

The background of the slide is a close-up photograph of a green lime on a branch. The lime is the central focus, with its textured skin and a small stem visible. The word "CASI" is written in large, bold, white, sans-serif capital letters across the middle of the image, with the lime partially obscuring the letter 'S'.

CASI

**CASI-F: a common framework for the
assessment and management of
sustainable innovation**

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Outline

- Part 1
 - The triple-track approach/sources
- Part 2
 - Data mapping: Exploring CASIPEDIA and the CASI Library
- Part 3
 - Critical issues identification and actions generation
- Part 4
 - Further steps in CASI-F: Piloting and applications



The triple-track approach/sources

Why a Triple Track approach?

'Good Governance' Principles (EC, 2001)	Track 1 Initiatives	Track 2 Citizen panels	Track 3 Policies
Openness	Sharing a wide range of SI initiatives through CASIPEDIA	Sharing some 50 citizen SI visions through the Visions Catalogue	Facilitating access to policy insights and policy blogs
Participation	Engaging with key stakeholders, innovators and experts	Eliciting desirable futures from civil society actors	Promoting policy debates through the CASI Policy Blog
Accountability	Dynamic assessment and tracking of SI practices	Assessing research priorities alignment with citizen visions	Disseminating EU/national SI policy developments
Effectiveness	Generating SI actions from systematic analysis of SI initiatives	Translating citizen visions into research priorities	Supporting evidence-based policy advice
Coherence	Co-producing advice at strategic, programming and operational levels	Identifying economic, social and environmental benefits of visions	Aligning advice with existing and emerging policy goals

Triple Track Approach to SI Management

	Track 1 SI initiatives	Track 2 Citizen panels	Track 3 Policies
Step 1: Mapping Intelligence 1.0 (Information)	<p>Nomination of 545 SI cases</p> <p>Selection of 193 SI cases</p> <p>Mapping 193 cases: practices, players, outcomes</p>	<p>Citizens' visions elicitation</p> <p>50 Visions from 12 EU countries</p>	<p>Policy briefs</p> <p>Policy blogs</p>
Step 2: Analysis Intelligence 2.0 (Ideas)	<p>Multi-source CASI analysis: 60 critical considerations for SI management</p> <p>Inductive analysis of 193 SI cases: dimensions (4), aspects (10), critical issues (50)</p>	<p>Visions outreach and transformation analysis: strategic level analysis</p> <p>Identification of chances, alarms, suggestions and intentions: programming level analysis</p>	<p>Identification of policy insights, gaps and actions implications</p>
Step 3: Advice Intelligence 3.0 (Actions)	<p>Meta-actions from SI common considerations</p> <p>Case-related actions from piloted SI cases, based on critical issues</p>	<p>Research priorities and actions based on chances, alarms, intentions, suggestions (experts' panels + citizens' acknowledgement sessions)</p>	<p>Policy recommended actions, based on formulated/ suggested policies</p>



**Data mapping:
Exploring CASIPEDIA and the CASI Library**

CASIPEDIA

- Home
- About
- News & Calendar
- Library
- Blog
- Casipedia
- Ideas bank
- Help & Contact

DISCUSSION

UPLOAD DOCUMENT

MAP A CASE

ADD AN IDEA



CASI

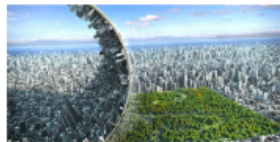
Public Participation in Developing a Common Framework for Assessment and Management of Sustainable Innovation



CASI TOUR



NEWS



16.11.2015 - by Monika Popper
Join the CASI Mutual-learning Webinar



12.10.2015 - by Monika Popper
Pre-piloting of the CASI Framework



07.10.2015 - by Monika Popper
Interview with Professor Ian Miles

EVENTS



11.12.2015 - 12.12.2015
Isola della Sostenibilità 2015

LATEST DOCUMENTS UPLOADED



50 Citizen Visions on...
Minna Kaarakainen, Petteri Repo, Kaisa Matschoss, Bjørn... 2015



European Research Priorities...
Petteri Repo, Minna Kaarakainen, Kaisa Matschoss 2015



Inspiration magazine for CASI...
CASI team 2015

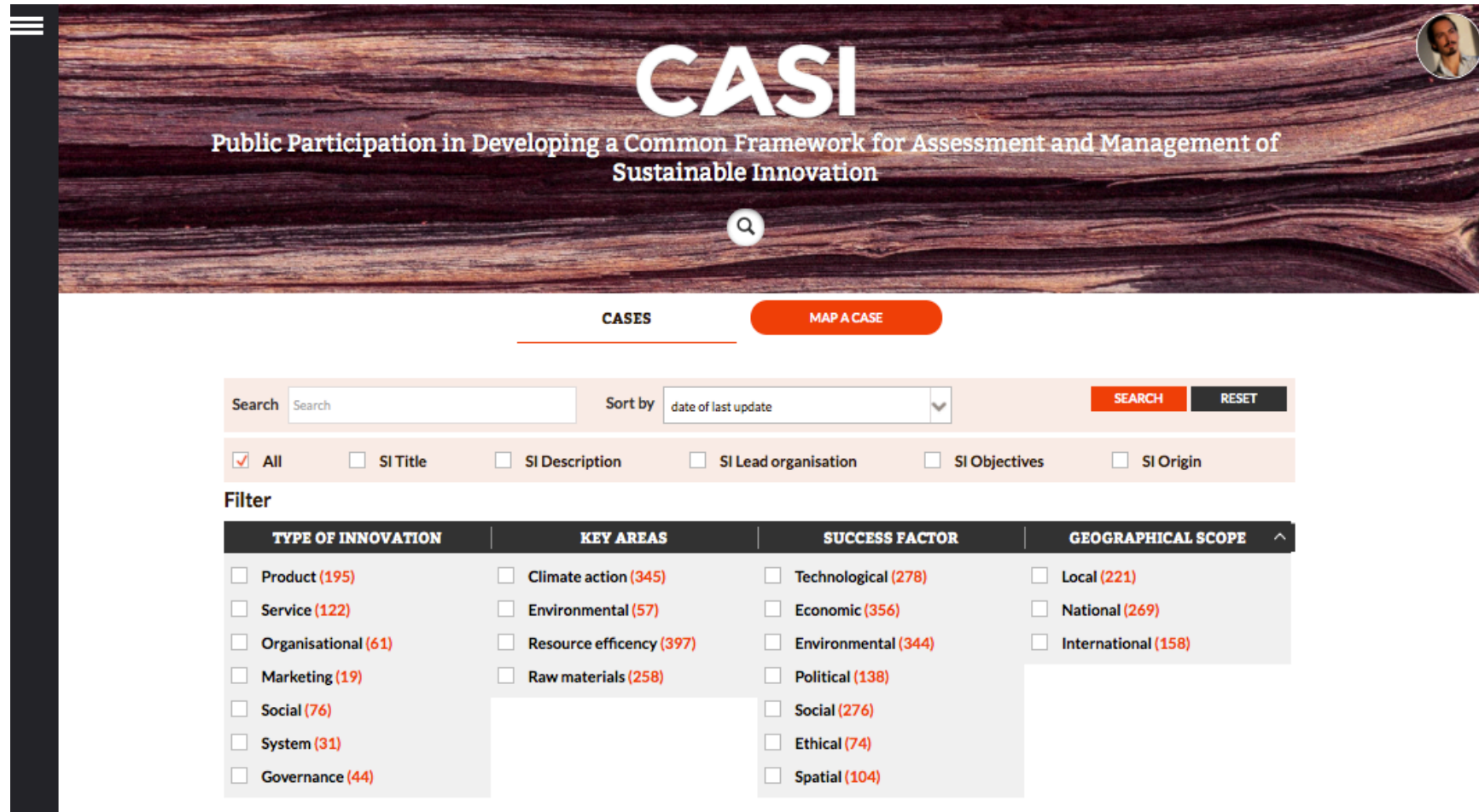


Energy Poverty
Anita Tregner-Mlinaric 2015

CASI



CASIPEDIA Filters (1/3)



The screenshot shows the CASI website interface. At the top, the CASI logo is displayed in white on a dark wood-grain background. Below the logo is the text "Public Participation in Developing a Common Framework for Assessment and Management of Sustainable Innovation". A search icon is visible below the text. The main navigation bar includes "CASES" and "MAP A CASE". Below this is a search and filter section with a search input field, a "Sort by" dropdown menu set to "date of last update", and "SEARCH" and "RESET" buttons. Below the search bar are checkboxes for "All", "SI Title", "SI Description", "SI Lead organisation", "SI Objectives", and "SI Origin". A "Filter" section is expanded, showing four columns: "TYPE OF INNOVATION", "KEY AREAS", "SUCCESS FACTOR", and "GEOGRAPHICAL SCOPE". Each column contains a list of categories with checkboxes and counts in parentheses.

CASI
Public Participation in Developing a Common Framework for Assessment and Management of Sustainable Innovation

CASES **MAP A CASE**

Search Sort by **SEARCH** **RESET**

All SI Title SI Description SI Lead organisation SI Objectives SI Origin

Filter

TYPE OF INNOVATION	KEY AREAS	SUCCESS FACTOR	GEOGRAPHICAL SCOPE
<input type="checkbox"/> Product (195)	<input type="checkbox"/> Climate action (345)	<input type="checkbox"/> Technological (278)	<input type="checkbox"/> Local (221)
<input type="checkbox"/> Service (122)	<input type="checkbox"/> Environmental (57)	<input type="checkbox"/> Economic (356)	<input type="checkbox"/> National (269)
<input type="checkbox"/> Organisational (61)	<input type="checkbox"/> Resource efficiency (397)	<input type="checkbox"/> Environmental (344)	<input type="checkbox"/> International (158)
<input type="checkbox"/> Marketing (19)	<input type="checkbox"/> Raw materials (258)	<input type="checkbox"/> Political (138)	
<input type="checkbox"/> Social (76)		<input type="checkbox"/> Social (276)	
<input type="checkbox"/> System (31)		<input type="checkbox"/> Ethical (74)	
<input type="checkbox"/> Governance (44)		<input type="checkbox"/> Spatial (104)	

CASIPEDIA Filters (2/3)

Governance (20)

CASES [MAP A CASE](#)

SECTORAL RELEVANCE

Manufacturing	149	Energy	118	Water	96
Agriculture	79	ICT	73	Other services	72
Transport	69	Construction	65	Education	49
Health/Social services	42	Accommodation & Food	41	Research & Consultancy	37
Retail	31	Arts & entertainment	27	Public administration	25
Real estate	17	Finance	12	Admin services	12
Household services	11	Mining	4	Extaterritorial bodies work	3

SI PRIORITY AREAS

Resource efficient sustainable lifestyles	215	Climate change mitigation solutions	169	Climate action by sustainable lifestyle	159
Eco-innovation and green economy transition	146	Eco-solutions to reduce raw materials use	130	ICT systems improving resource efficiency	106
Raw materials conscious sustainable lifestyle	79	Strategic intelligence and citizens' participation	76	Solutions to explore, extract, process and	63
Alternative raw materials	59	Climate change adaptation solutions	56	Climate action innovation policies	50
Solutions for water imbalances	32	Solutions for cultural heritage assets	31	Biodiversity examination and understanding	29
Awareness on raw materials shortage	25	Effective raw materials policies	12	ICT to assess and predict climate actions	11
Long-term raw materials availability	11	Climate change projections and scenarios	10	ICT mapping natural resources and trends	8
ICT systems to map raw materials trends	5				

RATING STATUS

Rated by Owner	530	Rated by UNIMAN	537	Rated by CUE	537
NOT Rated by Owner	18	NOT Rated by UNIMAN	11	NOT Rated by CUE	11
Mappable	203				

GEOGRAPHICAL RELEVANCE

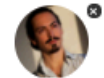


CASIPEDIA Filters (3/3)



GEOGRAPHICAL RELEVANCE

AT	34	IT	37
BE	31	LV	22
BG	28	LT	22
CR	21	LU	18
CY	20	MT	18
CZ	25	NL	31
DK	22	PL	26
EE	26	PT	25
FI	30	RO	21
FR	39	SK	15
GE	41	SL	15
GR	29	SP	30
HU	23	SE	31
IE	19	UK	66



Results (548)

« < 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 ... 55 > »



Arche Noah - diversity of cultural plants

ARCHE NOAH was established in 1990 on the initiative of heirloom - gardeners, farmers and journalists, concerned with...

31.07.2014

EDIT

DELETE



Solar Taxi Heidenreichstein

Austria's first e-taxi powered with electricity from solar power plants offers low-fare mobility services in a small...

12.08.2014

EDIT

DELETE



Ecoverified

Ecoverified® is established based on our ambition for a greener future. We specialise in providing unique...

27.11.2015

EDIT

DELETE



Oxford Photovoltaics

The actual innovation is a new type of solar cell for Building-integrated photovoltaics (BIPV) applications. Unlike...

29.08.2014

EDIT

DELETE

Mapping SI initiatives (1/7)

SI Practices

1. SI Name
2. SI Description
3. SI URL
4. Lead organisation
5. Lead organisation URL
6. SI Scope
7. SI Date range
8. Link to H2020 priorities
9. SI Type
10. SI Objectives
11. SI Origins
12. SI Factors of success
13. SI Drivers
14. SI Tensions
15. Funding/market potential
16. Mobilisation degree
17. Mutual learning processes
18. SI transferability
19. Similar SI elsewhere
20. SI assessment methods

SI Outcomes

1. SWOT
2. Policies
3. Spin-offs
4. Publications
5. Skills and competences
6. Transformations
 - Economic Systems
 - Infrastructure Systems
 - Government Systems
 - Social Systems
 - Individual Dev. Systems
 - Environ. & Resource Systems

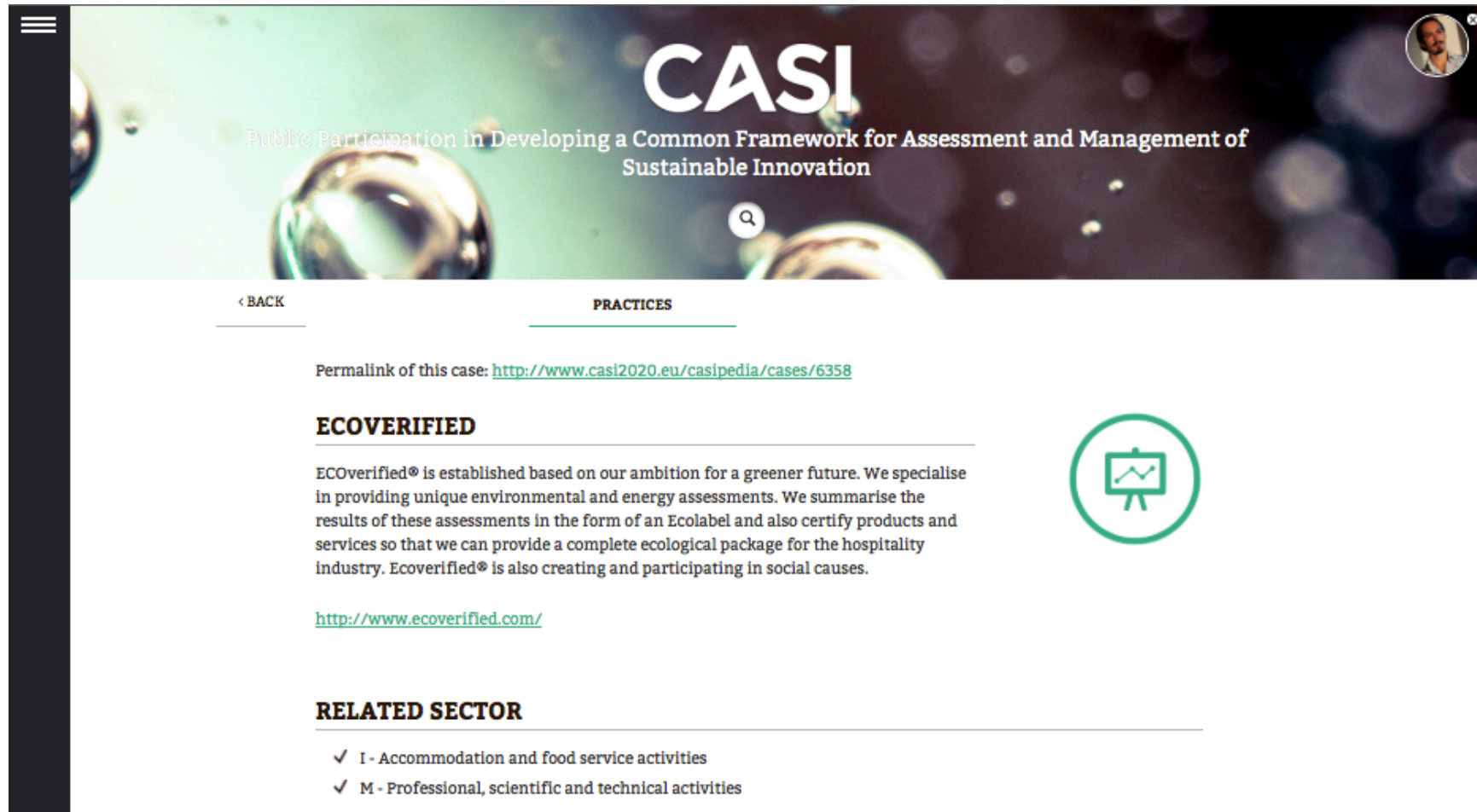
SI players

1. Innovators
2. Funders/Sponsors
3. Supporters/Brokers
4. Beneficiaries/Users

Mapping SI initiatives (2/7)

The screenshot displays the CASI web application interface. At the top, the title "CASI" is prominently displayed, followed by the subtitle "Public Participation in Developing a Common Framework for Assessment and Management of Sustainable Innovation". A navigation bar below the title includes tabs for "PRACTICES" (100%), "OUTCOMES" (100%), and "PLAYERS" (70%). A search icon is also present. Below the navigation bar, there is a filter section with checkboxes for "completed", "in progres", and "unanswered", along with "Collapse all" and "Expand all" options. The main form area is divided into two sections: "A1. SI Name" and "A2. SI Description". The "A1. SI Name" section contains the text "Ecoverified". The "A2. SI Description" section contains a paragraph of text: "ECOverified® is established based on our ambition for a greener future. We specialise in providing unique environmental and energy assessments. We summarise the results of these assessments in the form of an Ecolabel and also certify products and services so that we can provide a complete ecological package for the hospitality industry. Ecoverified® is also creating and participating in social causes." At the bottom right of the description field, it indicates "596 characters left".

Mapping SI initiatives (3/7)



The screenshot displays the CASI website interface. At the top, the CASI logo is prominent, followed by the subtitle "Public Participation in Developing a Common Framework for Assessment and Management of Sustainable Innovation". A navigation bar includes a "BACK" link and a "PRACTICES" section. The main content area features a case study for "ECOVERIFIED", which includes a description of the company's mission, a URL to their website, and a list of related sectors: "I - Accommodation and food service activities" and "M - Professional, scientific and technical activities". A circular icon with a chart is also visible next to the company description.

CASI
Public Participation in Developing a Common Framework for Assessment and Management of Sustainable Innovation

< BACK PRACTICES

Permalink of this case: <http://www.casi2020.eu/casipedia/cases/6358>

ECOVERIFIED

ECoverified® is established based on our ambition for a greener future. We specialise in providing unique environmental and energy assessments. We summarise the results of these assessments in the form of an Ecolabel and also certify products and services so that we can provide a complete ecological package for the hospitality industry. Ecoverified® is also creating and participating in social causes.

<http://www.ecoverified.com/>

RELATED SECTOR

- ✓ I - Accommodation and food service activities
- ✓ M - Professional, scientific and technical activities

Mapping SI initiatives (4/7)

SI LEAD ORGANISATION

Ecoverified - Research and education actor (Private research and innovation support organisations (RTOs))

<http://www.ecoverified.com/>

SI SCOPE

International: EU countries, Europe (non-EU), North America, Latin America, Asia, Africa, Oceania (Austria, Cyprus, Germany, Greece, Netherlands, United Kingdom)

SI PROCESS

Sustainable Innovation conception/design

Start Date: August 2014 End Date: December 2014

Sustainable Innovation development (piloting / demonstration)

Start Date: January 2015 End Date: June 2015

Sustainable Innovation implementation

Start Date: June 2015 End Date: Ongoing

Sustainable Innovation diffusion

Start Date: August 2015 End Date: Ongoing

LINK TO H2020 SI PRIORITIES

- ✓ Eco-innovation and green economy transition
- ✓ Resource efficient sustainable lifestyles
- ✓ Eco-solutions to reduce raw materials use
- ✓ Solutions to explore, extract, process and recycle
- ✓ Strategic intelligence and citizens' participation

Mapping SI initiatives (5/7)



SI TYPE

Main type of innovation

- ✓ **Marketing** - Ecoverified® is a filed Certification Mark in the European Union and trademarked under classes 35 and 41.

Additional supporting innovations

- ✓ **Service / Process** - We provide high level consultation delivered by our skilled team of Doctoral Researchers, MBA graduates and Senior Engineers in the following sectors: • greenhouse emission point (ISO 14067) • human health & eco-toxicity (REACH and US EPA) • life cycle assessment (ISO 14040-44) • biodiversity and resource consumption • corporate social responsibility (Ethics, ILO, ISO 8000 & Devel Programs) • By-Product Synergy (BPS)
- ✓ **Social (incl. behavioural)** - Ecoverified is also in the process of being involved with social causes. Some of them are: • 'Adopt a tree in Greece', in cooperation with a national TV channel • Help with gathering food for European refugees using a United Nations scheme • 3D print accessories for hotels and restaurants that will be biodegradable

SI OBJECTIVES

Explicit Objectives

- ✓ Provide unique environmental and energy assessments
- ✓ Create an Ecolabel for the participating businesses
- ✓ Certify products and services for being eco-friendly in cooperation with Universities.
- ✓ Advertise hotels that have gained our Ecolabel in online booking agents such as familygoesout, booking.com etc

Other Objectives

- ✓ Create an NGO that will have a social impact by participating in causes such as 'Adopt a tree in Greece', food for the refugees, 3D printed accessories etc. Give the chance to holidaymakers to adopt sea turtles, see them and learn about them.
- ✓ Create an application that will map eco-friendly locations and businesses. Greece will be the starting point, hoping to expand that to other countries as well
- ✓ Find alternative solutions for regions where recycling is not applied i.e. small islands.
- ✓ Create a map with all the eco-related activities that are available.

Mapping SI initiatives (6/7)



SI ORIGIN

Natasha is a Greek-UK-Dutch citizen. During her MBA in sustainability, she came up with the idea of creating an Ecolabel for hotels and restaurants. For her thesis she performed a research on more than 10000 holidaymakers and travel agencies, asking what their environmental requirements for hotels and restaurants are. Antonios is a scientist and a doctoral researcher on industrial biotechnology and green chemistry, residing in the UK. Vasilis is a chartered mechanical and environmental engineer working in a global energy company in Europe and South East Asia. Vasilis A. is a doctoral researcher in charge of our publications. Along with John who has experience in business and start-up companies we decided to create Ecoverified. After extensive talks on how we would create this company, we decided to trademark our name and started contacting people in key positions for their input. We have now built a good basis on how to proceed and thanks to our expertise we are ready to consult you.

SI FACTORS OF SUCCESS

- ✓ **Economic** - Ecoverified aims to provide both ECOlogical and ECONomical consultation to businesses and individuals aiming to inform the public and create business opportunities to companies willing to become Ecoverified.
- ✓ **Environmental** - For Ecoverified everything is judged according to it's environmental influence, how it minimizes environmental impact and how it informs the public about emissions.

SOURCES

- ✓ **Primary** - The primary source of information lies within the answers that were provided by over 10000 holidaymakers and travel agents and in the survey that was conducted by Anastasia Hadjichristofi during her MBA in sustainability. The former have expressed their preference and their answers have been evaluated according to the ecological and economical impact in the hospitality industry.
- ✓ **Secondary** - The practices applied and provided in the form of consultation to hotels, restaurants and their vendors are evaluated by professionals in cooperation with Universities.
- ✓ **Tertiary** - Ecoverified's tertiary sources are e-books and manuals which are provided following a businesses' evaluation.

Mapping SI initiatives (7/7)

CRITICAL ISSUES RELATED TO THIS CASE:

DUE TO THE ECONOMICAL CRISIS MANY COMPANIES ARE INTERESTED IN GREEN SOLUTIONS BUT CAN'T AFFORD TO INVEST MONEY IN SUSTAINABLE SOLUTIONS

Due to the economical crisis many companies are interested in green solutions but can't afford to invest money in sustainable solutions. Also sometimes raw materials have a very low cost which...



+ SUGGEST ACTION

ECONOMICAL SUPPORT

We privately support ECOVERIFIED. We are a motivated team with the same ambition and with different backgrounds which all when put together cover the necessary knowledge and resources needed.



+ SUGGEST ACTION

GEOGRAPHICAL BOUNDARIES CAUSING PROBLEMS IN APPLYING SOLUTIONS

In several areas like Greek islands it is nearly impossible to recycle and as a result we are doing our best to find alternative solutions. For example, if plastic bottles made of PET cannot be...



+ SUGGEST ACTION

GREEN MARKETING MOTIVATES HOTELS SO THAT THEY CAN INVEST IN GREEN SOLUTIONS

Green marketing motivates hotels so that they can invest in green solutions



+ SUGGEST ACTION

IN SOME REGIONS HARDLY ANY SUSTAINABLE SOLUTIONS ARE APPLIED AND THERE IS A GREAT MARKET OUTTHERE WAITING FOR GREEN SOLUTIONS

In some regions hardly any sustainable solutions are applied and there is a great market outthere waiting for green solutions



+ SUGGEST ACTION

IT IS NOT CLEAR IF AND WHICH LEGAL LIMITATIONS ARE APPLIED IN CO2 FOOTPRINTING AND IN GREEN CERTIFICATES

It is not clear if and which legal limitations are applied in CO2 footprinting and in Green certificates. ..



+ SUGGEST ACTION

1. - Write a title of the action here

2. - Select the level of action

Select an option

3. - Select relevant actions

Select an option

4. - Select action type

Select an option

5. - Provide a short description

6. - Select relevant SI management key aspect

Select an option

7. - Rate the importance



8. - Rate the feasibility



9. - Rate the economic impact



10. - Rate the environmental impact



11. - Rate the social impact



By saving the idea, I accept the Terms & Conditions

Problem posting the post




CREATE THE ACTION

CASI Ideas Bank

- Home
- About
- News & Calendar
- Library
- Blog
- Casipedia
- Ideas bank**

Main

- Add an idea
- Help & Contact
- DISCUSSION
- UPLOAD DOCUMENT
- MAP A CASE
- ADD AN IDEA

IDEAS BANK

ADD AN IDEA

CASI has mapped 500+ cases of Sustainable Innovations from across EU and beyond. From those, the 193 most CASI-relevant cases were selected for further analysis, which helped to gather a wide range of ideas that contributed to the development of the CASI Ideas Bank. These ideas are colour-coded and represent existing or potential: (1) barriers (black), (2) drivers (green), (3) opportunities (blue), or (4) threats (red), which can influence the success (i.e. uptake/implementation/diffusion) of sustainable innovation.

To explore the Ideas Bank:

- ✓ Browse the ideas using the various filters
- ✓ Find out the type of idea and associated success factor clustered around TEEPSES categories (technological, economic, environmental, political, social, ethical, spatial) by hovering over ideas' icons
- ✓ Add your own ideas

Search Sort by

Filter

TYPE OF INNOVATION	TYPE OF IDEA	TEEPSES
<input type="checkbox"/> Product / Process (271)	<input type="checkbox"/> SI Barrier (396)	<input type="checkbox"/> Technological (178)
<input type="checkbox"/> Service / Process (356)	<input type="checkbox"/> SI Driver/trend (424)	<input type="checkbox"/> Economic (446)
<input type="checkbox"/> Organisational / Business model (156)	<input type="checkbox"/> SI Opportunity/benefit (434)	<input type="checkbox"/> Environmental (221)
<input type="checkbox"/> Marketing (61)	<input type="checkbox"/> SI Threat/risk (295)	<input type="checkbox"/> Political (232)
<input type="checkbox"/> Social (373)		<input type="checkbox"/> Social (375)
<input type="checkbox"/> System (123)		<input type="checkbox"/> Ethical (30)
<input type="checkbox"/> Governance (209)		<input type="checkbox"/> Spatial (64)

SI PRIORITY AREAS

Results (1549)

« < 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 ... 155 > »



Green marketing motivates hotels so that they can invest in green solutions

Green marketing motivates hotels so that they can invest in green solutions

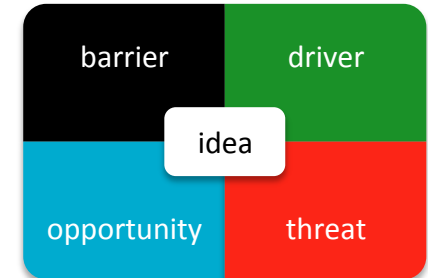
08.12.2015



Structural changes in agriculture

Small and medium farms die out, however they are important stakeholders and innovators in the field of crop diversity.

09.12.2015



CASI Library

The screenshot shows the CASI Library website. The top navigation bar includes 'Home', 'About', 'News & Calendar', and 'Library'. The main header features the CASI logo and the subtitle 'Public Participation in Developing a Common Framework for Assessment and Management of Sustainable Innovation'. Below the header are navigation tabs for 'DELIVERABLES', 'LATEST DOCUMENTS', 'POPULAR DOCUMENTS', 'ONLINE RESOURCES', and an 'UPLOAD DOCUMENT' button. The left sidebar contains a menu with categories like 'Main', 'Deliverables', 'Blog', and 'Help & Contact', along with buttons for 'DISCUSSION', 'UPLOAD DOCUMENT', 'MAP A CASE', and 'ADD AN IDEA'. The main content area is divided into 'KEY AREAS' (Climate action, Environment, Resource efficiency, Raw materials), 'DOCUMENT TYPE' (CASI, Policy briefs, Citizens' visions, Reports), and 'OTHER SI RELEVANT' (Articles, Reports). A search bar and filter options are present, along with a grid of document results including '50 Citizen Visions on...', 'European Research Priorities...', 'Inspiration magazine for CASI...', and 'Energy Poverty'. The bottom of the page features the CASI logo and the European Union flag.

CASI Policy Blog



POSTS

CONTRIBUTORS

ABOUT THE BLOG

ADD A POST

POSTS > ALL

Views: 44701 | Contributors: 28

Smart Cities – a driver for sustainability



30.11.2015 | [Candela Bravo](#) | Views: 15

Since the Industrial Revolution people are attracted to move and live in cities. The population growth in cities followed the increase of infrastructures (e.g. buildings and roads), the development of new communication systems, the creation of new services, among other aspects. Alongside with...

TOPICS

All posts

[Climate action](#)

[Environment](#)

[Resource efficiency](#)

[Raw materials](#)

[Sustainable innovation](#)

[Public participation](#)

STAKEHOLDER RELEVANCE

CASI





Critical issues identification and actions generation

What type of actions?

Top-level Management: Strategic actions

Involves the definition of orientation objectives and the ways in which the strategies will work towards the achievement of such objectives.

Mid-level Management: Programming/Tactical actions

Involves the translation of the objectives stated by the strategic level into tactical interventions implementing specific thematic SI priorities.

Front-line Management: Operational actions

Responsibility of SI front-line managers (government, firms, civil society, researcher and education actors): knowledge production, SI operations and management, network coordination.

Adapted from :

Barre, R., Henriques, L., Pontikakis, D., Weber K. M. (2013) "Measuring the integration and coordination dynamics of the European Research Area". Science and Public Policy, 40 (2), 187-205,



1st Track: SI Initiatives

Step 1: Mapping WAI initiative (WASTE´S ALCHEMY IBÉRICA, S.L.)

CASI
Public Participation in Developing a Common Framework for Assessment and Management of Sustainable Innovations

WAI
Description of the case: <https://www.casibn.com/ingles/innovations/wai/>

This project aims to introduce in the international market a new technology for recovering waste into an eco-material with remarkable characteristics. Its main objective is to contribute to the circular economy and reduce the environmental impact of waste. The project focuses on the recovery of non-hazardous waste and other valuable resources, and its capacity features give the material a great potential to be used as an eco-fuel.

<https://www.wastealchemy.com/>

RELATED SECTOR

- ✓ Manufacturing
- ✓ Other manufacturing
- ✓ Electricity, gas, steam and air conditioning supply
- ✓ Other specific activities: waste management and remediation activities

SI LEAD ORGANISATION
WASTE´S ALCHEMY IBÉRICA S.L. - Business sector (Small private organisations (SME))
<https://www.wastealchemy.com/>

SI SCOPE
International: EU countries, North America, Latin America

SI PROCESS
Sustainable Innovation conception/Design
Start Date: January 2012 End Date: ongoing
Sustainable Innovation development (piloting / demonstration)
Start Date: December 2014 End Date: ongoing

LINK TO H2020 SI PRIORITIES

- ✓ Solutions to explore, extract, process and recycle
- ✓ New solutions to reduce raw materials use
- ✓ Eco-innovation and green economy transition
- ✓ Alternative raw materials
- ✓ Climate change mitigation solutions

SI TYPE
Main type of innovation:
✓ Product / Process - It consists of a technology (machines) for residue treatment

Additional supporting innovations

- ✓ Service / Process - Services is provided to residue treatment agencies, by collecting residues instead of being sent to landfill.

SI OBJECTIVES
English objectives

- ✓ 1. The full development of a technology for transforming waste into an eco-material with remarkable carbonic, mechanical and energetic characteristics
- ✓ 2. The commercialization of this technology in the waste treatment sector, both at national and international level
- ✓ 3. The establishment of strategic alliances to commercialize the eco-material, through waste treatment centres, to electric power plants and energy high-consumption industries (use of the material like eco-fuel)
- ✓ 4. The establishment of strategic alliances to commercialize the eco-material, through waste treatment centres, to the construction and derived sector, and to consumer goods manufacturers (use of the material like a substitute of natural sources, e.g. wood)

SI ORIGIN
The managers had worked in the waste-treatment industry for some years. Then, they decided to join and set up a company which would develop some preliminary ideas they had about urban residue recovery.

SI FACTORS OF SUCCESS

- ✓ Technological - The waste transformation solution is entirely based on mechanical and robotic processes.
- ✓ Economic - Energy dependency in Europe may hinder economic recovery
- ✓ Environmental - Landfill increasing has become one of the most important environmental problems in Europe
- ✓ Political - Europe needs to become self-sufficient in terms of energy from other geo-political areas
- ✓ Social - Society claims for a more reliable, safe and clean energy
- ✓ Special / Other - Communities and research areas need to achieve energy self-sufficiency

SOURCES

- ✓ Primary - Interviews and on-site visits
- ✓ Secondary - The proposal that the company has submitted to Horizon 2020 (applying for funds) is available for reviewing

Process and equipment for the recovery of rejection fractions of non-hazardous waste

Step 1: Mapping WAI initiative (WASTE´S ALCHEMY IBÉRICA, S.L.)

Waste´s Alchemy Ibérica S.L. (WAI) is a small company located in Spain and dedicated to scientific and technological developments in the **waste-to-energy** sector. The ideas developed by this company seek to provide solutions to the waste management problems, focusing on the processes that may transform residues into **alternative ecologic materials and fuel**.



WAI is developing an innovative alternative for the treatment of waste rejected fractions, resulting in a new product with outstanding properties: **high-energy content, uniform density, waterproof** and a **homogenous molecular structure** that ensures valuable **mechanical** characteristics. This process has a bright future and business potential insomuch it constitutes a new and more efficient alternative to existing waste treatments. Furthermore, these particular characteristics make a real difference within the world of the **solid recovered fuels**, not to mention the **ecologic advantages over other contaminant fossil resources** such as coal. This dual feature, along with its low energy consumption, is considered one of the keys of this invention.

Although this invention has an accepted patent application, and the technology has been demonstrated with a prototype (according to the Technology Readiness Level scale, this technology is now situated in a **TRL 7 level**), more additional adaptations and piloting tests are needed at different scales and conditions, in order to reduce technology risks.

Step 2: WAI initiative's critical issues (WASTE'S ALCHEMY IBÉRICA, S.L.)

- **Enabling issues**

- Target energy, waste, raw materials challenges simultaneously
- Different alternative markets: energy and eco-material
- Waste treatment services
- Very diverse sectors are potential users of this technology

- **Inhibiting issues**

- Weak international cooperation
- Waste handling requires logistics agreements
- Technology costs need to be reduced
- University and research commitment is needed

Step 3: Mapping actions linked to critical issues

SI evidence: WAI (SP)	GOVERNMENT	BUSINESS	CIVIL SOCIETY	RESEARCH & EDU
STRATEGIC ACTIONS	<p>Facilitate tools for reinforcing SME's international network and internationalisation skills</p> <p><i>Barrier: They should reinforce the international network and the necessary skills for internationalisation)</i></p>	<p>Increase staff's innovation management skills and capabilities</p>	<p>Explore the potential implementation of SME's sustainable solutions on emerging countries (NGOs)</p>	<p>Strengthen the cooperation of SME's with local Universities</p>
TACTICAL ACTIONS	<p>Develop technology data-sharing platforms</p>	<p>Elaborate technology roadmaps</p> <p><i>Factor of success: The waste-transformation solution is entirely based on mechanical and calorific processes)</i></p>	<p>Participate as a partner in EC funded projects with local SMEs</p>	<p>Promote the dissemination of SME's best practices through shared courses and events (e.g. the week of "recovered residues")</p>
OPERATIONAL ACTIONS	<p>Deliver seminars on (sectoral) technology management at regional level</p>	<p>Feed an internal database with new technologies identified in trade/technology events, suppliers and users (open innovation)</p>	<p>Organise monthly meeting with local SMEs so as to share collaboration opportunities</p>	<p>Edit brochures with local SMEs' information and contact data</p>

Step 3+a: Importance self-assessment

Not important at all Moderate importance Important Very important Extremely important

WAI actions	GOVERNANCE	BUSINESS	CIVIL SOCIETY	RESEARCH & EDU
STRATEGIC ACTIONS	Facilitate tools for reinforcing SME's international network and internationalization skills	Increase staff's innovation management skills and capabilities	Explore the potential implementation of SME's sustainable solutions on emerging countries (NGOs)	Strengthen the cooperation of SME's with local Universities
TACTICAL ACTIONS	Develop technology data-sharing platforms	Elaborate technology roadmaps	Participate as a partner in EC funded projects with local SMEs	Promote the dissemination of SME's best practices through shared courses and events (e.g. the week of "recovered residues")
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Step 3+b: Feasibility self-assessment

Unfeasible	Moderate feasibility	Feasible	Quite feasible	Highly feasible
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WAI actions	GOVERNANCE	BUSINESS	CIVIL SOCIETY	RESEARCH & EDU
STRATEGIC ACTIONS	Facilitate tools for reinforcing SME's international network and internationalisation skills	Increase staff's innovation management skills and capabilities	Explore the potential implementation of SME's sustainable solutions on emerging countries (NGOs)	Strengthen the cooperation of SME's with local Universities
TACTICAL ACTIONS	Develop technology data-sharing platforms	Elaborate technology roadmaps	Participate as a partner in EC funded projects with local SMEs	Promote the dissemination of SME's best practices through shared courses and events (e.g. the week of "recovered residues")
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2nd Track: SI Visions

Piloting the assessment of relevant SI visions

Insects - the dish of the future (Fear: lack of food security)

Insects – the dish of the future

Inspired by the fear of lack of food security and malnutrition

Replacing costly and often inadequate diet with nutritious insects.

Economic benefits

- Breeding and producing insect-based food may offer new job opportunities, while reducing imports of food and other related activities
- Financial savings from reduced import of meat products
- Insects are easy to breed as they feed on debris and waste
- There are plenty of insects, which can be found throughout the planet and in any country

Environmental benefits

- Breeding of insects does not produce CO2 as part of livestock production and therefore do not contribute to global warming
- Achieving government emission target
- Decrease in meat production and consumption

Social benefits

- Insects are healthy and contain large amounts of protein, while reducing the incidence of cardiovascular disease and other chronic conditions that are induced by red meat consumption
- There are possibilities of various modifications such as the consumption of insects in the form of nutritional cocktails, which are more visually attractive
- People can capture, keep and cook insects themselves, thus being self-sufficient
- Protection and respect for animals; reducing animal cruelty

Nutrition Facts	
Serving Size 3.5 ounces (100g)	
Amount Per Serving	
Calories 122	Calories from Fat 50
% Daily Value*	
Total Fat 5.5g	9%
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 5g	2%
Protein 13g	26%
Calcium 0%	Iron 53%

*Percent Daily Values are based on a diet of 2,500 calories per day. Your daily values may be higher or lower depending on your intake needs.

Insects like **crickets** are a great source of protein and iron.



What are possible negative consequences of this vision?

- Large number of insects needed to feed a person
- Potential fear and uncertainty towards novel products
- Low demand for meat products affecting meat production sector and international trade

Required policies

- Promote standards and legislation for breeding and consumption of insects in the EU
- Develop regulations for the safe breeding and processing technologies
- Develop effective monitoring and quality control

Required knowledge and skills

- Marketing and familiarization with insect-based products and services
- Thorough research on the impact of insects' consumption
- A cookbook with attractive recipes and images
- Societal reassurance and cultural/behavioural change

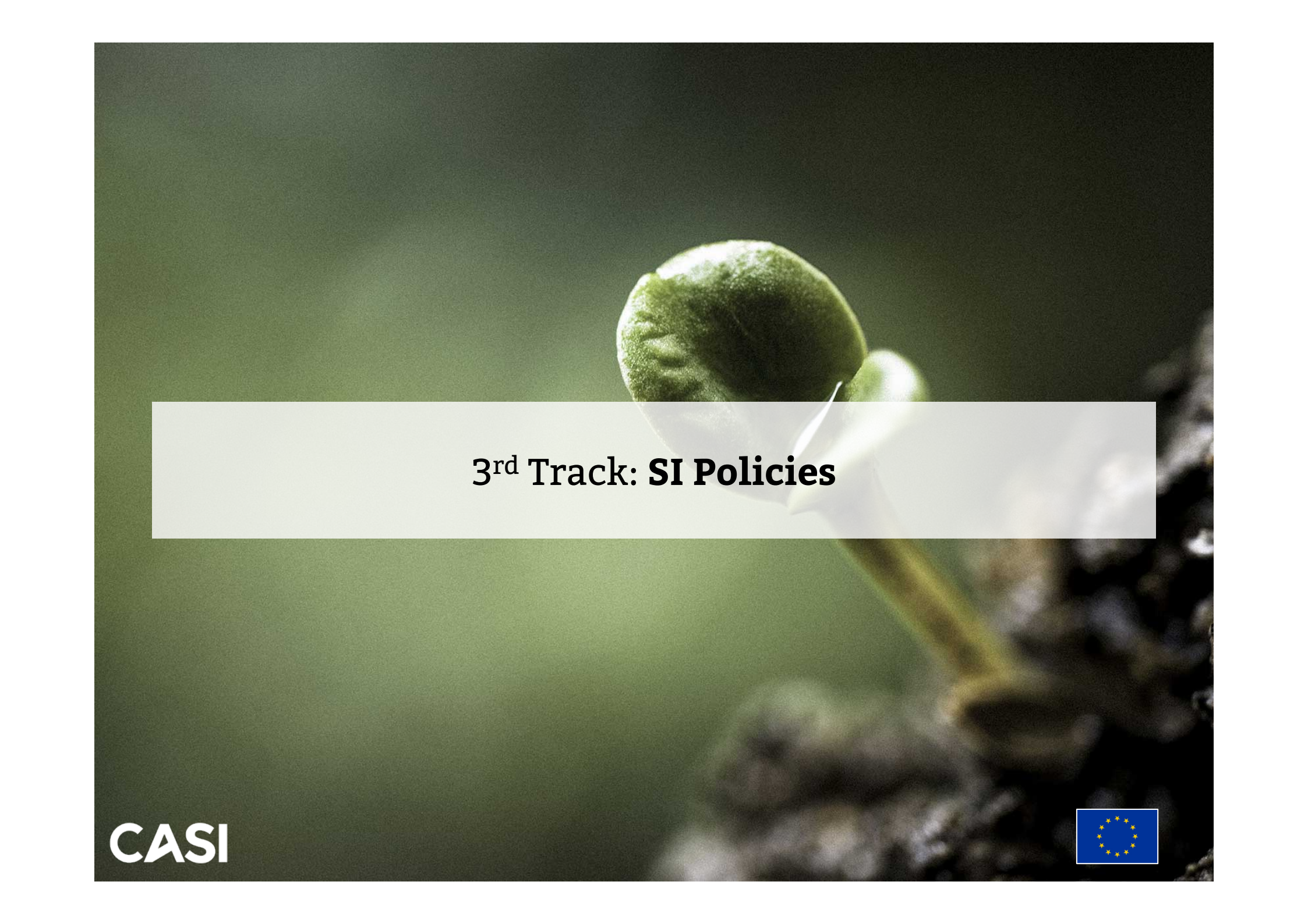
Required resources

- Build a complete new infrastructure for breeding, storing, trading and consuming insects
- Develop human resources, i.e. a new workforce dealing with the supply and demand of insect based products and services

Piloting the assessment of relevant SI visions

Insects - the dish of the future (Fear: lack of food security)

SI vision: Citizen Panel (CZ)	GOVERNMENT	BUSINESS	CIVIL SOCIETY	RESEARCH & EDU
STRATEGIC ACTIONS	Develop legislative advice for the breeding and consumption of insects in Europe.	Invest in marketing and capacity building activities for human consumption of insects.		
TACTICAL ACTIONS	Provide financial incentives and facilitate the development of required technological infrastructure for insect trade in the food chain.	Collaborate with other stakeholders interested in introducing the new insect-based products in the market.		Disseminate outcomes of research activities and train relevant stakeholders.
OPERATIONAL ACTIONS	Disseminate information on the safety and benefits of insects consumption to gain trust of potential consumers.	Develop safe insect breeding and processing techniques and technologies.	Collect or breed insects yourself.	Conduct further research on the consumption of insects.



3rd Track: SI Policies

3rd Track: Policies

Policy briefs



Policy blogs



Identification of critical issues and content analysis

Policy recommended actions, based on formulated/suggested policies

Can smart cities be sustainable innovation actors?

CASI Policy brief 31.3.2014 CASI-PB-1.2014-EUROPE



Most policy briefs focus on actions for Government Actors

Piloting the assessment of relevant SI policy

CAN SMART CITIES BE SUSTAINABLE INNOVATION ACTORS?

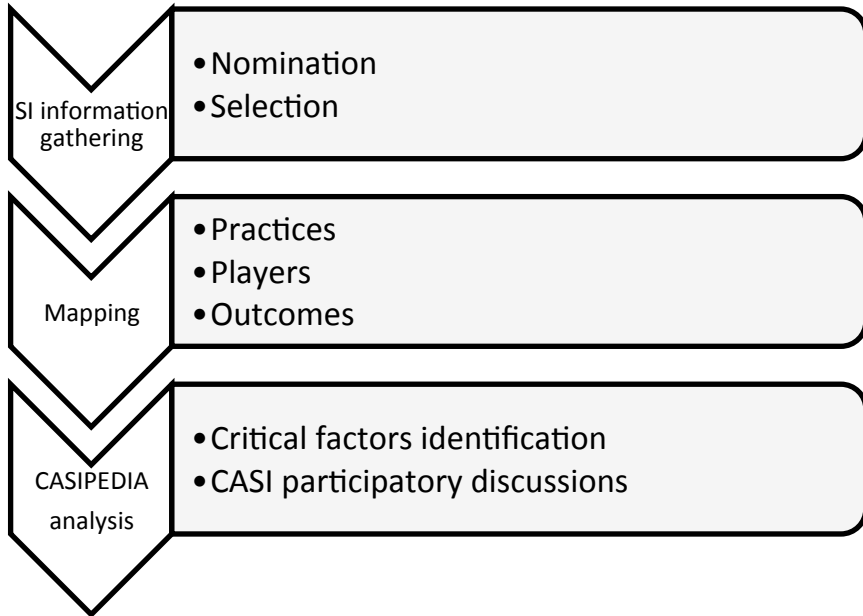
CASI Policy brief 31.3.2014 CASI-PB-1.2014-EUROPE

SI policy: Policy Brief (EU)	GOVERNANCE	BUSINESS	CIVIL SOCIETY	RESEARCH & EDU
STRATEGIC ACTIONS	Support partnerships that allow national and regional stakeholders to step out of common network boundaries into strong international alliances.	Not found in this Policy Brief		
TACTICAL ACTIONS	Share best practices and proven experiences from successful initiatives in smart cities.			
OPERATIONAL ACTIONS	Set up indicators and monitor results to track progress in smart cities development.			

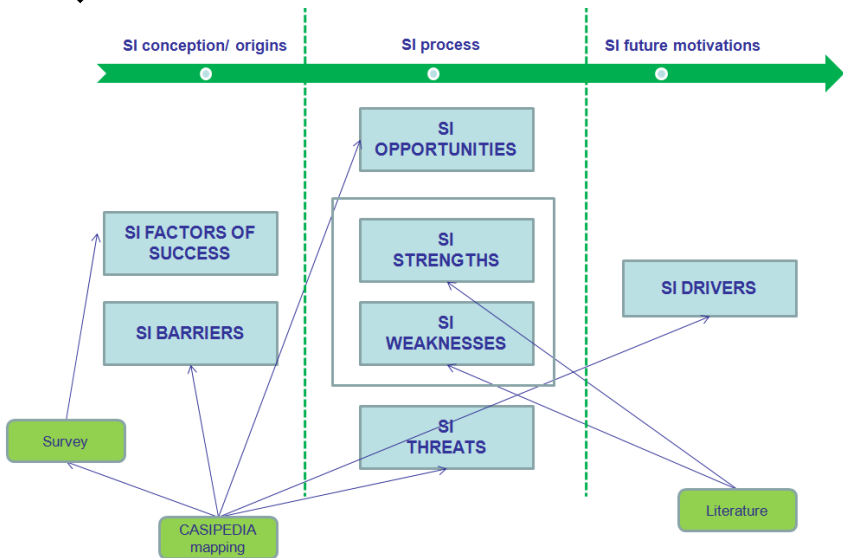
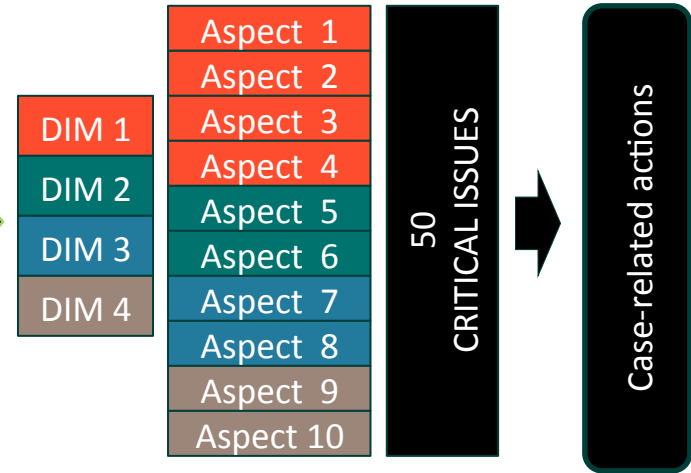


Further steps in CASI-F: Piloting and applications

Towards a SI Management Framework

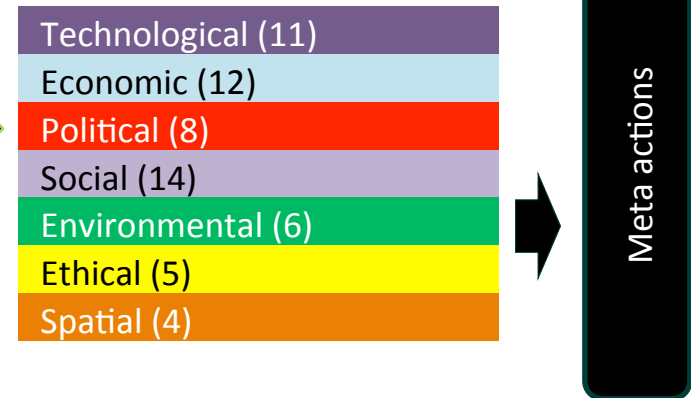


Inductive approach to critical issues (SI cases individual analysis)



Multi-source CASI analysis

60 Key findings from SI assessment



SI Management Dimension 1: Context

CONTEXT

The success of Sustainable Innovation depends greatly on its context. Firstly, the ‘**momentum**’ reflects a potential space for innovation: the **expectations** of entrepreneurs and other actors: the political drive from regulators or procurement: the **exemplars** from other ecological or social enterprises: and the perception of ‘**problems**’ which call for solutions. Second, the critical factors of ‘**foresight**’ show the capacity to anticipate, strategize, and get over gaps in the innovation curve. Thirdly, ‘**resources**’ show simply the necessary combinations of skills, finance, location, markets etc. Fourthly, ‘**mobilization**’ is the capacity for action, as in public participation, community support, institutional support, champions and facilitators, public-private partnerships, research and education engagement.

1. MOMENTUM	Political setting
	Exemplars
	Problems
2. FORESIGHT	Horizon scanning
	Strategic targets
	Trends
3. RESOURCES	Geographical setting
	Funding sources
	Infrastructure
	Data sources
	Scalability
4. MOBILISATION	Public participation
	Community support
	Institutional support
	Champions and facilitators
	Public-Private Partnerships
	Research and education engagement

SI Management Dimension 2: People

PEOPLE

The role of people – actors, stakeholders, players, intermediaries etc, acting as individuals, households, groups, firms, professions, communities or sectors – cannot be under-estimated. Many policy objectives are unfulfilled if they did not connect or mobilize the right people, or did not provide the right incentives and enabling factors. In parallel there is a focus of attention on ‘the entrepreneur’ or ‘**leadership**’ as one of the most critical factor: However in a complex knowledge-based supply chain, or a complex social community with multiple needs, it seems that the vital qualities of **entrepreneurship** or leadership are likely to be distributed, networked, risk-shared, and team-based. For sustainable SI (in contrast to mainstream innovation) there may be a stronger case for such qualities as emergent from the wider innovation ecosystem, even while the traditional ‘heroic’ image continues of the lone innovator. This has implications for SI-related innovation policy, which may take a conventional MBA-type approach, or look more widely to the community in context.

5. APTITUDE	Leadership
	Charisma
	Creativity
	Knowledge
6. ATTITUDE	Enthusiasm
	Empathy
	Involvement
	Commitment

SI Management Dimension 3: **Process**

PROCESS

Innovation is widely accepted to be a **complex, participatory** and **multifaceted** process. In particular, the analysis of CASIPEDIA confirms that a large number of actors and perspectives need to be considered in the study of innovation projects. SI process assessment and analysis are based on the interpretation of many **influencing factors** and their potential **combination**.

Given the varied possibilities of clustering, and with the aim of simplifying, here the SI process factors is analysed from two perspectives: a **'catalyst aspects'** category, i.e. those factors that contribute to activate and launch the innovation, and a **'keeper aspects'** category, which includes those factors that make possible the continuity and consolidation of SI actions.

7. CATALYSTS	Comprehensibility
	Crowd-sourcing
	Learning by doing
	Supportive services
	Absorptive capacity
	Ex ante impact evaluation
	Piloting and experimenting
8. KEEPERS	Incentives
	Coordination
	Networking and synergy
	Knowledge management
	Intellectual property management
	Ex post evaluation and monitoring
	Communication and dissemination

SI Management Dimension 4: Impact

IMPACT

The impact of sustainable innovation may be analysed from two different perspectives. On the one hand, we may focus on those ‘**system transformation-oriented**’ or **structural objectives** whose fulfilment would indirectly suppose a positive contribution to sustainability challenges, e.g. changes in **lifestyle**, actions for **economic growth**, initiatives to reinforce **community-sense**, **entrepreneurship** and **knowledge-sharing** strategies, among others. On the other hand, impacts may respond to narrower **sustainability-problem-oriented** actions, thus the effect of sustainability actions should be measured in terms of their **social**, **economic** or **environmental** sustainability. The analysis of CASIPEDIA have shown that SI projects usually combine both transformational and sustainability strategies.

9. TRANSFORMATIONS	Lifestyle changes
	Economic growth
	Community sense
	Entrepreneurship
	Knowledge sharing
	Jobs and competences
	Stakeholders development
	Multi-challenge approaches
10. SUSTAINABILITY	Social sustainability
	Economic sustainability
	Environmental sustainability

Example of an action plan for: “Increasing staff's innovation management skills and capabilities”

SI initiative:

WAI - Process and equipment for the recovery of rejection fractions of non-hazardous waste



<p>CONTEXT related actions</p>	<p>MOMENTUM Look at existing innovation management programmes in international Business schools, and look at competitors' practices</p>	<p>FORESIGHT Identify emerging management skills and capacities in the sector, through journals, conferences</p>	<p>RESOURCES Apply to local/ national funds for management skills development</p>	<p>MOBILISATION Establish new contacts with local/ regional business schools, and action researchers dealing with management skills and capabilities development (becoming a case study in schools)</p>
	<p>PEOPLE related actions</p>	<p>APTITUDE Transfer knowledge and intellectual capital on innovation management within the company</p>		<p>ATTITUDE Foster staff's creativity with participatory workshops, e.g. generate future actions through highly-transformed scenarios</p>
	<p>PROCESS related actions</p>	<p>CATALYSTS Involve staff and key stakeholders in piloting & experimental innovation phases</p>		<p>KEEPERS Establish incentive procedures to award staff's professional development</p>
	<p>IMPACT related actions</p>	<p>TRANSFORMATION Align personnel training objectives with existing jobs & competences local policies</p>		<p>SUSTAINABILITY Develop staff's education plans to conciliate personnel and company's needs in the medium-long term</p>

Conclusions

1. CASI triple-track approach is a comprehensive process for developing SI intelligence
2. Gathering information (SI cases, visions and policies) requires highly participatory approaches (intensive work of SI partners and correspondents)
3. CASI information can be transformed into SI ideas through different types of analysis:
 - Inductive and/or multi-source analysis of SI case studies
 - Vision clustering (strategic level) and vision-based research priorities (programming level)
 - Content analysis of policy briefs and blogs
4. SI experts and SI innovators' insights are essential to validate and assess CASI ideas, thus upgrading CASI ideas into CASI intelligence
 - CASI-F is a systematic process aimed to:
 - Map SI information
 - Identify SI ideas or critical issues
 - Provide SI advice in the form of multi-level management actions



Thank you for your attention!
Please visit us at www.casi2020.eu

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CASI

