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valuing oceans for tomorrow

CALOUSTE GULBENKIAN FOUNDATION

International Workshop on opportunities and obstacles for Natural Capital Accounting

Portugal Case-Study

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Calouste Gulbenkian Foundation – Oceans Initiative

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CALOUSTE GULBENKIAN
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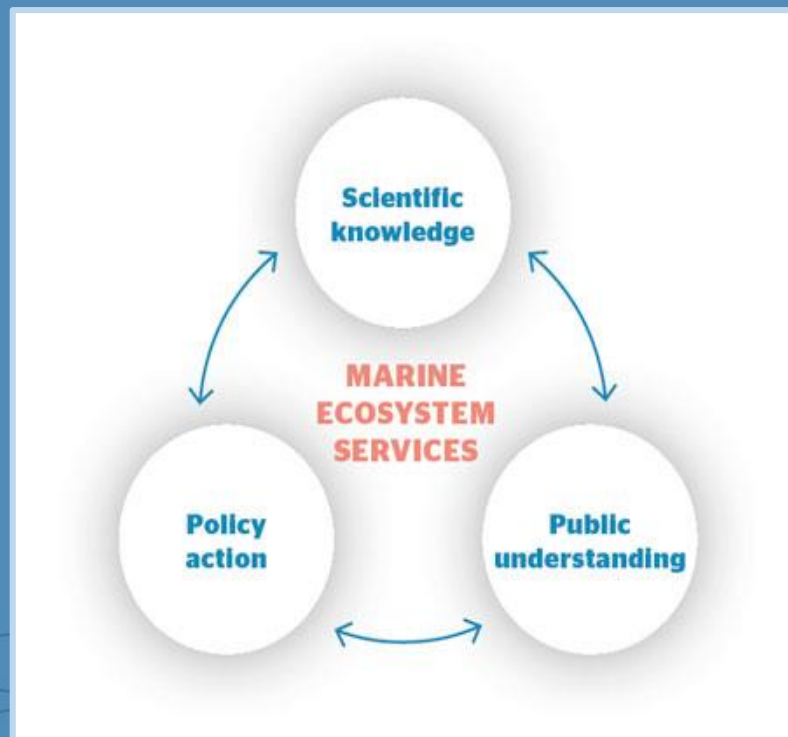   - Checklist of achievements/improvements

3. NCA in Portugal: Roadmap 2015-2020
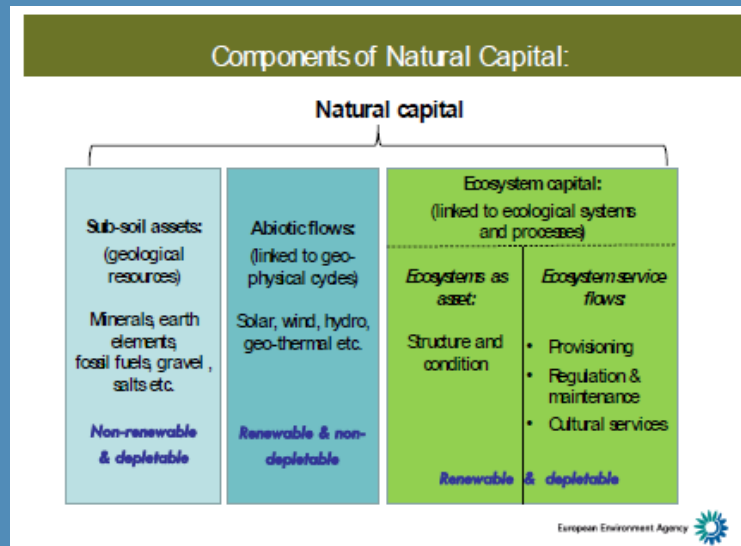   - Challenges & Recommendations

1. Gulbenkian Oceans Initiative
brief introduction

- **Mission** – to promote the economic valuation of marine ecosystem services in Portugal

1. Gulbenkian Oceans Initiative
assumptions (main concepts)

- Natural Capital

Components of Natural Capital:

Natural capital

Sub-soil assets: (geological resources) Minerals, earth elements, fossil fuels, gravel, salts etc. *Non-renewable & depletable*	Abiotic flows: (linked to geo-physical cycles) Solar, wind, hydro, geo-thermal etc. *Renewable & non-depletable*	Ecosystem capital: (linked to ecological systems and processes)	
		Ecosystems as asset: Structure and condition	*Ecosystem service flows:* • Provisioning • Regulation & maintenance • Cultural services
		Renewable & depletable	

European Environment Agency

1. Gulbenkian Oceans Initiative
assumptions (main concepts)

- ## Natural Capital
  - "*stock*" of natural assets (e.g. forests, rivers and oceans) that yield a *flow of ecosystem services* such as food, medicine, climate regulation and cultural services, *non-renewable resource stocks* such as fossil fuels, minerals and metals as well as *renewable natural resource flows* such as solar, wave and wind energy (adapted from EEA as cited in MAES et al., 2013)
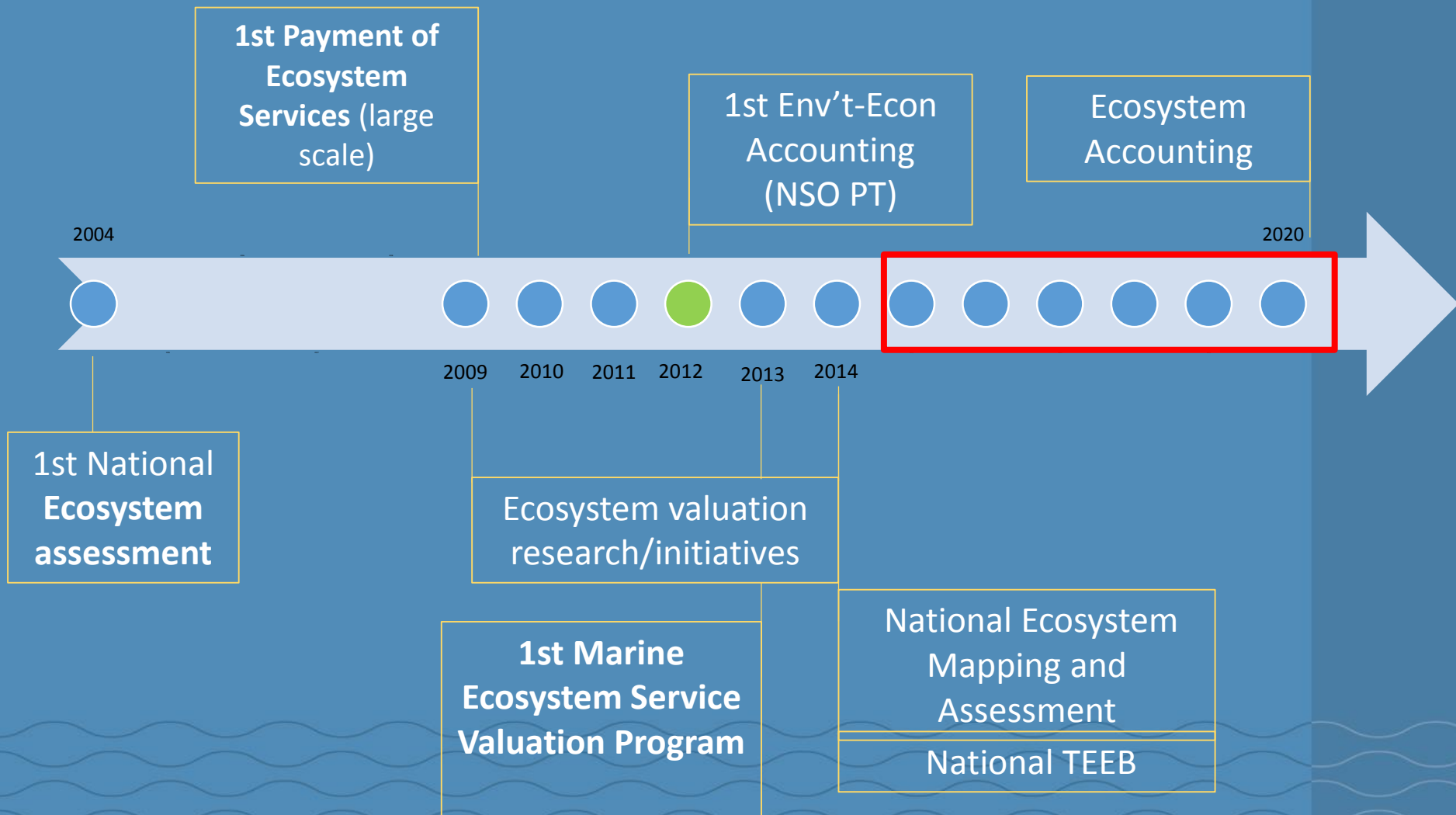
- ## Natural Capital Accounting*
  - Environmental-Economic Accounting (SEEA CF)
  - Ecosystem Accounting (SEEA EEA)

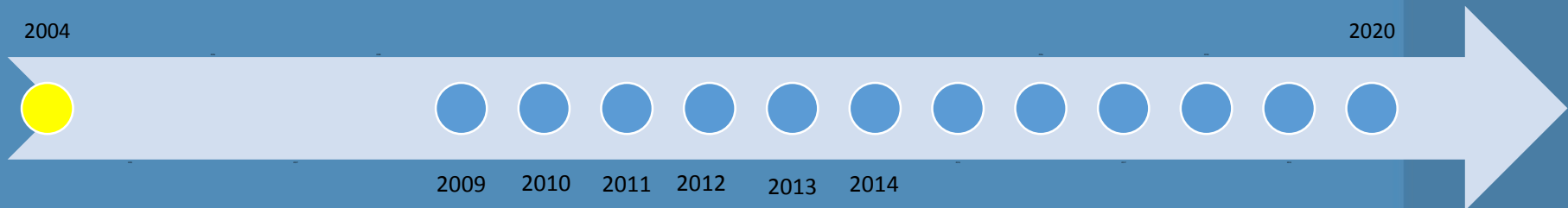*satellite national accounts

2. Portugal – road-map for NCA
Big picture (2004-2020)

1st Payment of Ecosystem Services (large scale)

1st Env't-Econ Accounting (NSO PT)

Ecosystem Accounting

2004

2020

2009 2010 2011 2012 2013 2014

1st National **Ecosystem assessment**

Ecosystem valuation research/initiatives

1st Marine Ecosystem Service Valuation Program

National Ecosystem Mapping and Assessment

National TEEB

SEEA CF accepted as an international statistics standard

2. Portugal – road-map for NCA

2004   2020

2009   2010   2011   2012   2013   2014

2004 – Portugal Millennium Ecosystem Assessment (Turning Point)

1st large-scale assessment of ecosystem services

Condition of ecosystem services in Portugal, recent trends in those services, available policy responses, and scenarios for the next 50 years

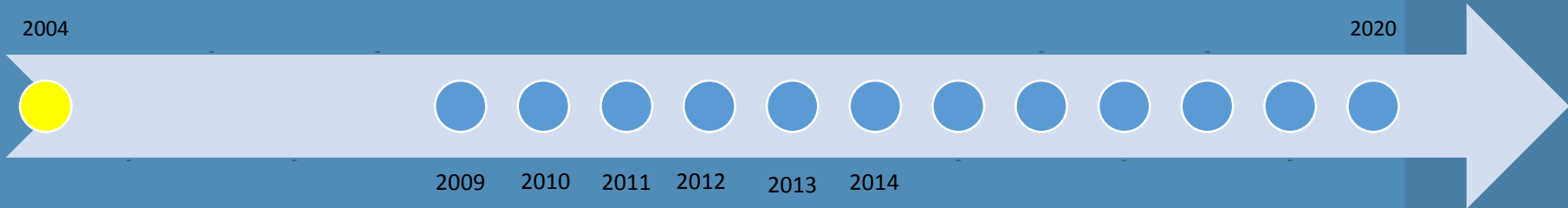Scale: National

Conceptual framework – Millennium Assessment

Raised awareness on the importance of **ecosystem service valuation.**

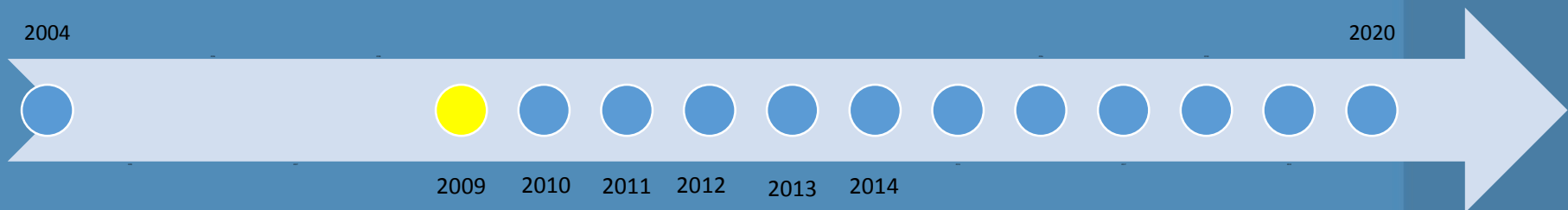# 2. Portugal – road-map for NCA

2004 ● ● ● ● ● ● ● ● ● ● ● ● ● 2020

2009　2010　2011　2012　2013　2014

2004 – Portugal Millennium Ecosystem Assessment (Turning Point)
Raised awareness on the importance of **ecosystem services valuation.**

Conditions and Trends
Overall Assessment (ptMEA)

	Food		Water		Fiber		Biodiversity	Soil and Flood Protection	Climate Regulation	Primary Productivity	Recreation	
Marine	↗	☝					↘		?	→	→	☝
Coastal	↘	☝					↘	↘		↘	↘	☝
Inland Water	→	☝	↘	☝			↘	↘		↘	↗	☝
Forest	→	☝	↘		→	☝	→	→	↗	↗	→	☝
Montado	→	☝	→		→	☝	→	→		→	→	☝
Cultivated	↗	☞	→	☝			→	↗	?	↗	↘	☝
Urban							↘	↘			↗	☝

Not Assessed	Bad	Poor	Fair	Good	Excellent

Source: Portugal Millenium Ecosystem Assessment - State of the Assessment Report, 2004

2. Portugal – road-map for NCA

2004   2020

2009   2010   2011   2012   2013   2014

2009 – Payment of Ecoystem Services - Carbon sequestration

Just as farmers sell mutton, veal and milk, they can now also sell a service called carbon sequestration

50.000 new hectares of Sown Biodiverse Pastures (between 2009 and 2012)
Sequestration of 1 million tons of CO2
1000 farmers

1st demonstration project, on a large scale, of how society can compensate farmers for the environmental benefits generated by good agricultural practice.

Winner of the European Commission Challenge – *The World you like. With a Climate you like*

More info at: http://www.terraprima.pt/en/area-de-actividade/1
(Terraprima - Serviços Ambientais)

2. Portugal – road-map for NCA

2009 – Payment of Ecoystem Services - Carbon sequestration

Source: This invoice was kindly provided by Dr. Tiago Domingos (founder and CEO of Terraprima – Serviços Ambientais)

2. Portugal – road-map for NCA

2004   2020

2009   2010   2011   2012   2013   2014
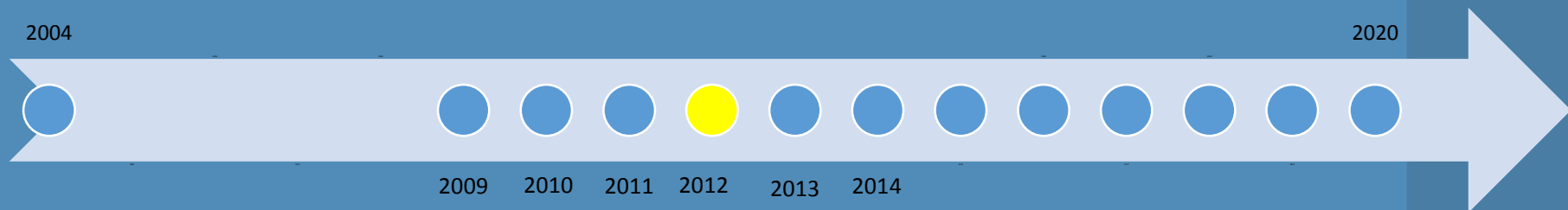
2012 – Environmental Accounting in Portugal (National Statistics Office)

Implementation of the first **three modules** of Env´t Accounting at the PT NSO
- Air emissions accounts (including greenhouse gases)
- Economy-wide material flow accounts
- Environmental related taxes by economic activity (ongoing)

Obligation: Regulation (EU) 691/2011 on European Envrinonmental Economic Accounts
Framework: Eurostat (SEEA CF)

Next obligation: Regulation (EU) 534/2014 (in force since 16June 2014) adding three modules with data transmission obligatory from **2017:**
- Environmental protection expenditure account
- Environmental goods and services account
- Physical energy flow accounts

● Accounts in physical terms   ● Accounts in monetary terms

2. Portugal – road-map for NCA
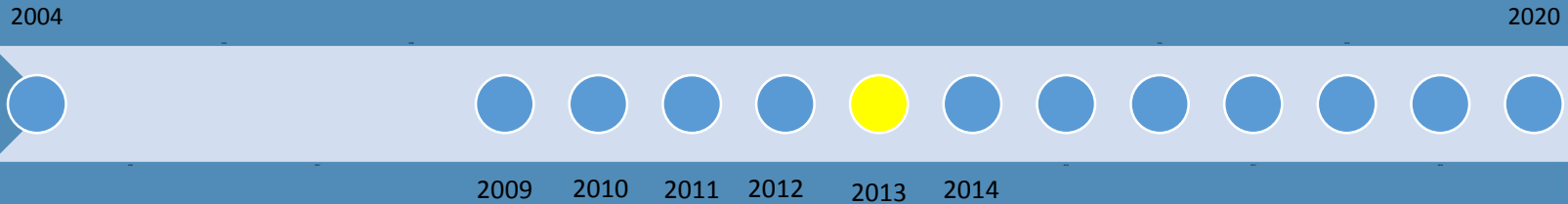
2004   2020

2009   2010   2011   2012   2013   2014

2013 – Gulbenkian Oceans Initiative
Research project: *Economic Valuation and Governance of Marine and Coastal Ecosystem Services at Peniche-Nazaré*
Teams: NOVA SBE (Dr. Antonieta Cunha e Sá) and CESAM (Dr. Henrique Queiroga)

Scale: Regional level (Peniche-Nazaré)
Valuation approach:
- Ecosystem assessment and mapping- Building direct links between ecosystem services and economic activities/human wellbeing
- Policy-based (current threats, drivers of change and negative externalities)
- Trade-off analysis and scenario analysis

Ecosystem services: provision, regulating, cultural
Conceptual framework: CICES/MAES
Terms of reference with specific orientations to set the ground for future **ecosystem accounting**

2. Portugal – road-map for NCA
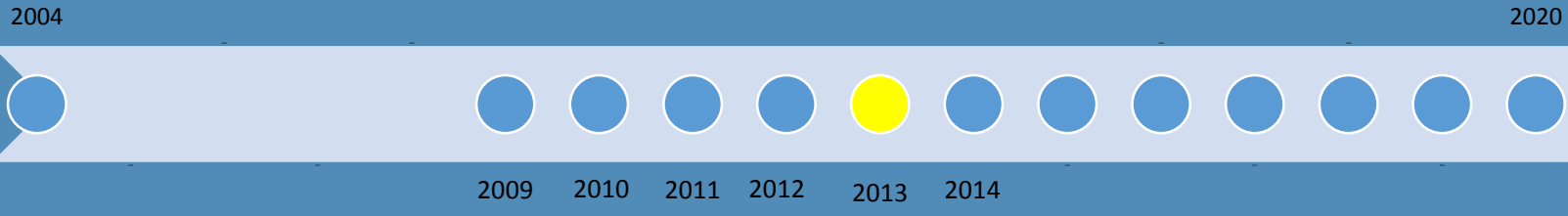
2004 — 2009 2010 2011 2012 **2013** 2014 — 2020

2013 – Gulbenkian Oceans Initiative

Research project: *Economic Valuation and Governance of Marine and Coastal Ecosystem Services at Peniche-Nazaré*

Case study: TEEB for Oceans and Coasts case study

Additional work (comparison of classifications)

Appendix Table 1: Comparison of CICES, the MA and TEEB Classifications (adapted from MAES, 2012)

Source: Haines-Young, R. and M. Potschin (2014): Typology/Classification of Ecosystem Services. In: Potschin, M. and K. Jax (eds): OpenNESS Ecosystem Services Reference Book. EC FP7 Grant Agreement no. 308428. Available via: http://www.openness-project.eu/library/reference-book)

CICES for ecosystem service mapping and assessment					
CICES for ecosystem accounting					
Section	Division	Group	Class	MA	TEEB
This column lists the three main categories of ecosystem services	This column divides section categories into main types of output or process.	The group level splits division categories by biological, physical or cultural type or process.	The class level provides a further sub-division of group categories into biological or material outputs and bio-physical and cultural processes that can be linked back to concrete identifiable service sources.	MA provides a classification that is globally recognised and used in sub global assessments.	TEEB provides an updated classification, based on the MA, which is used in on-going national TEEB studies across Europe.

2. Portugal – road-map for NCA

2004

2009 2010 2011 2012 2013 2014

2020
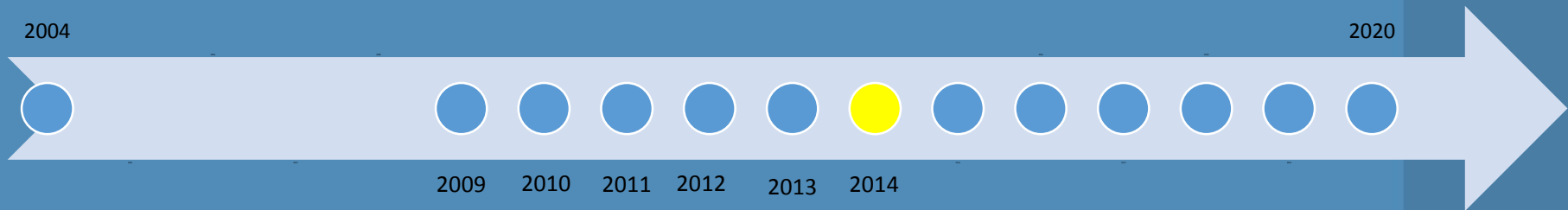
2014 – Portugal MAES pilot study (ptMAES)

Scale: Regional level (large scale)

Approach: Selection of indicators/GIS analysis/spatial modelling

Framework: CICES

Ecosystem services: provisioning, regulating, cultural

Team leaders: Dr. Tiago Domingos and Dr. Cristina Marta Pedroso (Instituto Superior Técnico) - conctracted by the PT Ministry of Agriculture and Sea

2014 – Portugal TEEB pilot study (ptTEEB)
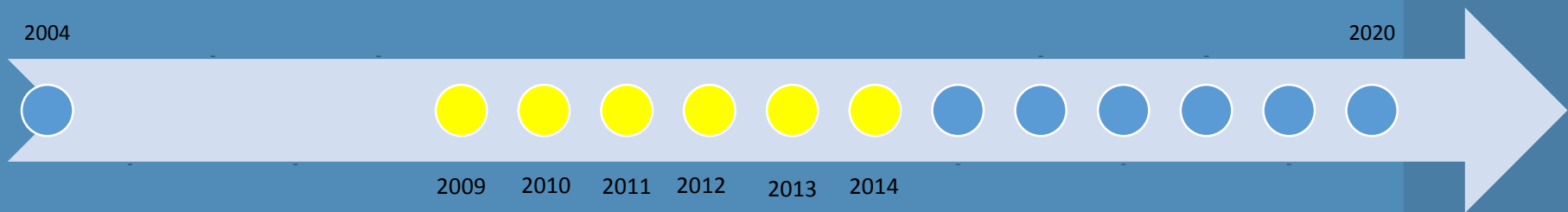
Scale: Regional level (large scale)

Approach: TEV of ecosystem services provided by the pilot region

Ecosystem services: provision, regulating, cultural

Team leaders: Dr. Tiago Domingos and Dr. Cristina Marta Pedroso (Instituto Superior Técnico) - conctracted by the PT Ministry of Environment
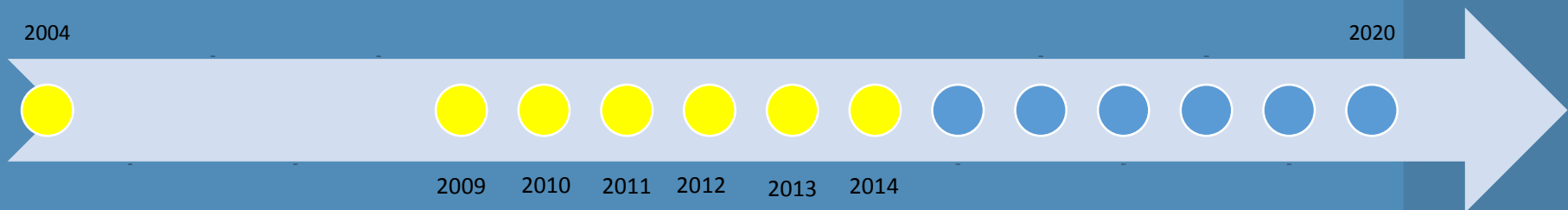
2. Portugal – road-map for NCA

2004   2020

2009   2010   2011   2012   2013   2014

2009-2014

Growing number of research projects/initiatives on economic valuation of ecosystem services (including assessment and mapping)

Growing number of valuations with the purpose of policy making/adaptation

2. Portugal – road-map for NCA

2004   2020

2009   2010   2011   2012   2013   2014

STRONG LEARNING PROCESS
Added Value:

- \+ scientific knowledge on ES assessment mapping and valuation

- little but growing interdisciplinary research

- \+ policy-oriented valuations

- *little but + public and political awareness*

- *Some environmental accounting (physical terms)*

2. Portugal – road-map for NCA

2004   2016   2018   2020

2015   2017   2019
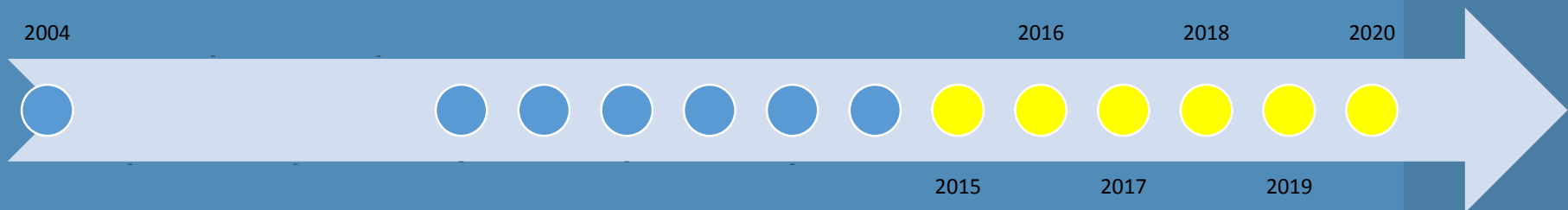
2015 - 2020

- + scientific knowledge on ES assessment, mapping and valuation

- + interdisciplinary research

- + policy-oriented valuations

- *+ public and political awareness*

- *+ environmental accounting (physical and monetary terms)*

- *Ecosystem accounting (2020+)*

3. Portugal – road-map for NCA
Recommendations (2015-2020)

Valuation for the sake of policy – scientific research, public and political awareness activities and capacity-building activities should be treated within an **integrated strategy**

3. Portugal – road-map for NCA
Challenges & Recommendations (2015-2020)

1. Research projects/scientific knowledge:

issues: multiple approaches and frameworks/lack of technical advice on accounting procedures

➢ Need a research project manager and technical advisor to maximize the potential usability of the scientific outputs. Ensure that scientific knowledge can be later integrated into env't and ecosystem accounting

  ➢ Accounting (legal obligations) of PT (NSO) - European legislation (Eurostat – SEEA CF)

  ➢ Terminology: Common International Classification of Ecosystem Services (CICES)

➢ Engage your National Statistics Office from the very beginning !

3. Portugal – road-map for NCA
Recommendations (2015-2020)

1.   **Research projects/scientific knowledge:**

issues: difficulty in defining the purpose of valuation

➢ Know your policy arena ahead of valuation/modeling stages (last slide)

➢ Stakeholders approach (engage the major/key stakeholders within the research projects)

➢ Policy-based valuation (value ES with social, economic and political relevance | regional/national/EU level)

issues: lack of data/knowledge

➢ Promote interdisciplinary teams

➢ Engage in institutional partnerships for data/knowledge sharing

2. Technical Capacity

issues: Lack of human resources in the National Statistics Office (PT)

Synergies between PT NSO and Eurostat are mainly (only) focused on the areas defined as mandatory by the EU legislation

➤ **Top-bottom incentives** – from the EC to the National Statistics Office
  ➤ Desired output: to promote joint projects on ECOSYSTEM ACCOUNTING between the National Statistics Office and research units/private institutions

issues: lack of accounting and environmental-economic knowledge among PT ENGOs

➤ Train ENGOs technical staff with environmental - economic valuation instruments (for a more effective advocacy work)

  ➤ Example GOI – course "*Economics for marine conservation*" (2013, 2014) taught by the new economics foundation, UK

3. Communication & Branding (awareness)

➤ Promote awareness within multiple audiences (government, ENGOs, corporate sector, community groups)

*issues: ecosystem/ecosystem services/ecosystem accounting – all have **weak brand names** for policy makers and business leaders*

➤ Develop a differentiated and tailored communication strategy (with more effective brand names)

➤ Promote training to improve communication effectiveness from researchers, civil servants and ENGO staff

➤ Example GOI - "*Policy Paper Writing Course*" **to be announced in 2015.**

4. Know your policy arena

➢ Define/List the decision-making processes you want to influence ahead of valuation/modeling stages

Examples for GOI:

- Revision of coastal management plans

- Revision of fisheries management plans

- Revision of management plans of MPA (Marine Protected Areas)

- National implementation of the Marine Strategy Framework Directive (MSFD)

- Transposition of the EU Marine Spatial Planning Directive

- Implementation of Common Fisheries Policy

- Transposition of the revised Environmental Impact Assessment directive

Thank you for your attention

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