Economic development and nature conservation in the Port of Antwerp:

Key factors of success
Overview (1999-2015)


- AFTER Deurganck Dock: “favourable state of conservation”
  - Defining conservation objectives (FSC)
  - Translating into integrated planning processes:
    - Further Development of the Port of Antwerp
      - Strategic Planning Process of the Port of Antwerp
      - Background document Nature
      - Species Conservation Programme
    - Integration in the 2010 Development plan for the Scheldt estuary:
      - Long Term Vision (LTVS)
      - 2010 Development Plan (Accessibility, Safety against flooding, Nature Restoration

- An integrated approach for (the deepening of) the river Scheldt in Belgium and the Netherlands
Location of Deurganck Dock
Habitat Directive, art. 6.3 – 6.4

- authorisation can only be granted to plans or projects not affecting the integrity of the site(s) concerned.

- any plan or project that is likely to have a significant effect shall be subject to **appropriate assessment** of impact.

- if assessment is negative or doubtful ⇒ **art. 6 § 4**
  - IF **alternative** is least damaging
    AND
  - IF **imperative reasons of overriding public interest**

⇒ Member State must take all necessary **compensatory measures** to protect coherence of Natura 2000 and inform EC.
Construction of Deurganck Dock 1999-2005
DEURGANCK DOCK CONFLICT (1999-2001)

- Highest Administrative Court annulled new spatial plan: “Zone for Port Development” re-installed to former “Agricultural Area”
- Complaint by European Commission
  - No proper impact assessment on N2000 conservation objectives
  - No account to cumulative effects with previous developments
  - No proper compensation plan

  ⬇️

- construction works interrupted – enormous monetary losses

  ⬇️

- new EIA Deurganck Dock – nature compensation plan

- EMERGENCY DECREE (dec.2001)
  - building permits overruling regional zoning plan
  - integration of nature compensation plan
<table>
<thead>
<tr>
<th>TYPE OF HABITAT</th>
<th>COMPENSATION</th>
<th>TARGET AREA</th>
<th>ACTUAL AREA</th>
<th>STATUS</th>
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<tbody>
<tr>
<td>Pioneering bare sandplains</td>
<td>Doel Dock (filled part)</td>
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<td>74</td>
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<td></td>
<td>Maritime Industrial Development Areas</td>
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<td></td>
<td>Plain of Zwijndrecht</td>
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<td>Reedmarshes</td>
<td>Freshwater Creek</td>
<td></td>
<td>17.8</td>
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<td></td>
<td>Polder of Steenland</td>
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<td></td>
<td>Haasop</td>
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<td></td>
<td>Groot Rietveld (Great Reedland)</td>
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<tr>
<td>Mudflat - saltmarsh - shallow water</td>
<td>Brackish Creek</td>
<td></td>
<td>36</td>
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<tr>
<td></td>
<td>Restoration of Paardenschor, saltmarsh</td>
<td>25</td>
<td>14.5</td>
<td>permanent</td>
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<td></td>
<td>Mudflats and marshes in flood control area</td>
<td></td>
<td>300</td>
<td>permanent</td>
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<td>Meadow bird areas</td>
<td>Doelpolder North</td>
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<td>71</td>
<td>permanent</td>
</tr>
<tr>
<td></td>
<td>Putten West</td>
<td>250</td>
<td>52</td>
<td>min. until 2007</td>
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<td></td>
<td>Wet meadows in flood control area</td>
<td></td>
<td>150</td>
<td>permanent</td>
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<tr>
<td>Freshwater lakes with natural shores</td>
<td>Drijdijck</td>
<td></td>
<td>36.7</td>
<td>permanent</td>
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<td></td>
<td>Verrebroekse plassen (water in future development area of Verrebroekdock)</td>
<td></td>
<td>80</td>
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<tr>
<td>Ecologically valuable polders</td>
<td>On land owned by Flemish Government</td>
<td></td>
<td>45</td>
<td>min. until 2007</td>
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</table>
Freshwater lakes
Reedmarshes
Tidal mudflats and saltmarshes
Pioneering sandy habitats
Wet meadows
Ecological polders
Bird Directive Area
Habitat Directive Area
Ramsar area
Key factors for successful compensation

Compensation Matrix

- Clear overview of timing and responsibilities
  - Divides tasks, responsibilities, financing amongst port authorities and governmental administrations
  - Links timing, procedures and permits to realise compensation areas with timing, procedures and permits for the construction of the dock

- Follow-up by intergovernmental task force
### Compensatie matrix Deurganck Dock

De streeffoppervlaktes betreffen de totale oppervlaktes noodzakelijk ter realisatie van de compensatiestoels ten gevolge de aanleg en de exploitatie van het Deurganckdok.

Als principe van gelijkheid geldt dat per habitattype of leefgebiedtype waarvoor verlies wordt vastgesteld tengevolge de werken, met minstens één van de natuurcompenserende maatregelen vervat in het natuurcompensatieplan (zie

<table>
<thead>
<tr>
<th>Habitattype</th>
<th>Streeffoppervlakte (ha)</th>
<th>Oppervlakte zoekzone</th>
<th>Aard van de compensatizoone</th>
<th>A. Bouwen, kaaimuren</th>
<th>B. Baggerwerken, ophogen van terreinen</th>
<th>C. Leefbaarheidsbuffer</th>
<th>D. Ontsluitingsmaatregelen</th>
<th>Compensatiemaatregelen</th>
<th>Verwervinginstrument</th>
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<tr>
<td>Strand &amp; Plasvlakten</td>
<td>200 ha</td>
<td>74,0</td>
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<td>a,b</td>
<td>a,b</td>
<td>a,b</td>
<td>A,B,D</td>
<td>NVT</td>
<td></td>
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<td>Opgespoten MIDA (Z2)</td>
<td>77,0</td>
<td>tijdelijk</td>
<td>a,b</td>
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<td>a,b</td>
<td>A,B,D</td>
<td>NVT</td>
<td></td>
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<tr>
<td></td>
<td>Vlakte Zwiendrecht (Z2)</td>
<td>53,0</td>
<td>tijdelijk</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>A,B,D</td>
<td>VI. Gewest</td>
<td></td>
</tr>
<tr>
<td>Riet &amp; water</td>
<td>25 ha</td>
<td>17,8</td>
<td>permanent</td>
<td>d,f</td>
<td>d,f</td>
<td>d,f</td>
<td>A, B, D</td>
<td>VLM</td>
<td></td>
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<tr>
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<td>Watergangen en -randen (Z2)</td>
<td>10,0</td>
<td>tijdelijk</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>A,B,D</td>
<td>NVT</td>
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<tr>
<td>Slik-schor-ondiep water</td>
<td>25 ha</td>
<td>36,0</td>
<td>permanent</td>
<td>d,g</td>
<td></td>
<td></td>
<td>B</td>
<td>VLM</td>
<td></td>
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<td></td>
<td>Afgraven Paardenschor (Natuurgebied)</td>
<td>14,5</td>
<td>permanent</td>
<td>d,e</td>
<td></td>
<td></td>
<td>B</td>
<td>VLM</td>
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<tr>
<td>Weidevogelgebied</td>
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<td>d,i,j,k</td>
<td>d,i,j,k</td>
<td>d,i,j,k</td>
<td>A,B,D</td>
<td>VLM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Putten West (ZTA-gebied)</td>
<td>52,0</td>
<td>minstens tot 2007</td>
<td>d,i,j,k</td>
<td>d,i,j,k</td>
<td>d,i,j,k</td>
<td>A,B,D</td>
<td>VLM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>KBR – ontwikkeling natte weilanden</td>
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<td>d,j,k</td>
<td>d,j,k</td>
<td>d,j,k</td>
<td>A,B,D</td>
<td>AWZ/VLM</td>
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<td>Plas &amp; oevers</td>
<td>35 ha</td>
<td>36,7</td>
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<td>d,f</td>
<td></td>
<td></td>
<td>B</td>
<td>VLM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kunstmatige waterplassen in ZZ-gebied</td>
<td>80,0</td>
<td>tijdelijk</td>
<td>l,m</td>
<td></td>
<td></td>
<td>B</td>
<td>NVT</td>
<td></td>
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<tr>
<td></td>
<td>Verrebroekse plassen</td>
<td>nt.bep</td>
<td>minstens tot 2007</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>B,C</td>
<td>NVT</td>
</tr>
<tr>
<td>Ecologisch waardevolle polder</td>
<td>45 ha</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Key factors for successful compensation

- **Management Committee for Nature Compensations on the Scheldt Left Bank (2002)**
  - on demand of Flemish Parliament
  - governmental and non-governmental stakeholders
  - task: follow up and guide realisation, follow up results annual progress report to Flemish Gov., Parl. and EC

- **MONITORING** (Research Institute for Nature and Forest)
  - follow up realisation of compensations
  - follow up evolution of habitat types / bird populations in relation to compensation objectives
Overview of some compensation areas

In general:

- all compensation areas are effectively realised as planned

- monitoring shows that newly created nature areas:
  - develop favourably
  - are increasingly used by targeted breeding birds
  - are being used intensively by wintering water birds
### Wet meadows for meadow birds

<table>
<thead>
<tr>
<th>Compensation</th>
<th>Target area</th>
<th>Actual area</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doelpolder North</td>
<td></td>
<td>250 ha</td>
<td>71</td>
</tr>
<tr>
<td>Putten West</td>
<td>52</td>
<td>min. until 2007</td>
<td></td>
</tr>
<tr>
<td>Flood control area KBR - wetlands</td>
<td>150</td>
<td>permanent</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL:** 305 ha
Realisation of wet meadows and tidal creek in Doelpolder North

11 okt. '05

24 jan. '06

11 mei '06

15 juli '06

30 aug. '06

30 aug. '06
## Mudflats and saltmarshes

<table>
<thead>
<tr>
<th>Compensation</th>
<th>Target area</th>
<th>Actual area</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brackish Creek</td>
<td>25 ha</td>
<td>36</td>
<td>permanent</td>
</tr>
<tr>
<td>Restoration of Paardenschor-saltmarsh</td>
<td>14,5</td>
<td>permanent</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>50,5 ha</strong></td>
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Restoration of Paardenschor tidal mudflat and saltmarsh (20/10/08)
## Reedmarshes

<table>
<thead>
<tr>
<th>Compensation</th>
<th>Target area</th>
<th>Actual area</th>
<th>Status</th>
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<tr>
<td>Freshwater Creek</td>
<td>25 ha</td>
<td>17,8</td>
<td>permanent</td>
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<td>Steenlandpolder</td>
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<td>10</td>
<td>temporary</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>27,8 ha</strong></td>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Compensation</th>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Haasop (comp. for historical passive)</td>
<td></td>
<td>101,5</td>
<td>permanent</td>
</tr>
<tr>
<td>Great Reedland (comp. for historical passive)</td>
<td></td>
<td>82,4</td>
<td>permanent</td>
</tr>
</tbody>
</table>

- Bluethroat
- Marsh Harrier
- Reed Warbler
Putten West and Freshwater Creek (20th oktober ‘08)
Conclusions of the DGD-case

- Resulted in first effective and large-scale nature compensation scheme in Belgium:
  - 1200 hectares of compensation area were developed (cost: 28 milj €)
  - Based on clear compensation objectives
  - Build-in guarantees (compensation matrix, permanent follow-up and monitoring, annual progress reports to Fl. Gov. and EC)

- Led to transposition of Art 6 HD in Flemish nature legislation

BUT:

- Resulted also in enormous economic losses (>25 milj €)
- Most habitats and species of the SPA’s and SAC’s were still in an unfavourable state of conservation
- European nature legislation was conceived as a new threat by port authority and economical sector...
AFTER Deurganck Dock (2005 – present)

SHIFT FROM:

COMPENSATION

- ad hoc approach
- short term solution
- fragmented nature
- 1-on-1
- ecol.-econ. uncertainty
- conflict / confrontation

TO:

STATE OF CONSERVATION

- pro-active approach
- sustainable, ‘robust’ situation
- large nature core areas
- favourable state of conservation
- ecol.-econ. certainty
- dialogue / cooperation
Step 1: Defining conservation objectives

- C.O. = qualitative and quantitative objectives for habitat types and areas necessary to maintain/restore populations in a “favourable conservation status”.

- “favourable conservation status” = combination of influences on habitats or species that affect their long-term distribution, structure, function and abundance.

- C.O. for port of Antwerp (Left Bank) defined in 2004

- Port of Antwerp was pioneer. Based on the good experiences of this case:
  - C.O. for SPA’s and SAC’s along Flemish part of Schelde estuary were defined in 2005 and approved by Flemish Government
  - ‘National’ C.O.’s for all N2000-habitats and species approved in 2010
  - Site-specific C.O. defined for all Flemish SPA’s by end 2014

- IMPORTANT: DEFINING CONSERVATION OBJECTIVES SHOULD BE BASED PURELY ON SOUND SCIENCE AND SHOULD AS SUCH BE LEFT TO SCIENTISTS !!!
Step 2: Translating C.O. into integrated planning processes

<table>
<thead>
<tr>
<th>C.O. Schelde Estuary</th>
<th>C.O. port of Antwerp</th>
</tr>
</thead>
<tbody>
<tr>
<td>[down arrow] Long Term Vision SE</td>
<td>[down arrow] Background Nota Nature</td>
</tr>
<tr>
<td>[down arrow] 2010 Development Plan</td>
<td>[down arrow] Strategic Plan for the port of Antwerp</td>
</tr>
<tr>
<td>[down arrow] Actualised SIGMAPLAN</td>
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<td></td>
<td>implement in</td>
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<td>will be realised by</td>
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</table>
Integrated planning for the further development of the Antwerp port area

- **Strategic Plan for the Port of Antwerp** (=SPPA)
  - Integrated vision up to 2030 for further port development, transport agriculture, residential use, and nature in the wider port region
  - “favourable conservation status” is primary condition for development
  - Efficient use of space

- **EIA on SPPA** (agreed 6/3/’09)
  - Environmental impact of different scenarios for PORT development
  - In combination with different scenarios for NATURE development as described in “**BACKGROUND NOTA NATURE**”
  - Resulted in defining “Publicly Most Acceptable Alternative”

- **Spatial Plan on SPPA** (approved in 2013)
  - Spatial translation of future port development plans and all necessary nature restoration and development plans
  - Defines and establishes **final** boundaries of port area...
Background Nota Nature

starting-points:
- N2000-sites currently don’t meet ‘favourable conservation status’ as defined by the C.O.
- C.O. to be reached in network of new nature areas outside the port

aim:
- provide spatial scenarios for sust. realisation of Conservation Objectives
- enable port further development and give certainty to economical sector

basic principles: realisation of
- Network of high level nature core areas outside port area, plus
- Supporting Network of Ecological Infrastructure inside port area

‘robust nature’, with enough strength to allow further economical development without causing significant impact on the favourable conservation status of SPA’s, SAC’s and App. 4-species
Different Nature Scenario’s

Figuur 5.2.2
Overzicht scenario’s

Legende
- stik en suiker (begroeiing/ontwurven natie)
- braakte krui
- plank en veren
- nat en water
- zoete wat in natuurbosweer
- wat in situatie/veen (zichtbare omlaag)
- hooi & strenge
- overige natuurstraten buiten aantekening
- zeekomende waarderende permanente ecologisch infrastructuur maatregelen (kan worden afgepast)
- zeekomende waarderende permanente ecologische infrastructuur maatregelen (kan worden afgepast) niet toepasselijk
- afwikkelingsprocedures (kan verder bij uitvoering van aanvraag en naast de compensatie gemeld worden)

Vogelsoortengebied

Version: 35Feb2010
“Publicly Most Acceptable Alternative” as defined by EIA
“Publicly Most Acceptable Alternative” translated in GRUP
PRO-ACTIVE APPROACH nature restoration and port development
PRO-ACTIVE APPROACH

- **Principles:**
  - STAND-STILL guaranteed at all times
  - Focus on FAVORABLE STATE OF CONSERVATION
  - Constant improvement until conservation objectives are fully reached

- Each port development project will be properly assessed according to the procedures of art. 6 of the HD

- Pro-active nature restoration projects should guarantee no significant impacts of each individual port development project

- Still awaiting for advice/approval of EC/European Court...
Conservation of Annex 4 - species

- Annex 4 – species occurring in the Antwerp port Area: Natterjack Toad, Fen Orchid, bats
- Fully protected by the Habitat Directive, where ever they occur
- Conflicts with development plans of industries in the port
- Species conservation strategy:
  - From 'passive protection of individual specimens' to 'active conservation of populations'
  - Aim: ensure 'favourable state of conservation' in the port area
  - Instrument:
    - Development of a species conservation program for port specific species and habitats for the entire port area
    - Realisation of a Network of Ecological Infrastructure to meet the conservation objectives for these species within the port area
Network of Ecological Infrastructure in the Antwerp Port Area
Example 1: Natterjack Toad

Occurrence in Antwerp port - 2007

Future occurrence: Backbone
Example 1: Natterjack Toad
Example 2. Fen Orchid

- 99,9% of the Belgian population occurs in the Antwerp port area
- Conservation assured through spatial planning:
  - 17 ha of “industrial area” re-designated as “nature area”
  - 17 ha of existing “nature area” -> “industrial area”
- Management of new nature area sponsored by industries
Step 2: translating C.O. into integrated planning processes

C.O. Schelde Estuary
- Long Term Vision SE 2010 Development Plan
- Actualised SIGMAPLAN

implemented in

C.O. port of Antwerp
- Background Nota Nature
- Strategic Plan for the port of Antwerp

will be realised by
Trends in intertidal habitats
Integrated planning for Schelde estuary

- **Long Term Vision Schelde estuary** (2001): vision up to 2030
  - flood protection (dikes and flood control areas)
  - accessibility of ports (deepening of the shipping channel in the Schelde)
  - nature restoration (creation of mudflats, salt marshes and wetlands)

- **2010 Development Plan** (2004): engagements up to 2010
  - choice for ‘robust nature’ to restore/maintain FSC
  - to be achieved by providing/restoring ‘space for the river’

- **Actualised Sigmaplan** (2006-2030):
  - defines Conservation Objectives for the Flemish part of the Schelde
  - Implementation of C.O. through maximal combination with flood protection projects
Actualised SIGMAplan: nature restoration projects in flooding areas
Overlapping planning processes
Combination in northern nature core area

- Saeftinghe
- Hedwige polder
- Prosperpolder N
- Prosperpolder Z
- Doelpolder N + Kreek Buffer N
- Doelpolder Midden
- Paardenschor
- Paardenschor
- Actualised Sigmaplan and Strategic Plan
- LTVS and 2010 Development Plan
- Nature compensations
- Deurganck Dock
Nature restoration in Hedwige-Prosper
Hedwige-Prospelpolder in the past (2009)...
...and in the near future (2018)
COSTS & BENEFITS of 2010 Development Plan

- Safety & nature projects Zeeschelde: 220 million €
- Accessibility: 250 million €
- Nature projects Westerschelde: 200 million € (of which 1/4 for compensations agricultural sector)
- Compensations for Zeeland: 100 million euro (infrastructure)

- TOTAL COST: 770 million €
  ⇐ CALCULATED BENEFITS: 2 billion €
At present...

- Deepening of shipping channel completed in 2010
- Delay’s related to Hedwige polder finally solved...
- Sigmaplan fase 1 nearly completed
- Sigmaplan fase 2 in preparation (spatial planning processes, license procedures, land acquisition, ...)

BUT:

- Court cases against GRUP Port of Antwerp still pending
- Very recently RVS overruled partly GRUP Port of Antwerp

⇒ Still awaiting for final advice/approval of EC/European Court...
Thank you for your attention

Any questions?