**EU Action Plan for the Circular Economy**

**ThE CirCUlAr EConomy PACkAgE**

**Disclaimer**
- For exact formulation of actions, see the Circular Economy Action Plan
- For quick reference only at the CE stakeholders meeting 25-01-2016

**Requirement for product repairability**
- Coherent product policy framework
- BREFs for CE in industrial sectors
- Facilitate industrial symbiosis
- SME support to substitute hazardous substances and for advanced manufacturing technologies
- EMAS and ETV

**Facilitate industrial symbiosis**
- Encourage reuse activities
- Enforcement of 2-year guarantees
- Action on false green claims
- Eco-design for repair and spare parts
- Repair info requirements
- Better EU Eco-labelling
- Testing for planned obsolescence
- Product Environmental Footprint

**SME support to substitute hazardous substances and for advanced manufacturing technologies**
- Revised EU regulation fertilizers
- Minimum requirement re-used water
- Interface chemicals, products, waste
- Electronic Info system on cross-border waste transfers
- Quality standards for secondary raw material

**Legislative package on waste**
- MS and COM to avoid overcapacities in waste treatment and improve waste management plans
- Cohesion policy aligned to waste hierarchy

**Innovation investments**
- Innovation deals

**How to measure progress**
- Resource Eff. Scoreboard
- Raw Materials Scoreboard
- New monitoring framework

**Priority sectors**
- Plastics
- Food waste
- Critical raw materials
- Construction & demolition
- Biomass & bio-based products

**Best practices**
- MS to introduce economic instruments aligned to waste hierarchy

**Waste legislation amendments**
- Definitions of municipal waste
- Definition of food waste
- Simplification of reporting
- Exemptions from SMEs
- Preparation for reuse
- New calculations rules for recognised re-use centres and products, and metal recycling from energy recovery
- Better data by quality check and national electronic registers
- New targets for municipal waste recycling
- New targets for municipal waste landfilling
- New targets for packaging waste recycling
- Prevention of food waste, textile, WEEE, furniture
- Prevention of incineration (by target)
- Prevention by Extended Producer Responsibility

**Variety of policy measures**
- Legislation
- Implementation support
- Voluntary approaches
- Better information
- European funding

**MS to promote sustainable sourcing**
- Revised EU regulation fertilizers
- Minimum requirement re-used water
- Interface chemicals, products, waste
- Electronic Info system on cross-border waste transfers
- Quality standards for secondary raw material
### Production and products for circularity (including eco-design and waste prevention, reuse, repair, refurbishment and recycling)

#### STORY 1: REUSE, RECYCLING OF ASPHALT

When looking for a way to make asphalt more sustainable we first looked at the LCA data. As the impact of the amount of recycled material has the biggest impact we made this leading in our development. We found a way to solve the problem with the use of reclaimed asphalt and were able to use an existing method for producing asphalt at low temperatures. A homogeneous mixture produced at a low temperature and a high amount of reclaimed asphalt offers a product that is durable and sustainable.

**KEY MESSAGES**
- Improving sustainability is a balancing act: keep the other important factors (costs, durability, technical performance) in mind
- If the aim is a maximal positive environmental impact: follow the market volume and try to make improvements scalable
- Every sustainable products needs a sustainable customer demand

Website: [www.heijmans.nl](http://www.heijmans.nl)
Contact person: Maarten van Santvoort
Email: maarten.vansantvoort@heijmans.nl

#### STORY 2: OBsolescence and repair of electronics

Frustrated by the poor performance of a service technician ordered to repair my dishwasher but acting as a sales agent I became an accidental entrepreneur 20 years ago. Being a serial (social) entrepreneur ever since I run the biggest independent repair centre in Austria today. Already at the beginning we had to cope with an overwhelming demand, which pointed at an existing market failure concerning serious repair services. I simply had to put up the RepairNetWork Vienna, which is another success story. Meanwhile we have initiated an official Austrian standard for durable and easy to repair electrical and electronic equipment.

**KEY MESSAGES**
- Design products durable and repairable: communicate the avg. life span and repairability on the energy efficiency label
- Independent repair service providers have to get access to sufficient service documentation and electronic diagnosis tools incl. the respective soft ware to prevent repair monopolies in the field of EEE
- Until the products costs the true price: No VAT for labour intensive repair services

Website: [www.RUSZ.at](http://www.RUSZ.at)
Contact person: Sapp Eisenrigler
Email: sepp.auservigler@rusz.at

#### STORY 3: CLOSED LOOP INK CARTRIDGE RECYCLING

- Closed loop process: extending reverse cycles: rPET – rIPP – rHI PP
- Challenges: impurities, molding, dimensional tolerances
- 276.000 T HP cartridges recycled WW since 1991

--> More than 75% of HP inkjet cartridges contain closed loop plastic

**KEY MESSAGES**
- Innovative approaches to reverse cycles, sorting and separation needed to close material loops
- Challenge: Lack of high grade plastics as output from many processes: consistency – quality – quantity
- Challenge: Find innovative suppliers / key customers
- Leakage – problem to get materials back at affordable cost

Website: [www.hp.com](http://www.hp.com)
Contact person: Brigitte Lahm
Email: Brigitte.Lahm@hp.com

#### STORY 4: EXTENDING LIFETIME OF PRODUCTS

We believe that old furniture has the right to a second life. That's why IKEA Belgium introduced “Save the furniture”, a pioneering program that offers five solutions for customers' old furniture.

**KEY MESSAGES**
- The circle is only complete if all actors are involved, from producers, customers, NGOs etc.
- Clear legal frameworks are needed and definitions of waste, so that material can be put back in the circle
- It is a transformational change, changing behavior and minds requires time.

Website: [www.IKEA.com](http://www.IKEA.com)
Contact person: Monica Miralles Serrano
Email: monica.mireles.serrano@ikea.com
THEME A
Production and products for circularity
(including eco-design and waste prevention, reuse, repair, refurbishment and recycling)

STORIES

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RECYCLING OF CONSTRUCTION AND DEMOLITION WASTE

- 40% of the C&DW is managed and deposited in illegal landscape
- In many examples referred to as “backfilling” to illegal practices of management of C&DW that can never qualify as valorisation
- Much of this waste is still landfilled
- The price of C&DW management is so low there is a very cheap illegal market
The majority of Councils in Spain, do not meet the basic legislation of the State in terms of C&DW.

KEY MESSAGES
- Legislative compliance, ends the illegal practices and increases the price of the dumping
- Encourage the use of recycled aggregates
- You can only fill with recycled materials for such use from authorized managers

Website: www.rcd asociacion.es
Contact person: Jose Ignacio Tertre Torán
Email: maartenvoort@heijmans.nl

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REFURBISHMENT OF MEDICAL EQUIPMENT

At Siemens Healthcare Refurbished Systems we breath a second life into pre-owned medical devices and thus create a benefit for the environment, economy and society.
Nowadays we cannot serve the demand of the European Market with refurbished eoline systems, because there are different market prerequisites for identical refurbished medical devices depending on whether they are placed on the market for the first time and inside or outside the EU before July 2014; some EU legislation such as RoHS and the CE-mark. This means, that although the systems have a CE-mark they cannot be globally marketed and our business cannot follow a circular approach on a global base. We need this approach to be supported and promoted by the EU in general to follow a sustainable path.
We need circular legislative solutions to keep the second life of medical devices a reality.

KEY MESSAGES
- Used medical devices for refurbishment & refurbished devices are not waste and should not be treated as such
- EU legislation (e.g. RoHS & CE-mark) needs to be adapted to the circular approach and take into account that medical devices have a global market
- The CE-mark – verified in the refurbishment process – is the “passport” of our medical devices and their proof of high quality

Website: www.siemens.com
Contact person: Claudia Schmidt
Email: claudia.schmidt@siemens.com

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CIRCULAR PRODUCT DESIGN

This kitchen worktop is made from 100% recycled, post-consumer materials and has been available in Castorama stores in France since summer 2014. Kingfisher was looking for ways to give waste a second life, especially waste generated by its own activities. Through research, Kingfisher identified wood (in the shape of waste wood pallets) and plastic (from discarded window frames) as suitable materials to develop a wood composite that can be used in a large range of products, including worktops. The new worktop has several improved product features including increased water resistance thanks to its composite structure as well as being 40 per cent lighter than similar worktops. The worktop is also a good illustration of the circular economy as it is itself recyclable.

KEY MESSAGES
- Make use of all your expertise in-house and get on board external partners to foster creative thinking.
- Take a commercial, rather than a technical, view for your projects: customers will buy a certain product because they need it, not only because it is made from recycled materials.
- Learn from mistakes and establish an environment of continuous improvement.

Website: www.kingfisher.com
Contact person: Caroline Laurie
Email: caroline.laurie@kingfisher.com
**ThE CirCUl A r E Conomy P A C k A gE**

**STORIES**

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**CHEMICAL LEASING**

Chemical Leasing is a business model for fostering inclusive and sustainable industrial development and the circular economy.

**The challenge:** Traditional business models ("the more you sell the more you earn") are fuelling the unnecessary consumption of chemicals and the generation of hazardous waste.

**The response:** Shifting the focus from increasing the sales volume of chemicals to a value-added approach.

Chemical Leasing is centred around a unit of payment; the payment is no longer related to the chemical itself, but to the function of the chemical.

**KEY MESSAGES**

- Circular economy concept needs close linkage to real-world problems of industries -> Chemical Leasing is a performance-based innovative business model applied across sectors that is in line with the circular economy concept.

- Circular economy needs to be promoted at the global level -> Chemical Leasing is an enabler for this, as a globally applied business model (since 2004 under the umbrella of UNIDO’s Global Chemical Leasing Programme).

- Sustainable industrialization can only be achieved by enhanced cooperation of stakeholders -> Chemical Leasing aligns incentives of chemical users and suppliers and brings win-win situations for economy, environment and communities.

**STORY**

Chemical Leasing is a business model for fostering inclusive and sustainable industrial development and the circular economy.

**Traditional relationship Conflicting incentives**

**Chemical Leasing model Aligned incentives**

- Supplier: wants to increase chemical consumption
- Buyer: wants to decrease chemical consumption

- Supplier: wants to increase chemical consumption
- Buyer: wants to decrease chemical consumption

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**TURN FOOD AND ORGANIC RESIDUES INTO FERTILIZERS**

Tyre is the only product in the world that incorporates reuse by design through tread and patterns. For over 140 years, Michelin has been a world leader in manufacturing products used by customers in their everyday life. To adapt to new demands, Michelin has initiated innovative business models, shifting from product selling to performance and usage contracts, such as selling landings to airline companies. A subsidiary called "Michelin Solutions" has been recently launched to develop those kind of contracts for B2B customers.

**KEY MESSAGES**

Consumers are key in shifting to a circular economy

Encourage circular models and products by Public Green Procurement Technologies and business models still need time to mature. It would make more sense to frame ambitions and have a sectorial perspective rather than a “one size fits all” approach.

**PHILIPS**

**LIGHTNING: SERVICE PAID PER LUX**

**STORY**

- For us circular economy starts with our vision, which is to make the world healthier and more sustainable through innovation.

- Circular economy is a driver for innovation in the areas of material, component and product reuse, as well as new business models such as solutions and services.

- Instead of selling products, we aim to retain ownership, selling use as a service so we can optimize the use of resources and the performance.

- Example Circular Lighting: a product as service model to remove the need for capital investment, benefit from energy savings and lower operational costs, hassle-free operation and efficient disposal.

**KEY MESSAGES**

Product as service models allow for lower cost and improved quality of service while using fewer resources.

The model requires long-term partnerships between stakeholders, built on performance, trust and predictability.

The biggest barrier for change is the culturally defined mindset, in the market and within companies.
THEME C
Biobased economy for circularity

STORIES

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BIO-BASED PACKAGING

Mars Inc does not believe in 1st gen bio-based materials. Together with Rodenburg Biopolymers and Tagheef, we developed a 2nd gen. flexible packaging material. Pilot has been done in three EU countries in H2 of 2015 including a quant consumer research. Currently we are evaluating a results in order to define the next steps.

KEY MESSAGES
Sustainable packaging is a system innovation requiring:
- Scale
- Active involvement from policy-makers/legislators and industry alike
- Initial (financial) stimulation in order to put fly-wheel in motion.

Website: www.mars.nl
Contact person: Dennis van Eeten
Email: dennis.van.eeten@effem.com

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USAGE OF ORGANIC RESTS AS FUEL

Grandfather Klimis surrounded by a landscape abundant in olive groves at Kalamata city in Greece, he was inspired to use a waste, olive pips, as a fuel to produce lime products and the new waste of that fuel is used for creating barbecue briquettes.

KEY MESSAGES
- Doing more with less while striving for environmental excellence.
- Never give up your efforts as every obstacle is an opportunity for improvement and to manage to achieve the objective.
- Eco-Management and Audit Scheme (EMAS) enhanced our competitiveness and boost our image and reputation.

Website: www.klimiscoal.gr
Contact person: Makios Athanasios
Email: amakios@klimiscoal.gr
**THEME D**

Promising change in consumer behavior and lifestyle for circularity

**STORIES**

**EFFECTIVE STRATEGIES FOR DRIVING BEHAVIOR CHANGE**

WRAP’s mission is to accelerate the move to a sustainable, resource-efficient economy by re-inventing how we design, produce and sell products, re-thinking how we use and consume products and redefining what is possible through re-use and recycling. One way is by inspiring the general public and their lifestyles.

**Love Food Hate Waste**

Love Food Hate Waste works directly with consumers to give advice on how to eat well and waste less. This has helped people in the UK reduce avoidable food waste by 21% over 5 years. For example, single mother Megan, after attending a course run by Love Food Hate Waste, reduced her family’s weekly food budget by a staggering 80%.

**Recycle Now**

Recycle Now helps people to recycle more to improve UK recycling rates. WRAP and the British Retail Consortium developed an On Pack Recycling Label for groceries, now adopted by almost 500 brands, to help consumers understand what can and cannot be recycled.

**Love Your Clothes**

Love Your Clothes raises awareness among UK consumers of the value of clothes and the environmental benefits of re-using and recycling them. For example, we organised workshops at Brighton Fashion Week around upcycling and second hand clothes. We are now working to roll this work out across Europe by working with leading retailers and brands as part of the LIFE-funded European Sustainable Clothing Action Plan.

**KEY MESSAGES**

Helping people change their behaviour and lifestyles is just as important as working with businesses and policy makers in the move towards a truly more sustainable circular economy.

Small changes made by individuals can have a massive impact collectively.

It is not enough to give people the evidence of why they need to change their behaviour; you have to find a key driver for that change, and provide simple tools to help them change.

Website: www.wrap.org.uk
Contact person: Richard Swannell
Email: richard.swannell@wrap.org.uk
STORIES

THREE E
Operating in the secondary resources market

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B/S/H/

REVERSED LOGISTICS AND REPAIR

BSH supply logistics of new appliances is combined with the pickup of waste appliances (WEEE), optimizing truck use.

Collected WEEE is sorted in categories and send for recycling. Parts of that WEEE and transport damage appliances are send free of charge for preparation of re-use. BSH collaborates with the re-use sector

KEY MESSAGES
- Save CO2 and increase collection with smart logistics
- Use your expertise to provide the re-use sector with easy to refurbish (W)EEE and appropriate information
- Convince your management!

Website: www.bsh-group.com
Contact person: Bruno Vermeesen
Email: bruno.vermeesen@bshg.com

Contact person: Richard Swannell
Email: richard.swannell@wrap.org.uk

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RECYCLING FOR WASTE PICKERS IN DEVELOPING COUNTRIES

Waste-pickers organized in cooperatives or independents work in a sorting center supplied by a local waste managing company and co-started with Danone and local partners.

In this sorting center waste-pickers have better working and social conditions than those they used to have in the open landfills.

The waste collected and segregated by the waste-pickers is directly bought by a specialized recycling company at a fair price

KEY MESSAGES
- The frontiers of the company do not stop at the factory gates...
- How can a company expect to thrive in an economic and social desert?
- It is in a company’s best interests to take good care of its economic and social environment, in one word, its ecosystem.

Website: www.ecosysteme.danone.com
Contact person: Jean-Christophe Laugée
Email: Jean-Christophe.LAUGEE@danone.com
High value recycling
(incl. take-back schemes, cascading & upcycling)

**STORY**

**CIRCULAR WORKING CLOTHING**

DutchSpirit developed Inspire, circular fabric for workwear. Inspire consists of 100% polyester, but has the look and feel of cotton. At the moment, most workwear consists of polyester-cotton which cannot be separated and thus turns to waste after using it only once. Inspire can be recycled again and again.

**KEY MESSAGES**

- Make circular fabric more attractive by strongly discouraging the mixing of materials that cannot be separated anymore. (Like polyester and cotton)
- In using tenders to spur circular innovations, focus on the goal instead of defining the means.
- Reward application of far-reaching innovations instead of incremental small steps.

Website: www.dutchspirit.com
Contact person: Erik Toenhake
Email: info@dutchspirit.com

**STORY**

**HIGH QUALITY POLYMER RECYCLING FROM HOUSEHOLD**

The mission of Veolia is to “resource the world”. This calls for a shift from the linear consumption of resources to a more circular, Waste2resource approach. The Netherlands is a centre for excellence for Veolia in the field of plastic recycling.

1. Through Veolia Polymers, Veolia recovers municipal post consumer waste and generate compounds of the highest homogenous quality, which are then used in the production of electronic and consumer goods.
2. Veolia has developed a technology that enables the production and re-co-ver of biopolymers from municipal and industrial waste and waste water.

**KEY MESSAGES**

- The continued development of a circular economy approach needs to be supported through government policies and funds.
- Image & branding. For the markets we supply the quality of recycled plastics is equal to virgin.
- The development of a secondary resource market can only be achieved in collaboration with industrial companies that use these products.

Website: www.veolia.com
Contact person: Hilda Garde McCarville
Email: Hilda.Garde@veolia.com
STORIES

PHOSPHATE RECOVERY FROM SEWAGE AND SLUDGE WASTE WATER, AND LEGAL OBSTACLES

STORY
Phosphorus recovery from wastewater is a new technology and a new business for water authorities.

In the end, the big challenge is not to recover the phosphorus, but to sell it.

KEY MESSAGES
We need a EU ‘clearing house’ to acknowledge secondary resources and accelerate the circular economy!

The only way is to cooperate, the water sector proves it!

In order to move from push to pull we need to adjust our focus: from technique (product) based to product-market based!

Website: www.wateronet.nl
Contact person: Jacqueline de Danschutter
Email: jacqueline.de.danschutter@wateronet.nl

TURN FOOD AND ORGANIC RESIDUES INTO FERTILIZERS

STORY
Around the world, PepsiCo is looking at ways to reduce the environmental impact of fertilizers.

Transforming organic waste into natural fertilizers helps our farmers reduce emissions and contributes towards a circular economy.

KEY MESSAGES
Conventional fertilizers have a significant impact on climate change.

Together with farmers, PepsiCo is testing initiatives to turn organic waste into natural fertilizer to improve our environmental performance.

Harmonised rules for organic waste-based fertilizers will help PepsiCo roll out best-practice among growers.

Website: www.pepsico.com
Contact person: Thomas Gauthier-Lafaye
Email: Thomas.gauthier-lafaye@pepsico.com
Food is no waste

STORIES

CHEMICAL MARKET TOOL FOR SUPPORTING REUSE OF FOOD SURPLUS LEASING

The Food Fair is an online surplus food donation platform in Belgium that helps to reduce food waste by allowing all types of actors in the food chain to easily connect in real time with social and food aid organisations interested in donations.

It contains 3 modules which enables a customer friendly tailormade solution to the specific needs of donators and receivers. Since the launch in august 2015, already more than 160 social and food aid organisations have registrered on the platform. Now the platform is being promoted toward the actors in the food chain in close cooperation with the main food chain federations.

KEY MESSAGES
Need for exchange, alignment and/or collaboration on European level between the existing similar national tools.
All stakeholders should be involved from the beginning and in particular the offer side.
This kind of platform on national level should be seen as an instrument within the national food waste reduction policy and therefor get proper support.

Kellogg's

FOOD REDISTRIBUTION WITHIN EUROPE

- Through BIBD we committed to re-distribute as much as we can
- This requires some soul searching; clear internal guidelines and an element of an “open doors” policy
- The culture is established
- Food redistribution can have incremental costs
- However not all edible food can be practically re-distributed

KEY MESSAGES
Companies need to continually work to embed a culture of food redistribution
Food Redistribution needs to be the “best option” for edible non-saleable food
Our biggest barrier to more food redistribution is the issue of “Foreign labelled food”
## THEME 1
Sustainable sourcing

### STORY

#### GREEN RESOURCING FOR FRAGRANCES AND CONSUMER BEHAVIOR

Producers are the key of natural products. Firmenich and Mane’s mission was to improve vanilla farming, harvesting and curing practices to increase yield and quality by engaging, building capacity and supporting the suppliers of Vanilla in Madagascar.

Trimming the cypresses on the side of the roads creates an opportunity for a circular economy cycle. Residuals from cypresses can be toxic if left on the land, so cut-offs are brought to Mané, a flavour and fragrance manufacturer, who transforms it into a sterilized compost or biofuel.

“Energy from citrus” is a pilot project created to transform the citrus waste compost into a bio-energy resource by using it in the industry sector and aiming at identifying industrial processes involving the use of such compost as a sub-product.

#### KEY MESSAGES
- Value chain cooperation is essential to grant circularity: FACILITATE IT
- Innovation is needed in technologies and processes: ENCOURAGE IT
- EU regulatory framework needs a more “circular approach”: MAKE IT HAPPEN

Website: www.ifra.org
Contact person: Charles Larocche
Email: charles.larocche@ashnet.be

### STORY

#### SUSTAINABLE SOURCING AND USE OF BIOBASED MATERIALS

Two-thirds of our packaging is made from cardboard – a renewable material. We aim to offer packaging fully made of renewable materials. In 2015, we launched the world’s first fully renewable milk carton, Tetra Rex® Bio-based; a major step in our journey.

This package is made from FSC™-certified cardboard & bio-based plastics derived from sugar cane. It is fully recyclable. Our commitment to renewable materials contributes to a resilient circular economy.

#### KEY MESSAGES
- To unwrap the CE Package we need:
  - Policy measures that require primary materials to come from socially and environmentally acceptable sources,
  - Incentives to increase the use of renewable materials,
  - Legislation that requires recycling of all recyclable packaging and bans packaging from landfills.

Website: www.tetrapak.com
Contact person: Sabine von Wiener-Lehr
Email: sabine.vonwienerlehr@tetrapak.com

### STORY

#### AVOID USE OF HARMFUL SUBSTANCES

Hazardous chemicals in materials can disrupt recycling. This problem is accentuated by:
(i) long delays before chemicals are identified as problematic
(ii) a lack of information on hazardous chemicals in articles
(iii) laws – e.g. on food contact materials – that do not properly control chemical content.

#### KEY MESSAGES
- A sustainable circular economy must be a clean circle, with non-toxic material cycles.
- Identification of, and action on, problem chemicals needs to be faster and more precautionary.
- Tighter regulation of chemical use in food contact materials is needed, along with improved information flow on hazardous materials in articles.

Website: www.chemtrust.org.uk
Contact person: Michael Warhurst
Email: michael.warhurst@chemtrust.org.uk

### STORY

#### C2C CERTIFIED CLEANING PRODUCTS

Every product has the potential to make right things right.

The end is just the beginning.

Talk less, Join the Initiative

Website: www.werner-mertz.com
Contact person: H Timothy Glas (Corp. Affairs)
Email: tglaz@werner-mertz.com
FransVancaveyland@werner-mertz.com
PRESERVATION OF CORK OAK LANDSCAPES

Montado is a savannah-like Mediterranean forest landscape shaped for centuries by man building a multifunctional ecosystem.

Direct use values (main economic revenues)
- Cork oak montado – cork harvesting, livestock production and wildlife goods (game species, mushrooms and bee-keeping)
- Holm oak montado – acorns production, livestock production and wildlife goods.

Indirect use values (main economic revenues)
- Cork/ holm oaks montados – high levels of biodiversity, cultural landscape, High Nature Value Farmland (HNVF), Habitat Directive (%\$\$).

OPERA’s goals
Help managers to increase revenue from nature based solutions testing innovative instruments.

KEY MESSAGES
- The montado is a sustainable system that combines profitable economic activities with biodiversity conservation.
- This system can be more profitable using nature based solutions, but most landowners are simply unaware of this.
- Quantifying less explored Ecosystem Services delivered by the montado can be a novel way to maintain (or increase) its economic viability and promote its long-term sustainability.

Website: www.ce3c.ciencias.ulisboa.pt
Contact person: Inês do Rosário
Margarida Santos-Reis
Email: itrosario@fc.ul.pt
mmreis@fc.ul.pt