

THE NEED FOR DATABASES AND VIEWERS

**TO SUPPORT DECISION
MAKING AND LEARNING**

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Introduction – Coastal Management

Policy:

Highwater safety → Coastline & Coastal Foundation maintenance
~ 12 Mm³/y (Shoreface, Beach & Gully) Nourishments

Implementation:

Nourishment program & monitoring program

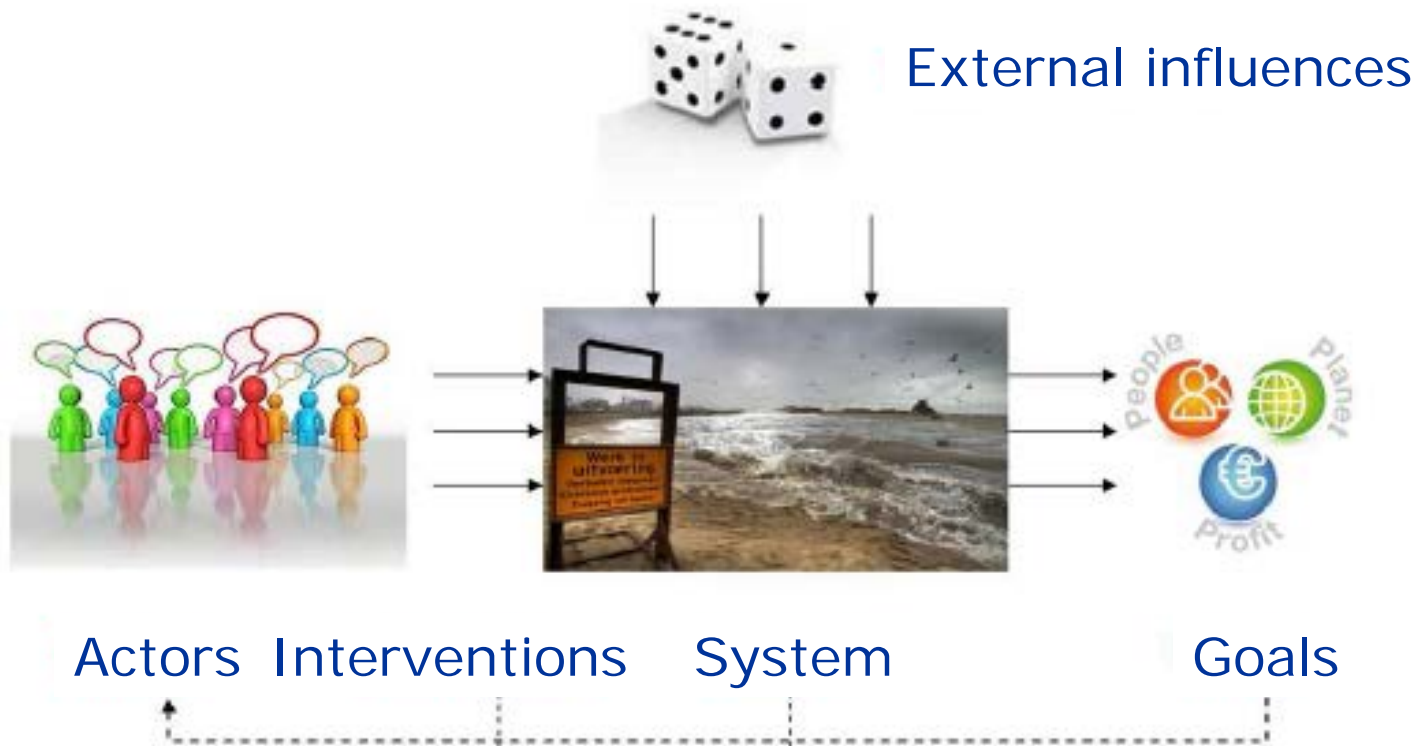
Learning:

Implementation program: natural system & governance



General Aim of a Database & Viewer

- Necessary types of information:
 - natural system (e.g. morphology)
 - nourishment history
 - agreements
 - user functions
 - etc.
- Possibility to easily visualize & provide the information (e.g. for research, advisors, actors etc.)
- Source for gaining insights into Nourishment strategy & Policy





System





External influences





Goals



Interventions





Hoogheemraadschap van Delfland



Hoogheemraadschap Hollands Noorderkwartier



Enabling Delta Life



Katwijk



Waterschap Scheldestromen

Actors



de Waddenvereniging



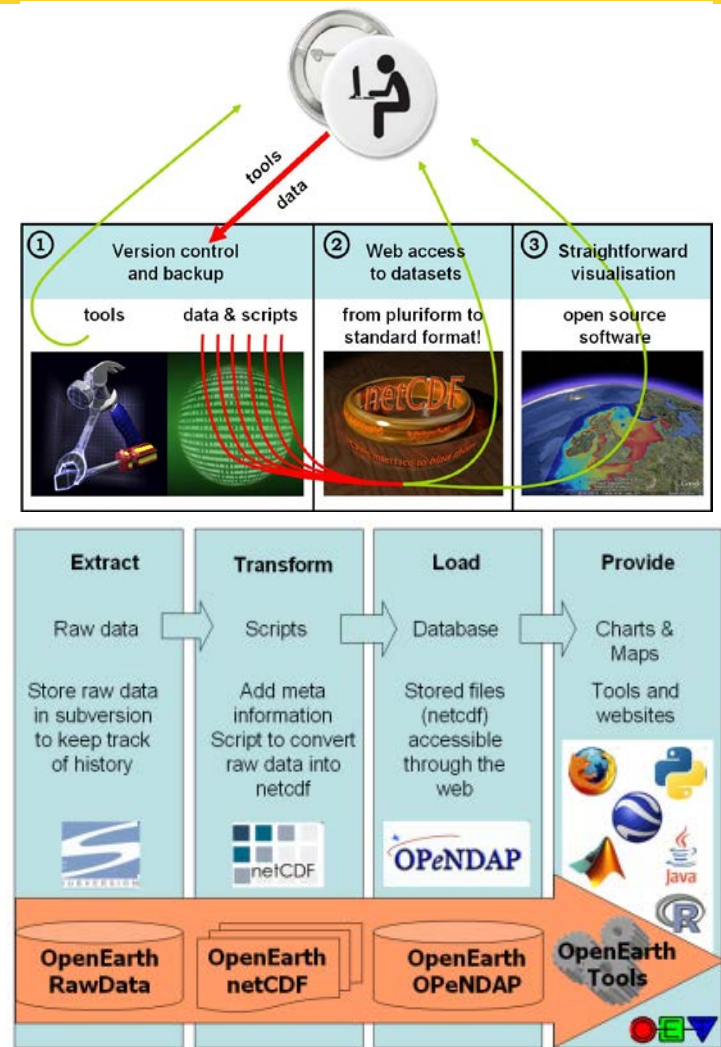
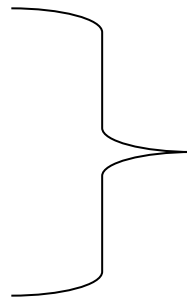
Rijkswaterstaat Ministerie van Infrastructuur en Milieu

Rijkswaterstaat



Database (OpenEarth):

- = open
- = all necessary information
- = uniform format
- = communicate with software



<http://publicwiki.deltares.nl/display/OET/OpenEarth>

The Viewer



Kustviewer - Lizard - Windows Internet Explorer

http://test.kustviewer.lizard.net/km/viewer/

File Edit View Favorites Tools Help

Kustviewer - Lizard

LIZARD

Home → Kustviewer

Kaartlagen

- Hoogtemeting
 - Vaklodgingen
 - Jarkus
 - Vaklodgingen info
 - Jarkus info
 - Lidar
 - Algemeen Hoogtebestand Nederland
 - Kaarten Waterlijnen (LW, HW, DV)
 - Kaarten 1843-1999
 - Kaarten 1965-heden
 - Kaarten Kustlijnen (MKL, TKL, BKL)
 - Grafieken Water- & Kustlijnen
 - Ingrepen
 - Suppleties
 - Versterkingen (under construction)
 - Zandmotor (under construction)
 - Functies

Jarkus

Weergave

Ophoging: [slider]

Opschaling: [slider]

Uitvullen: Ja

Kleurenmap

Transparantie: [slider]

Verschuiving: [slider]

Wijzig weergave

Acties

Grafiek over meerdere raaien

Voorbeeld

Afspeelsnelheid: [slider]

3-1976 1-2007

1926 2007

20 10 0 -10 -20 -30 -40 -50

86 %

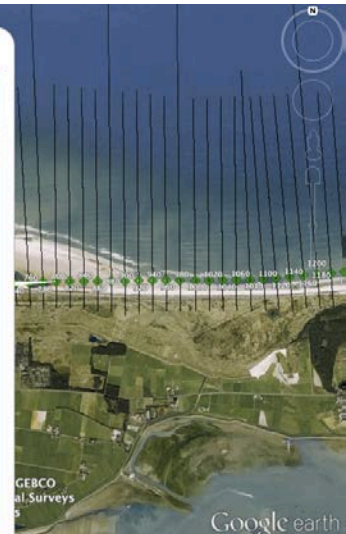
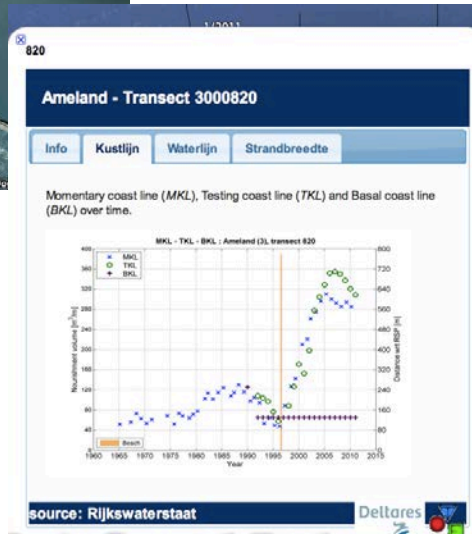
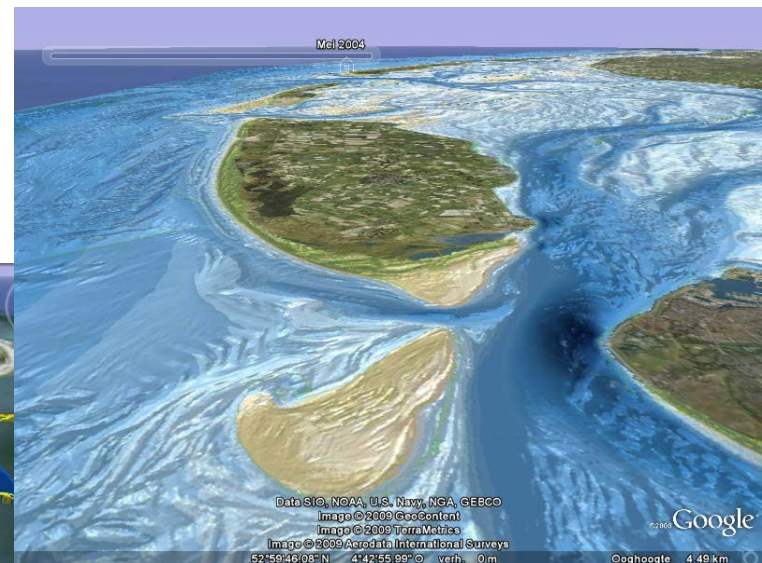
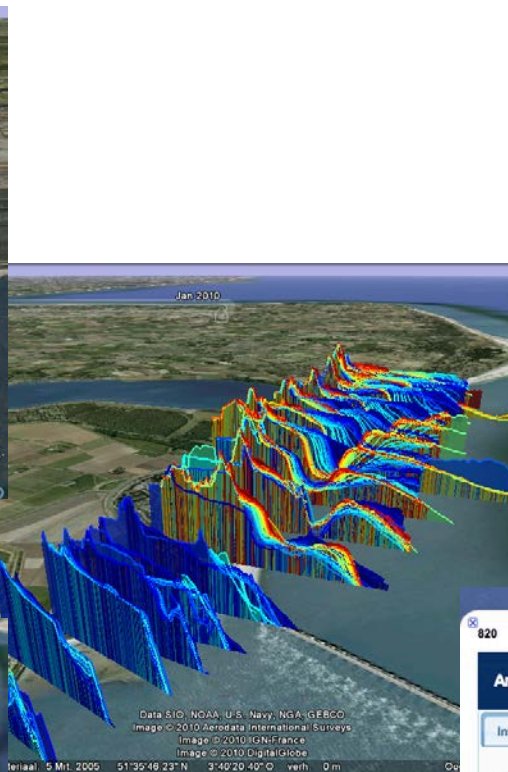
Image © 2012 Aerodata International Surveys

Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Image © 2012 GeoContent!




Google earth

Gebruiksvoorwaarden





Vogel- en Habitatrichtlijngebieden

-  Vogelrichtlijngebied
-  Habitatrichtlijngebied
-  Vogel- en Habitatrichtlijngebied



Bron: Alterra

RIVM/NC/okt03/0498

Natura 2000 gebieden





LIZARD

» Home → Kustviewer

Afspeelsnelheid: 100 %

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- Grafieken Water- & Kustlijnen
- Ingrepen
 - Suppleties
 - Versterkingen (under construction)
 - Zandmotor (under construction)
- Functies
 - Ecologische hoofdstructuur
 - Natura 2000
 - Test directe WMS laag

arkus

voorbeeld

Data SIO, NOAA, U.S. Navy, NGA, GEBCO
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Image © 2012 Aerodata International Surveys
Image © 2012 GeoContent

Google earth
Gebruiksvoorwaarden



Result– Coastal Management

Monitoring and storage of information in a database and visualisation within a viewer → an efficient learning proces is possible → Base for sustainable Coastal Policy

Learning:

Implementation program: natural system & governance



Thank you for your attention

Future viewer link: <http://kustviewer.lizard.net>

Deltares
Enabling Delta Life

Rijkswaterstaat
Dutch Ministry of Infrastructure and the Environment

A good understanding of both the natural dynamics and socio-economic developments along the coast is crucial to conduct cost-effective and sustainable coastline management. Rijkswaterstaat is the agency responsible for coastline management and is supported by the independent research institute Deltares on a regular basis.

KNOWLEDGE CONTINUUM FOR COASTLINE MANAGEMENT IN THE NETHERLANDS

Coastline Management

At present, 60-70 million euros from the Dutch national treasury are spent annually on sand nourishments to counter erosion. The sandy dunes of the Netherlands, from erosion and sea level rise. These sand nourishments provide physical protection for houses and dikes, which is important for coastal safety, socio-economic resilience and recreation for the densely populated hinterland.

Knowledge continuum

Scope of the knowledge of the Dutch coast is established through long term research programs and simultaneously also for short term studies to coastline management. This provides a continuum between coastline management - policy development - system of the coastal system. Policy makers and coastline managers are constantly involved in:

- Ongoing research => joint fact finding
- Formulating new questions => new research hypotheses

Besides Deltares, many other institutions contribute to the research.

Coastal research

The research topics relate to three spatial layers:

layer	type of research	example of topics
Occupation layer	How do we deal with the increasing number of people and activities in coastal areas? How do we deal with the increasing number of activities in coastal areas?	How do we deal with the increasing number of people and activities in coastal areas? How do we deal with the increasing number of activities in coastal areas?
Network layer	How do we deal with the increasing number of people and activities in coastal areas? How do we deal with the increasing number of activities in coastal areas?	How do we deal with the increasing number of people and activities in coastal areas? How do we deal with the increasing number of activities in coastal areas?
Basic layer	How do we deal with the increasing number of people and activities in coastal areas? How do we deal with the increasing number of activities in coastal areas?	How do we deal with the increasing number of people and activities in coastal areas? How do we deal with the increasing number of activities in coastal areas?

Conclusions

Coastline management adapts to changing needs and knowledge of:

- societal needs in terms of where and how to conduct sand nourishments and consequently the sand volume required,
- using small and large scale dynamic processes in coastal environments, in order to improve the planning of new sand nourishments,
- current practice, in order to frame new sand nourishments cost-effective and ecological sound.

www.deltares.com

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