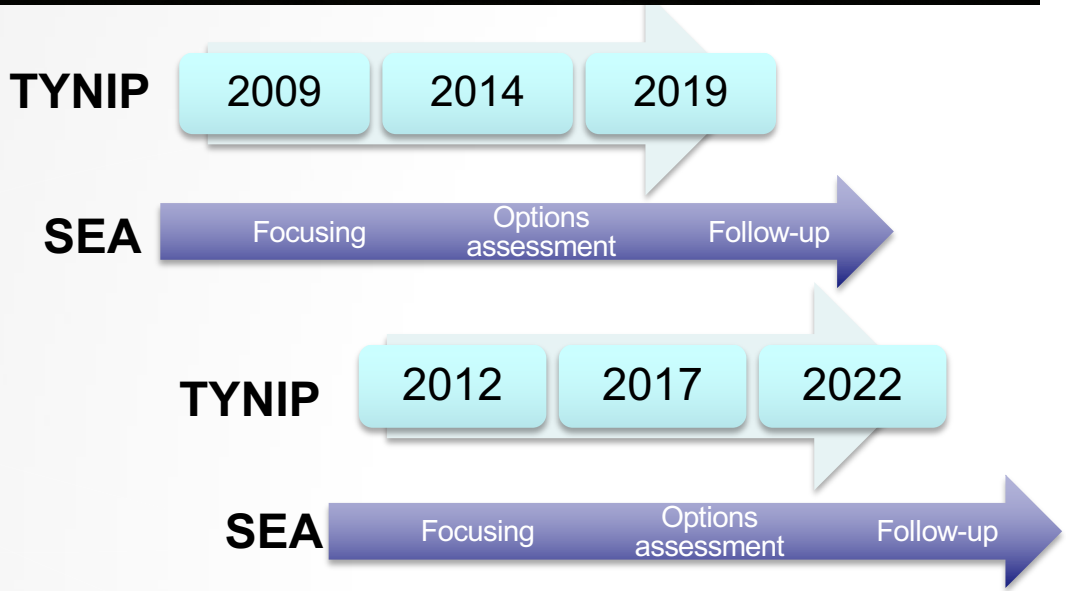
ST4S in SEA case-studies

Prof. Doutora Maria do Rosário Partidário

SEA OF THE TEN YEAR NATIONAL INVESTMENT GRID PLAN

REN, SA



Objectives of SEA of PDIRT 2009 – 2014 (2019)

- To identify, describe and assess, from an environmental and sustainability perspective, the strategic options that can be considered so as to ensure the expansion of the national electricity transport grid (RNT);

- To assess the potential significant environmental effects on the environment that result from the application of PDIRT (D.L. nº232/2007, 15 of June);

- To assist with planning the transport grid expansion demands, considering environmental and sustainability objectives.

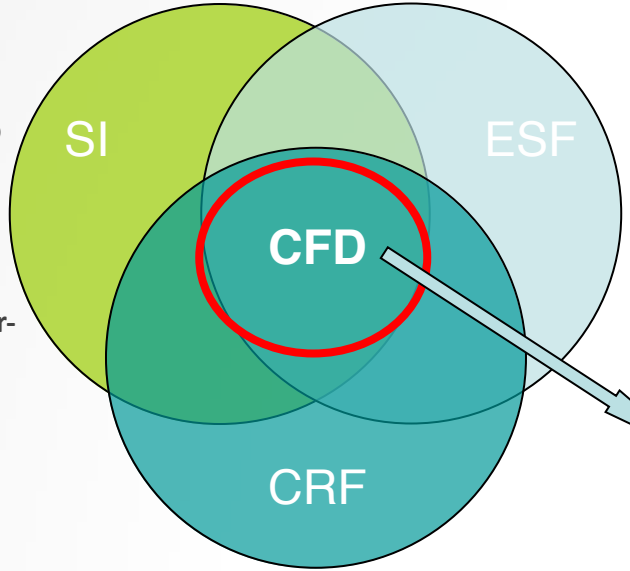
Environmental scope (Directive 2001/42/CE)

Environmental issues required in national legislation (Decreto – Lei nº 232/2007 June)	Interpretation used in the SEA of PDIRT
Biodiversity Fauna Flora	Fauna and protected areas
Landscape Cultural heritage	Landscape and cultural heritage
Climatic factors	Energy
Population Human health	Health and population Noise
Material goods	Urban Network, spatial channels and large infra-structures
Water Atmosphere Soils	Not relevant

Critical Factors for Decision-making (CFD)

To ensure:

- Supplies to expected demands
- Appropriate conditions to incorporate electricity production (...) while meeting energy policy objectives with respect to renewable energy resources;
- Appropriate levels of inter-linkage capacity (MIBEL);
- Appropriate levels of quality of service (conservation/replacement of facilities)



Fauna and Protected areas; Landscape and Cultural heritage; Energy; Population, Human health and noise; Urban network, Spatial channels and large infra-structures

Energy

Fauna

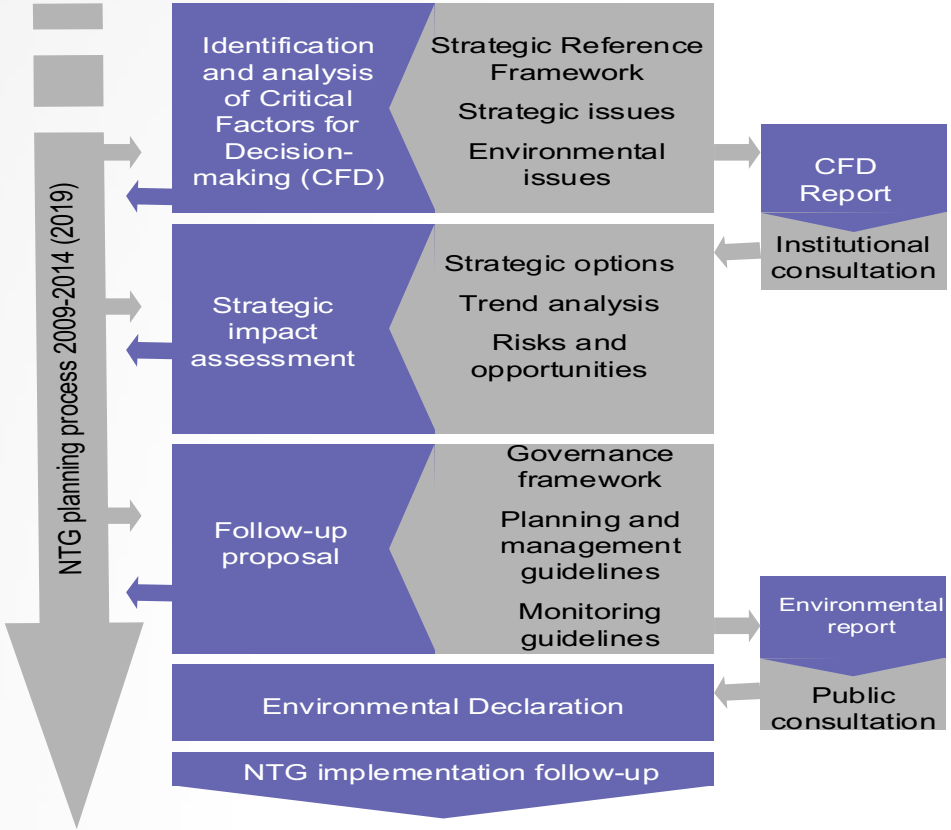
Spatial Planning

Kyoto Protocol; SDS-EU; European Programme for Climate Change; NSSD; National Strategy for Energy; PNAC; PNBEPH;QREN; PNAAS;etc.

CDF and Assessment criteria

Critical Factors for Decision-making	Assessment criteria
ENERGY	To accommodate power generation, particularly that coming from Production in Special Regime (PRE)
	Energy efficiency (management and reduction of transmission grid losses);
FAUNA	Intersection with protected areas
	Crossing of critical zones for species of fauna (except birds and bats)
	Crossing of critical zones for species of birds with unfavourable conservation status that are most sensitive to collision
	Proximity to bat areas of national importance
	Reduction of cumulative impacts
SPATIAL PLANNING	Interference with sensitive areas (including landscape) or conditioned by natural and cultural heritage protection
	Interference with areas of significant human presence, as well as areas of existing and potential infra-structures
	REN spatial enhanced potential (including synergistic effects with relevant power generation areas)

Process of the NTG Plan SEA



Processo PDIRT	Início AAE	Cenários e opções	Simulações		Consulta		Pdirt-final		

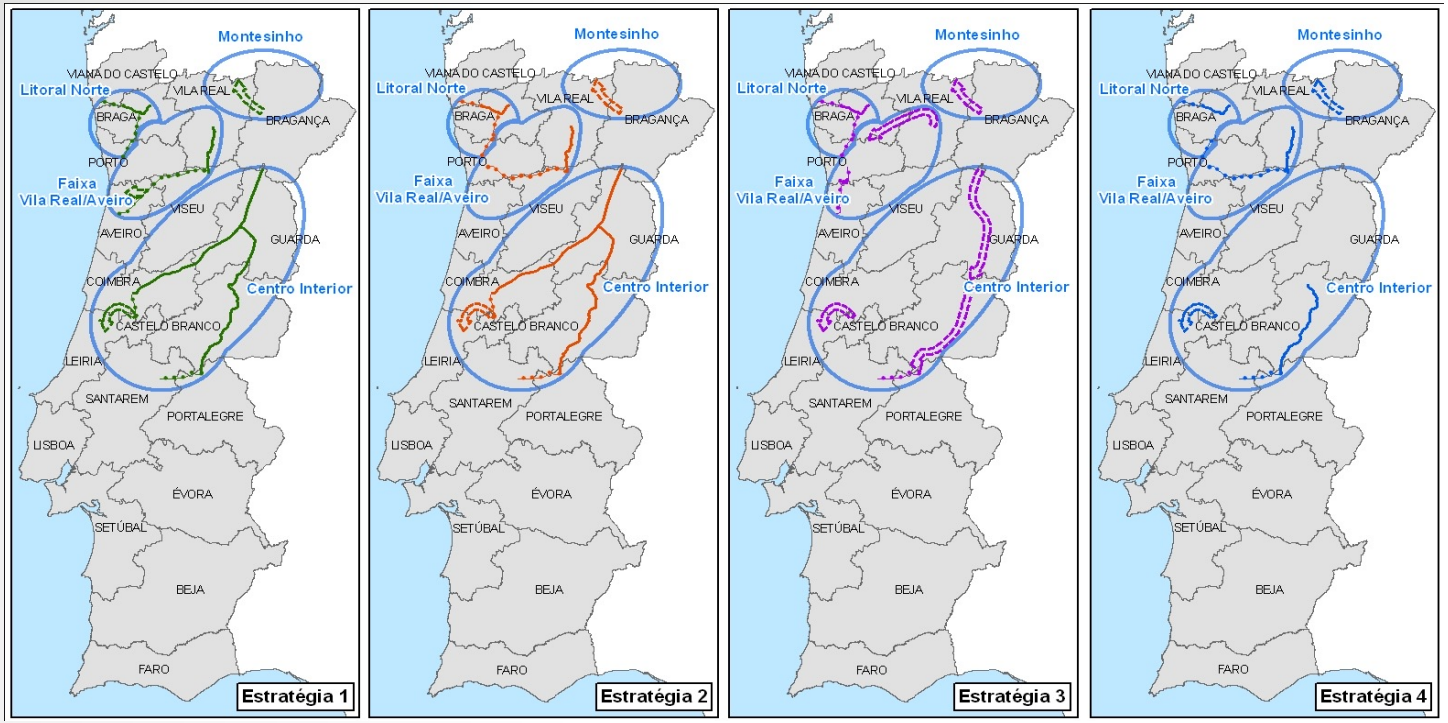
AAE – Estudos para AAE	Jul-Ago 2007	Set-10 Out 2007	10-15 Out	15 Out-10 Dez 2007	10-15 Dez	Jan-15 Fev 2008	15 Fev - 25 Mar 2008	25-31 Mar	31 Mar - 25 Jun 2008	25-3
Coordenação e Acompanhamento - processo										
Estabelecimento do processo e calendários	■			■			■			
Análise do ciclo de processo do PDIRT e identificação de momentos críticos	■									
Definição de conteúdos e formatos de estudos e relatórios	■	■		■			■		■	
Coordenação de Estudos	■	■		■				■	■	
Entrega de conclusões orientativas			■					■		
Entrega de relatórios	■				■					■
Consulta de entidades	■					■				
Consulta de agentes e público						■				
Estabelecimento do processo de seguimento e quadro institucional									■	
Declaração Ambiental										■
Acompanhamento do processo	■	■	■	■	■	■	■	■	■	■
Factores Críticos para a Decisão										
QRE, FA e QE do PDIRT	■									
FCD, Critérios e indicadores	■									
Relatório de FCD	■									
Apreciação de comentários das entidades		■								
Análise e Avaliação - Estudos										
Análise de tendências e caracterização - ligação QRE		■								
Interpretação de cenários		■								
Avaliação de opções		■								
Identificação de oportunidades e riscos		■								
Conclusões orientativas			■					■		
Justificação de oportunidades e riscos				■			■			
Apreciação de comentários das entidades e público				■		■	■			
Directrizes e indicadores de monitorização				■			■		■	
Programa de Seguimento				■					■	
Relatório ambiental				■						■

Expansion strategies

	Description	Capacity to receive new generated PRE (1)	Flexibility
Strategy 1	Strategy with the highest potential, preferably using existing axes, with all new main projected lines at 400 kV	Very high	High
Strategy 2	Strategy with high potential, preferably using existing axes, with a significant number of new lines with voltages below 400 kV	High	High
Strategy 3	Strategy with high potential, with some axes covering new areas, with all new main projected lines at 400 kV	Average/High	Average
Strategy 4	Strategy restricted to the minimum requirements that fulfil national energy policy objectives.	Low	Low
Strategy F	Strategy with high potential, with new expansions largely developed through existing axes, with all new main projected lines at 400 kV	High/Very high	High

(1) Beyond targets established in the national energy policy objectives. Fonte: REN

PDIRT 2009-2014: The 4 starting strategies for the development of the NTG



Lines/Corridors

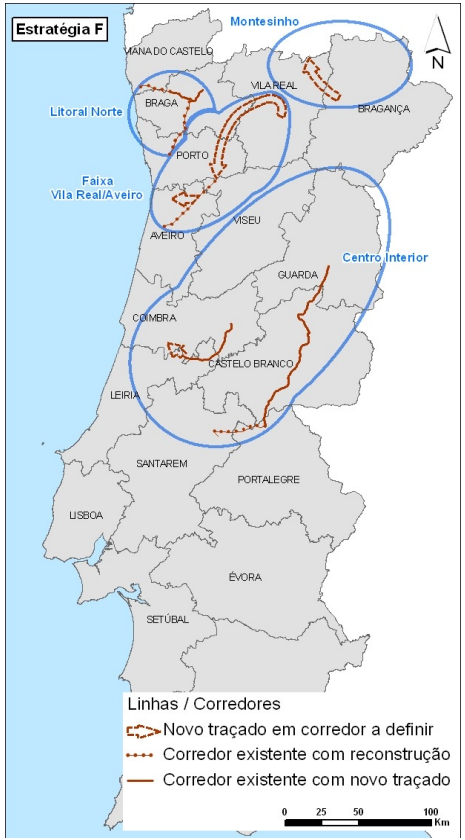
- New route in corridor to be defined
- Existing corridor with rebuilding
- Existing corridor with new route

Strategy F (Final)

Strategy F (Final) is the result of the cross comparison, analysis and assessment of the 4 initial strategies:

It represents the best option for the evolution of the grid that creates more flexibility through a series of technical solutions and geographical coverage of the areas with higher power generation potential.

Note: New lines and substations already decided, scheduled before 2012/13, were not considered as candidates to the different alternative strategies

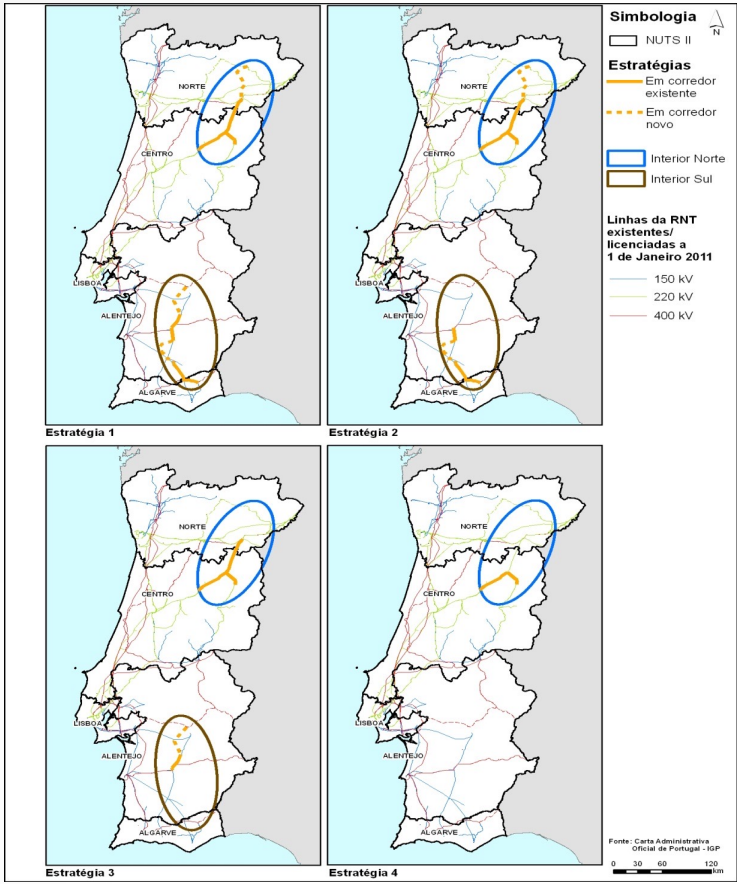


Assessment results per CFD

CFD	CRITERIA	E1	E2	E3	E4	EF
ENERGY	To accommodate power generation, particularly that coming from PRE	++	+	+	-	++
	Energy efficiency (management and reduction of the transmission grid losses);	+	-	-	+	+
FAUNA	Intersection with protected areas	--	--	--	-	-
	Crossing of critical zones for species of fauna	--	--	-	--	-
	Crossing of critical zones for species of birds with unfavourable conservation status that are most sensitive to collision	--	--	-	-	-
	Proximity to bats areas of national importance	--	--	--	--	-
	Reduction of cumulative impacts	-	-	+	+	+
SPATIAL PLANNING	Interference with sensitive areas (including landscape) or conditioned by natural and cultural heritage protection	--	--	-	-	-
	Interference with areas of significant human presence, as well as areas of existing and potential infra-structures	--	--	--	-	+
	REN spatial enhanced potential (including synergistic effects with relevant power generation areas)	+	+	-	-	++

Key:++ Highly significant opportunity; + Opportunity; 0 Indifferent; - Risk; -- Highly significant risk

PDIRT 2012-2017 strategic options for the development of the NTG



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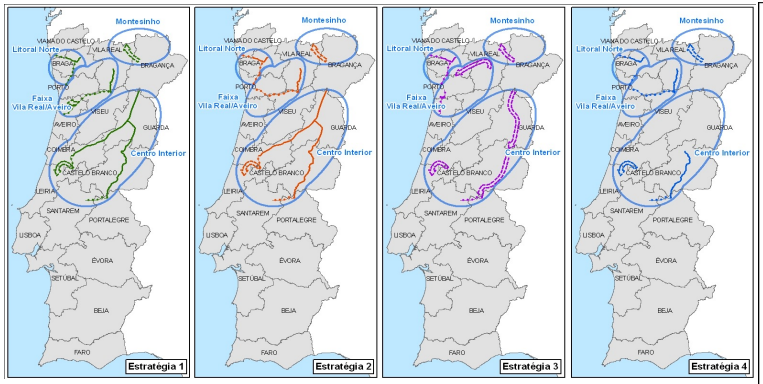
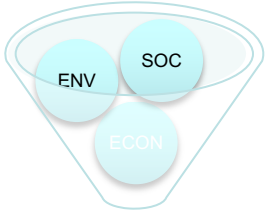
REN, SA

Results: options assessment

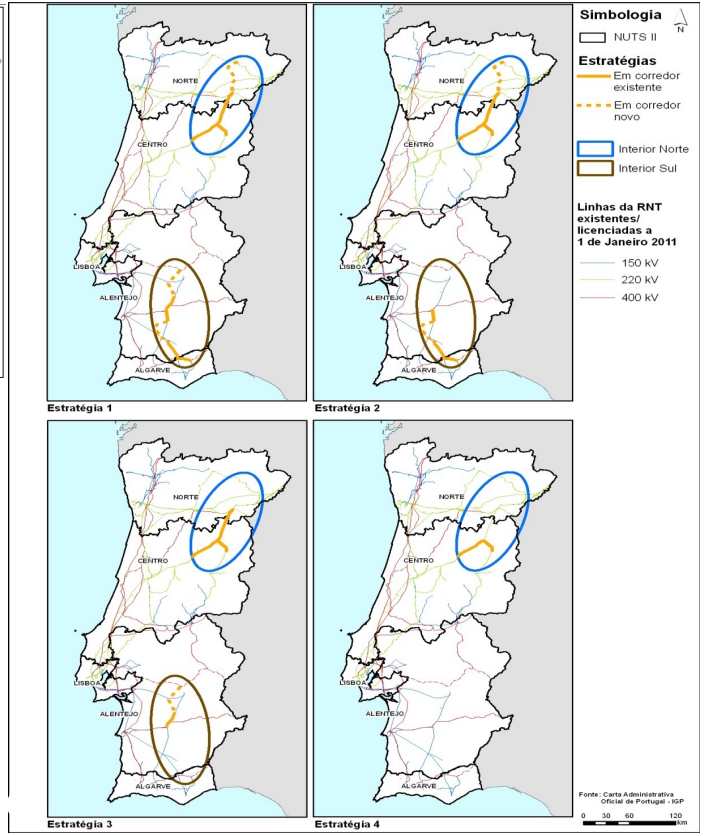


1st cycle



CDF

Energy, Fauna, Spatial Planning



In both cases a fifth option was the preferred

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Governance framework

- **REN** - To maintain dialogues with competent authorities concerning spatial planning, licensing of electricity production activities and all those that have experience regarding electrical lines;
- (...)
- **APA (Environmental Authority)** - To keep GEE targets up-to-date (horizon 2020) and results of monitoring of PNAC (national CC programme) measures (renewal production and reduction in distribution losses).
- (...)
- **Regional and local spatial planning authorities** – To keep spatial development perspectives up-to-date and ensure inclusion of the national electricity transport grid reserved space in spatial plans;

- **Environmental NGO's** – To follow PDIRT monitoring, cooperate in partnerships with REN and participate in public consultation processes.

Follow-up guidelines

Planning and Management

• Ensure that no infra-structures or facilities are developed in natural sensitive areas and high landscape and cultural heritage valuable sites, as well as in areas with major urban development commitments.

• Ensure effective participation of the interested public improving information, dissemination and negotiation processes

Monitoring

• Establish an institutional platform to enable systematic interface and dialogues across relevant stakeholders in energy production

• Establish a PDIRT monitoring platform;

• Monitor the development of the national electricity transport grid to adjust to the effective power production.

Follow-up process

- Implementation of a monitoring system, based in the definition of indicators to each of the planning and management and monitoring guidelines proposed by the SEA process
- Articulated with the EIA follow-up system and with the Sustainability Reporting Indicators System
- Indicators specially designed to cover the monitoring of the governance framework for action proposed
- Strong transparency and sharing of responsibilities in the Plan implementation with public institutions and the public
- Dedicated communication channels (Internet; e-mail; public meetings).

Lessons learned

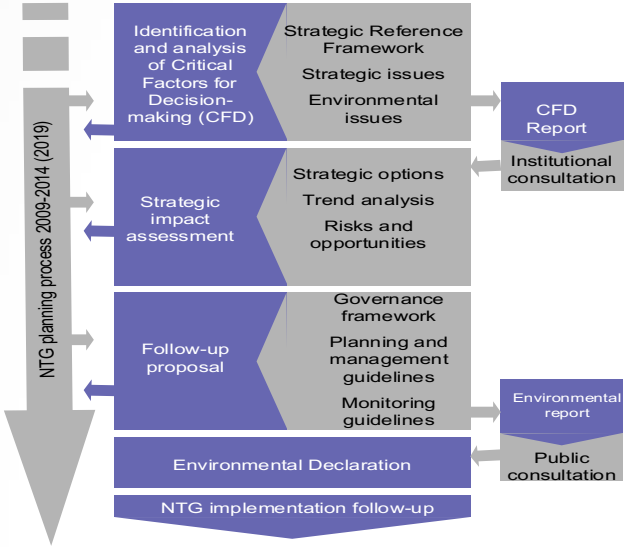
Success factor 1: Early start
- The SEA explored strategic options and was focused on a strategic decision, not on proposed solutions.

Success factor 2: Strategic long-term and cyclical planning
- The strategic nature of the NTG planning process (long-term view 10 years view and short term review cycle: 3 years) enables flexibility in planning and opportunities for improvement, it offers the best planning setting for the application of a strategic-based approach in SEA

Lessons learned

Success factor 3: Strategic position in decision-windows, iterative fine-tuning

- SEA and the NTG planning link together throughout, with several iterations – NTG call on SEA for inputs to be able to move in preparing scenarios, options and fine-tune solutions

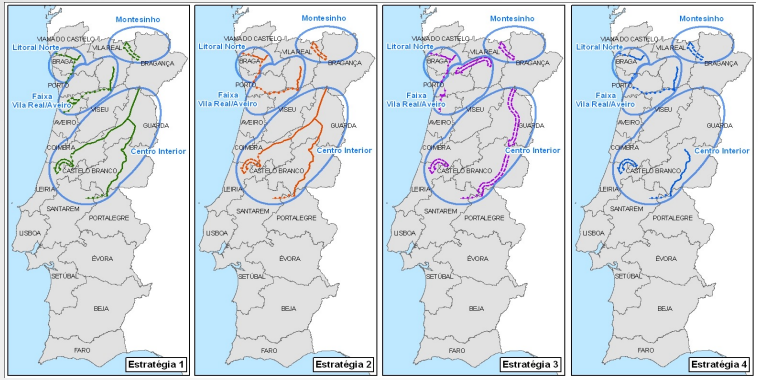


Lessons learned

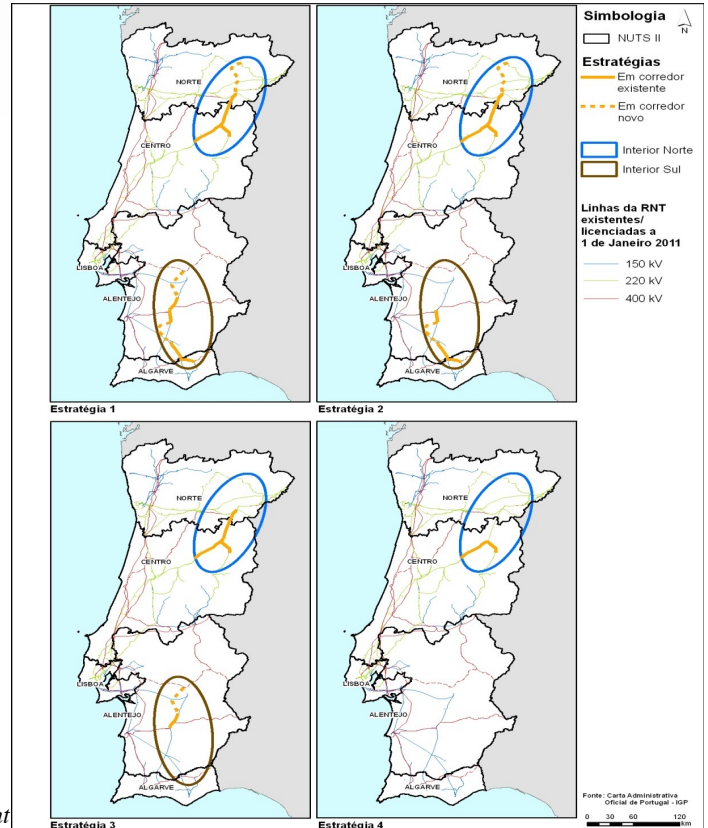
Success factor 4: strategic options to select critical pathways for sustainability

- Priority in SEA was assisting NTG planning to find options that would create more sustainable conditions for NTG development, avoiding conflicts at project's level.

Four starting strategies for the development of the NTG were prepared for SEA analysis



PDIRT 2009-2014(2019)



PDIRT 2012-2017(2022)

Environmental Assessment

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Lessons learned

Success factor 5: Critical decision factors collectively identified

The CDF were identified through experts judgement based on brainstorming discussions involving the SEA and the NTG planning teams, REN top management, sectoral and environmental authorities.

Success factor 6: Governance framework

- Several sectoral authorities and private organization are likely to influence the effectiveness of plan implementation and are engaged with responsibilities in its implementation. They were also involved in post-evaluation.

Lessons learned

Success factor 7: Communication strategy
- REN established a dialogue platform (workshops, meetings, written communication, website) with internal and external stakeholders providing for intensive inter-change of perspectives. This was extended over the post-evaluation period in the interim period. This strategy strengthened dialogue between REN and its planning process stakeholders, including private companies, sectoral administration, environmental authorities, NGO's and the public.

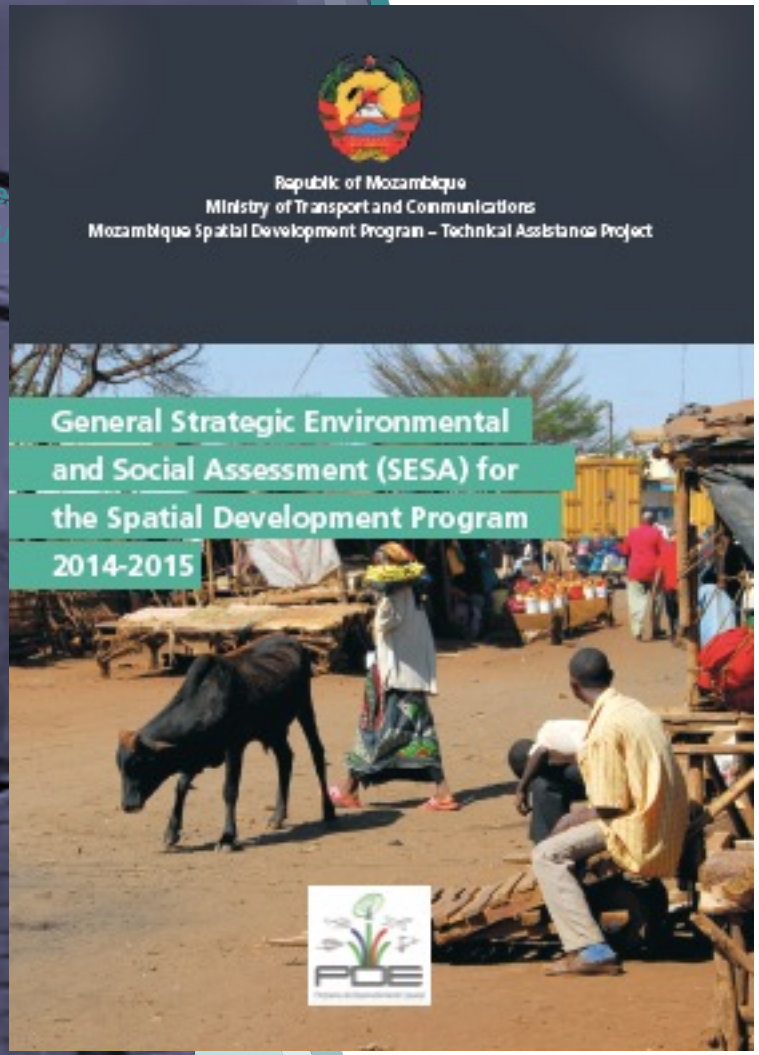
Success factor 8: Development of trust, knowledge-brokerage
An initial ice-break, and knowledge-brokerage period was crucial to create trust between NTG planning and SEA teams. The communication strategy also contributed to increase levels of trust with other stakeholders, enabling knowledge-brokerage.

Obstacles founded

- Often need to explain and justify to authorities the strategic SEA methodology vs. methodologies that follow more closely the practice of EIA projects – resisting mental model
- Scale of the SEA analysis - precise location of certain lines or sub-stations have proved to not be relevant to the scale of strategic analysis – yet EIA mental model expects to see discussion of detail
- Follow-up and monitoring difficult due to fragmentation of institutional responsibilities and insufficient practice

Final Remarks

- Development of trust, and a communication strategy is critical to the success of SEA
- Strategic-based SEA processes can create a platform for dialogue that will enhance the interaction between proponents and their stakeholders
- Usefulness of SEA strategic approaches in enabling more sustainable investment by the private sector
- Strategic-based SEA proves to facilitate the planning processes and better sustainable and environmental outcomes



SEA of the Spatial Development Programme 2014-2035 Mozambique

Initiative

The Ministry of Transport and Communications (MTC) is implementing the Spatial Development Program (SDP) to create institutional capacity on spatial planning, and to prepare Spatial Development Initiatives (SDIs).

An SDI attempts to unleash the sustainable economic development potential in development corridors, underpinned by anchor projects and underlying infrastructure investments for transport, power, water and the like. Anchor projects are owned and operated by the private and/or public and private sectors and utilize physical, human, natural and infrastructure resources.

The SEA influenced the life of development corridors, from concept to design, implementation and operation, adopting a long-term perspective where increasing wealth and well-being are based on the sustainable use of natural resources capital.

Initiative

Seven corridors are included : Maputo, Beira, Zambezia, Nacala, Libombos, Mueda and North-South, each with distinct economic, environmental and social characteristics, priorities and challenges. Maputo, Beira, Nacala and Zambezia are being developed or practically with a completed concept, while Libombos, Mueda and North-South are still in early conceptual stages.

Object of assessment and purpose of SEA

The object of assessment in this SEA is the SDI investment priorities and development strategy, considering the unrealized economic potential in development corridors, as well as long-term integrated development planning for sustainable economic growth and poverty reduction.

The potentially significant changes in the physical and social environments caused by anchor and infrastructure investments in development corridors, justify a SEA of the SDP.

The SEA focuses on the medium to long-term opportunities and risks that the social, cultural, economic and biophysical environments provide for future development.

Methodological approach

A general SEA establishes the legal, institutional and governance framework within which subsequent SEA at corridor level will take place. Analysis under the general SEA is driven by long-term economic, social and environmental objectives, built upon a problem framework, and sets a strategic assessment framework (SRF) and guidelines for the development of SEA for regional development corridors (north and south).

A strategic thinking SEA was adopted and Critical Decision Factors identified because they relate to:

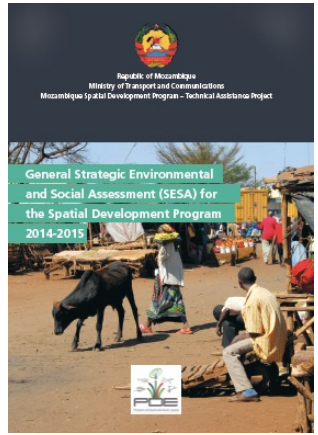
- Relevant macro-policies in Mozambique identified in the SRF, including international commitments (e.g., climate change, biodiversity);
- Priority problems identified (e.g., the sustainability of local communities livelihoods, pressured cultural and natural resources, environmental sensitivities and institutional coordination deficit); and
- SDP priorities in particular concerning development corridors (e.g., poverty eradication, wealth creation, improved institutional capacity, and public instruments for synergistic development of investment projects).

Problem framework

Table 3 - Problem framework – key aspects

Key Potentials	Key sensitivities and risks	Key challenges
• Growth of infra-structure • Development of value chains linked to anchor projects • Increase in economic advantage and competitiveness • Strengthening of the local economy and social opportunities	• Sensitive ecosystems • Cultural heritage • Climate change risks • Poverty	• Economic and social valuation of natural resources • Engagement and benefits for vulnerable communities • Public governance leadership and inter-sectoral cooperation

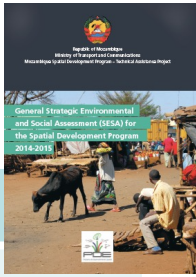
Critical Decision Factors and assessment criteria



- **Governance**
  - Public policies
  - Integrated Investment Plan
- **Poverty erradication**
  - Generation and distribution of wealth
  - Social inclusion
- **Environmental and climate management**
  - Adaptation and mitigation to climate change
  - Environmental management
- **Pressure on natural and cultural resources**
  - Community conflicts
  - Sustainable use

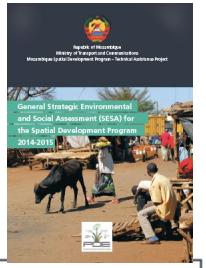
Opportunities and risks

Opportunities and risks for each CDF were identified – examples:



CDF	Opportunities and Risks (examples)
Governance	**O**: integration of environmental and social issues through participated and collaborative planning and development processes enhancing communities knowledge **R**: Insufficient corporate social and environmental responsibility
Poverty eradication	**O**: Several infrastructures (sewage systems, water supply, waste management, electricity supply, accessibility) and public services (health, education security) will be developed as environmental investment opportunities **R**: The investment on public infrastructure be insufficient, or even inexistent
Environment and climate change	**O**: Reduced vulnerability of people, land and goods to climatic extreme events **R**: Increased aggressiveness of climate extreme events with negative effects through severe flooding or drought
Pressure on natural and cultural resources	**O**: Adopt adequate policy for local content and social and local economy programs that respect community livelihood dependence on natural and cultural resources. **R**: Destruction of biodiversity hotspots, scared forests and cultural heritage including in urban areas

Outputs – orientations for other levels of planning

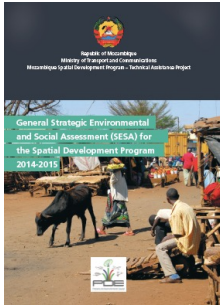


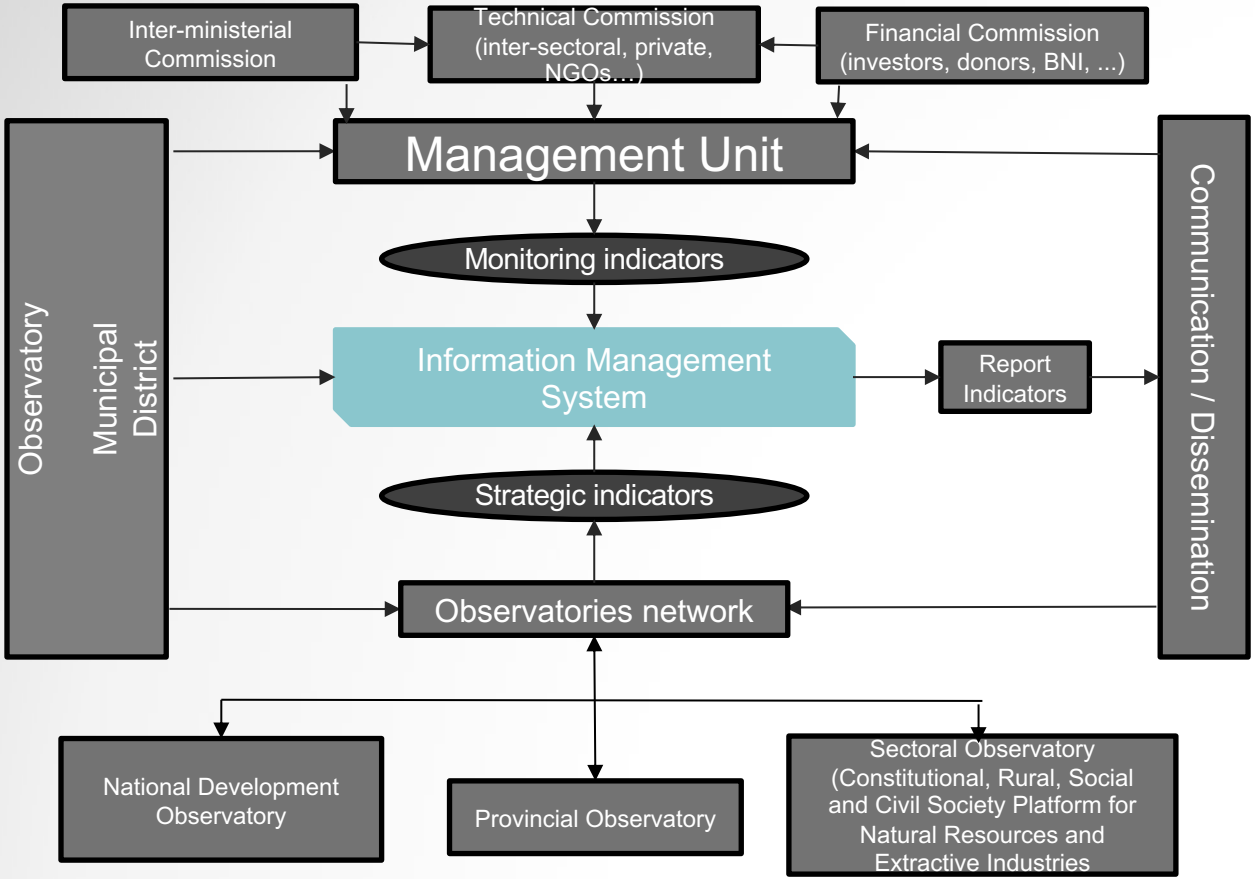
Main Policy Recommendations

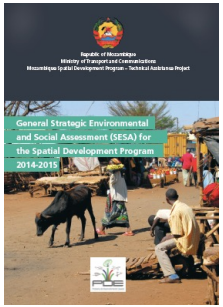
Establish a policy on SESAs that *inter alia* distinguishes between strategic level SESAs (e.g., SDP) and operational SESAs (development corridor, region or sector).
Establish a policy for the use of spatial planning.
Establish institutional coordination mechanisms for inter-sectoral spatial planning, involving government, private sector and civil society stakeholders.
Promote outside the SDP training on spatial planning, development corridors and SESAs.
Establish a policy to ensure that investments in development corridors address environmental and social priorities (including the green economy, climate change and energy efficiency) as well as economic priorities.
Establish a policy on local content policy relevant to all significant investment in development corridors.
Establish a policy to ensure the open dissemination of spatial planning, GIS, environmental and social data.
Establish a policy concerning follow-up of the General SESA and corridor level SESAs.

Outputs – orientations for other levels of planning

- Population evolution and movements;
- Poverty incidence and measures to reduce poverty;
- Promotion of local content and income generation of local community based on sustainable resources management;
- Potential re-settlements and characteristics of respective community livelihoods;
- Health issues;
- Capacity-building of human resources;
- Climate change vulnerable areas, and disaster risks;
- Ecological sensitivities;
- Culture sensitivities concerning culture heritage;
- Major expected land use changes;
- Water quality and availability;
- Waste management plans;
- Soil destruction and conflicts with mining, agriculture and forestry activities;
- Governance issues concerning coordination across ministries, private sector and with communities and NGOs
- Level of engagement of local communities and local authorities in discussing the future development of local areas;
- Enforcement of public policy for spatial planning, social inclusion and environmental management; and
- Environmental investment opportunities.







Follow-up: monitoring and evaluation

Lessons learned

The SEA adopted a strategic thinking approach and helped to integrate environment and sustainability issues into the planning and programme development process.

Two stages SEA were conceived: general umbrella SEA that looked at the overall concept and SEA for development corridors per se, which should follow orientations found by the umbrella SEA

Several meeting were held with the SDP teams – the work together, and SEA recommendations, were easier and better taken where government commitments to the private sector were not yet established.

With the economic crisis in Mozambique the SDP programme was brought to a hold in 2016.