility of CASI-F. Secondly, the report suggested that policy makers systematically analyse and

make sense of the drivers of change affecting different types of sustainable innovation stakeholders (government, business, civil society, and research & education). A broad concept of innovation accounting for product, service, social, organisational, governance, system and marketing innovations is also promoted.

Concerning citizen and expert participation in sustainable innovation, a third key message related to the benefits of promoting public engagement for improving sustainable innovation impacts at policy and societal level. It was outlined that this engagement implies the recognition that the major challenge of sustainability today resides in the systemic re-orientation of society and the economy. Fourthly, and with respect to the assessment of sustainable innovation policies, the report emphasised the benefits of considering a wide variety of stakeholders when applying sustainable innovation policy.

Relating to sustainable innovation management, a fifth message in the report emphasised the benefits of removing barriers to sustainable innovation, promoting collaboration between sustainable innovation actors, and supporting the acceptance of sustainable innovation actors on business and policy agendas. Finally, the report argued for more intensive public engagement in sustainable innovation research. When this research aims to support policy action, public engagement would help to better match citizens' expectations with current or upcoming sustainable innovation policies. Involving citizens in policy making may also contribute to address social issues linked to sustainable innovation more efficiently.

The **third annual policy report** focused on policy impacts of CASI contributions (Tregner-Mlinaric Ed., 2017: Reaching out for sustainable innovation). The report targeted four streams of impacts. Firstly, policy formulation was enhanced through review of CASI MML methodology, introduction of disruptive elements, as well as suggestion of an issue based approach to policy formulation, all providing variety and challengers to current applications. Secondly, impacts were approached through stakeholder involvement and networks, both arguing for complementary involvement strategies as well as spanning boundaries and contributing to mutual learning.

Thirdly, prerequisites for impacts were examined through assessment and management cultures as well as results from pilot projects. Fourthly, tools to reach impacts were examined in the specific domains of regions and education. In conclusion, the third and final annual policy report translated CASI experiences and results to actionable strategies that all strive for impacts in sustainable innovation and public participation in it.

➤ **Online policy blog**

The CASI policy blog served as a non-stop knowledge hub for the audience of CASI (policy-makers, knowledge institutions, innovation agents, civil society organizations, other stakeholders and citizens), allowing them to read analysis and reviews about sustainable innovation-related (best) practices, events, policies, research, ideas etc. The blog focuses on policy and provides an interface for CASI to promote sustainable innovation and interact with professionals and the broad public. Thematically, the CASI policy blog focuses on the Horizon 2020 grand challenge on climate action, environment, resource efficiency and raw materials. Major strategic developments and major legislative developments are of particular interest and relate in the CASI context to the Europe 2020 strategy, the Horizon 2020 framework programme on research and innovation as well as developments in more specialised fields of sustainable innovation at European, national and local levels.

Content creation and management of the CASI policy blog promoted policy development dissemination on a European, national and local level and improved awareness on sustainable innovation related policies, practices, events, research etc. The CASI policy blog provided the CASI project a communication channel to disseminate and put the numerous contributions of the project in a policy context and perspective to policy professionals and a broad audience. Policies are here

interpreted as broader than government policies, but refer to a course or principle of action, guiding principle or procedure adopted or proposed by individuals, organisations, businesses, political party or government intended to influence and determine decisions, actions and other matters.

The blog differed from an academic journal or book in the sense that it aims at addressing both policy professionals and a broad audience. The style of blog posts was therefore different; a blog post should be easily accessible and comprehensible in order to disseminate policy insights and spur new policy debates.

During the life-time of the project 49 contributors from the consortium partners and other organisations published 82 blog posts, which generated almost 190,000 views: <http://www.casi2020.eu/blog/posts/>

WP8 Policy Recommendations

The objective of WP8 was to inform policy makers at different levels of governance (in the consortium partners' countries and the relevant DGs of the European Commission) about the key findings and conclusions stemming from the CASI project in regard to sustainable innovation. Specific objectives included:

- To contribute to policy coordination at the national level and between the national and EU levels
- To develop specific policy recommendations for stimulating wider societal engagement in sustainable innovation activities, for their assessment and improved public management

WP8 successfully extended the policy outreach of the CASI project by delivering policy messages to a wide array of policy-minded audiences, thus also promoting the policy insights of CASI-related work. Those insights were subject of a series of collaborative dialogue processes, including stakeholder workshops, a policy conference, and a serious analytical effort by the CASI team.

Major achievements of WP8

➤ **D8.1 Local and National Reports on Policy Recommendations**

At a series of national and local level dialogues in each of the CASI countries scientists, interest groups, industry, CSOs, public administration and national and regional policy makers jointly identified barriers and recommendations for how to stimulate societal engagement in sustainable innovation. D8.1 summarised the outcomes of those national discussion. Highlights include:

- Discussions at the workshops very much focused on governance mechanisms to institutionalise public participation and make sure that the notion of involvement is embedded into the way government administrations work.
- Recommendations developed in several workshops addressed the need to make demands in legislation for the practice of societal engagement in sustainable innovation, while in others the promotion of a "culture of participation" was seen as the way forward.
- Another governance tool was public funding and the ways in which it could support public engagement in sustainable development, e.g. by dedicating funding streams for this specific purpose; the workshop participants also clearly express a desire to involve citizens, users, stakeholders and experts to a higher degree and in various ways.
- In addition to the call for inviting citizens to contribute to innovation processes in their capacity of being users or voters, several workshops recommended that citizens be empowered to actively seek the participation in such processes themselves, e.g. through coaching and education.

- Recommendations from several workshops pointed to the need for training public administrations and other decision makers in how to apply participatory methods and to share best practices. The need to plan such processes well was highlighted and some recommendations pointed to the need for neutral and specialised facilitators or mediators between the different societal actors engaged.

The workshops helped frame and stimulate national debates about the relationship between public engagement and sustainable innovation. Public engagement has not traditionally been part of the sustainable innovation discourse and connecting these two dimensions has the potential to affect the way in which policy makers and stakeholders think of sustainable innovation.

➤ D8.2 Report on European Conference

CASI cooperated with another FP7-funded project – Public Engagement Innovation for Horizon2020 (PE2020)⁴ to co-organise a high-level policy conference under the title of “Public Engagement for Research, Practice and Policy: Exploring Policy Options for Responsible Research, Sustainability and Innovation”. The CASI/PE2020 Conference was a timely and productive avenue for reiterating the growing importance of the inclusion of public engagement approaches into research and innovation designs, and further encouraged discussions on their policy relevance. A multitude of concepts and approaches, and the way they become part of integrated policy solutions, were introduced and discussed in depth. Engagement proved to be an overarching concept concentrating aspects of practice, innovation, knowledge generation, and policy opportunities.

The event was hosted by the Committee of the Regions (CoR) in the city of Brussels, Belgium. More than 160 delegates were welcomed by the President of the CoR Mr. Markku Markkula and by the Deputy Director-General for DG Research and Innovation Dr. Ruxandra Draghia-Akli. The partnership with the PE2020 project has been particularly productive, and resulted in an expansion of the focus and outreach of the conference. The two projects had interacted closely during a longer period (in the preparation phase), which greatly facilitated the exchange of knowledge and praxis between the organising teams and the partners from both consortia. From CASI’s point of view, this was an excellent example of the underlying mutual learning and mobilisation principle (MML), which is foundational to the project. On the other hand, CASI provided a richer base of engagement praxis that enriched the scientific inquiry undertaken by PE2020. Thus, not only did not the two projects have to compete over much of the same target audience, but they mutually reinforced their messages and contributed to a richer shared space for deliberation and focused policy dialogue. Overall, the event featured 4 keynote speeches, and more than 40 speakers throughout 10 parallel sessions.

Some key conference highlights include:

- Current engagement models are insufficient in that they are not supported by policies that aim to bring science and science-bound issues to citizens in a convenient and comprehensible way.
- There is strong impetus towards the inclusion of solutions that encourage the expansion of the public engagement paradigm to also include very practical ways to bring knowledge to the people in an effort to stimulate not only general awareness but greater understanding. Otherwise, the existing knowledge gap between the general public and scientists would persist as a knowledge divide that could make engaging citizens in science and research ever more challenging. One unwanted consequence would affect sustainability in a very direct way by making citizens increasingly distanced from the complex challenges affecting their lives that are often themselves subject to scientific study, or are the result of rapid technological advances.

⁴ <http://www.pe2020.eu>.

- Public engagement is but one important avenue where such a divide could be narrowed, and which could in the long term contribute to improved solutions to sustainability and other societal challenges. This was as well reiterated during the conference as support for the evolution in scientific citizenship concept, which is particularly apt to more inclusive sustainability policy and governance.
- Public engagement could enhance the typical process of knowledge creation through scientific research. Integrating citizen input at various research stages enables the introduction of novel perspectives that are not rooted in scientific paradigms, but are nonetheless valid. This contributes further to the enhancement of researchers' accountability, and in turn increases trust in the science system. Policies that are supporting the encouragement of knowledge development among lay citizens and, in turn, lay citizens' contributions to a more structured research processes, would be very beneficial to both researchers and society at large.

➤ **D8.3 Policy Recommendations Report**

The report presents policy recommendations for steering research and innovation towards more sustainable futures and for ways in which public participation can contribute to that end. The recommendations are addressing EU, national and local decision makers, business leaders, civil society organisations, foundations, and universities alike. One key observation is that given CASI's complex, contested and systemic nature, both the objectives for research and innovation towards a more sustainable future and the means by which it is pursued would – in light of CASI insights and experiences – benefit strongly from increased societal engagement. One might even assume that innovations cannot truly serve sustainable futures without societal engagement.

D8.3 offers several suggestions/recommendations for ways in which sustainable innovations and futures can be promoted by policy makers, business leaders, civil society organisations, foundations, and universities alike. The recommendations are divided in three thematic chapters:

Multi-stakeholder Collaboration in Sustainability Research and Innovation

1. Mobilisation and Mutual Learning Action Plans (MMLAP's) should be applied extensively both at the EU and Member State level in order to advance the sustainability of future innovations.
2. The Mobilisation and Mutual Learning Action Plan (MMLAP) approach should be applied to "wicked problems" that cut across more than one societal challenge.

Sustainable innovation strategies

3. Promotion and support for the diffusion of sustainable innovations by local, national, and EU level Government bodies can significantly contribute to a transition towards sustainable futures.
4. Sustainable innovation assessment and management can be improved by the use of a framework that seeks responses to critical issues through the engagement of government, business, and civil society, and research and education actors.
5. New policy agendas for sustainable innovation could be better informed by innovation actors' current priorities and their future expectations.
6. New infrastructures and support strategies for social innovations are required.

Citizen participation in sustainable innovation

7. Identify shared interests amongst European citizens and institutionalise the inclusion of citizens' interests in research and policy agendas.
8. Make use of citizen participation in order to draft innovative research agendas and policies for moving toward a more sustainable future.

9. More research should be directed at finding solutions that will empower citizens to help bring about a more sustainable future.

Knowledge-generation strand 3: Communication, dissemination and sustainability of CASI results

WP3 Dialogue and participation

(Task 3.3 Webinar for wider societal learning and participation)

➤ **Webinar for wider societal learning and participation**

The webinar was more directed at a general public, providing more structured content rooted in what CASI had already developed at the time, in notions (such as public engagement) that informed the CASI approach, and served as a general introduction to CASI-F, the assessment and management framework being developed at the time within the project. CASI designed a webinar, which attracted more than 100 individuals to the live broadcast, and later published the recordings of the sessions on its YouTube channel.

WP9 Heritage

The overall objective of WP9 was to ensure that organisations beyond the CASI consortium will benefit from the outcomes of the project.

The partners jointly worked on measures for promoting CASI and its results outside of the CASI consortium, through their own networks. Opportunities for strengthening the awareness on CASI-F were identified and highlighted. The partners as well looked specifically on the mobilisation and mutual learning approach of the project, and suggested how CASI's most important achievements could be used by other organisations and stakeholders for addressing societal challenges in different geographical settings and contexts, beyond the formal end of the project.

Major achievements of WP9

➤ **Deliverable D9.2 Promotional plan**

The Promotional Plan is an important part of the activities oriented towards ensuring the overall sustainability of the CASI results and achievements after the formal end of the project. This report synthesises opportunities which had been identified by all CASI partners for promoting the project and its results, by listing specific opportunities and detailing planned promotional activities at the national level. It further presents the targeted stakeholders to whom the promotional activities should be addressed. It is designed as a plan easy to be followed by the partners. It also featured CASI promotional packages of materials (sets of CASI deliverables and tools, as well as promotional brochures) that could be used by the partners to promote specific CASI achievements.

➤ **Deliverable D9.3 CASI MML Strategy and Action plan**

The major objective of CASI's Mobilisation and Mutual Learning (MML) Strategy is to enhance the sustainability of CASI results and achievements after the project is formally closed (i.e. after 30 June 2017), helping potential users of CASI's outputs to identify opportunities to draw knowledge and insights from the project outputs. Thus, this document aims to support stakeholders in addressing societally-pressing challenges through the application of relevant CASI results which enable the mobilisation of relevant actors and mutual learning among them. It also demonstrates the potential of the CASI methodologies and tools, elaborating on their added value for enhancing sustainability objectives through promoting sustainable innovation policy and practice which integrate societal aspirations and values. The stakeholders which have been within the focus of CASI and are the main

target groups of the MML strategy are: i) government; ii) business (including Social Enterprise); iii) civil society; and iv) research and education actors. The MML Strategy further addresses two specific groups which have a great potential to contribute to overall sustainability of the CASI results and achievements after the project is formally closed, namely: DG RTD of the European Commission, and the CASI Project Network, composed of the CASI consortium partners, the CASI country correspondents and the members of the Advisory Committee of the project, as well as the External Evaluator.

WP10, Communication and dissemination

WP10 was designed so as to ensure the set-up of the technological platforms needed for **internal communications between the partners** (i.e. file storage interface, deliverable storage, file sharing within the consortium), as well as all **external communication channels and dissemination**, including a comprehensive web platform, social networking accounts and interfaces for the collection and aggregation of data on sustainable innovations.

Major achievements of WP10

➤ **Deliverable 10.1 Project web portal, homepage widgets, main modules and CMS access – concept and web presence**

The CASI web portal and page (**Deliverable 10.1**) were available in May 2014, and kept growing in terms of contents over the entire life span of the project. It is accessible at <http://www.casi2020.eu>. The portal features **CASIPEDIA** – CASI’s bank of sustainable innovations, including cases of sustainable innovation and the mapping interface thereof, a comprehensive set of “critical issues” ideas bank (barriers, drivers, opportunities and threats), and actions bank (an action or advice co-creation tool for the management of critical issues at strategic, tactical and operational levels, and for the developing of policy roadmaps), as well as storing the 50 visions elaborated by the national citizens’ panels. The **CASI library** contains all project-generated materials, including the policy briefs and the project deliverables. The project set up and maintained a **Twitter account and a LinkedIn group**, using both as strategic dissemination tools. The development of the concept as well as the development of the web presence of the online training on CASI-F is part of WP10 as well. Final national events on the promotion of the major CASI achievements and results and EU-level events during which the project had been promoted were part of WP10, too. CASI partners had the opportunity to present CASI at relevant public events that were external to the project and the Consortium, thus featuring certain CASI results to a much wider audience. The full list of events attended, as well as the target audiences reached, is provided in the Participants Portal.

➤ **Deliverable 10.2 Bulletin board, blog, calendar, discussion forum, document storage, mapping environment integration – concept and web presence**

The deliverable presents the mapping environment which was named “CASIPEDIA” with the input and output forms, as well as the advanced filter functionality which enables effective and user-friendly searching and analysing of the sustainable innovation cases in the CASIPEDIA. It further introduces the concepts of the policy blog and calendar sections on the web portal, as well as the document storage (library) and intranet sections.

➤ **Deliverable D10.4 Final national events - reports**

The final national promotional events enabled partners to introduce the CASI results and achievements in their national and local contexts, by attracting diverse stakeholders and publics. In some countries, these events were co-organised with other interested parties, thus helping CASI to reach a much broader audience. D10.4 focuses on the implementation and results from the events that took place in the 12 partnering countries (Austria, Belgium, Bulgaria, Czech Republic, Denmark, Germany, Finland, Italy, Poland, Portugal, Slovenia, and the United Kingdom) during May and June 2017. A total of fifteen events were held (2 in Bulgaria, 3 in the UK and 1 in each of the remaining partner’s countries), which

attracted a total of 319 stakeholders representing the quadruple helix of sustainable innovation actors (i.e. government, business, civil society and research and education). The report highlights messages and CASI results (CASI Framework, online training course, public engagement, etc.) promoted during the events, as well as insights expressed by the participants.

Knowledge-generation strand 4: Management and evaluation of the CASI project

The management and evaluation activities of the CASI project fall under WP1 Management and WP11 Evaluation.

WP1 Management

The overall objective of WP1 was to ensure the fulfilment of the project's mandate and the delivery of the planned results, as well as the overall scientific, administrative and financial coordination of the consortium partners. The specific objectives included the establishment of a network of country correspondents as well as an Advisory Committee to the CASI project.

Major achievements of WP1

➤ **Deliverable 1.1 Project Handbook**

The CASI Handbook was compiled in the first semester of 2014 (right upon the formal commencement of the project in Jan 2014) with the aim to facilitate the implementation of all tasks within the CASI project by providing complete details on task execution, interdependencies, deliverables and partner responsibilities. The handbook was used as a primary reference when planning each of the tasks, and was especially useful in highlighting the specific collaborations that need to take place during CASI's implementation.

➤ **Deliverable 1.2 Sustainability Plan**

The Sustainability Plan was delivered in the end of the first year of the project and was meant to guide CASI partners in their efforts to achieve sustainability of project's results. The sustainability plan identified those project results which, from the perspective of 2014, had the potential to be used beyond the lifetime of the project, and as well outlined activities which could be undertaken by partners (within the time-frame of CASI) to ensure the use of the major project's results and their continuous impact beyond the formal end of CASI.

➤ **Task groups**

Dedicated task groups in CASI represented a collaborative approach to methodology detailing and problem solving and were based on fair distribution of responsibilities and close coordination among partners within the task group. Considering the overall complexity of the CASI project and the need for closer coordination among partners during the implementation of interlinked tasks, several ad-hoc 'task groups' had been set up to jointly work on conceptualising several project tasks and their inherent deliverables, i.e. the online survey on the characteristics of sustainable innovation and the first draft of CASI-F (WP4), the pilot application of CASI-F - framework for assessment and management of sustainable innovation – and its finalisation (WP5 and WP6), the online training on CASI-F (WP9), the second annual policy report titled "Sustainable Innovation Policy Advice" (WP7), the joint conference of the CASI PE2020 projects (WP8), as well as the policy recommendations report (WP8).

➤ **Networks**

Network of country correspondents

Given the mobilisation and mutual learning nature of the CASI project it was the common understanding of the consortium partners that CASI should have an EU-coverage. This is why already at the time of the proposal development, the set-up of network of country correspondents was foreseen. Sixteen country correspondents have been recruited – national experts, from the 16 EU

countries where the CASI consortium had no partner. Correspondents were managed by five partners – Coventry University Enterprises Ltd., META Group S.R.L., INOVA+, the Centre for Social Innovation and the University of Helsinki, based on geographical proximity whenever possible. The country correspondents were tasked with collecting and providing information for several CASI tasks so as to ensure jointly with the CASI partners adequate information basis for subsequent analyses, as well as to serve as contact points for disseminating information and project results to interested stakeholders in their countries. The country correspondents contributed positively to the mutual learning in the framework of the project, and through their work the knowledge base of the CASI project could be extended beyond the 12 CASI partner countries.

Advisory Committee

The CASI Advisory Committee had 5 members, renown experts and researchers, who supported the CASI consortium with providing feedback to major deliverables, linking CASI partners to relevant and ongoing EU-level policy developments, and advising on how CASI could contribute to the different EU policies of relevance to the CASI project.

WP11 Evaluation

The overall objective of this workpackage was to establish the system for internal and external evaluation of the project. WP11 ensured both internal and external evaluation processes and recommendations. As a relatively complex and activity-rich project, CASI had put in place mechanisms for continuous monitoring and reporting on both performance and quality assurance. It also contracted an external independent evaluator with a clear mandate to review major project processes and deliverables, and provide recommendations for improvement. The deliverables of WP11 were of restricted nature and available only to the consortium partners and DG RTD of the European Commission.

CASI Major Impacts

As a 42-month long project CASI has set out an ambitious agenda and delivered a range of valuable insights and has exemplified impacts on policy, science, and citizen participation. The development of a solid theoretical framework of sustainable innovation that was inspired by a mixture of engagement forms, the collection and analysis of good innovation practices, as well as by ongoing policy developments, informed the elaboration of a complex framework for the assessment and management of sustainable innovation – CASI-F.

The framework evolved throughout the project, out of a solid theoretical foundation, and into a practical application with selected innovators (through a methodologically robust piloting process). CASI-F positioned itself as a versatile framework supporting sustainability oriented processes and this has been recognised within CASI when applied to seven different types of innovations. Moreover, this has also been demonstrated when CASI was applied in different contexts and thematic areas outside of CASI's scope, thus increasing the usability of the framework and its impact potential. The framework can be applied in academic settings and is also accessible to the general public through a dedicated mass online learning course (CASI-F Tutorial), drawing continuously new course takers worldwide.

CASI has achieved impacts well in line with its own ambition and the requirements of the Working Programme under which it received funding, namely Science in Society of FP7. Most important details are below for each of the three major expected impacts:

Improving the governance of research and technological development to better facilitate sustainable and inclusive solutions.

- CASI started out with a general term to conceptualise sustainable innovation and differentiate it as an independent innovation phenomenon amidst a range of closely competing definitions sharing both similarities and unique features. Rather than insist on introducing another taxonomy of innovation types, CASI purported to consider sustainable innovation across 7 different and agreed upon types of innovation, opening up space for studying sustainability aspects of innovations in general. That led both to an evolvement in the definitional scope of how CASI defined sustainable innovation (through several iterations, while building on newly acquired evidence throughout the implementation of the project), and also set the grounds for the elaboration of an assessment and management framework that could be applied to generate management or policy advice.
- A further advance in understanding the phenomenon of sustainable innovation came from the EU-wide online surveying of innovation and sustainability professionals, which revealed that public participation is perceived as a defining characteristic of any sustainable innovation. It further revealed strong association of the term with notions of sustainable development and eco-innovation while still asserting it requires separate attention as well as management approach. The online questionnaire also provided a solid base for internal consideration within the consortium. The obtained results were also made available for use by other researchers. As such, it represents a valuable data source on sustainable innovation, offering not only a conceptual glimpse, but also assisting with obtaining a more thorough understanding of sustainable innovation as a societal phenomenon, the influence of key drivers and barriers, as well as distinct characteristics that make sustainable innovation significant from a practitioner's point of view. These lessons have been summarised in an internal document, and have been also taken-up in other project deliverables. They further served to inform key audiences and to shape their understanding of sustainable innovation during project events, thus also strengthening mutual learning.
- In light of the above, CASI demonstrated how powerful public engagement can be in aiding policy formulation in an open, transparent and inclusive way, by integrating the perspectives of lay citizens in what is typically characterised by a high level of expertise and specialised

knowledge. One particularly strong finding has to do with the clear identification of cross-linkages between the themes underlying each of the Societal Challenges (SCs) of Horizon 2020 programme. Citizens' perceptions tend to be broader, resulting in frequent overlaps among thematic priorities, as grouped within the SCs, suggesting that the methodological approach of CASI could well be utilised when addressing other societal challenges, with only little, if any, tweaking necessary (see Table 1).

- CASI also performed a EU-wide policy monitoring (Policy Watch) over issues of sustainability and innovation, the results of which were aggregated in the form of national and EU-level policy briefs. The briefs, which were downloaded more than 28,000 times by the end of the project, proved that it was possible to create a policy watch procedure for monitoring complex policy initiatives across a large scope and provide useful advice to policy planning processes. The policy brief process also proved to be a unifying effort for CASI project partners and country correspondents. Policy Watch continues in the LinkedIn group of the CASI project. Membership in the group includes representatives from the extensive CASI network of stakeholders and collaborators as well as future newcomers.

Incorporating Science in Society issues into research and innovation systems to include the values, needs and interests of EU citizens, thus promote Responsible Research and Innovation.

- To facilitate uptake and improved understanding of CASI-F a special online learning course (CASI tutorial) was developed for people interested in learning more in-depth and intricacies of the framework and start applying it to their own context. The training offers rich content distributed into separate modules, and could be taken at the learner's own pace. A set of self-assessments are provided to enhance learning outcomes and to highlight areas for critical feedback. All course takers are offered a certificate upon successful completion of the course and satisfactory results from the self-assessments. The availability of the online course helped spread knowledge of CASI and the CASI-F not only in Europe, but also to promote a very intense and effective mobilisation and mutual learning agenda in Latin America, from where a large number of course takers have already obtained their certificates. In addition to the EU-wide interest, various Latin American institutions are exploring the application of the CASI Framework in different contexts, as well as the potential translation of CASI-F and the CASI Tutorial to Spanish.
- CASI demonstrated quite well how a form of citizen engagement could contribute to the elaboration of policy and research priorities, while ensuring not only democratic accountability but also wider diversity and integration of expertise-based and tacit knowledge into the proposed policy solutions. It successfully integrated and developed further an engagement method first pioneered in the FP7-funded CIVISTI project⁵, thus expanding that project's legacy and building one of its own. It provided a solid methodological framework for the integration of citizens' values, needs and interests into practical solutions aimed at research and policy formulation, and demonstrated the possible scope of interpretation and analysis of citizens' input to advance knowledge co-creation as a powerful and legitimate activity. Thus it also successfully demonstrated a possible approach to enhancing responsibility aspects of research and innovation, as well as of policy-making aimed at either.
- CASI's engagement approach – to citizens in particular – was highly instrumental in introducing a richer perspective into the early stages of policy elaboration, especially with regards to complex and “fuzzy” issues. These perspectives are very informative in that they provide views that are often easily disregarded by experts' thinking. At the same time, they provide strong complementary source of information that could steer cross-disciplinary discourses to

⁵ <http://www.civisti.org>

elaborate a richer and more inclusive policy options whereby citizens' acceptance and adoption is of the highest importance.

- CASI mobilised more than 160 stakeholders from across the EU to a 2-day policy conference held at the premises of the Committee of the Regions in November 2016. This was a joint undertaking with another FP7-funded project – PE2020 (Public Engagement Innovations for Horizon2020), and featured key policy makers and stakeholders discussing about the role of public engagement in R&I in general and sustainable innovation in particular. Connecting those two dots can potentially impact how future R&I related to sustainable innovations is structured, meaning that public engagement could potentially support future innovation processes to a large degree. Another potential impact is the realisation, mainly among policy makers and research funding institutions that systematic approach to assessing and managing sustainable innovation is needed and that CASI-F offers such an approach.

Improving transnational cooperation on sustainable innovation research within the European Research Area.

- The CASI consortium consisted of a mixture of organisations that represented different societal actors – NGOs, universities and research organisations, local governance organisations, and businesses. Not only did the partnership advance the notion of sustainable innovation as it applies to both practice and policy across different countries and regions, but it also enabled those actors to uptake sustainable innovation and integrate it into their own activities (i.e. research agendas, study curricula, policy debates, new project proposals, scientific conferences, etc.). That kind of a first-level-network was complemented by the involvement of country correspondents in the countries not represented by the consortium, making CASI a EU-wide knowledge network. The capacity of all actors involved to integrate sustainability within technological and non-technological innovation solutions has been enhanced. The country correspondents' network was modelled after successful ERAWATCH Network models.
- A core CASI activity, more than 500 cases of sustainable innovations from EU28 were identified, with more than 200 of them fully mapped to provide a solid knowledge source in the elaboration of CASI-F. Thus CASI has successfully promoted cross-national collaboration, benchmarking and mutual learning about good practices and shared critical issues, especially barriers, drivers, opportunities and threats.
- Throughout the duration of the project CASIPEDIA (i.e. CASI's Bank of sustainable innovation initiatives) gained popularity amongst research and education actors, mainly as a source of case studies for lecturers. In early 2017, growing public engagement was noted as some 20 new cases of sustainable innovation were mapped in CASIPEDIA and CASI-F applied to those initiatives by students and researchers from Italy.
- In addition to the above, the theme of sustainable innovation has been successfully integrated with other topics beyond just SC5 "Climate action, environment, resource efficiency and raw materials" of Horizon 2020 programme. Table 1 below summarises the cross-linkages and areas of thematic overlapping between SC 5 "Climate action, environment, resource efficiency and raw materials" of H2020 and the other societal challenges related topics, as they emerged from the analysis of the citizens' visions in CASI.

Table 1 Cross-linkages and areas of thematic overlapping between SC5 and the other SCs of Horizon 2020 programme

SC5 cross-linked with	Main issues of concern and research topic suggestions
<p>SC1 Health, demographic change and well-being</p>	<ul style="list-style-type: none"> • Air pollution and wider changes in eco-systems and their impacts of human health • Healthy and sustainable lifestyles that mitigate the environmental footprint

SC5 cross-linked with	Main issues of concern and research topic suggestions
	<ul style="list-style-type: none"> • Physically active population, which contributes to mitigating environmental challenges (e.g. through developing and utilising technology for transforming kinetic to potential energy) • Production of nutritious food (GSC2) and promotion of healthy diet
<p style="text-align: center;">SC2</p> <p>Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the bio-economy</p>	<ul style="list-style-type: none"> • Sustainable agricultural practices • New sustainable agribusiness models (e.g. urban farming) • Sustainable and nutritious food production • Water ecosystems and impacts of human health (GSC1) • Small-scale agribusiness models
<p style="text-align: center;">SC3</p> <p>Secure, clean and efficient energy</p>	<ul style="list-style-type: none"> • Growing scarcity of resources • Growing energy demand • Employing new business models (e.g. based on 'shared resources') • Improved energy and material efficiency in major sectors • Low-cost, low-carbon renewable energy supply • Green energy solutions • Small-scale energy projects and resulting health benefits (GSC1) • Access to clean and reliable energy and energy services
<p style="text-align: center;">SC4</p> <p>Smart, green and integrated transport</p>	<ul style="list-style-type: none"> • Reducing car fleet • Integrated transport environment • Introducing ICT technologies • Sustainable business models in transport (e.g. shared transport) • Green transport • Using low-carbon fuels
<p style="text-align: center;">SC6</p> <p>Europe in a changing world - inclusive, innovative and reflective societies</p>	<ul style="list-style-type: none"> • Change of individual values and patterns of consumer behaviour in view of optimising the use of resources and achieving long-term sustainable development • Distributive justice for essential resources • Socially responsible, eco-friendly, innovative and efficient business models • Reconciling human behaviour with the technological potential of new socially and environmentally friendly products • Developing sustainability indicators which reward compliance to social and environmental imperatives • New ways of organising society that promote solidarity and a shift to sustainable lifestyles • Holistic forms of education and curricula that integrate the principles of inclusiveness, citizens' participation, respect for the environment and social/cultural differences • Spatial planning that fosters social cohesion and limits environmental pollution • New ways of organising society that promote solidarity and a shift to sustainable lifestyles
<p style="text-align: center;">SC7</p> <p>Secure societies - protecting freedom and security of Europe and its citizens</p>	<p style="text-align: center;">International cooperation in the management of natural resources founded on the principles of solidarity and fair distribution of and access to essential resources</p>

Source: Ivanov et al. (2016). *Strategic Outline of Public Engagement in the Development of Sustainability Research Policies and Programmes: Findings of the CASI Project*, pp.11-12.

Cooperation with other projects, networks and initiatives

- **CIVISTI project (FP7, <http://www.civisti.org/>)**: the methodology for citizen engagement within CASI builds upon the CIVISTI project. The CIVISTI methodology has been adapted to the needs of the CASI project and further developed and enriched with performing additional analysis of the visions developed by the citizens in order to elaborate policy-relevant messages. The findings of the content analysis of the visions were presented in the paper “Strategic Outline of Public Engagement in the Development of Sustainability Research Policies and Programmes” along with five mock-up calls on research priorities from the list of top-10 research priorities voted by the citizens. The paper and the mock-up calls were presented to DG RTD, Directorate I Climate Action and Resource Efficiency.
- **SI Drive project (FP7)**: the CASI project had its own session in the framework of the international conference “Social Innovation 2015: Pathways to Social Change”, organised in Vienna in November. In the “Atlas of Social Innovation” prepared as part of the SI-Drive project (<http://www.socialinnovationatlas.net/>) the interplay between social innovation and sustainability was examined, building on the results of the CASI project. The articles included in the Atlas provide insights into ongoing research on social innovations. The Atlas will be launched in January 2018.
- **PROSO project (H2020)**: The CIVISTI and CASI projects, and the citizen panel methodology, served as inspiration in the development of the PROSO methodology for citizen consultation. The PROSO partners drew on the practices and experiences with citizen panels in CIVISTI and CASI, especially in terms of establishing a structure for mutual feedback and collaboration between experts and lay citizens, and adapted this methodology to serve the objectives and needs of the PROSO project (<http://www.proso-project.eu/>).
- **Engage2020 (FP7, <http://engage2020.eu/>)** – CASI was presented at the final conference of the Engage2020 project “Engaging Society in Responsible Research and Innovation: What’s Next?” which took place on 9-10 November 2015 in Brussels. The CASI project was part of the Sustainability session of the conference, entitled “Engagement for a sustainable future – what’s the way forward?” The participants in the session, among them EU representatives and policy makers, deliberated on how engagement can support national, European and global agendas for sustainable development. CASI was also featured in the Engage2020 Anthology “Science, Society and Engagement”, which provides an introduction to engagement in research and innovation.
- **PE2020 project (FP7, <http://pe2020.eu/>)**: CASI collaborated with the team of PE2020 project in conceptualising and preparing a joint policy conference “Public Engagement for Research, Practice and Policy: Exploring Policy Options for Responsible Research, Sustainability and Innovation” that took place on 16-17 November 2016 at the Committee of the Regions in Brussels. Both projects shared content and ran parallel sessions.
- **Black Sea Horizon (H2020, <https://blacksea-horizon.eu/>)**: Two international workshops on inclusive, **sustainable** and **social** innovation were planned to take place on 2-3 November 2017 (Sofia, Bulgaria) and 5-6 December 2017 (Tbilisi, Georgia) within the Black Sea Horizon project (H2020 project, coordinated by ZSI GmbH, also a partner in CASI). The workshops build on the outcomes of the CASI and SI-Drive projects, and have the overall objective of delivering policy-relevant messages to different levels of governance on possible measures to support sustainable, social and frugal innovation in the Black Sea Region.
- Collaboration with the **European Business Network (<https://ebn.eu/>)**. EBN has been very instrumental in announcing and promoting the CASI-PE2020 policy conference (16-17 Nov 2016), encouraging its members to register, if interested. Not only did CASI gain higher visibility among the EBN network, but the EBN endorsement added value to the conference itself.
- In continuation of a tradition set by the **PACITA project (FP7)**, ARC Fund was invited to host a session on CASI at the **3rd European Technology Assessment Conference**, which took place in Cork, Ireland, on 17-19 of May 2017. Furthermore, as an observer in the European Technology Assessment Network, ARC Fund participated and disseminated CASI-produced knowledge at the

- Annual EPTA Conference, held at the Austrian Parliament in October 2016. Link: <https://cork2017.technology-assessment.info/>
- **RECREATE** project (FP7, <http://www.recreate-net.eu/>) is focused on SC5 “Climate action, environment, resource efficiency and raw materials”. The CASI Top-10 R&I Policy Agendas resulting from the analysis of the sustainable innovation practices in CASIPEDIA have helped (1) to frame the discussions of the 3rd Annual Stakeholder Workshop on Defining tomorrow’s research and innovation funding priorities (26 October 2016, Brussels) and (2) to better structure SC5-relevant policy advice in terms of future R&I priorities, instruments and initiatives in RECREATE’s report “Three integrated scenarios until year2050”, accessible at <http://www.recreate-net.eu/dweb/results>
 - **CloseLoop** project (funded by the Strategic Research Council of the Academy of Finland): 3 conference papers have been written drawing on CASI results⁶: The papers were presented in two conferences: [5th International Conference on Nanotechnology and Materials Science](#) (October 16-18, 2017 Dubai, UAE) and the 1st [World Congress on Nanoscience and Nano Technology](#) (October 16-17, 2017 Dubai, UAE).
 - Plenty of evidence of **CASI’s international outreach** can be found in Latin America (seminars and high-level meetings in Suriname, Costa Rica, Peru, Colombia, Panama and Uruguay) where presentations on CASI-F, the state-of-the-art of sustainable innovation, the CASI policy advice report and the online training on sustainable innovation were delivered in the first semester of 2017 and shortly after the end of the project. The versatile nature of CASI-F has been recognised in different context and thematic areas that are outside of CASI’s scope, thus increasing the usability of the framework and its impact potential in other world regions.

The above list of collaborations is not exhaustive. It is meant only to exemplify the ways CASI networked and collaborated with other consortia and projects during the project implementation.

Use and dissemination of foreground

The CASI promotional plan (Deliverable D9.2) identifies and encourages activities to ensure the sustainability of CASI project results and achievements. The plan is a guiding roadmap for project partners in support of more effective promotion of project’s results. The Promotional Plan goes beyond mere dissemination by identifying the added value of CASI results and promoting them through the lens of four different groups of stakeholders and their unique perspectives. In terms of breadth, the Promotional Plan covers the main achievements and results of the CASI project, namely: (i) CASI-F and CASI Tutorial, (ii) CASIPEDIA and Ideas Bank, (iii) Visions Bank and citizen-expert-citizen based priorities, and (iv) the CASI Policy Watch. In terms of depth, the Promotional Plan and proposed promotional activities address the four main groups of stakeholders in the focus of the CASI project, namely (i) government, (ii) business, (iii) civil society and (iv) research and education actors.

Each project partner has prepared their individual promotional plan. The promotional activities for main CASI outputs (CASI-F & Online training, CASIPEDIA & Ideas bank, Visions bank & research priorities, Policy Watch/Policy Briefs), per project partner, are presented in Annex I of the Promotional Plan and cover the following aspects related to promotional activities:

- Outputs and results – what is to be promoted?
- Target users [there are four main target groups for CASI - policy makers, business, NGOs and civil society, researchers and academia] – to whom and for whom?
- Promotional channels and tools – how to reach the audiences?

⁶ Conference papers: 'Action roadmaps paving the way towards electric mobility and circular economy' (Mika Naumanen & Rafael Popper, 2017), 'Developing a sustainable circular economy strategy for electric mobility, Assessing the role of Li-ion battery technology' (Rafael Popper, Mika Naumanen & Monika Popper), and 'CASI-F applied to critical issue analysis and assessment of Li-ion battery technology solutions' (By Rafael Popper & Mika Naumanen)

- Timeframe – when to promote?
- Level/coverage of promotional activities (regional, national, international/EU)
- Responsible partner

Detailed information on the communication and dissemination activities during the life-time of the CASI project can be found in the List of dissemination activities of the current report.