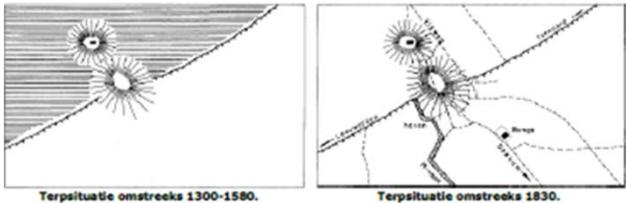




Holwerd, till 1580

Trading centre at sea



- Till 1580 really in sea
- Harbor and market function
- Almost the 11th city of Fryslân
- After the new dike, the area fell into decline



In 2000 population decline started to get painfully obvious

1999	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
1687	1762	1778	1620	1600	1530	1500	1480	1490	1500	1500	1495	1520	1475

- Jobs disappeared
- Facilities disappeared
- Houses became hard to sell
- Pauperization started

Holwerd became a potential ghost town in a ghost region



Holwerd aan Zee

The problems got a lot of attention

**Aanvalsplan krimp
Holwerd**

Gebeurt er niets, dan verliest het waddendorp binnen twee decennia ruim 23 miljoen euro aan waarde, berekende adviesbureau PRC.

Autoren drs. S. van Schijndel, drs. M. Rutherford, PRC
Rotterdam, februari 2010

SGV

KRIMP BIJDT RUIMTE

**SCHETSBOEK
HOLWERTER FERSICHTEN**

Holwerd aan Zee

2009

2009

2009

2010

Holwerd aan Zee

Many plans and visions followed

Interactive planning

**Aanvalsplan krimp
Holwerd**

Gebeurt er niets, dan verliest het waddendorp binnen twee decennia ruim 23 miljoen euro aan waarde, berekende adviesbureau PRC.

Autoren drs. S. van Schijndel, drs. M. Rutherford, PRC
Rotterdam, februari 2010

SGV

KRIMP BIJDT RUIMTE

JACHTHAVEN

Holwerd aan Zee

2009

2009

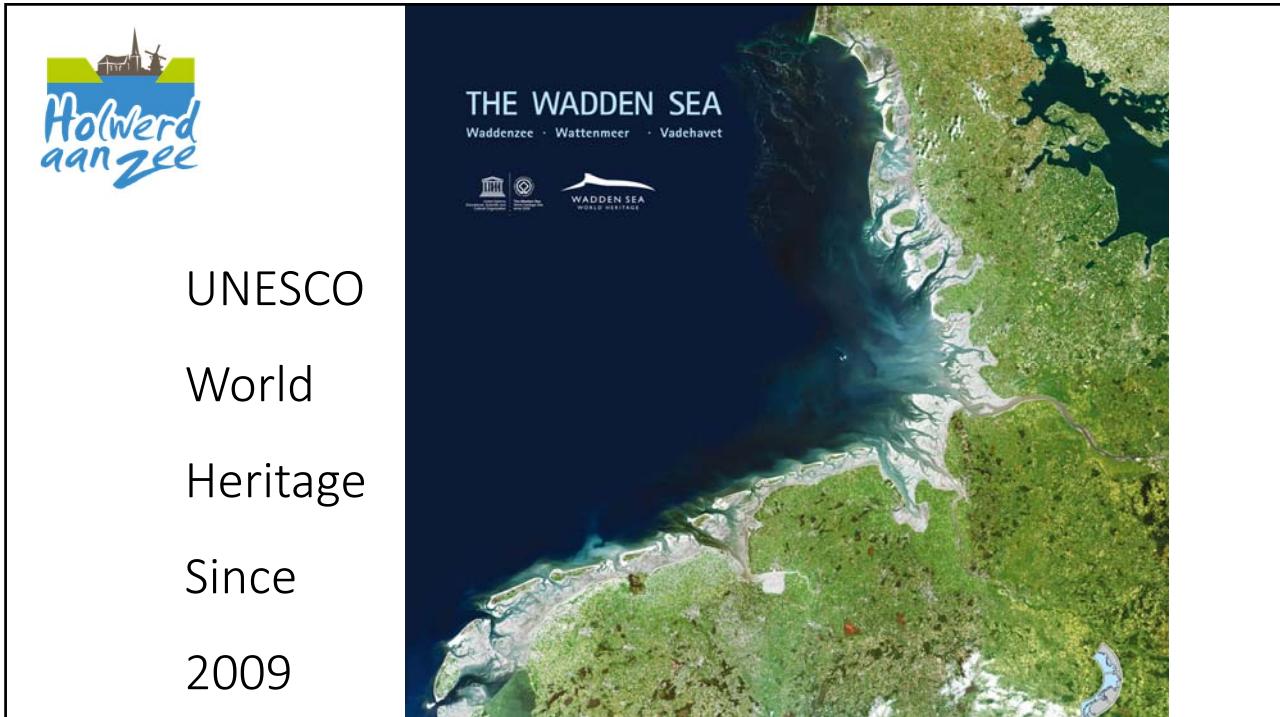
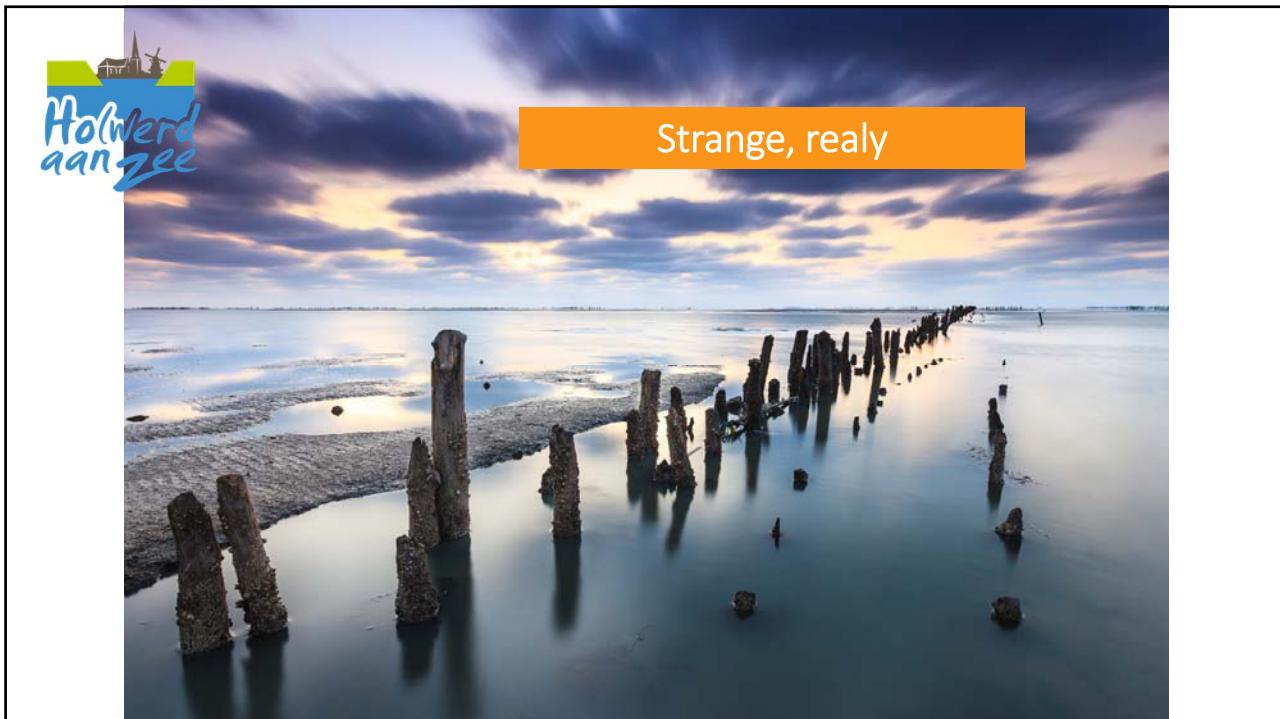
2009

2010

All the plans had one thing in common

They ended up in the bottom drawer

Holwerd got tired of this top down planning



Meanwhile in Germany!

The map illustrates the German North Sea coast from Norderney to Wittmund. Key locations labeled include Norderney, Baitrum, Nessmersiel, Dornum, Bensersiel, Neuharlingersiel, Harlesiel, Carolinensiel, Werdum, Holtgast, Stedesdorf, Samtgemeinde Esens, Ochtersum, Moonweg, Utarp, Schwendorf, Westerholt, Neuschoo, Blomberg, Eversmeer, Großeide, Halbemond, Leezdorf, Osteel, and Hagermarsch. Roads 72, 461, and 210 are shown connecting these towns. Blue double-headed arrows indicate the geographical correspondence between Holwerd aan Zee and towns like Norden, Bensersiel, and Harlesiel.

Same coast, same places

Bensersiel for instance

600.000 - 850.000 overnight stays

An aerial photograph of the coastal town Bensersiel, showing its marina filled with boats, a long sandy beach, and a mix of modern and traditional residential buildings. The town is situated along a river or canal system, with green fields and pastures visible in the foreground.





So Holwerd thought: "If that is possible in Germany...."

Hessel Hiddema
Farmer (cropper)

Theo Broersma
Food & consumer product safety

Marco Verbeek
Entrepreneur

Jan Zijlstra
Entrepreneur



"... it can be done at Holwerd as well!"



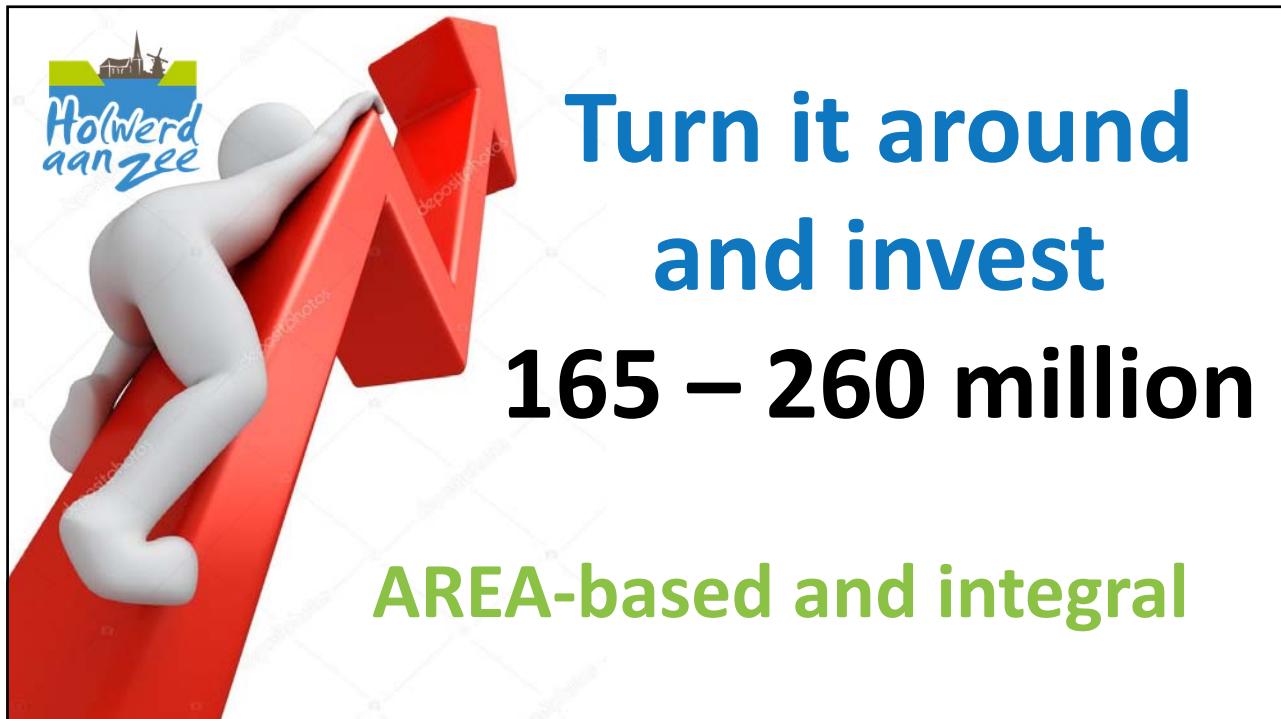
Doing nothing is not an option



Tabel 1 – Welvaartseffecten

Scenario	Laag	Hoog
Holwerd	18	26
Blije (F) en Tussen Dokkum en Holwerd (D)	24	48
Overig krimpdorpen*	125	75
Totaal NO-Fryslân boven Dokkum (afgerond)	165	260

Costs 165 – 260 million
for the region





Nature benefits

Food, fish, breeding islands etcetera



ECOLOGY = ECONOMY



Recreation houses against the dike (dike houses)



Aerial view of a coastal area showing a network of dikes and fields. A yellow circle highlights a cluster of small houses built on stilts (dike houses) located near a body of water. Several birds are flying in the foreground.

Dike houses oriented towards the experience lake
attractive for nature lovers



Bird-watching lodge New Stateszijl



Recreation houses against the village



Aerial view of a coastal area showing a cluster of houses built on stilts (dike houses) located near a body of water. In the background, there is a small village with traditional Dutch houses.

- Small hamlets on new terps / mounds



Moddergat



Marken

Holwerd aan Zee

Unique world heritage experience

low ...

... and high tide

unique selling point

Holwerd aan Zee

Goal: sales and jobs

Start construction work in 2025



Benefits 166 million euro

Social costs & benefits analysis 2022/12

Without passage for shipping / With passage for shipping

	Without passage for shipping	With passage for shipping
Kosten	112,29	115,67
Baten	166,14	176,50
Saldo (baten - kosten)	53,85	60,82
Ratio (baten / kosten)	1,48	1,53

**A cost-benefit ratio of 1.5
(1 = break-even)**



Funding so far: 45.8 million

- Province (10 million)
- Municipality (5.5 million)
- Wadden Fund (8.3 million)
- LNV Region Deal (7 million)
- Dream fund Postcode Lottery (15 million)
- National Government (Large Waters PAGW)

(we know where to find the rest)



Target group for the Wadden coast

- Sustainable quality tourist
- Young families
- Travel eco-friendly
- Zero-waste
- From the Randstad, Germany and Belgium



55+ Important target group

- 1/3 of all Dutch tourists
- 54% stays in the Netherlands for their holiday



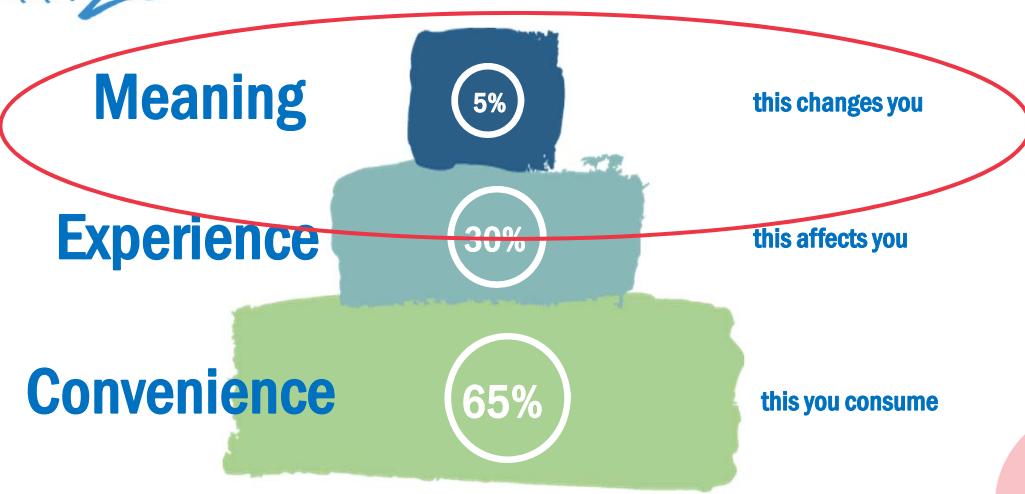


Looking for exclusive authentic experiences

- Rest and openness
- Art, culture and nature
- Terps, dikes, churches,
- salt marshes, mudflat walking
- historic towns
- local products and
- dark sky



Pyramid of needs in recreation and tourism





Centrum Holwerd: startpunt van persoonlijke en unieke Wadden-ervaringen

TOERISTISCHE-RECREATIEVE POSITIONERING HOLWERD AAN ZEE



Route to plan realization

- February 22 : Go decision Provincial Council
- finding answers to the final ifs and buts
- lobby on remaining funding (45 million)
- Manage ownership
- Maintenance fund for 10-15 years
- Purchase rest of the land (11 hectares of 43)
- Cooperation agreement with our partners
- 2024 final design & start permits



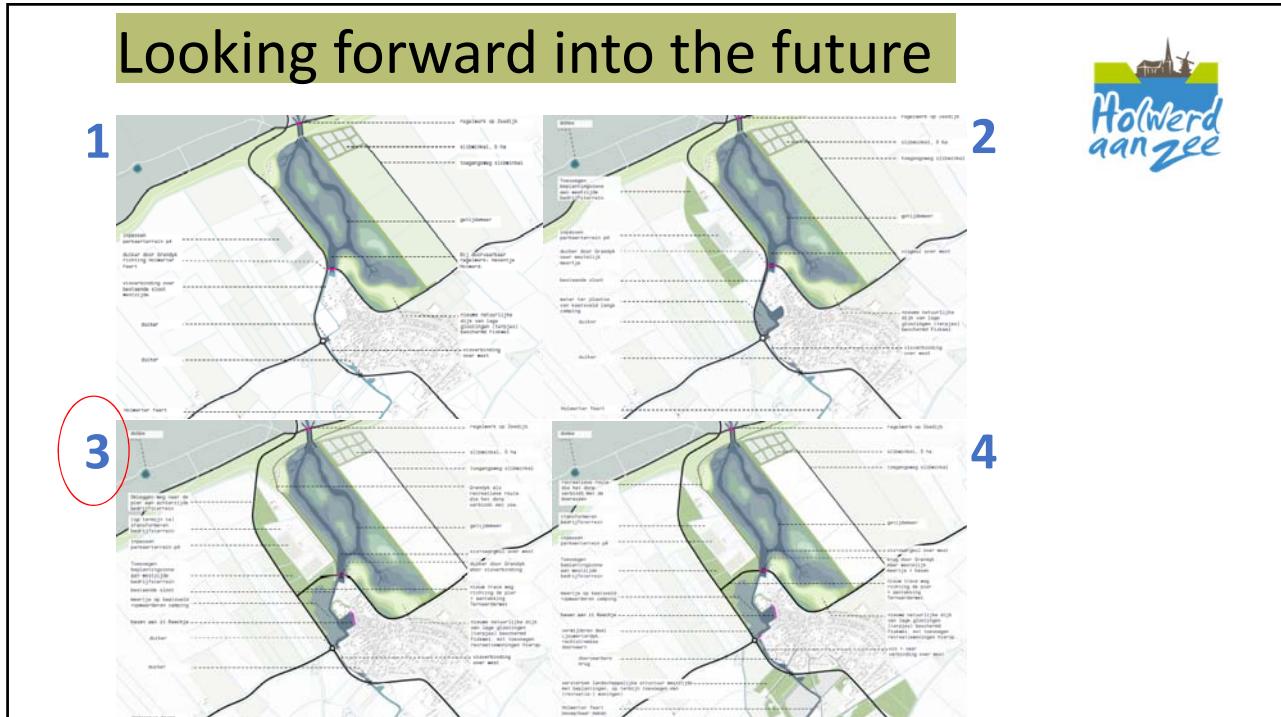


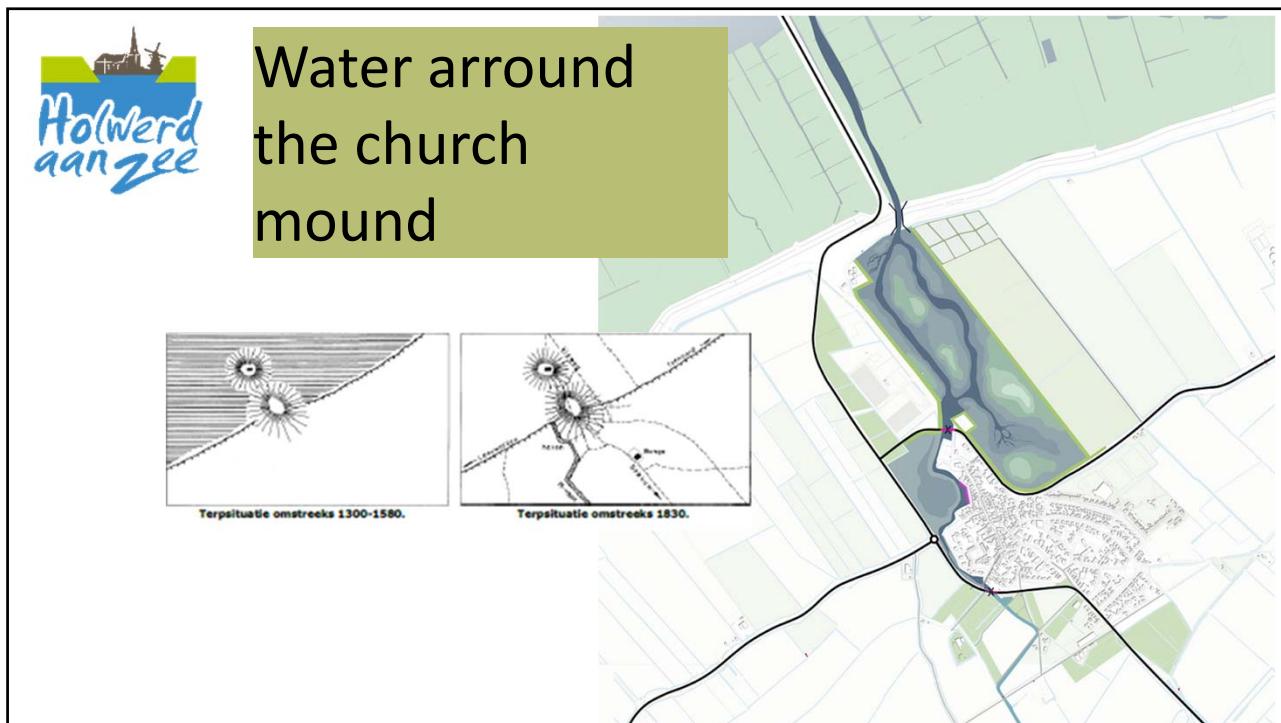
Ready in 2025? Not likely.



Start in 2025?













The Wadden area has 16 million fans

The image contains three maps. The left map shows a route from Bensersiel (Germany) to Holwerd (Netherlands), with a red circle highlighting a segment from Keulen to Düsseldorf, labeled "3 u. 29 min. 68 km". The middle map is a density map of Europe showing the number of fans in millions, with the Wadden Sea region shaded in dark blue at approximately 16 million. The right map shows a route from Bensersiel to Holwerd, with a red circle highlighting a segment from Arnhem to Düsseldorf, labeled "3 u. 42 min. 360 km".

Potential visitors

But, the hospitality business
is in the startup phase and we don't have
the numbers of Yellowstone Nat. Park

The image features a map of the Wadden Sea area, showing the coastline of the Netherlands, Germany, and Denmark. A legend on the map identifies various coastal features. To the right of the map are four photographs: a view of a cliff face in the Wadden Sea, a view of the Grand Canyon, a view of the Great Wall of China, and a sunset over a beach.

 **Wadden Coast area is not a destination, yet**



No connection between
entrepreneurs of Holwerd, Dokkum,
Ameland, Lauwersmeer area etc

 **High time for the spin-off**



Multiple stepping stones to achieve this target



Working together with our neighbors on our identity and positioning



Blige
Holwerd
Ternaard
Waaxens
Brantgum
Foudgum
Raard
Bornwird
Aalsum
Hiaure
Hantum
Dokkum



Candidate Unesco Biosphere Area Wadden Coast



United Nations
Educational, Scientific and
Cultural Organization



Man and
the Biosphere
Programme



Sustainable
Development
Goals

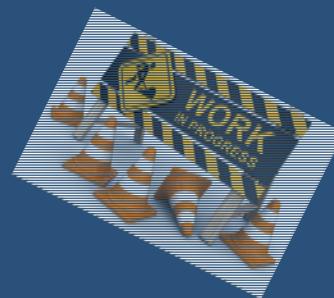


Man and nature reinforcing each other

Other UNESCO Man & Biosphere Reserves



Other major Opportunities





The Healthy Wadden Coast

Mindwalk Plus, 21 June 2019



United Nations
Educational, Scientific and
Cultural Organization

Man and
the Biosphere
Programme



Clean air





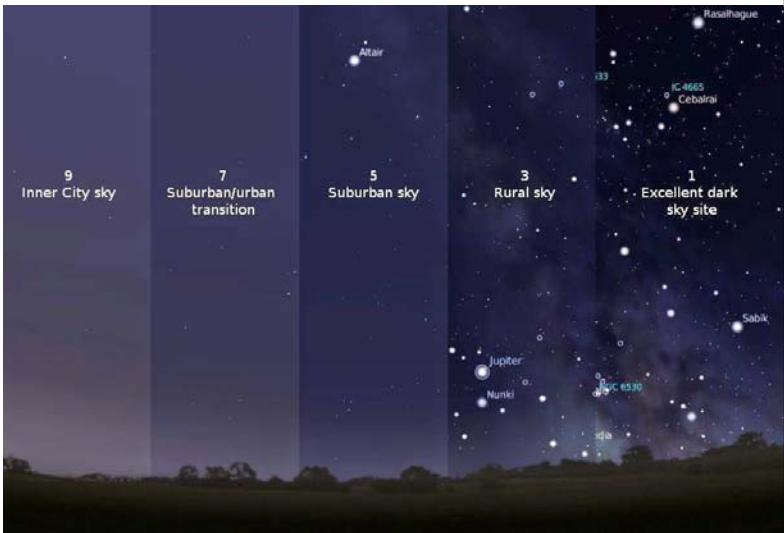


 **Investigating International 'Dark Sky Community' label**



- We do it together
- Part of identity
- USP / MAB
- Recognised IDA logo





The diagram illustrates the progression of light pollution from an inner city environment (dark purple) through a suburban/urban transition (medium purple), a suburban environment (light blue), and finally a rural environment (very light blue). The stages are numbered 9, 7, 5, 3, and 1 respectively. The diagram is set against a background of a dark night sky with various stars and constellations labeled, including Altair, Cebalrai, Raaihague, IAC-4665, Sabik, Jupiter, and Nunki.





Holwerd aan Zee

Recreational and ecological standing mast connection

Chances for:

- Water storage for dry summers
- Fish spawning grounds
- Connection to Blije?
- New hiking and biking trails
- Villages benefit



One Wadden Coast area

Dokkum on Sea

- Wadden gate
- Sea connection
- Admiralty City
- Connecting the hinterland with Dokkum





Maybe the biggest opportunity





United Nations
Educational, Scientific and
Cultural Organization



Man and
the Biosphere
Programme



Sustainable
Development
Goals



Facelift Pier



2 km highway through UNESCO World Heritage Wadden



The collage illustrates the 'Facelift pier Holwerd' project. It features several images: a logo for 'Holwerd aan zee' with a windmill icon; a wide-angle aerial view of the pier and surrounding land; a red car parked near a modern concrete structure; a pedestrian crossing sign; a long elevated walkway or bridge; a bus stop; and a parking area with directional signs. An orange banner at the bottom contains the text 'Concrete, steel, fences, bus stops, containers.....'



The image shows a coastal scene where a paved path leads from a grassy area towards the sea. In the distance, people are walking along a long, low-lying causeway or island. The sky is overcast. The 'Holwerd aan zee' logo is visible in the top left corner.

Transformation
to the Green Carpet of the Wadden Sea



Complete makeover

Pier as a place to recreate instead of just passing through



With facilities

Canoe ramp, landing stages, restaurants, exhibition hall etc. etc.





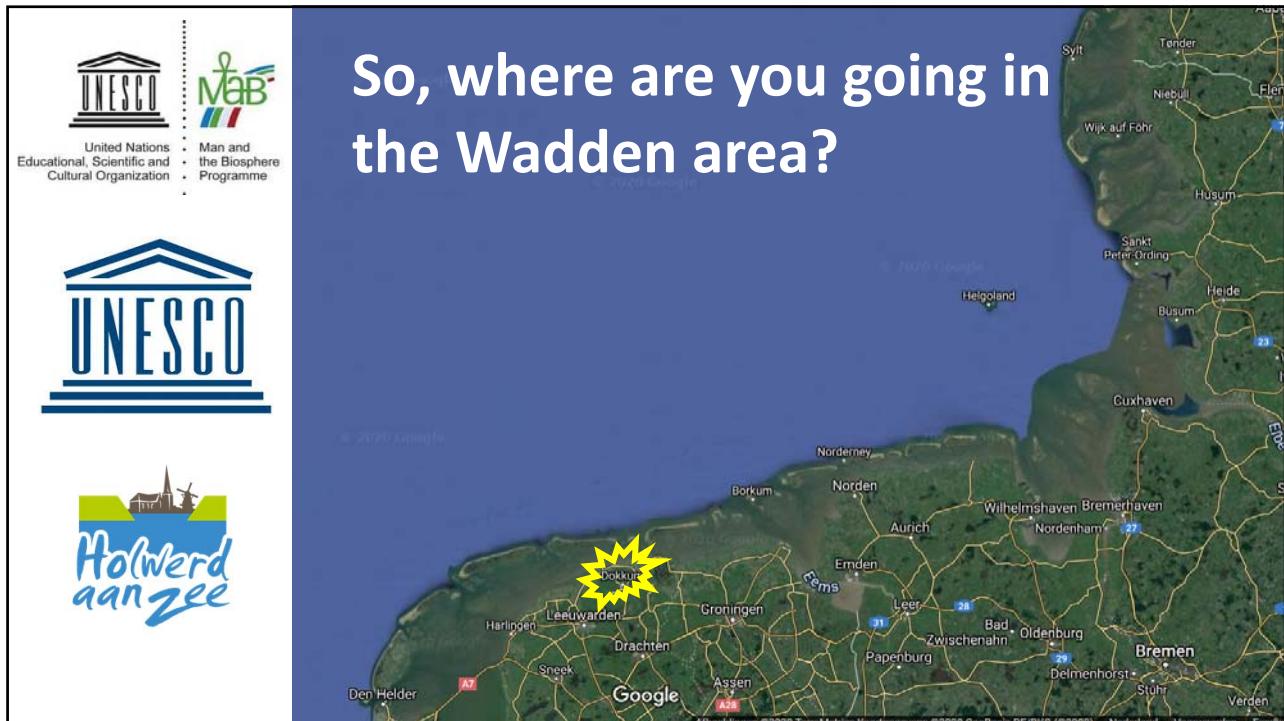
**Natural swimming
pool**

Looking over UNESCO World Heritage Site



**Complete make-over
New functions**

- 5 star hotel
- Restaurant with Michelin star
- Conference Centre
- Wellness Centre
- Top architecture
- Museum Wadden Art



Working on 8 of 17 Sustainable Development Goals VN

1 GJIN EARMODE	2 GJIN HONGER	3 GOODE SÜNENS	4 KVALITEITS-ÖNDERWIJS	5 LYKWEARDIGENS TUSKEN MAN EN FROU	6 SKJIN WETTER EN SANITÈRE FOARSJENNINGS
7 BETELBERE EN DUORSUME ENERZY	8 WEARDICH WURK EN EKONOMYSKE GROEI	9 YNDUSTRY, YNGVAASJE EN YNFRASTRUKTUER	10 MINDER UNGELIKENS	11 DUORSUME STEDEN EN MIENSKIPPEN	12 FERANTWURDE KONSUMPSJE EN PRODUKSJE
13 KLIAMAATAKSJE	14 LIBBEN YN IT WETTER	15 LIBBEN OP IT LÂN	16 FREDE, JUSTYSJE EN STERKE PUBLIKE TSJINSTEN	17 GEARWURKING OM DE DOELSTELLINGEN TE HELIJEN	

Holwerd aan Zee

GHENT UNIVERSITY

This section displays the 17 Sustainable Development Goals (SDGs) from a local perspective. It highlights which goals are being worked on in Holwerd aan Zee. Green checkmarks indicate active work on specific goals, while others are shown without a checkmark.



Questions?





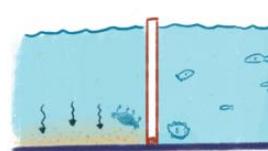
Regelwerk voorkomt slib probleem Mogelijk combinatie slibinvang?



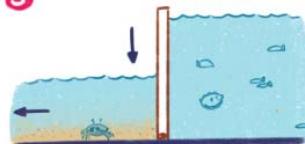
1 OPKOMEND TIJ



2 HOOG WATER



3 AFGAAND TIJ



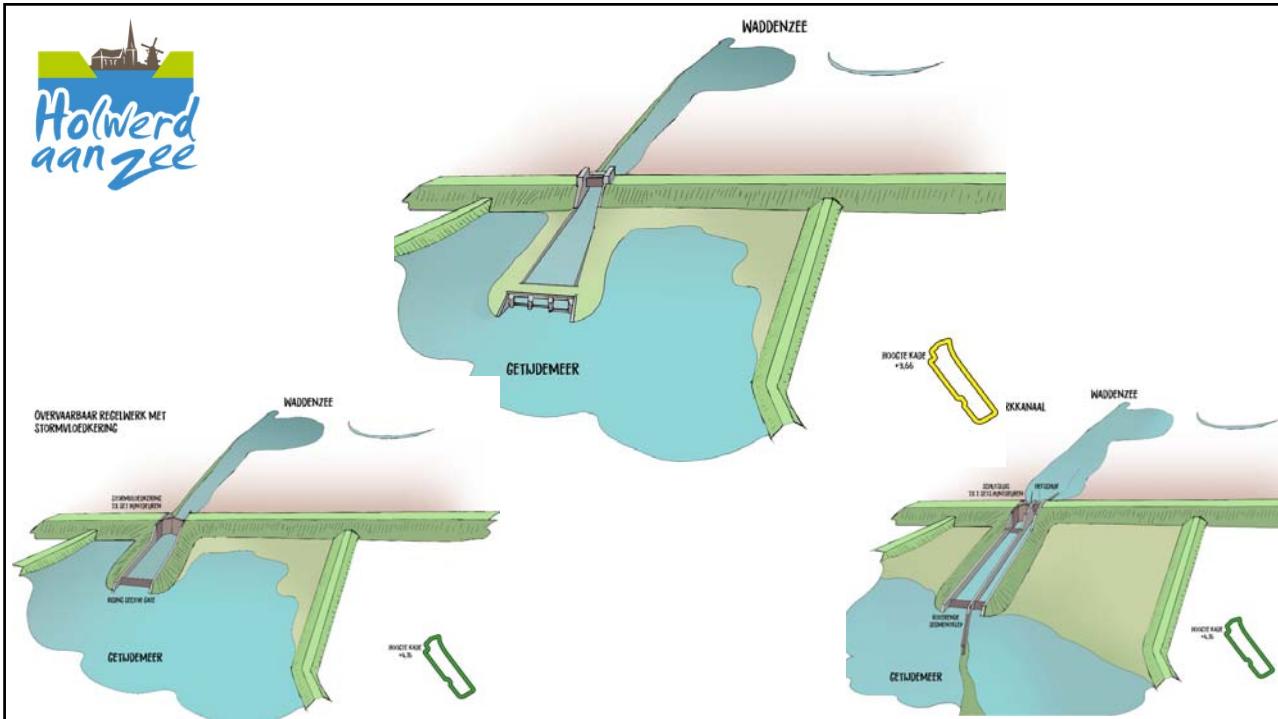
LAAG WATER 4



Slib is inmiddels van waarde.

Praktijk Lauwersoog. Opbrengst en bijdrage B&O





















UNESCO Biosphere Waddenkust





United Nations
Educational, Scientific and
Cultural Organization



Man and
the Biosphere
Programme



Sustainable
Development
Goals



Cooperation with our neighbors on our identity and positioning



Blije
Holwerd
Ternaard
Waaxens
Brantgum
Foudgum
Raard
Bornwird
Aalsum
Hiaure
Hantum
Dokkum



Candidate Unesco Biosphere Area Wadden Coast



United Nations
Educational, Scientific and
Cultural Organization



• Man and
the Biosphere
Programme



Sustainable
Development
Goals



Man and nature reinforcing each other



Huh, there was already a Unesco World Heritage, wasn't there?

- Wadden Sea is World Heritage since 2009
- World Heritage is the sea, the plates and salt marshes: pure nature ('biosphere')
- Focused on conservation and protection
- MAB is also about the part where the 'Man' lives, works and recreates



United Nations
Educational, Scientific and
Cultural Organization



Man and
the Biosphere
Programme





Global network

- 738 famous areas
- In 134 countries
- More than 45 years of experience
- Learning and benefiting
- UNESCO is a strong brand



United Nations
Educational, Scientific and
Cultural Organization



Man and
the Biosphere
Programme



No Threats Just opportunities

- MAB does not provide any additional restrictions for the area
- UNESCO logo is an opportunity, if supported by residents and entrepreneurs
- Reinforces identity and the story of this area
- Helps with future (European) subsidy applications



United Nations
Educational, Scientific and
Cultural Organization



Man and
the Biosphere
Programme





UNESCO Biosfeer Waddenkust



United Nations
Educational, Scientific and
Cultural Organization



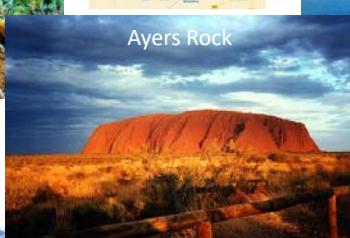
Man and
the Biosphere
Programme

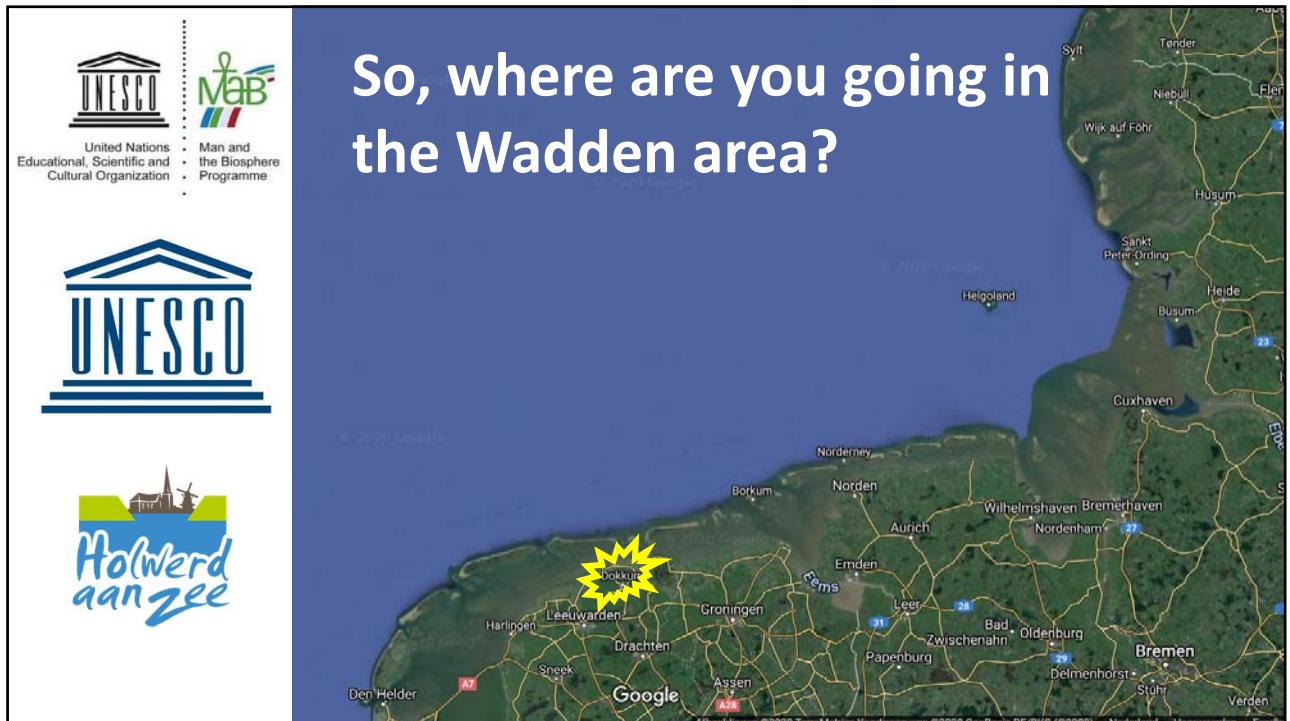
Planning

- Exploration MAB Status (in progress)
- Spring 2021 MAB symposium
- Candidate UNESCO MAB
- Determine identity and area branding
- Drafting request 2023
- 2025 granting MAB status



Other UNESCO Man & Biosphere Reserves







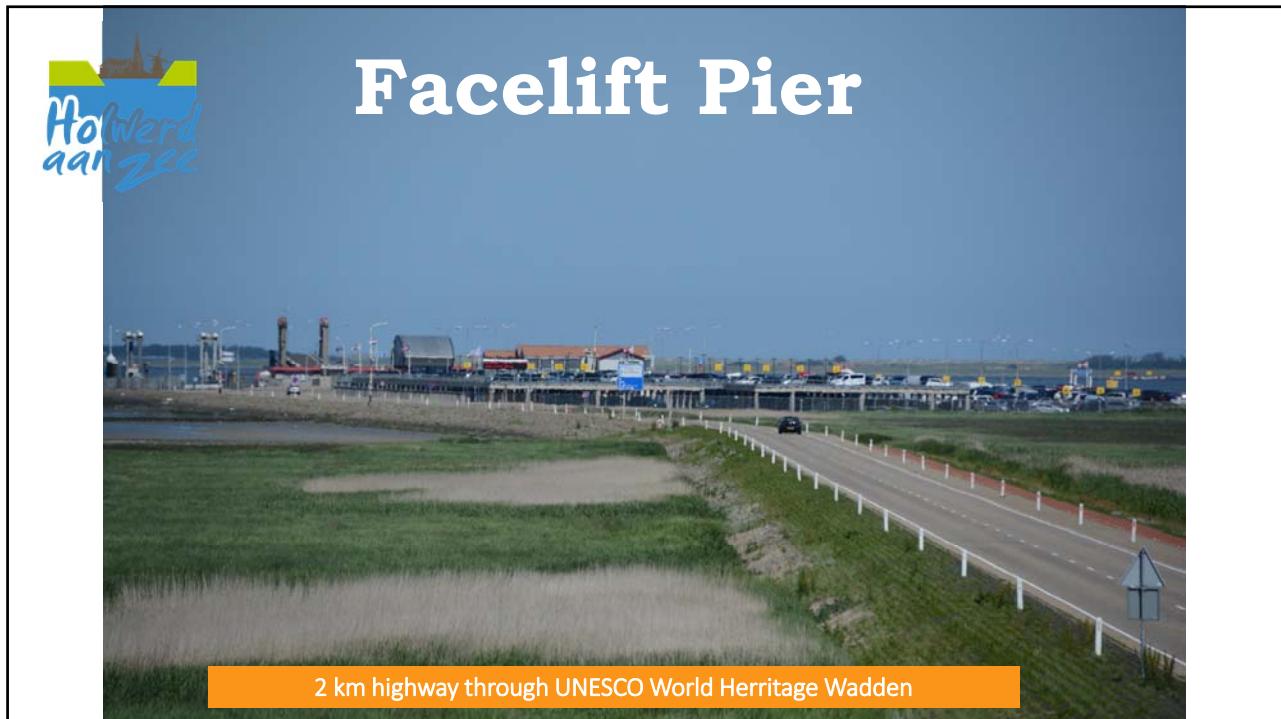
 Maybe the biggest opportunity



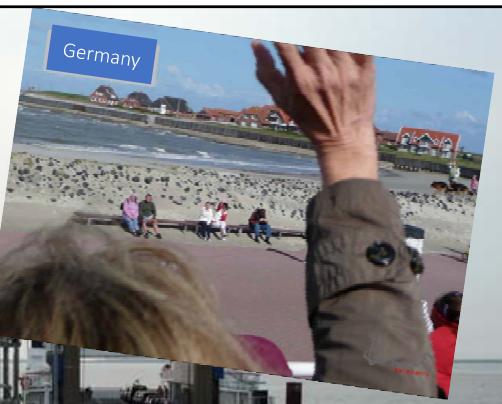
United Nations Educational, Scientific and Cultural Organization

• Man and the Biosphere Programme

Sustainable Development Goals



Facelift Pier



Cars glisten in the sun





To be seen from miles
away



Dark Sky???

Every year thousands of visitors already

WdB fotografie @wilfred_bruin 6d Nog een beetje van gisterenavond, de binnenkomst van MS Oerd #Holwerd @wpd_ameland @vvvameland

andreas @andreas May 16 Reprise to @tiket @fryskiegearan ... Ja, wat was de lucht mooi gisteravond ☀️

Meteo-Nederland @SevereWe... 3d Zonsopgang op @AntarRes @Franka75 ... Zonsopgang bij Holwerd vanochtend, was bitterkoud

Meteo-Nederland @SevereWe... 3d Sunset near Holwerd, Netherlands this evening #StormHour @StormHour

Foto's #poollicht #noorderlicht vanaf de Pier bij Holwerd van rond 1:30 !!!!
Foto - 14 maart 2010

Pier Amelend

Two piers one project

Holwerd aan Zee





Complete makeover

Pier as a place to recreate instead of just passing through



Complete makeover

Pier as a recreation area



TU Delft



With facilities

Canoe ramp, landing stages, restaurants, exhibition hall etc. etc.



Complete make-over New functions

- 5 star hotel
- Restaurant with Michelin star
- Conference Centre
- Wellness Centre
- Iconic architecture
- Museum Wadden Art









14 hours a day / 6 days a week
8 million euros a year





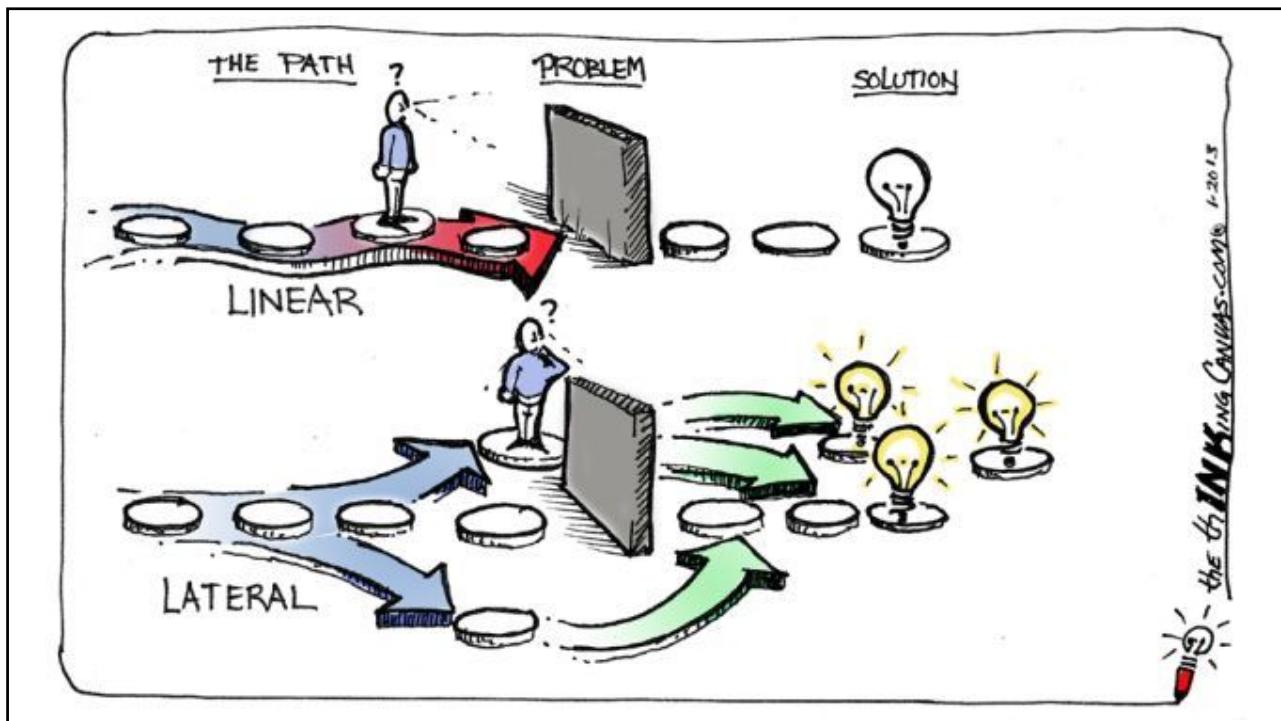
Working on 8 of 17 Sustainable Development Goals VN (Ghent University)

1 GJIN EARMODE	2 GJIN HONGER	3 GOODE SÜNENS	4 KVALITEITS-ÖNDERWIJS	5 LYKWEARDIGENS TUSKEN MAN EN FROU	6 SKJIN WETTER EN SANITÈRE FOARSJENNINGS
7 BETELBERE EN DUORSUME ENERZY	8 WEARDICH WURK EN EKONOMYSKE GROET	9 YNDUSTRY, YNOVAASJE EN YNFRASKRUTUE	10 MINDER UNGELIKENS	11 DUORSUME STËDEN EN MIENSKRIPPE	12 FERANTWURDE KONSUMPSJE EN PRODUKSJE
13 KLIAMAATAKSJE	14 LIBBEN YN IT WETTER	15 LIBBEN OP IT LÄN	16 FREDE, JUSTYSJE EN STERKE PUBLIKE TSJINSTEN	17 GEARWURKING OM DE DOELSTELLINGEN TE HELJEN	
					
					



Only possible if we start thinking and working differently

- ⌚ Area-based
- ⌚ Integral & cross sectoral
- ⌚ Co-creative (top-down meets bottom-up)
- ⌚ In a coalition of coalitions



Holwerd aan zee

Requires innovation and guts!

WIJ MAKEN NEDERLAND!

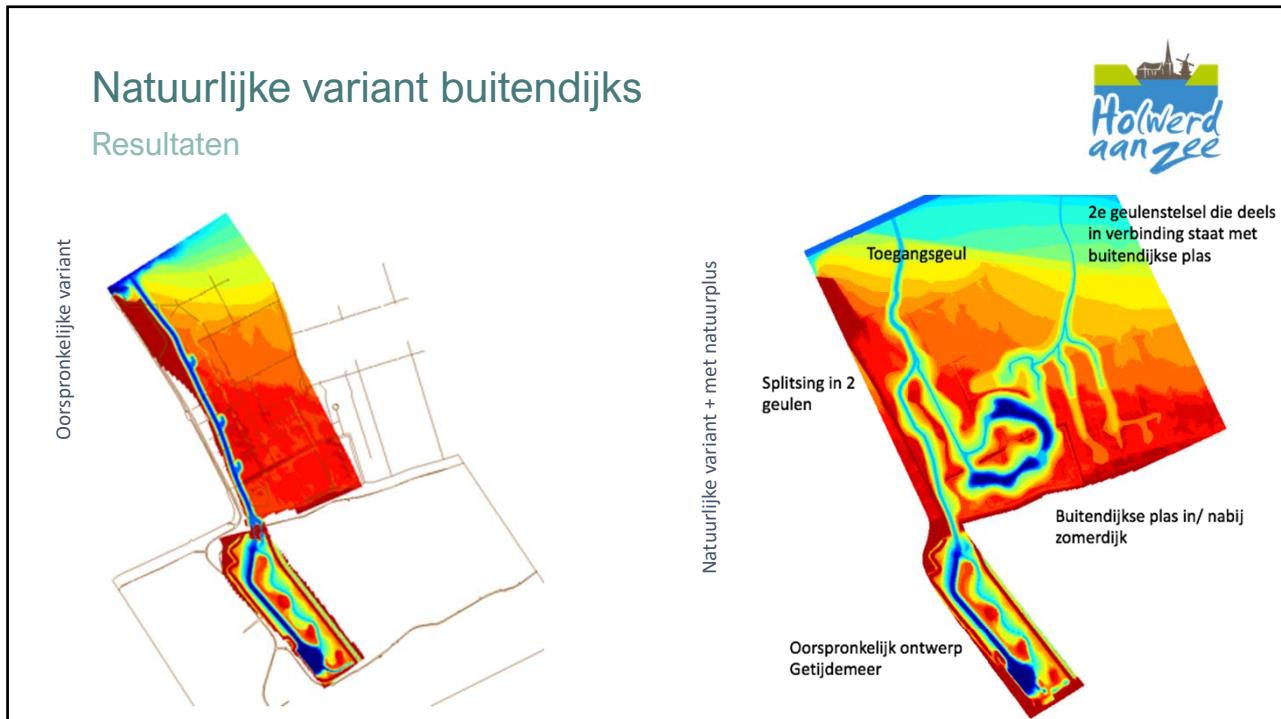


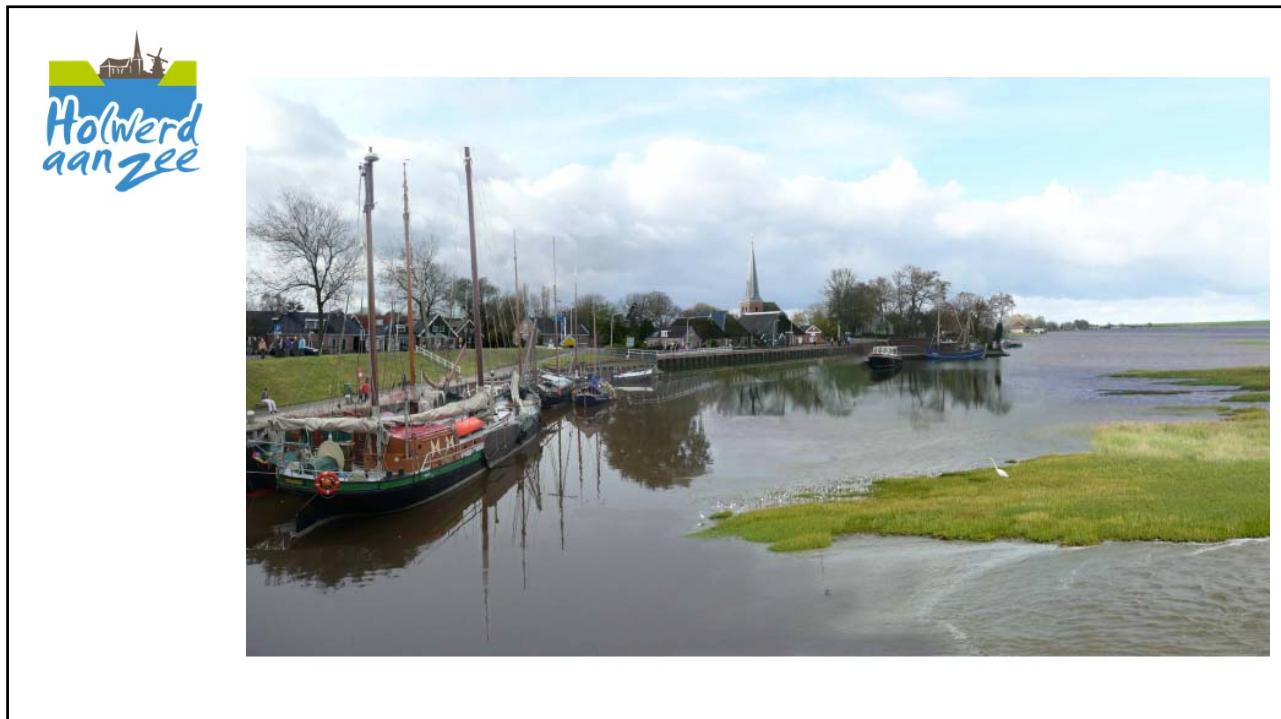
UNESCO
United Nations Educational, Scientific and Cultural Organization

MAB
Man and the Biosphere Programme

Sustainable Development Goals







Boulevard

experience maritime atmosphere

New transport concepts

Green seal

- Sailing from the village center
- Crossing the Wadden Sea in 15 minutes
- Clean, quiet
- Short waiting times
- Real-time info (Wadden awareness)

Holwerd aan Zee



Problemen stapelen op zoals onder andere



- ❖ Klimaatverandering
- ❖ Stijgende zeespiegel
- ❖ Bescherming en ontwikkeling natuurwaarden
- ❖ Vermarktung Unesco
- ❖ Criteria
- ❖ Experimenteertruimte
- ❖ Internationale positie
- ❖ Havens
- ❖ Circulaire economie
- ❖ Circulaire landbouw
- ❖ Energietransitie
- ❖ Druk op leefbaarheid
- ❖ Omgevingswet
- ❖ Bestuurlijke vernieuwing
- ❖ Regionale samenwerking (gemeenten – provincie –Rijk-Europa)
- ❖ Knellende begrotingen



Zoveel opgaven, ambities... een knellend korset



- ❖ Vele opgaven
- ❖ Sectorale werkwijze
- ❖ Ruimtebeslag
- ❖ Knellende begrotingen
- ❖ Capaciteit mensen
- ❖ Grenzen aan groei
- ❖ Grondstof tekort
- ❖ Etc etc etc...





Regio Deal De Wadden Delta van 2100

The first Regio Deal where future-proof agriculture, biodiversity, livability, climate adaptation, CO2 reduction, ecotourism, and governance innovation come together in a co-creative and adaptive way in a climate-proof coastal landscape. 2100 proof, and that from the bottom up!

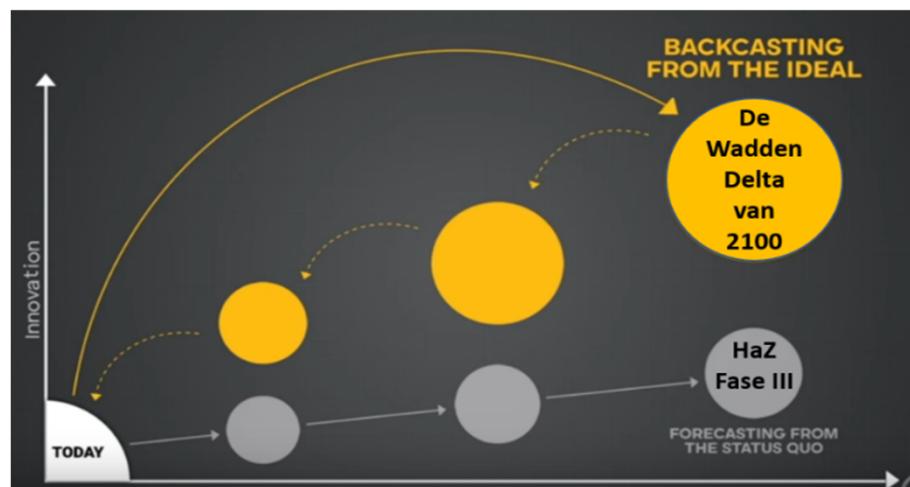
The Region Deal as a stepping stone to a Green Deal

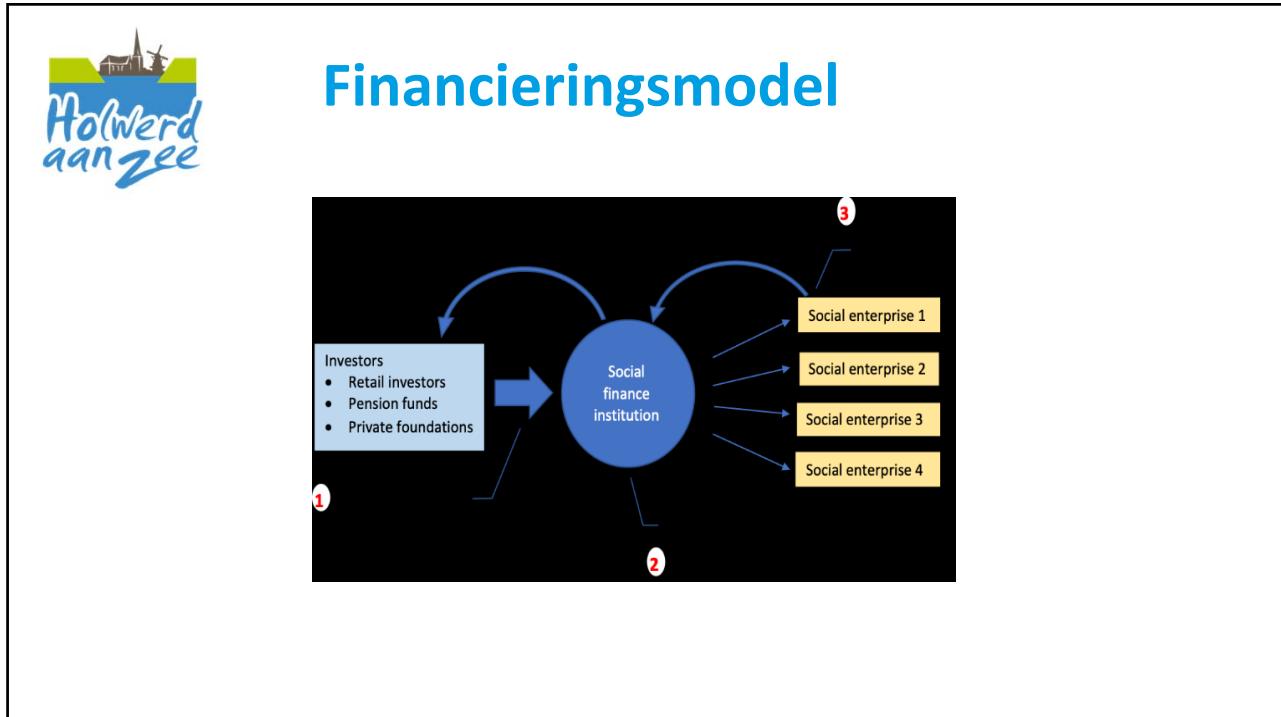


Timmermans: "Change will only happen if it happens bottom up."



Backcasting







Inhoud Regio Deal

- Samenvatting (tevens twopager)**
- Maak kennis met De Wadden Delta van 2100.....**
 - Grensregio aan de rand van het Wad.....
 - Het verhaal van het Landschap
 - Cultuurhistorische waarden van internationale betekenis ...
 - Agrarische identiteit
 - Dark Sky



Inhoud Regio Deal

- Reinventing The Netherlands!.....**
 - Het streefbeeld.....
 - Forget about Hansje Brinker!
 - Co-creatie als fundament
 - Coalitie van coalities.....
 - Backcasting
 - Het DNA van Holwerd aan Zee



Inhoud Regio Deal

- Lokale oplossingen voor globale uitdagingen.....**
 - Unesco Biosfeergebied Waddenkust (kandidaat)
 - Sustainable Development Goals.....
 - Nieuwe iconen.....
 - Roadmap
 - Brede welvaart
 - Impactanalyse en lerend evalueren
 - Visitekaartje van Fryslân, voor de BV Nederland



Inhoud Regio Deal

- Place-based governance**
 - Het Huis van Thorbecke
 - Social Finance als financieringsmodel
 - Democratische legitimiteit
 - De organisatie.....
 - Programmabureau van en voor het gebied
 - Bestemmingsmanagement.....



Inhoud Regio Deal

- Holwerd Coast Academy**
 - For Applied Climate Adaptation & Mienskip
 - EU Mission 'Adaptation to Climate Change'.....
 - Internationaal kennisnetwerk



Inhoud Regio Deal

- Financieringsstrategie.....**
 - Financieringsbehoefte als opmaat
 - Europese subsidies
 - Green Deal.....
 - Groeifonds.....



Social costs & benefits analysis cost-benefit ratio of 1.5 (2022)

Without passage for shipping / With passage for shipping

Baten/effecten	Without passage for shipping	With passage for shipping
Netto opbrengst kleiverkoop	1,22	1,22
Exploitatiebaten verblijfsrecreatie	79,72	80,79
Exploitatiebaten dagrecreatie	13,23	13,23
Recreatieve belevingsbaten	6,33	6,33
Werkgelegenheidsbaten	18,45	18,66
Woongenotsbaten landschapsverfraaiing	9,08	18,15
Baten van vermeden leegstand	12,36	12,36
Baten van voorzieningenbehoud	16,83	16,83
Erfgoedbaten	3,68	3,68
Biodiversiteitsbaten	5,25	5,25
Landbouwopbrengsten	0,00	0,00
Totale baten	166,14	176,50
Saldo (baten - kosten)	53,85	60,82
Ratio (baten / kosten)	1,48	1,53

* deze post is bij het VKA in mindering gebracht bij het planonderdeel getijdemeer.



Cost-benefit ratio could be 1.8 as well (MKBA 2022)

mkba sensitivity analysis
additional supply of silt

Tabel 4.5 Gevoeligheid voor de omvang van het baggervolume

Contante waarden in miljoenen euro's bij een discontovoet voor kosten van 1,6% en voor baten van 2,25% over een periode van 103 jaar en prijspeil 2021	Natuurlijke variant Zonder varen	Natuurlijke variant Met varen
Originele uitkomsten (baggeren 32.000 m ³ /jaar à EUR 9,95/m ³ & kleiverkoop 19.200 ton à EUR 15/ton)		
Kosten getijdemeer	31,16	31,16
Netto opbrengst kleiverkoop	1,22	1,22
Saldo (baten - kosten van het hele plan)	53,85	60,82
Ratio (baten / kosten van het hele plan)	1,48	1,53
Nieuwe uitkomsten bij ondergrenzen (baggeren 16.000 m ³ /jaar à EUR 6,00/m ³ & kleiverkoop 9.600 ton à EUR 12,50/ton)		
Kosten getijdemeer	20,41	20,41
Netto opbrengst kleiverkoop	-5,17	-5,17
Saldo (baten - kosten van het hele plan)	54,07	61,04
Ratio (baten / kosten van het hele plan)	1,51	1,56
Nieuwe uitkomsten bij bovengrenzen (baggeren 100.000 m ³ /jaar à EUR 9,95/m ³ & kleiverkoop 60.000 ton à EUR 30/ton)		
Kosten getijdemeer	63,87	63,87
Netto opbrengst kleiverkoop	58,70	58,70
Saldo (baten - kosten van het hele plan)	103,53	110,51
Ratio (baten / kosten van het hele plan)	1,86	1,89



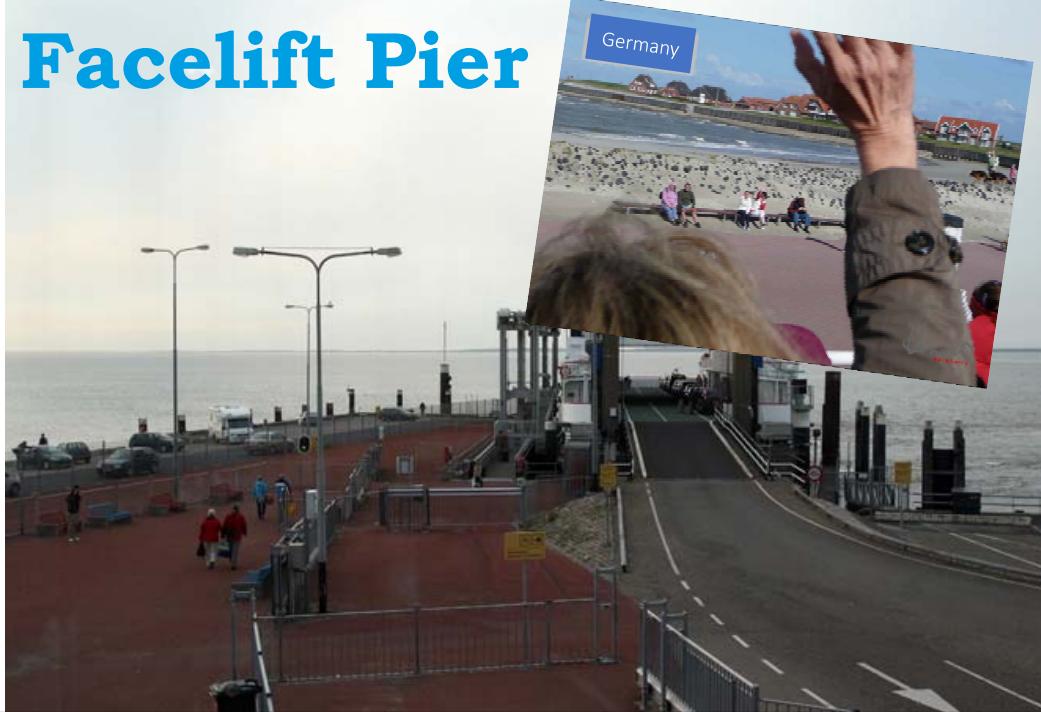
MKBA has a cost-benefit ratio of 1.5 (MKBA 2022)

Tabel 4.2 MKBA-uitkomsten nader gedetailleerd

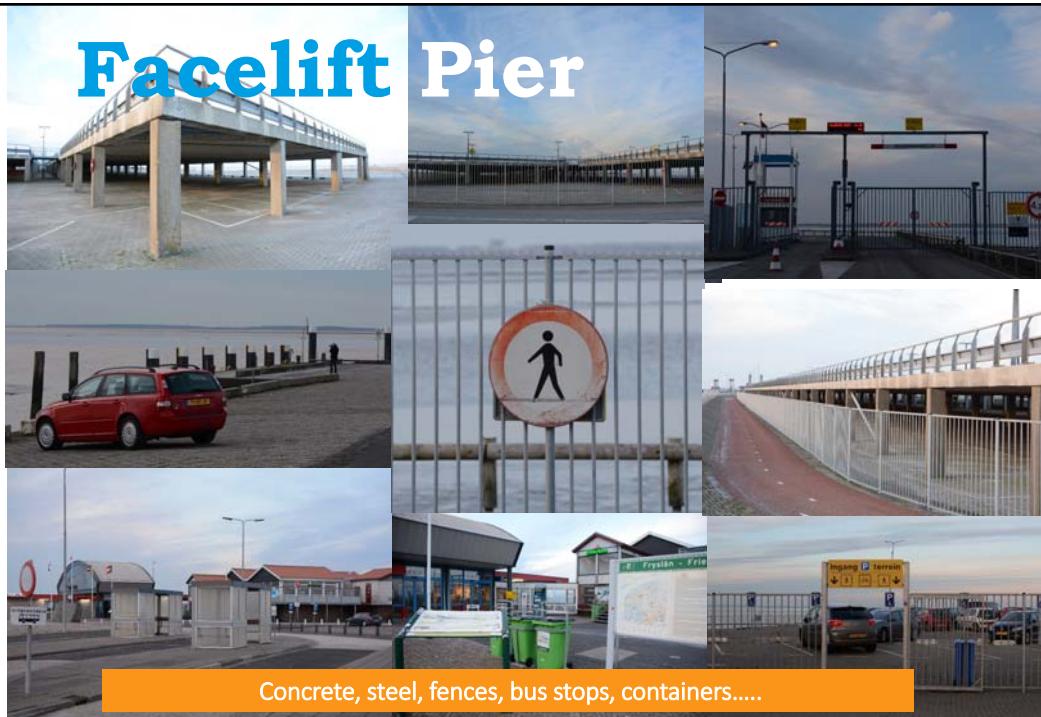
Contante waarden in miljoenen euro's bij een discontovoet voor kosten van 1,6% en voor baten van 2,25% over een periode van 103 jaar en prijspeil 2021	Natuurlijke variant Zonder varen	Natuurlijke variant Met varen
Kosten		
Vaarrecreatie	38,90	40,24
Getijdemeer	31,16	31,16
Vismigratie	8,13	8,13
Hoogwaterveiligheid	29,85	31,90
Oppervlaktewater	1,91	1,91
Kabels en leidingen	4,51	4,51
Recreatievoorzieningen	2,62	2,62
Overige objecten	8,84	8,84
Risicoreservering & financiering	11,27	11,27
Eenmalige kleiverkopen*	-24,91	-24,91
Totale kosten	112,29	115,67



Facelift Pier



Facelift Pier





Cars glisten in the sun



**To be seen from miles
away**



Dark Sky???

A photograph of a sunset over a body of water. In the foreground, the silhouette of two people standing on a pier is visible against the bright sky. The sky is a gradient of orange, yellow, and blue. In the top left corner, there is a logo for "Holwerd aan Zee" featuring a stylized windmill and the text in blue and white.

Every year thousands of visitors already

WdB fotografie @wifred_bruyn 6d Nog een beetje van gisterenavond, de binnenkomst van MS Oerd #Holwerd @wpd_ameland @vvvameland

andrea @enzelied May 16 Replying to @stikie @FryskeGeo an Ja, wat was de lucht mooi gisteravond

Meteo-Nederland @SevereWe... 3d Zonsopgang bij Holwerd vanochtend, was bitterkoud

Foto's 'poollicht' #noorderlicht vanaf de Pier bij Holwerd van rond 1:30 !!!!

JANKoopmans @JANKoopmans 16 Jul 2012 Sunset op buitendijk Wad @DZK_dWadden @Waddenpost @waddenwheels @DSunsets @waddentogtogen @mooieuuchten

Meteo-Nederland @SevereWe... 3d Sunset near Holwerd, Netherlands this evening #StormHour @StormHour



Pier Amelend

Two piers one project



Place with huge potential



Holwerd aan zee

Complete makeover

Pier as a recreation area

TU Delft

The collage illustrates the transformation of a pier into a recreation area. It features a wooden pier extending into a body of water, with a person standing on it. Inset images show a beach with people, a close-up of a person on the pier, and a field of yellow flowers. The TU Delft logo is in the bottom right corner.

Holwerd aan zee

Higher experience value

The collage shows a group of people gathered on a pier, with a view of the water and land in the background. The TU Delft logo is in the bottom left corner.



Holwerd aan Zee

More natural dynamics

Larger water storage area
Less dredging of fairway H-A



Could save a lot of money

14 hours a day / 6 days a week
8 million euros a year



Holwerd aan Zee

**Niets doen kost
150 – 260 miljoen**

Uit MKBA CE Delft ('18) Holwerd aan Zee:

Tabel 1 – Welvaartseffecten krimp

Scenario	Primos		Provincie	
	Laag	Hoog	Laag	Hoog
Holwerd	15	25	18	26
Blije (F) en Tussen Dokkum en Holwerd (D)	22	36	24	48
Overig krimpdorpen*	110	175	125	75
Totaal NO-Fryslân boven Dokkum (afgerond)	150	235	165	260

Tabel 2 – Raming kosten krimp op basis van sloop en aankoop leegstaande woningen per scenario

	Primos		Provincie	
	Laag	Hoog	Laag	Hoog
Holwerd	6	10	7	11
Blije (F) en Tussen Dokkum en Holwerd (D)	9	15	10	20
Overige krimpdorpen	45	70	50	75
Totaal NO-Fryslân (afgerond)	60	95	70	105



