

# CLIMATE-KIC

## THEMATIC PRIORITIES

PROGRAMME MANAGEMENT OFFICE

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[climate-kic.org](http://climate-kic.org)

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# Introduction

This Thematic Priorities document captures and summarises the state-of-play in the priorities of Climate-KIC to provide a stable reference point for upcoming programme calls. Anyone in the Climate-KIC community considering applying to Climate-KIC programmes or sub-programmes should read the Thematic Priorities document and ensure that their proposal aligns with the latest Thematic Priorities. In order to balance relevance with stability, we will update the Thematic Priorities document twice per calendar year.

## 1.1 Climate-KIC

Climate-KIC is the world's leading public-private partnership addressing climate change mitigation and adaptation through innovation. It is one of six Knowledge and Innovation Communities (KICs), supported by the European Institute of Innovation and Technology (EIT), that provide a unique model of innovation to address key societal challenges, benefit the economy, create new jobs and enhance the entrepreneurial culture of Europe. Climate-KIC's mission is to **bring together, inspire and empower a dynamic community to build a zero carbon economy and climate resilient society**. Our vision is to enable Europe to lead the global transformation towards sustainability.

## 1.2 Innovation Framework

With a mission to bring together different innovation actors in the pursuit of innovation we aim to achieve economic, climate mitigation and climate adaptation impact. To achieve this, we define innovation as:

*Innovation is the application of new ideas to meet market needs.*

To Climate-KIC, innovation only happens when an idea is sustainably applied to fulfil the need. The Climate-KIC Innovation Framework outlines the programmes through which Climate-KIC engages and supports its community in the pursuit of innovation:

**Thematic Priorities** – assess innovation demand and challenges to identify where the impact potential lies.

**Ideator** – source and refine ideas to identify innovation opportunities that can be exploited.

**Accelerator** – model and validate the innovation outcome to articulate and strengthen the proposition, attracting key stakeholders.

**Demonstration** – put the theory and groundwork into practice, showing that the innovation can achieve the intended outcome.

**Scaler** – scale up, scale out, replicate and connect to deliver meaningful mitigation and adaptation impact.

**Graduate, Business, Online Education** – build the human capital, enabling the process of innovation.

The Thematic Priorities programme has particular significance as this programme shapes all our other programmes. Through engaging with our community and beyond we assess the market needs, understand the demand and consider the innovation challenges, in order to set a direction that has the potential to deliver most impact. It is a direction that is evolving and refining as we learn from our community and the innovation we support.

The following 2017 schedule outlines when the Thematic Priorities will be released and the key programmes intakes in 2017.

# 2017 Climate-KIC Intake Schedule

2017 Climate-KIC Schedule Version 1.4 - released 21-2-17		Quarter	Q1													Q2												Q3												Q4													
		Month	January				February				March					April				May				June				July				August				September				October				November				December					
		Week No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
Common Programme Calendar	<b>Theme Integration and Planning</b>																																																				
	<b>Thematic Priorities</b>																																																				
	Theme Priorities Document Issued	Priorities 1: For Q1/Q2 intakes																									Priorities 2: For Q3/Q4 intakes																										
	Flagship Priorities Document Issued	Priorities 1: For Q1/Q2 intakes																									Priorities 2: For Q3/Q4 intakes																										
	Knowledge Contribution Calls														KC Call 1																								KC Call 2														
	<b>Ideator</b>																																																				
	Geo-Theme Away-Days	Geo-Theme 1																									Geo-Theme 2																										
	Pathfinder Call Deadlines	Pathfinder 1: Focus Areas identified in Priorities 1																									Pathfinder 2: Focus Areas identified in Priorities 1												Pathfinder 3: Focus Areas identified in Priorities 2														
	Climate LaunchPad Hosting Selection	Partner/ 3rd Party Hosting Selection Deadline													←----- Launchpad Startups handled as admissions to the programme																								----->														
	Other Activities	←-----													Theme or Geography specific Ideator activities etc																								----->														
	<b>Accelerator</b>																																																				
	Partner Accelerator Call Deadlines	Accelerator 1 - Focus Areas identified in Priorities 1																									Accelerator 2 - Focus Areas identified in Priorities 1												Accelerator 3 - Focus Areas identified in Priorities 2														
	Start-up Accelerator Call Deadlines	Start-up Programmes follow local Geography schedule, with harmonised schedule targeted in late 2017																																																			
	<b>Demonstrator</b>																																																				
	Common Scaler Programme	Scaler Call 1																									Scaler Call 2												Scaler Call 3														
Open Scaler	←-----													Open Format/Process for Themes to tailor to specific Partner/Startup needs																								----->															

Indicative schedule - please refer to the [Climate-KIC website](http://Climate-KIC website) for more details on 2017 calls and intake deadlines.

# Thematic Priorities

Climate change is hugely complex and affects all aspects of society and the economy. Guided by world-class IPCC climate science, Climate-KIC breaks climate change down into the issues and actions that need to be taken at a sectoral level in order to mitigate, adapt and build resilience. These sectors are analysed to understand where they are now on mitigation and adaptation, and where sectors need to go to achieve their climate targets. Climate-KIC understands where sectors are struggling (market needs), which mechanisms are needed to mitigate, adapt and build resilience and how innovation can help (supply) and facilitates this connection.

The sector analysis sets out a strategy – topics are chosen by the themes to guide innovation, whereby public, private and academic interests coalesce around the most strategic points of work. We want innovative ideas, but they must also be relevant and practical for sectors, and demonstrate significant climate impact.

Through each edition of the Thematic Priorities document, our Climate-KIC Themes declare the areas of interest for forthcoming Climate-KIC innovation calls.

## 2.1 Urban Transitions

Climate change and the demands of booming urban populations pose a major challenge for infrastructure, buildings, energy supply, water systems and drainage, sanitation, waste management, housing and mobility. Cities need to be able to deal with climate risks and impacts (flooding, temperature rise, urban heat islands) and move to more sustainable, zero-carbon and resilient ‘circular’ pathways. The onus is on cities to improve air quality, reduce emissions, waste and resource use, and at the same time promote wellbeing, public health and social balance resulting in ‘restorative’ cities. Meeting these ambitions will demand trillions of investment, and innovation in systemic thinking, governance and financing. This is a major opportunity for a new, sustainable market to emerge harnessing the creativity, skills and economies of scale that exist within urban environments to produce new systemic solutions. Climate-KIC’s Urban Transitions catalyses urban transformation through collaboration and systemic innovation across infrastructure, governance and investment (in collaboration with Climate KICs Decision Metrics and Finance theme).

### Key Activities

- **Integrated and Systemic Innovation:** Urban Transitions fosters innovation that synergises city systems and infrastructure on the following principles: district proximity, connectivity and efficiency; circular economy and waste as a resource; novel data architecture and management to support smart and responsive technologies.
- **Smart and Sustainable Development:** Urban Transitions makes the case for smart, sustainable development through articulating new models of value, and visualising and making sense of complex data. Urban Transitions demonstrates how one ‘engagement’ can be more efficient and have multiple outcomes and benefits.
- **Education, Facilitation and Capacity Building:** Urban Transitions facilitates, catalyses and enables collaboration, bringing diverse and competing stakeholders together. It is a beacon for best practice and knowledge in urban transformation. For the programme to have greatest impact a new ‘benefits first’ approach will be adopted putting the citizen at the centre of the programmes. For example, ‘carbon reduction’ is not as successful in mobilising a community as say; parks, nature based solutions, air quality improvement or building

comfort. For example, ‘carbon reduction’ is not as successful in mobilising a community as say; parks, nature based solutions, air quality improvement or building comfort.

## Priorities 2017

The purpose of all the work of Urban Transitions is Systemic Innovation. The aim is to unlock the market failures in the built environment. The scope is broad and the landscape full of competing players so it is important that the Urban Transitions theme narrows the scope and aligns with the right partners and collaborators to unlock the biggest opportunities. For 2017 the theme is focussing on the following priorities.

### A. Deep Retrofit<sup>1</sup>

Buildings are key to a low-carbon future, as a high proportion of emissions (over 50%) occur in buildings, and some of the strongest carbon abatements business cases exist in this sector (see marginal abatement cost curves by Carbon Trust, McKinsey et al). The climate change targets set out under the Paris Agreement cannot be achieved without decarbonizing the building sector, which according to IPCC, is responsible for about one third of global GHG emissions. Existing buildings represent significant energy saving opportunities because their performance level is frequently far below current efficiency potentials. The European refurbishment rate has been around 0.3% for the last 20 years, despite concerted efforts to improve it over the past ten years through EU climate and energy strategy. In order to achieve its 2050 building sector target however, the EU needs to achieve a building refurbishment rate of around 3% per year, with that refurbishment being deep retrofit. In order to accelerate the retrofitting rate across Europe Urban Transitions is looking for innovations in the following areas:

- ‘Deep’ retrofit solution packages – aiming for zero on the meter- covers fabric, heating and cooling, optimisation and renewable generation.
- New business models to unlock retrofit at scale – ability to monetise future savings through; PPPs, EPC’s, leasing, monetising benefits.
- Supply chain integration – particular off site to allow retrofit at scale
- Health and wellbeing as a tool to enable the take up of the use of natural (low carbon / sustainable) materials and passive low energy design<sup>2</sup>.
- Performance gap to address the gap between design prediction (utilities) and actual a combination of behavioural, accuracy of design, and assumptions made (regulated and regulated loads).

### B. Transforming Districts into Smart and Sustainable Neighbourhoods<sup>3</sup>

Cities, with swelling populations, have a particularly complex climate challenge. They must reduce environmental impact and build resilience. Globally, many cities have committed to ambitious climate goals. But most are struggling to bridge the gap between their aspiration and the practical steps that lead to measurable impact. This is where districts come in.

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<sup>1</sup> See also Building Technologies Accelerator Multi Annual Plan for further supporting information on deep retrofit.

<sup>2</sup> Research by World Green Building Council BCO and others shows that health and wellbeing and the link to productivity is a bigger driver for businesses to engage in the carbon reduction / sustainability agenda. Businesses typically spend 90% of their annual costs on staff salaries and staff related costs and there is an increasing relationship between the environmental quality of space and retention, productivity and brand value.

<sup>3</sup> See also Smart Sustainable Districts Multi Annual Plan for further supporting information.

Districts have the autonomy, and are an effective unit of scale at which to test integrated systems that can help accelerate sustainability and meet climate goals.

Integrating Systems – Systemic Innovation: Integrating systems such as building functions, energy or mobility can enhance environmental performance. Such technologies and approaches – district heating, smart grids, demand management and resource sharing – already exist but a lack of joined-up policy and implementation frameworks can be a barrier. At the district level, however, it's possible to test out the new models of financing and contracting, joint ventures, partnerships, community engagement or novel governance models that this integration demands.

Climate-KIC's Smart Sustainable District developments are guided by the concept of 'factor four'. This is the idea of leveraging twice the value with half the resources. As well as enhancing environmental performance, goals can include local job creation, boosting local business, improving community participation or inspiring new patterns of citizen behaviour.

The Smart Sustainable Districts Process: Conventional green development strategies tend to be led by master developers or agencies, but district developments require wider collaboration. SSD brings together consortiums of policymakers, local municipalities, utilities, private developers, innovation experts, sustainability specialists and citizen groups. Districts undertake a multi-stage process:

- First, they determine **priorities, strategies and opportunities**. Some of the recurring priorities across districts are: energy (big scale energy optimisation across buildings & retrofit, district heating, smart grids), blue green infrastructure (flooding and precipitation, reducing heat islands, restorative regeneration), mobility (electric vehicles/bikes, mobility as a service), citizen engagement, data (open data platforms), master planning/operational efficiency, peer learning.
- They then identify tangible **'factor four' outcomes** from cross-sector synergy, either through demonstrating unconsidered benefits, or through bringing in new data and modelling scenarios.
- SSD makes the business case for sustainability, achieving environmental, social and economic outcomes.
- The last phase of the process is about **managing, evaluating and refining the proposition**. Districts do this through sharing best practice, integrating and layering project data, by understanding interactions, and applying new techniques.

Join Smart Sustainable Districts: There are currently nine districts within the SSD network: Rotterdam's Stadshaven Harbour, Utrecht The New Centre, London's Queen Elizabeth Park, Paris' Les Dock de Saint-Ouen, Gothenburg's Johanneberg, Malmö southeast, Berlin Moabit West, Helsinki's Kalasatama and Copenhagen Energy Block. In 2017 we have two focus areas: Firstly, Smart Sustainable Districts is looking to expand globally and invite more districts to join the programme with specific focus on developing a more balanced portfolio across all of Europe. Secondly, to deepen the systemic innovation process, so that a set of training materials can be developed to form part of a wider knowledge service. Moreover, Urban Transitions is eager to support innovations that can be demonstrated and scaled up across our district network tackling the priorities and opportunities outlined above.

### C. Mobility

Cities are the main drivers of global mobility demand as a result of direct passenger transport activity within and among urban areas, as well as indirectly through the freight activity needed to meet the demand for goods of city residents. At the same time transport continues to be one of the largest CO<sub>2</sub> emitters and a considerable source of air pollution, noise accidents and physical barriers which affects citizen's quality of life. A modal shift away from personal transport is vital to achieve the Two Degree Scenario in transport.

The International Energy Agency's (IEA) recognises that urban density gives potential opportunities for cities to curb transport-related carbon emissions by shifting activity to public transport, walking and cycling and by gradually adopting more efficient low carbon vehicles. Furthermore, cities are also important test beds for the penetration of advanced transport technologies such as new concepts like 'Mobility as a Service', the incorporation of ICT into urban transport and the deployment of battery electric vehicles as well as a key test-bed for new policy tools and procurement possibilities by transport authorities.

Against this background Urban Transitions is looking for innovations that address the following aspects:

- Cities are important test beds for the penetration of new and emerging concepts like 'mobility as a service.'
- Avoiding journeys where possible — by, for example, densifying urban landscapes, sourcing localized products, internet shopping, restructuring freight logistics systems, and utilizing advanced information and communication technologies (ICT).
- Address barriers to modal shift towards cycling and walking – by, for example, systemic investments in walking and cycling road infrastructure, linked with public transport options – and promote the benefits of physical activity unlocking the value for health and well-being.
- Shift citizens onto public transport by minimizing travel time and distance, improving its reliability and effectively incorporate ICT into its activities and rewarding its use.
- Provide cities with transport assessment frameworks for deciding which mobility options to promote, social cost benefit models including health effects to address prioritisation of investments and interventions in the urban fabric.
- Tackling emissions from lorries, vans, diesel taxis and buses is a key aspect of any thorough low carbon mobility strategy. This issue is given increasing salience by the growing concerns over air quality and its effects on public health and large scale shift to electrification.

### D. Blue Green Infrastructure (Nature Based Solutions)

Blue and green infrastructure are playing a key role in addressing challenges related to climate change. In cities extreme temperatures and weather are occurring with increasing frequency. The effects of urban heat islands and uncontrolled or inadequately planned urbanisation are amplifying the combined stresses on urban life. The restoration and redevelopment of integrated 'blue' and 'green' infrastructure could help to reduce the impact of such events and simultaneously increase the value of the land.

Nature based solutions are natural, service providing infrastructures that are often more resilient and more capable of meeting social environmental and economic objectives than

‘grey infrastructure’. City decision makers, urban planners and water engineers should consider how water systems and vegetated areas can be better integrated together to make cities more habitable and resilient in spite of climate change. Blue Green Infrastructure is forming one of the key pillars of Urban Transitions’ portfolio going forward. Areas where needs have been identified are:

- Future proofing – improving the resilience of cities by for example reducing urban heat islands, flooding protection and adaption to peak pressures in city water systems.
- Combined water systems – by for example coupling surface water run-off reductions and waste water recycling into a single system.
- Biodiversity improvement in cities to act as carbon sinks, improve air quality flora and fauna through for example the use of green rooves, pocket parks, and living walls and urban farming, as green-blue infrastructure delivery mechanism.

#### E. Cross-Cutting Topics

Climate change is a societal challenge that necessitates a broad response encompassing all layers of society. There is an increasing recognition that the transition to a low carbon city requires transforming embedded daily practices within institutions and individual citizens, changing the behaviours of energy consumers, developers, transport users as well as organisations. In 2017 Urban Transitions wants to promote:

- Finance:
  - New financial models to unlock retrofit at scale.
- Legislation and regulation:
  - Regulatory interventions to spur the deep retrofit rate and circular economy practices working for example with the bodies that set minimum building performance regulations for the EU member states and voluntary BS and CEN codes.
  - Closer liaison with bodies that set green building certifications such as BRE (BREEAM), Well standard, IEA, Passivhaus, Edge, etc.
- Health:
  - Closer liaison with Health KIC / EIT Health to unlock health and wellbeing benefits.
- Capacity Building:
  - Workshops, schools and training materials that promote behaviour change amongst practitioners and ‘prosumers’.

**Proposals that are addressing additionally systemic thinking, circular economy, health and wellbeing, or big data for better outcomes will be looked upon more favourably.**

### Case Studies

For case studies please [download the Urban Transitions booklet](#).

## 2.2 Sustainable Production Systems

The dominant take-make-dispose model of production and consumption represents a high level of inefficiency in resource use. In the face of climate change and increasing vulnerability in supply chains, there is a need to design out emissions and waste, optimize and share resources, develop synergies between industrial systems and build resilience.

Climate-KIC's Sustainable Production Systems theme is building a new foundation for industry in Europe, fostering innovation that decouples economic growth from unsustainable resource use and greenhouse gas emissions. We develop and champion climate-friendly and economically viable circular models of manufacturing that will deliver a carbon-neutral European economy.

### Key Activities

- Alternative Feedstocks: We identify alternative feedstock for industrial processes, substituting raw materials with secondary ones, processed with low carbon, renewable sources. We foster innovation that designs waste out of systems by channelling by-products back into the value chain.
- Closing the Loop and Zero Waste Systems: Our closed-loop approach yields material and energy exchange, and a sharing of assets. Our goal is to add value among stakeholders. We demonstrate the positive impact of co-creation, shifting efforts away from singular gains towards cross-industry and cross-sectorial collaboration.
- Linking Up and Downstream: We connect upstream (B2B) manufacturing industries in the chemicals and metal sector with the industries where there is the highest demand for their products in the consumer markets (B2C) – from mobility and household appliances to consumer electronics, packaging, fabrics and clothing. We work with recycling and waste management operators, interlinking markets for secondary resources and creating closed material cycles.

### Priorities 2017

We would like to support **innovation ideas that accelerate multi-stakeholder and cross-industry innovation with the biggest climate and business impact, reflect the principles of circular economy**, implying lifecycle thinking, a material and/or energy exchange or sharing of assets and lead to an added value among different stakeholders. Depending from the stage in which the innovation opportunity will enter our Innovation framework, expected time to market is between 1-5 years' maximum, exceptions are cross-cutting topics (listed under section D).

**Focus value chains** are metals (steel, aluminium, copper), chemicals and plastics, with applications in:

- Vehicles & Logistics: Automotive, Trucks, Buses, Air, Rail, Marine
- Consumer Goods: Household Appliances, Consumer Electronics, Textiles
- Packaging and Packaged Goods

#### A. Production Outputs and End-of-Life

- High value secondary materials through improved waste collection, sorting and recycling, standardization of secondary materials, new business models based on cross-sector collaboration, open patents and open source to boost broader take-up of innovative technologies
- Designing products for multiple circular loops

#### B. Production Systems Re-Design & Resource Efficient Manufacturing

- Digital Solutions: Accelerating innovation and resource efficient manufacturing through digital tools and digitalized manufacturing (e.g. additive manufacturing/3D printing, digitized material identification, online waste management platforms, digital solutions in recycling, waste collection, ...)
- Multimodality & Logistics: Reducing footprint of freight transport all along manufacturing value chains
- Industrial & Territorial Ecology: Implementing innovations to create material (and energy) synergies between different stakeholders at different levels of the value chain within a specific territory

#### C. Production Inputs

Alternative feedstock substituting raw materials through secondary materials and/or renewable, less carbon intensive resources:

- Secondary materials from metals (steel, aluminium, copper), chemicals and plastics
- Biomass from waste (agro-forestry, households and industry), fully biodegradable
  - For bio-based materials and chemicals to substitute plastics in mobility, consumer electronics, household appliances, textiles, packaging.
  - For bio-fuels only if used for applications in aviation industry (we would interlink with our project Renjet (bio-based kerosene supply chain development – Schiphol, KLM and SkyNRG)
  - **We will not support 1<sup>st</sup> generation biomass**
- 3<sup>rd</sup> generation bio-mass from algae
- CO<sub>2</sub> re-use, emissions as source of value, will be addressed under the Flagship Program EnCO<sub>2</sub>re (for further information please refer to our Flagship Manager Ted Grozier: ted.grozier@climate-kic.org)

#### D. Cross-Cutting Topics

- Legislation
  - Regulatory interventions to spur environmental innovation and Circular Economy practices
  - Solutions to overcome potential barriers from
    - different waste treatment, collection and recycling regulations in Europe,
    - liabilities and warranties still supporting linear models,
    - missing quality standards for secondary materials,
    - missing incentivisation of waste avoidance in production processes
- Finance
  - Financial instruments & incentives for cross-industry and cross-sector collaboration in Circular Economy
    - Fiscal incentives to foster re-use of secondary materials and increase competitiveness of secondary markets
    - Solutions for industry to measure and quantify the Circular Economy Benefit in the business case in comparison to the linear models of production
    - Assessment tools for financial investors to calculate ROI of Circular Economy business models

#### E. Flagship priorities – EnCO<sub>2</sub>re

EnCO<sub>2</sub>re is an innovation and market development programme for CO<sub>2</sub> re-use. Our vision is a balanced and prosperous market for re-used CO<sub>2</sub>, beginning with a focus on polymers and chemical intermediates. Our ambition is large-scale CO<sub>2</sub> re-use through the establishment of a CO<sub>2</sub> value chain.

Our vision: A world using waste CO<sub>2</sub> as a valuable resource. In a more sustainable future: CO<sub>2</sub> is extensively used as feedstock for new or improved products

- Companies and consumers demand products made from CO<sub>2</sub>
- The industrial carbon loop is nearly circular
- Give rise to proven technologies for CO<sub>2</sub> re-use
- Renewable energy makes CO<sub>2</sub> re-use even more sustainable
- Europe leads in CO<sub>2</sub> re-use technology and has successfully capitalized on its potential to be a pillar of sustainable growth.

For our Flagship Program EnCO<sub>2</sub>re, we are shifting the focus from a technology development program involving a limited number of stakeholders towards becoming an innovation and market development program acting as an interest group for CCU. Planned highlights of 2017 include:

- Recruit 2-5 new industry Partners into the flagship to reflect the shift in focus.
- Secure at least 1 new corporate Sponsor and collaborate with other networks to enable large representation of CO<sub>2</sub> re-use corporate stakeholders.
- Increase co-funding in all Partner projects and start concrete fundraising activities
- Collaborate on up to 2 projects or conferences with other CCU networks.
- Shift resources towards awareness and network building activities; host 2 innovation roundtables

The changes in 2017 reflect our desire to bring better cohesiveness to EnCO<sub>2</sub>re projects and activities and contribute to Knowledge Triangle Integration. Our work to date gives us the building blocks to make KTI possible.

#### Climate Impact Potential

There is an urgent need to mitigate the carbon emissions from manufacturing and industry, underlined by the 2015 Paris Agreement. Manufacturing is responsible for about 98% of total direct CO<sub>2</sub> emissions from the industrial sector and 30% of total global CO<sub>2</sub> emissions arise mainly from material processing. An increase in resource productivity would enhance economic prosperity, competitiveness and innovation, while reducing greenhouse gas emissions and adverse environmental impact.

Through a study commissioned by Climate-KIC Sustainable Production Systems to ENEA Consulting, it has been estimated that innovation related specifically to

- Waste collection, sorting and recycling of municipal solid waste reduction (paper and card, plastic packaging, textiles, glass packaging, steel packaging, white goods, aluminium packaging, garden waste and food waste) can reach a GHG emissions reduction potential of ~ 190 to 220 MtCO<sub>2</sub>eq in 2030\*
  - GHG emissions reduction levers (dependent on waste collection and sorting) are raw material substitution and waste amount reduction.
- Bio-based materials and chemicals GHG reduction levers are raw materials substitution, Waste amount reduction, GHG neutralization (algae), other levers for process emissions

reduction (bio-processes) with a GHG emissions reduction potential of ~ 60 to 130 MtCO<sub>2</sub>eq in 2030<sup>4\*</sup>

- Bio-feedstock with the strongest climate potential: ~ 48 to 117 MtCO<sub>2</sub>e
  
- Resource efficient manufacturing enabled through implementation of new technologies resulted in materials savings of up to 40 % or 50 % and therefore showing a high GHG reduction potential. GHG emissions reduction levers are raw materials consumption reduction, waste amount reduction, lifetime extension, energy efficiency with a GHG emissions reduction potential of ~ 30 to 70 MtCO<sub>2</sub>eq in 2030\*
  
- The climate impact that can be achieved through modal shift is about 1.5 times higher than the climate impact that can be achieved through innovative logistics. However, the subcategory innovative logistics displays a better dynamic of innovation and a stronger economic growth for 2020.

GHG emissions reduction levers are transport emissions reduction with a GHG emissions reduction potential of ~ 140 to 190 MtCO<sub>2</sub>eq in 2030<sup>5\*</sup>

- Multimodality / Modal shift: GHG emissions reduction potential of 108 MtCO<sub>2</sub>e in 2030.
- Innovative logistics, including: Optimized vehicles use with a GHG emissions reduction potential of 58 MtCO<sub>2</sub>e in 2030;
- Intelligent heavy goods vehicles with a GHG emissions reduction potential of 20 MtCO<sub>2</sub>e in 2030;
- Automation of ship systems with a GHG emissions reduction potential of 3 MtCO<sub>2</sub>e in 2030.

## Case Studies

For case studies please [download the Sustainable Production Systems booklet](#).

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\*MtCO<sub>2</sub>eq avoided in 2030

## 2.3 Sustainable Land Use

The extensive demands on natural resources, and the interactions between land use and ecosystems services make the agriculture, food and natural resources sector complex in terms of sustainability. With the impact of climate change, there is a need to build resilience into food and forest supply chains, and, at the same time, drive transparency and traceability. There is a need for a coordinated approach that addresses externalities and efficiency across the value chain.

Climate-KIC's Sustainable Land Use theme supports approaches that decarbonize agriculture, making it more efficient and productive. We foster innovation in the bio-economy that builds resilience into global food and forest value chains. We promote integrated, sustainable land use, coalescing

### Key Activities

- Forests: We support monitoring, restoration and management initiatives to prevent deforestation and degradation and to promote biodiversity. We support innovation that embraces the multi-functional role of forests both as carbon sinks and as natural assets in the bio-economy.
- Agriculture and Food Production: We promote precision, efficient and low carbon agriculture, and integrated cultivation systems that maximize resources and innovate waste out of the food chain. We work to build resilience in forest and food supply through risk services, diversification tactics, and evidence-based planning and management.
- Integrated Landscape Management: From maintaining ecosystems services to balancing the diverse demands on natural resources, we take the approach of integrated landscape management to find common ground between sectors, rights, stakes and objectives through adaptive management and shared learning.

### Priorities and Key Challenges 2017

This note presents the main thematic priorities and key challenges of the SLU theme for 2017.

Priorities are key issues and directions that have been identified in our medium term strategy and result from the first year of implementation of KIC 2.0.

Key challenges are more specific and actionable i.e. they are commensurate with the size and ambitions of our projects. Given the previous achievements, their main connections with the different KIC programmes (ideator, accelerator, demonstrator, scaler and flagship) and with some concrete activities are also presented.

All proposals submitted to the theme need to fit with the priorities and a tentative ratio of 80% of them needs to address the challenges identified. Exceptions to this 80% rule will be considered especially for:

- Follow-on from previous successful projects
- Proposals demonstrating very strong synergies with the other KIC themes or with other external organisations (other KICs, strategic national/international organisations)

Regarding our flagship Climate Smart Agriculture Booster, the text below (section 3) explains the structure and main components of the flagship. As regards to project proposals expected from partners, they need to prioritize the implementation of methods and solutions with value chain actors and to generate tangible impacts.

## 1. Priorities

The generic priorities are presented to set the stage. They fit with the general evolutions anticipated by the theme as presented in the 5-year strategy of the KIC and, more broadly, with its missions.

### A. Consolidate the Agriculture Focus Area (challenges 1,2,6,7)

With the Climate Smart Agriculture Booster (CSAb) up and running, most activities related to agriculture need to be concentrated in the priority areas identified by the flagship (see below). Ideators or Accelerators initiated in 2016 that focus on agriculture may enter the CSAb project portfolio pipeline if fitting with these priorities or having a clearly demonstrated potential to scale and generate significant climate impact<sup>6</sup>. See section 3 for more on CSA booster.

### B. Connect Agriculture Production with Food Consumption (challenges 1,6)

Innovating in the agriculture sector is not an easy task. However, most start-ups (60%) connected to the SLU theme deal with food and food waste i.e. the demand/consumption side. Innovations in the food sector should be leveraged to accelerate the evolution of sustainable agricultural practices. SLU will tap this innovation potential through developing projects that facilitate such connections and better align the needs of both the supply and demand side.

### C. Continue the Development of a Consistent Forestry Portfolio (challenges 1,2,3,4,5,7)

The forestry sector has tremendous potential provided it can combine upstream carbon sequestration with downstream substitution of fossil carbon with recently stored carbon. On the downstream segment, we wish to prioritize solutions that maximize the value of the harvested wood by *combining* construction-wood, industry wood, bio-chemical products and only in the last instance energy-wood.

### D. Initiate the Development of Integrated Landscape Approaches (challenges 1,7,8)

Zero sum games induce major failures in climate actions for the land use area. Today there is clear evidence that developing comprehensive landscape approaches is critical to avoid scenarios where the benefits obtained in one sector or territory are offset by land use changes in another one. Projects linking and integrating land use areas (including agriculture, forestry, cities, other ecosystems) and demonstrating (using frameworks such as Natural Capital Accounting Protocol) how to implement such approaches will be a SLU priority for 2017.

### E. Integrate Climate Services and Resilience Approaches (challenges 3,9,10)

All themes have agreed to give greater exposure to our adaptation activities and to structure them into a consistent programme. The SLU theme will use the experience in resilience approaches of its partner community and connect it better with the climate services tools developed by the DMF Theme.

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<sup>6</sup> Each time we mention “climate impact”, it needs to be understood that the capacity to scale and hence the quality of the business model has been demonstrated

## 2. Key Challenges

The proposed thematic challenges for the development of activities within the Innovation pipeline are presented in the Table below. They do not include the specific flagship priorities/challenges that are presented in the next section.

Key Challenge	Rationale, Comments	KIC Programmes
1. Improve <b>traceability and develop efficient certification tools</b> along supply chains (food, wood) and at landscape level	<p>Traceability in supply chains is essential and is strongly connected to certification mechanisms.</p> <p>While vertical traceability has received attention, there is a clear need to develop more holistic approaches at the landscape level and to influence policies</p>	Ideator, Accelerator and possibly Demonstrator
2. Develop tools to monitor and manage <b>carbon stocks</b> especially in soils and degraded lands in order to maximise carbon sinks	<p>Soils contain more carbon than the atmosphere and the stock has regularly decreased in the past decades. The international 4 p 1000 programme launched after COP21 is a natural partner of the KIC in this area. Co-development of projects with this programme will receive specific attention.</p>	Ideator and Accelerator
3. Develop tool(s) and guide(s) to <b>assess and evaluate the climate benefits of forest management practices</b> (in terms of mitigation and adaptation)	<p>Costs of certification remain too high for many smallholders. Simple yet robust assessment tools are needed in order to reduce these costs and increase the certification.</p> <p>Tools based on Natural Capital Accounting (NCA) protocol could in particular be considered.</p> <p>Adaptation to climate change will also need to be addressed since a resilient forest is critical for carbon sequestration. Reducing fire risks, increasing tree diversity are key to both sustainable management and to adaptation</p>	Ideator and Accelerator
4. Create win-win opportunities between <b>climate friendly forest-derived products</b> and downstream value chains in particular in the wood	<p>Increasing the sink term of forest while substituting fossil carbon is a good way to maximize climate benefits.</p> <p>Value chain approaches, where the value generated downstream is partly transferred to forest owners, are critically needed here.</p>	Ideator to Demonstrator

construction or bio-based industries	Cooperation with other themes or other organisations is critical for this challenge	
5. Develop tools to <b>monitor, assess and predict available wood and biomass</b> in forests/landscapes, taking account of land tenure issues.	Investments in wood and associated bio-based product value chains need predictions of the availability of resources in quality and quantity, and for short, medium and long term horizons.  Land tenure issues (types of forest owners, size and accessibility of properties) play a critical role in this availability and need to be taken into account	Accelerator and Demonstrator
6. Develop and scale up <b>innovative solutions for the food sector</b> , connecting them to actors of the value chains and to producers	Innovation in agriculture is triggered mostly by changes in the food sector (i.e. from transformation to consumption) demand as demonstrated by the large number of start-ups.	Demonstrator and Scaler
7. <b>Integrate</b> agriculture and forestry activities (circular economy, energy efficiency, carbon stocks, resilience)	Agriculture and Forests being managed by different people and institutions; several improvements can be derived from a better integration (starting with agroforestry approaches).	Ideator and possibly Accelerator
8. Initiate <b>integrated landscape/territorial</b> approaches with specific focus on minimizing impacts of land use changes and on avoiding zero-sum games between competing land uses	Land use changes are critical to carbon sequestration and GHG emissions. Taking holistic approaches at landscape level is critical to avoid land use changes detrimental to climate change or to induce positive changes that will increase carbon sequestration.	Ideator and Accelerator, possibly Demonstrator
9. Connect <b>climate services</b> (including insurance mechanisms) <b>with agriculture and forestry resilience</b> approaches	Several tools already under development. New projects to be better connected to existing demonstrators and flagships. Connection with DMF theme expected	Accelerator to Scaler
10. Develop <b>land-based resilience mechanisms</b> and contribute to an adaptation programme	The priorities of the adaptation programme will be refined in Q1 2017	Ideator and Accelerator

### 3. Flagship Priorities (CSA Booster)

Having realigned and refocused the CSA Booster's vision and strategy, the 2017 priorities and challenges, aligned with its revised Multi-Annual Plan, are as follows.

#### 3.1 Priorities

**A. Implement a solid work plan of on-going, supporting activities** that will provide a strong foundation for the booster, create sustainable knowledge assets, and support the development and implementation of its projects. It will consist of four major activities:

- Implementation of the open innovation platform
- CSA education and training
- CSA solutions and services
- Regional hub development in France, Italy and Netherlands
  - ➔ Details of the four activities are covered in the Key Challenges below.

**B. Successful implementation of multi-year projects** launched in 2016 and follow-on/ new projects (from two project calls in Q1 and Q2) focussed on the following five topics:

- Value chain analysis and optimization in wine, dairy and fruit
- Agriculture climate impact/risk assessment models and M&E tools
- Innovations in soil and land use adaptation
- CSA financing and insurance solutions
- Urban agriculture

Details of the five topics are covered in the Key Challenges below.

**C. Implementation of CSA communications and outreach strategy** to actively engage and grow its multi-stakeholder partner community and ecosystem, focusing on businesses, value chain actors, start-ups and potential funders. It will also aim to increase awareness and visibility on key CSA issues and challenges and raise the profile of CKIC and CSAb. This will be done via its new website, more consistent branding and marketing materials, social media, conferences and events, and educational activities (e.g., the first CSA MOOC).

**D. Initiate projects connecting the agriculture production/supply side with the consumption/demand side** via SLU's food related start-ups, the Food KIC and other flagships and initiatives focused on urban areas such as LoCAL and the Urban Transitions theme.

**E. Increase collaboration with other flagships, themes, and initiate cross-theme** (e.g., with DMF theme in agriculture risk & insurance and investment) and **cross-KIC** projects (e.g., with the Food KIC). It also intends to expand its activities in the Nordic and explore opportunities in Eastern Europe.

### 3.2. Specific Priorities

#### Flagship components

Flagship Component	Priority	KIC Programmes
<b>Open innovation platform (OIP)</b>	An OIP focused on CSA is needed to better connect all relevant stakeholders in the CSA space, raise awareness of key sector issues, enable sharing of knowledge, expertise and solutions, and facilitate co-creation and investment. It will be used to showcase and promote the CSAb's tools, services and projects.	Demonstrator (implementation of IT architecture, V1.0 of features and functionalities, first user community)
<b>CSA education and training</b>	To raise awareness and educate the public on critical CSA issues and challenges – this will include the launch of the first CSA MOOC in 5 languages and continuing webinars on specific topics. To develop educational resources for farmers, solution implementers and value chain actors.	Demonstrator, Scaler
<b>CSA solutions and services</b>	Develop an integrated solution assessment framework and tool. Development of a solution database with solutions linked to specific policy incentives.  Matchmaking between solution providers and customers. Piloting of CSA consultancy and technical assistance services.	Accelerator, Demonstrator, Scaler
<b>Regional hub development</b>	Development of regional CSA hubs in France, Italy and Netherlands focused on prioritized value chains in the region, and engaging local stakeholders, partners and funders.	Accelerator, Demonstrator

Flagship specific challenges

Key Challenges	Rationale, Comments	KIC Programmes
<b>Value chain (VC) analysis</b>	Facilitate deployment of CSA solutions via value chain assessment and optimization in wine, dairy and fruit. Working with leading FMCGs (e.g., Unilever, Danone, Barry Callebaut) and other actors.	Demonstrator, Scaler
<b>Ag. climate impact/risks assessment and tools</b>	Development and testing of alternative climate impact/risk assessment models for agriculture (e.g., IRMA, PETM Climate VaR, Oasis LMF applied to Ag.). Improvement and operationalization of M&E tools such as the Cool Farm Tools with Cool Farm Alliance.	Demonstrator, Scaler
<b>Soil and land use adaptation</b>	Innovation and technologies in soil adaptation and resilience such as soil additives/augments, alternative farming and land use practices and business models.	Ideator, Accelerator, Demonstrator
<b>CSA financing and insurance solutions</b>	Alternative approaches and mechanisms in financing and increasing CSA investments such as green bonds, carbon credits, corporate funding platforms and other co-financing, blended-value or tired risk/return models with public and private funders. New insurance solutions to reduce climate risk for farmers and incentivize adoption of CSA solutions. Initiate cross-theme projects with DMF in potential topics such as ag. risk/insurance and ag. investment.	Ideator, Accelerator, Demonstrator
<b>Urban agriculture</b>	Focused on ag. needs within Urban context such as cultivation, processing and distribution of food in cities, aquaculture, agroforestry and urban gardening and farming. Initiate cross-theme projects with other relevant themes e.g., Urban Transitions (working with cities) and cross-KIC projects with Food KIC (or Health KIC).	Ideator, Accelerator, Demonstrator

## Case Studies

For case studies please [download the Sustainable Land Use booklet](#).

## 2.4 Decision Metrics and Finance

The Paris Agreement has united the globe in its fight against global climate change and has set ambitious targets. While it is clear that many solutions already exist, there still remains a big challenge: scaling up the innovative solutions quickly enough to a level consistent with the targets set. The fact that even current targets are not sufficient to stay on track is exemplified by the fact that countries will examine in 2018 whether and how to tighten targets. With respect to mobilizing the required finance, in infrastructure alone for example roughly \$93 trillion of infrastructure designed to be low-emission and climate-resilient will need to be built globally in the next 15 years.

International climate policy is not the only forum that has woken up to the need for action, monitoring and risk management. Also, it is increasingly recognized that the private sector is exposed to significant climate change risks and opportunities. The G20's Financial Stability Board concluded in 2015 that, without effective disclosure of these risks, the financial impacts of climate change may not be correctly priced – and as the costs eventually become clearer, the potential for rapid adjustments could have destabilizing effects on markets. It therefore commissioned a Taskforce on Climate-Related Financial Disclosure (TCFD) convening 30 high-level private sector experts which on 14 December 2016 issued its recommendations<sup>7</sup>. The aim is that climate-related financial issues are routinely considered in business and investment decisions and encourage an effective dialogue between companies and banks, insurers and investors. That will lead to smarter, more efficient allocation of capital, and speed the transition to a climate-friendly, low-carbon economy.

### Key Activities

While the above developments are very promising because they set the right ambition level and provide broad frameworks, a lot still needs to be done in order to put this into practice.

Together with partners, Climate-KIC's DMF theme aims at developing innovative climate metrics, climate finance, and decision-making mechanisms to enable the scaling of climate-friendly innovation. We do this by:

1. Boosting climate metrics and evidence-based targets
2. Unlocking climate finance
3. Informing and educating decision-makers

While DMF works with all sectors and entities of all sizes, **we prioritize projects that demonstrate end-user and financial sector involvement. All projects must aim to achieve financial self-sustainability.** DMF is Climate-KIC's main centre for activities oriented towards climate metrics, finance, policies, and standards.

To pursue the priorities outlined below, the DMF will support Climate-KIC Partners and collaborate with other entities and individuals along a range of engagement opportunities.

We recommend contacting your local Climate-KIC team who can advise you directly, or in collaboration with the DMF team.

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<sup>7</sup> [https://www.fsb-tcfd.org/wp-content/uploads/2016/12/18\\_1216\\_TCFD\\_Report\\_A4.pdf](https://www.fsb-tcfd.org/wp-content/uploads/2016/12/18_1216_TCFD_Report_A4.pdf)

## Priorities 2017

The DMF theme prioritises five topics for 2017. These are:

1. Transforming Financial Markets and Accounting Standards
2. Developing a Global Market for Climate Risk Information
3. Unlocking Climate Finance for Cities
4. Mobilising Finance for Sustainable Land Use
5. Informing & Educating Decision-Makers on Climate Finance (Cross-Cutting Priority)

### A. Transforming Financial Markets and Accounting Standards

This priority area is concerned with the innovations needed to redirect substantial financial market flows to climate-friendly and resilient assets across all sectors. Areas where needs have been identified are:

- **Climate accounting and reporting methodologies:** Greenhouse gas (GHG) emission disclosure and accounting methodologies have come a long way. However, there still remain gaps, not only in terms of what can be accounted for (scope 3, future impacts and actions, resilience, among others), but also in tailoring the available and newly produced data into practical information and services for climate action. It is also critical these methodologies remain updated and the surrounding ecosystem of actors is sustained by solid business models.
- **Facilitating the uptake and scaling of innovative climate finance instruments:** Financial products and structures that aggregate or scale investments, particularly with a view to mainstreaming climate finance more broadly. An emphasis will be made on instruments that target investors who seek market returns (retail or institutional). This endeavour may include applications of blockchain, behavioural finance and data visualisation techniques, as well as the use of lessons learned from other domains such as microfinance. New methods that assist mainstream fund managers with portfolio allocations will be critical to scaling efforts. Ideas for robustly incorporating climate considerations into financial accounts and valuation are welcome.
- **Safeguarding the integrity of nascent markets and emerging asset classes as they scale:** While climate finance needs to be scaled very quickly, a lack of integrity could cause a backlash which needs to be avoided. For example, the market for green bonds is developing rapidly. However, there is a persistent need to develop better standards, improve verification, and integrate aspects such as resilience. Innovative offerings to accelerate the development of sovereign green bonds could help in financing Nationally Determined Contributions (NDCs).
- **Mechanisms to expand and scale blended climate finance:** The time is opportune to build on the latest work in blended finance, particularly in the climate space. (Ideally in collaboration with institutions such as the IFC).

## B. Developing a Global Market for Climate Risk Information (Flagship Programme)

Increasingly different parts of society are facing the need to plan for a riskier future as a result of inevitable global warming. While this has been bread and butter for the large segments of the insurance industry for decades, the need to plan ahead to de-risk has become an urgent need for city governments, energy modellers, commodity traders, infrastructure investors and engineers, health systems planners and a range of supply-chain dependent businesses, as often decisions have been made under conditions of imperfect market information. Climate-KIC addresses these challenges with its flagship program Climate Risk Information working with OASIS, which is an innovation community of expert organisations that:

1. Sets a standard for catastrophic risk data and models (via the non-profit entity OASIS LMF: <http://www.oasislmf.org/>)
2. Provides capacity building for risk data and models and fosters financial innovation to incentivize increased insurance and investment for resilience

The 2017 priority is to increase the use and availability of risk data and models by:

- **Developing an e-marketplace for risk data and models to be exchanged and consumed**
  - An online marketplace in which climate risk models and environmental risk data can be bought and sold, or through which models and data can be made available free-of-charge and where revenue is generated via transaction-levy. Models and data in the online marketplace would need to meet certain quality and compatibility criteria to support the widest possible utility. To date, DMF has supported the development of OASIS Hub Ltd as the delivery agent for this priority, ensuring alignment and compatibility with OASIS LMF (not precluding compatibility with other platforms).
- **Demonstrating the use of climate risk models and data for concrete end-user applications (Point 2).** To build the market momentum, demonstrations should aim to be compatible with the LMF standards and look towards the e-marketplace as a potential route to market. We prioritize those projects that have strong involvement from investors, insurance, or end-users (e.g. urban planners, agri-business, infrastructure and utilities).
  - **Cities:** Scalable climate risk models and data that help cities and investors assess risk and planning decisions. Novel approaches to assess vulnerability and provide damage functions. Market analysis on actual needs of municipalities and other city-level institutions (ideally in collaboration with a multiplier such as Rockefeller's 100 Resilient Cities). Novel approaches and interfaces to make decisions based on evidence around the costs and benefits of adaptation. *Interface with Urban Transition theme*
  - **Land Use:** Novel approaches to use climate models and data to support insurance and long-term planning in light of both acute and chronic risks (changes in long-term climate patterns). *Interface with Sustainable Land Use theme*
  - **Health:** To use climate risk data to assist the health sector to take appropriate climate adaptation and resilience actions linked to climate extremes and assist the health insurance sector to prepare adequately for such futures. *Ideally at interface with EIT Health.*
- **Overarching, enabling innovation:**

- **Education:** Analysis of what training is needed by data providers to build and upload usable products, training needs of non-insurance end-users to make use of climate risk data in their investment and planning decisions, novel training modules to start closing these gaps
- **Financial innovation:** Enable development or transformation of financial instruments by reducing risk uncertainty, incentivize resilience investments

In terms of geographic scope, we welcome work that targets beneficiaries in Europe, as well as in emerging and developing economies, where data availability is often a major challenge.

Across all of the above, we are interested in how data/models can lead to novel insurance business models and financial instruments like resilience bonds that incentivise investment into resilience.

## C. Unlocking Climate Finance for Cities (Flagship Programme: LoCaL)

LoCaL is an innovation platform supporting cities, donors and investors that addresses the enormous challenge of unlocking climate finance for cities.

LoCaL will support projects that

- **Influence** the global agenda on unlocking climate finance for cities by providing thought leadership & knowledge related to sustainable urban infrastructure
- **Mobilize** cities and the financial sector to develop & implement bankable projects in cities, channel more funds into sustainable infrastructure
- **Develop** financial mechanisms dedicated to sustainable infrastructure projects
- **Provide** tools to better integrate environmental (including co-benefits of climate action) impact in urban infrastructure projects

Proposals are expected to demonstrate strong involvement from the financial sector and/or a city authority.

In addition, **LoCaL is building 4 Competence Centers** to deliver programme level outcomes. CCs can address issues that cannot be solved by individual projects. They are co-led by the Climate-KIC and a set of strategic partners, aim at developing programmatic know-how and assets with considerable visibility, and are tasked to conduct fundraising for their future activities based on the jointly developed assets.

The objectives of CCs are:

- Identify and address overarching climate-finance and metrics barriers in a city context
- To demonstrate thought leadership and inform the global agenda
- To position LoCaL and Climate-KIC internationally
- To attract external sources of funding for their own activities and if relevant for LoCaL supported projects
- To support LOCAL projects with their expertise where needed

The envisioned Competence Centers are:

1. **Impact Assessment Center** : LoCaL will support the creation of an impact assessment center whose goal is to help cities and investors in assessing the impact of their climate actions and investments. The Center will over time be in charge of ensuring that LoCaL project success and impact are measured.
2. **City Finance Lab** : LoCaL will support the development of a climate finance lab dedicated to cities. This innovation hub will be responsible for accelerating the uptake of novel finance mechanisms.
3. **Project Preparation** : LoCaL aims to to increase and improve dealflow generation, based on a collection of best practices and methodologies that can be used to support PPFs in better integrating the financial perspective, enabling project pooling and accelerate projects globally.
4. **Training Hub**: LoCaL is building a training hub in climate finance for cities in collaboration with its partners. Our Training center will empower cities in improving and better integrating their climate planning with finance planning.

A more detailed description of the Competence Centers can be accessed [here](#). Please engage early with the LoCaL Programme Manager ([victor.gancel@climate-kic.org](mailto:victor.gancel@climate-kic.org)) prior to submitting proposals.

## D. Mobilising Finance for Sustainable Land Use

The Land Use sector represents a very important area to address both mitigation and adaptation challenges. However, due to the underlying, often fragmented market structures and the natural phenomena at play, the mobilization of finance based on solid decision metrics remains a challenge. The DMF theme therefore encourages ideas to come forward in the following areas:

- **Financial instruments fit for land use**: Innovative financial instruments to help scale investments into climate friendly agriculture/ and conservation of forest areas
- **Metrics to enable scaled-up investment**: Ex ante and ex post assessment metrics that could help financial instruments to gain more acceptance and therefore attract more capital
- **Interface between insurance and investment**: Innovative and synergistic models of insurance and investment in the land use sector, often combining adaptation and mitigation benefits

This will be done in close collaboration with the Sustainable Land Use theme and, as concerns agriculture, especially the Climate Smart Agriculture Booster flagship.

## E. Informing and Educating Decision-Makers on Climate Finance (Cross-Cutting Priority)

The ultimate objective is to capture knowledge assets resulting from projects so that state-of-the-art innovations can be widely scaled up and distributed amongst decision makers and project practitioners across all thematic areas.

DMF are looking to develop capacity-building and training modules including using best practices developed, tested and demonstrated under past and current Climate-KIC Partner projects. These

modules will comprise a DMF catalogue of training modules that can be mixed and matched to the needs of the training recipients.

These training modules will use tried and tested capacity-building formats and delivery modes to offer these modules to the broader landscape of climate actors, whilst creating value for Climate KIC and its Partners. As a result, best practice and demonstrated innovations by Partners in all aspects of climate metrics and finance are invited to be turned into innovative training modules.

## F. Other Areas

Mobilizing finance for Sustainable Production Systems is expected to become a priority in 2018. To lay the groundwork for this, DMF will issue a call for a report in 2017 on the most innovative business models, metrics, and financial mechanisms are to drive the circular economy.

Any other idea that does not fit the above priorities will still be considered if it:

- Advances DMF Objectives and is consistent with its Key Activities (Section 2 above)
- Is scalable, replicable in or adaptable to other contexts or geographies
- Demonstrates end-user involvement and aims to or has achieved financial self-sustainability

Proponents of such ideas are asked to contact the Climate-KIC through their local offices as soon as possible.

## Case Studies

For case studies please [download the Decision Metrics and Finance booklet](#).

## 2.5 Education

To catalyse the creation of a low carbon society, the Education Theme aims to be a leading global centre of excellence: educating, inspiring, and empowering climate leaders and ‘change agents’ with creative and innovative scientific, policy and business solutions.

Climate-KIC Education offerings complement the existing education system and provide a creative approach to training entrepreneurs, innovators and leaders. In 2017, we will continue to empower top talent, educating students as well as professionals and executives to develop Europe’s innovation pipeline and labour market for climate change mitigation and adaptation. Our programmes will work to deliver skills, knowledge, training, transition-thinking and clean technology in the 4 Climate-KIC thematic areas. In the Education theme, we understand that climate change education is an urgent need and should be interdisciplinary, action orientated, and holistic; integrating scientific, social, economic, cultural, policy and ethical dimensions.

### Key Activities

Climate-KIC Education focuses on 3 key areas: Business Education, Graduate Education, and Online Education:

- Business Education: Our climate business education adopts a learner-centric approach to help visionary leaders drive a low-carbon society. The Climate-KIC innovation pipeline activities simultaneously provide an opportunity to identify capacity gaps and to test the efficacy of business education offerings. Core activities within this area include:
  - Professional and Executive Education courses
  - Pioneers into Practice professional mobility
  - Certified Professional Framework
  - Case Study and Knowledge Product Development
  - Global Climathon
- Graduate Education: The Graduate School continues to provide one of the most effective platforms for Climate-KIC to actively engage core Partners, enabling joint value creation and integration with colleagues across the KIC community. Key activities include:
  - EIT Master and PhD label programmes
  - Journey Summer Schools
  - Catalyst - PhD Summer Schools
  - Greenhouse pre-incubation programme
  - Spark inspirational lectures
- Online Education: The dynamic online learning system that is currently being rolled out is helping to transform ideas into action in line with our focus on impact. With its action-based toolkits for key user groups, it’s all about fostering innovation and making change happen. Key activities for 2017 include:
  - Leveraging platform for support to 4 themes
  - Strengthening cross-KIC collaboration
  - Developing paid course development services to institutions

## Priorities 2017

Systemic climate change education is an urgent societal need and this will be prioritised in our 2017 portfolio. We will continue to evolve our interdisciplinary, action orientated and holistic approach across Graduate school (improving quality), Business school (improving scale) and Online education (improving quality and usage).

### A. Business School

The focus for 2017 is: to extend the EIT brand to elite executive education delivered in collaboration with top tier business schools; establish a world leading professional competency framework (leading cross-KIC consortia); and train mid-career professionals in Europe and drive global impact and engagement through Climathon. Business education will help develop commercial revenue streams, provide immediate impetus to drive climate impact in organisations through human capital enhancement and extend the outreach of EIT and Climate-KIC brands globally.

### B. Graduate School

We will focus on improving the quality and scale of impact by better linking our education partners and programmes to our Climate-KIC core Themes. This provides more opportunities for our alumni to get involved in other Climate-KIC activities. In 2017, Climate-KIC will continue to train graduate 'change agents' through EIT Label programmes and transform the students into young leaders through summer schools and pre-incubation programmes. It is a long term investment in the human capital of Europe, globally establishing EIT and Climate-KIC as the authoritative brand in climate education.

### C. Online Education

In 2017, we will continue our cross-KIC co-operation, further exploiting the online education platform to support the Climate-KIC innovation activities of the core Themes. We will increase global outreach to niche audiences, continue to build revenue streams, and become an authoritative content provider for climate innovation.

**Document History**

Version	Date Published	Change Description
1.0	06/01/2017	Initial Document
2.0	15/05/2017	Updated Decision Metrics and Finance section