

SustainX

One-Stop-Shop

VALUE CHAIN INSIGHTS

Eleven interregional pathways for sustainable innovation,
collaboration and investment readiness

Romania | Latvia | Spain | Greece | Bulgaria

11

value chains

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partner regions

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analysis lenses

1

shared objective

Disclaimer

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How to use this resource

- 1. Locate your theme** - Identify the value chain closest to your product, service or innovation project.
- 2. Map your position** - Determine whether you contribute inputs, enabling technologies, validation, deployment or market access.
- 3. Find regional complements** - Use the regional links to identify capabilities and pilot environments not available in your own ecosystem.
- 4. Improve sustainability** - Review the sustainability leverage points and convert them into measurable project objectives and KPIs.

5. Build the partnership – Engage the relevant SustainX contact, confirm interest and develop a concept note, pilot plan, letters of interest and investment pathway.

Four lenses for value-chain sustainability

Environmental performance Materials, energy, emissions, water, waste, biodiversity and circularity.	Economic resilience Productivity, investment readiness, market access, supply-chain risk and scalable business models.
Social value Access, skills, safety, inclusion, quality of life and regional job creation.	Governance and data Traceability, cybersecurity, interoperability, compliance, IP and responsible innovation.

The 11 value chains at a glance

A working portfolio spanning green, digital and industrial transitions

No.	Value chain	Core sustainability focus	Indicative regions
1	HealthTech & Digital Health	Accessible care, efficient workflows and secure health data	RO / LV / ES / GR
2	Smart Circular Construction & Retrofitting	Circular materials, energy performance and net-zero retrofit	RO / LV / ES / GR
3	Blue Economy & MarineTech	Coastal monitoring, marine resilience and resource efficiency	RO / GR / ES
4	Circular Textiles & Sustainable Fashion	Bio-based inputs, textile circularity and traceable products	LV / BG / ES / RO
5	Sustainable Tourism & Smart Destinations	Low-carbon mobility, destination resilience and local value	ES / GR / LV / RO
6	EdTech & Digital Learning	Inclusive digital skills and evidence-based learning	ES / RO / LV / BG
7	Creative Industries & Digital Content	Digital production, IP, cultural value and market reach	LV / ES / GR / BG / RO
8	Cybersecurity & Digital Resilience	Business continuity, secure digitalisation and compliance	RO / BG / ES / LV
9	Smart Agri-food & Sustainable Farming	Efficient inputs, traceability and resilient food systems	GR / BG / RO / ES
10	Test Polygons, Living Labs & Technology Validation	Shared validation, safer deployment and investment evidence	LV / BG / ES / RO / GR

11	AI, Smart Manufacturing & Resource-Efficient Industry	AI-enabled productivity, lower waste and resource efficiency	RO / LV / ES / BG
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Note: Regional configurations indicate the capability mix discussed so far. They do not imply that every organisation in a region participates in every value chain.

Regional capability map

How the five ecosystems can contribute complementary roles

RO Romania – Use cases, technical expertise and project maturation

Digital and engineering expertise; health, cybersecurity and industrial applications; TRL assessment; concept-note and consortium development; SME and public-sector pilot demand.

LV Latvia – Prototyping, manufacturing and regional digitalisation

Technology-park infrastructure; digital roadmaps; test-before-invest; manufacturing and biomaterial capabilities; regional SME access; laboratories and investment-support experience.

ES Spain – Circularity, living labs and market integration

Circular-economy approaches; tourism and destination pilots; digital business models; industrial integration; user experience; market validation and international ecosystem links.

GR Greece – Sector deployment and scale-up environments

Agri-food, tourism, maritime and building deployment contexts; end-user engagement; demonstration sites; regional policy and ecosystem scaling; routes to market.

BG Bulgaria – Digital resilience, agri-food and ecosystem mobilisation

Cybersecurity and digital-resilience networks; agri-food and creative-industry connections; biomaterial inputs; innovation-support organisations; training and pilot mobilisation.

How interregional value is created

A strong SustainX value chain connects different functions rather than simply placing organisations from several countries in the same consortium. One region may supply materials or technology, another may provide an enabling platform, a third may validate the solution, and a fourth may offer deployment and market access. The result should be a coherent cross-border pathway from need to validated investment.

Value-chain profiles

Indicative structures for collaboration and sustainability improvement

VC1

HealthTech & Digital Health

Scalable, secure and patient-centred health innovation

Indicative regional configuration

RO Romania **LV** Latvia **ES** Spain **GR** Greece

Value-chain pathway: clinical need and data -> AI-enabled or digital solution -> interoperability and cybersecurity -> pilot validation -> health-system adoption

Regional complementarity: Romania brings health use cases, clinical and technical expertise; Latvia contributes digital infrastructure and prototyping; Spain supports market-oriented pilots and ecosystem links; Greece offers deployment contexts and health-system validation.

Sustainability leverage: earlier diagnosis, remote access, more efficient clinical workflows, lower pressure on healthcare infrastructure and responsible use of health data.

Priority gaps / partner opportunities: clinical validation partners, interoperable data environments, cybersecurity assurance, reimbursement expertise, hospitals and living labs for cross-border pilots.

VC2

Smart Circular Construction & Retrofitting

Circular materials, smart buildings and measurable net-zero renovation

Indicative regional configuration

RO Romania **LV** Latvia **ES** Spain **GR** Greece

Value-chain pathway: sustainable and bio-based materials -> smart construction technologies -> energy monitoring and optimisation -> certification and traceability -> reuse and net-zero retrofit

Regional complementarity: Romania-Latvia: bio-based materials and circular validation; Spain-Greece: energy monitoring, smart engineering and deployment; Romania-Spain: integration of construction technologies with digital monitoring.

Sustainability leverage: lower embodied carbon, reduced operational energy use, traceable materials, longer building life and reuse of components.

Priority gaps / partner opportunities: industrial-scale manufacturers, accredited testing and certification bodies, building owners, energy-performance pilots and digital-twin integrators.

VC3

Blue Economy & MarineTech

Data-driven protection and productive use of marine and coastal ecosystems

Indicative regional configuration

RO Romania **GR** Greece **ES** Spain / Catalonia

Value-chain pathway: marine and coastal sensing -> data integration and analytics -> inspection or monitoring technologies -> pilot zones -> environmental and commercial deployment

Regional complementarity: Romania contributes digital engineering and data capabilities; Greece provides maritime and coastal deployment environments; Spain contributes island, port and coastal living-lab contexts and market links.

Sustainability leverage: better ecosystem monitoring, prevention of pollution and losses, resource-efficient aquaculture and safer coastal infrastructure.

Priority gaps / partner opportunities: coastal authorities, ports, marine research institutes, sensor manufacturers, data platforms and multi-season demonstration sites.

VC4

Circular Textiles & Sustainable Fashion

From bio-based inputs and textile waste to validated circular products

Indicative regional configuration

LV Latvia **BG** Bulgaria **ES** Spain **RO** Romania

Value-chain pathway: biomaterials and textile waste -> fibre/material processing -> product and manufacturing design -> testing and certification -> brands, retail, reuse and recycling

Regional complementarity: Latvia, Bulgaria and Spain provide upstream biomaterial and innovation capacity; Romania and Spain add technical and SME enabling roles; Romania supports downstream market deployment. The configuration remains open to external actors.

Sustainability leverage: waste prevention, substitution of virgin materials, non-toxic processing, product durability, traceability and circular end-of-life pathways.

Priority gaps / partner opportunities: industrial-scale textile manufacturers, accredited material-testing laboratories, fashion brands, large retailers and reverse-logistics partners.

VC5

Sustainable Tourism & Smart Destinations

Low-carbon mobility, inclusive visitor experiences and destination resilience

Indicative regional configuration

ES Spain **GR** Greece **LV** Latvia **RO** Romania

Value-chain pathway: destination needs and visitor data -> low-carbon mobility and digital services -> impact measurement -> living-lab testing -> replication across destinations

Regional complementarity: Spain and Greece offer tourism-intensive pilot environments; Latvia contributes regional digitalisation and service innovation; Romania adds data, platform and business-model expertise.

Sustainability leverage: carbon-footprint reduction, efficient mobility, less seasonal pressure, accessibility, local value creation and better use of destination infrastructure.

Priority gaps / partner opportunities: municipalities and destination-management organisations, transport operators, venues, living labs, impact validators and tourism SMEs.

VC6

EdTech & Digital Learning

Accessible learning tools and stronger innovation skills for SMEs and institutions

Indicative regional configuration

ES Spain **RO** Romania **LV** Latvia **BG** Bulgaria

Value-chain pathway: learning and skills needs -> digital content and platforms -> AI-supported personalisation -> pilot delivery -> evidence of outcomes and market scaling

Regional complementarity: Romania contributes technical and educational expertise; Spain supports content, user experience and market pathways; Latvia brings digital-skills delivery and regional SME access; Bulgaria adds ecosystem and training deployment capacity.

Sustainability leverage: inclusive access to skills, reduced travel for training, reusable digital content, lifelong learning and improved workforce adaptability.

Priority gaps / partner opportunities: schools and vocational providers, assessment specialists, accessibility experts, data-privacy partners and organisations able to validate learning outcomes.

VC7

Creative Industries & Digital Content

New digital formats, stronger IP pathways and wider market reach

Indicative regional configuration

LV Latvia **ES** Spain **GR** Greece **BG** Bulgaria **RO** Romania

Value-chain pathway: creative concept and intellectual property -> digital production -> immersive or AI-enabled tools -> distribution and audience engagement -> monetisation and internationalisation

Regional complementarity: Latvia and Bulgaria support creative-industry ecosystems and experimentation; Spain and Greece contribute cultural, tourism and market contexts; Romania adds digital production and innovation-support capabilities.

Sustainability leverage: digital distribution, shared production resources, local cultural value, inclusive access and durable business models for creators.

Priority gaps / partner opportunities: rights-management expertise, immersive-media labs, distributors, cultural institutions, audience-validation partners and sustainable monetisation models.

VC8

Cybersecurity & Digital Resilience

Practical protection for SMEs, industrial systems and digital services

Indicative regional configuration

RO Romania **BG** Bulgaria **ES** Spain **LV** Latvia

Value-chain pathway: risk and compliance assessment -> tool or service development -> testing and assurance -> SME or industrial deployment -> workforce training and continuous monitoring

Regional complementarity: Romania contributes cybersecurity use cases and technical expertise; Bulgaria brings digital-resilience networks and training capacity; Spain adds AI-enabled security and market ecosystems; Latvia offers regional SME access and test-before-invest services.

Sustainability leverage: business continuity, secure digitalisation, protection of critical data, lower incident costs and resilient supply chains.

Priority gaps / partner opportunities: industrial pilot sites, certification and compliance partners, incident-response expertise, sector-specific threat data and scalable training providers.

VC9

Smart Agri-food & Sustainable Farming

Resource-efficient production, traceability and higher-value regional food systems

Indicative regional configuration

GR Greece **BG** Bulgaria **RO** Romania **ES** Spain / Catalonia

Value-chain pathway: farm and food-chain needs -> sensors, data and AI -> resource optimisation -> processing and traceability -> pilot validation and market uptake

Regional complementarity: Greece and Bulgaria provide strong agri-food deployment ecosystems; Romania contributes digital, engineering and SME innovation capacity; Spain adds circular-economy, market and value-chain integration expertise.

Sustainability leverage: lower water, fertiliser and energy use, less food loss, traceable production, resilient supply chains and value creation in rural areas.

Priority gaps / partner opportunities: farms and processors, cooperatives, machinery and sensor providers, food-safety laboratories, logistics partners and large-scale demonstration sites.

VC10

Test Polygons, Living Labs & Technology Validation

Shared environments for proving performance before market deployment

Indicative regional configuration

LV Latvia **BG** Bulgaria **ES** Spain **RO** Romania **GR** Greece

Value-chain pathway: defined use case -> prototype integration -> controlled testing -> user and impact validation -> certification evidence -> scale-up and investment readiness

Regional complementarity: Latvia contributes prototyping and technology-park infrastructure; Bulgaria supports test-polygon and ecosystem activities; Spain and Greece offer sectoral living labs; Romania adds technical evaluation, TRL assessment and project maturation.

Sustainability leverage: fewer failed deployments, better evidence for investment, shared infrastructure, faster learning and safer market introduction.

Priority gaps / partner opportunities: test-site operators, accredited laboratories, end users, impact evaluators, public authorities and financing for multi-region demonstrations.

VC11

AI, Smart Manufacturing & Resource-Efficient Industry

Applied AI and digital production for competitive, lower-impact industry

Indicative regional configuration

RO Romania **LV** Latvia **ES** Spain **BG** Bulgaria

Value-chain pathway: industrial challenge and data -> AI, digital twin or automation solution -> prototyping and integration -> resource and energy optimisation -> validated industrial deployment

Regional complementarity: Romania offers AI, engineering and industrial use cases; Latvia contributes manufacturing infrastructure, prototyping and digital roadmaps; Spain adds AI and robotics ecosystems; Bulgaria supports regional deployment and innovation-network links.

Sustainability leverage: higher material and energy productivity, predictive maintenance, less waste, safer processes and stronger European manufacturing resilience.

Priority gaps / partner opportunities: industrial data owners, systems integrators, robotics and sensor suppliers, cybersecurity partners, energy experts and production-scale pilot sites.

Cross-value-chain synergies

Combination	Why it matters
VC1 + VC8 + VC10	Digital-health solutions require cybersecurity, interoperable data and multi-site validation.
VC2 + VC11 + VC10	Circular construction benefits from AI, digital twins, industrial prototyping and credible building pilots.
VC4 + VC11 + VC10	Circular textile materials need resource-efficient manufacturing, accredited testing and market-facing demonstrations.
VC5 + VC3 + VC7	Smart destinations can combine coastal monitoring, creative digital content and inclusive visitor services.
VC6 + VC8 + VC11	Digital learning platforms can support cybersecurity skills and industrial workforce transformation.
VC9 + VC11 + VC8	Smart agri-food solutions need secure data, AI-enabled optimisation and industrial integration.

Cross-regional link matrix

Indicative roles by value chain

VC	Value chain	RO	LV	ES	GR	BG
1	HealthTech & Digital Health	Core/R&D	Tech/Test	Pilot/Market	Pilot	Support
2	Smart Circular Construction & Retrofitting	Materials/Tech	Materials/Test	Digital/Pilot	Energy/Pilot	Support
3	Blue Economy & MarineTech	Data/Tech	Support	Coastal pilot	Marine pilot	Support
4	Circular Textiles & Sustainable Fashion	Enable/Market	Inputs/R&D	Inputs/Enable	Support	Inputs/R&D
5	Sustainable Tourism & Smart Destinations	Data/Tech	Digital support	Core/Pilot	Core/Pilot	Support
6	EdTech & Digital Learning	Content/Tech	Skills/Pilot	Content/Market	Support	Training/Pilot
7	Creative Industries & Digital Content	Digital production	Creative ecosystem	Market/Culture	Culture/Tourism	Creative ecosystem
8	Cybersecurity & Digital Resilience	Core/R&D	SME/Test	AI/Market	Support	Core/Training
9	Smart Agri-food & Sustainable Farming	Digital/SME	Support	Circularity/Market	Core/Pilot	Core/Pilot
10	Test Polygons, Living Labs & Technology Validation	TRL/Assessment	Prototype/Test	Living labs	Living labs	Test polygon
11	AI, Smart Manufacturing & Resource-Efficient Industry	AI/Engineering	Manufacturing/Test	AI/Robotics	Support	Deployment/Network

Reading the matrix: Roles describe an indicative contribution to the value-chain function, not a formal consortium commitment. “Core” indicates a strong thematic fit; “R&D/Tech” indicates technology development; “Test/Pilot” indicates validation environments; “Market” indicates deployment or commercialisation links.

From insight to action

1 A. Define the value-chain position Describe what you provide, who uses it, the current TRL, the problem solved and the stage where you need partners.	2 B. Establish the sustainability baseline Identify the most material environmental, economic, social and governance impacts. Record a small set of measurable indicators.
3 C. Identify missing functions Locate missing inputs, enabling technologies, validators, pilot owners, market deployers or consortium leaders.	4 D. Design the interregional pilot Specify the use case, regions, expected TRL progression, pilot site, evidence, risks, timeline and responsibilities.
5 E. Prepare investment evidence Develop a project canvas, partner longlist, roadmap, budget logic, letters of interest and market-validation evidence.	6 F. Engage through SustainX Share the preferred value chain and partner needs, consent to matchmaking, and join advisory and consortium-building activities.