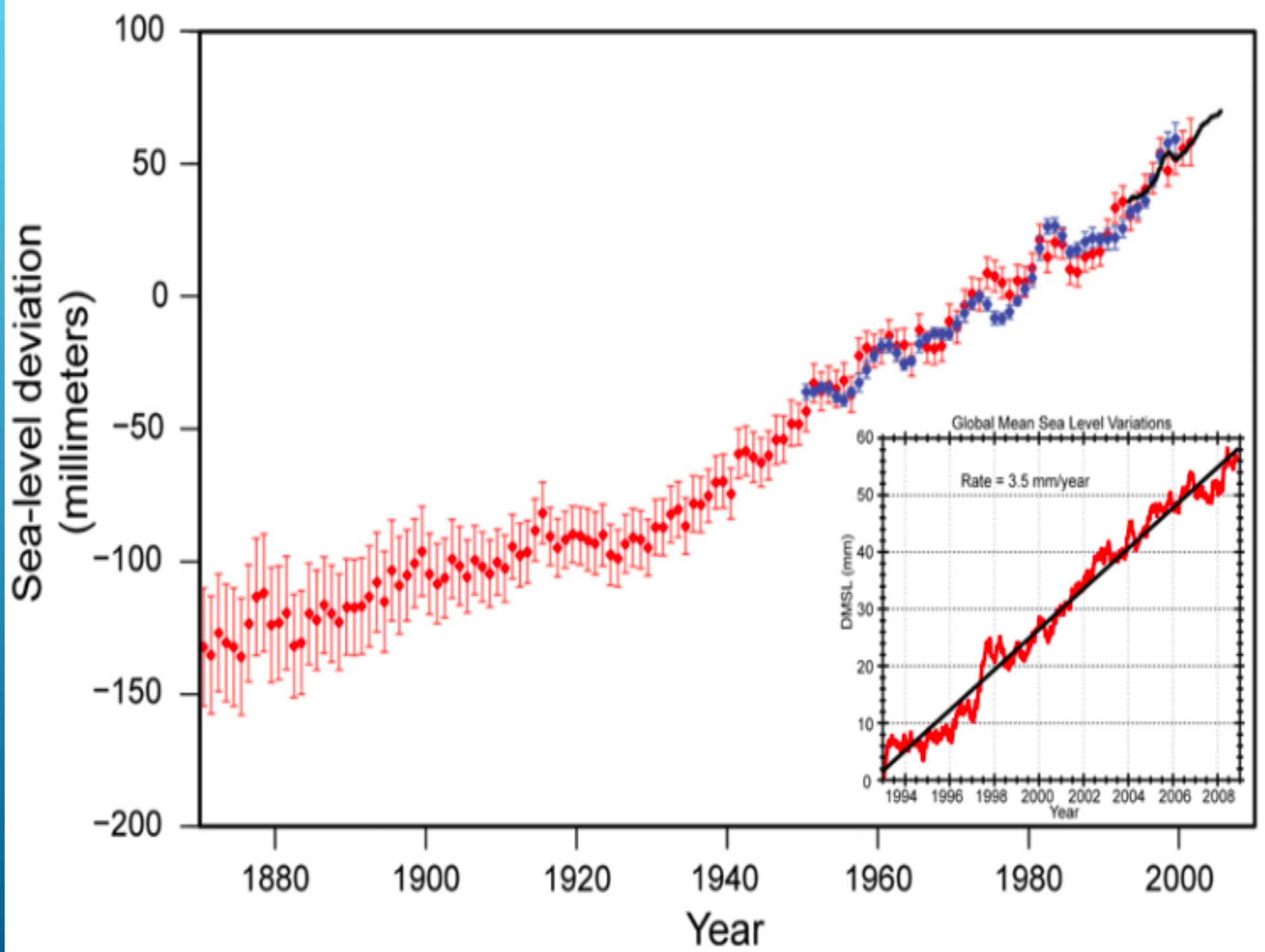
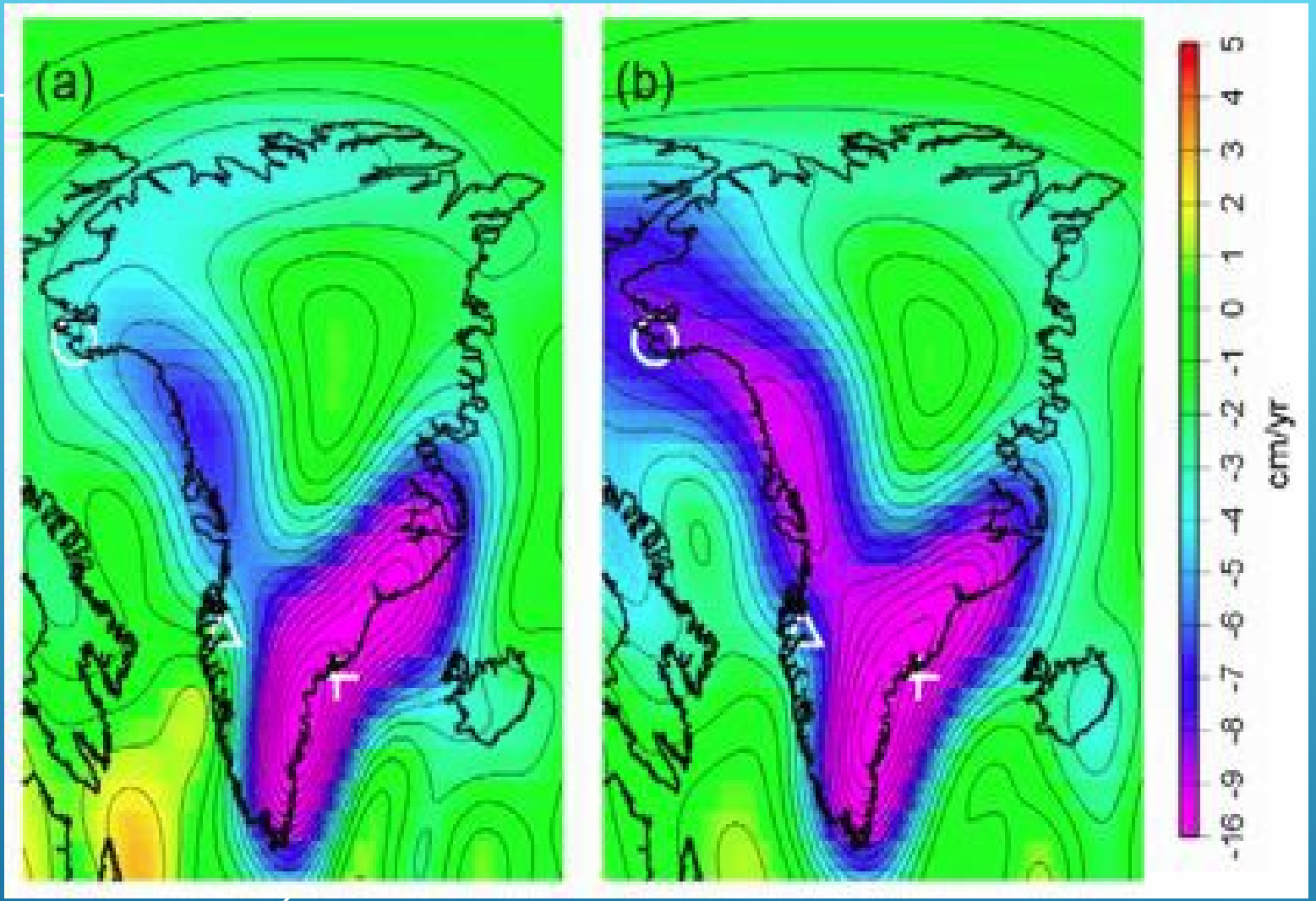
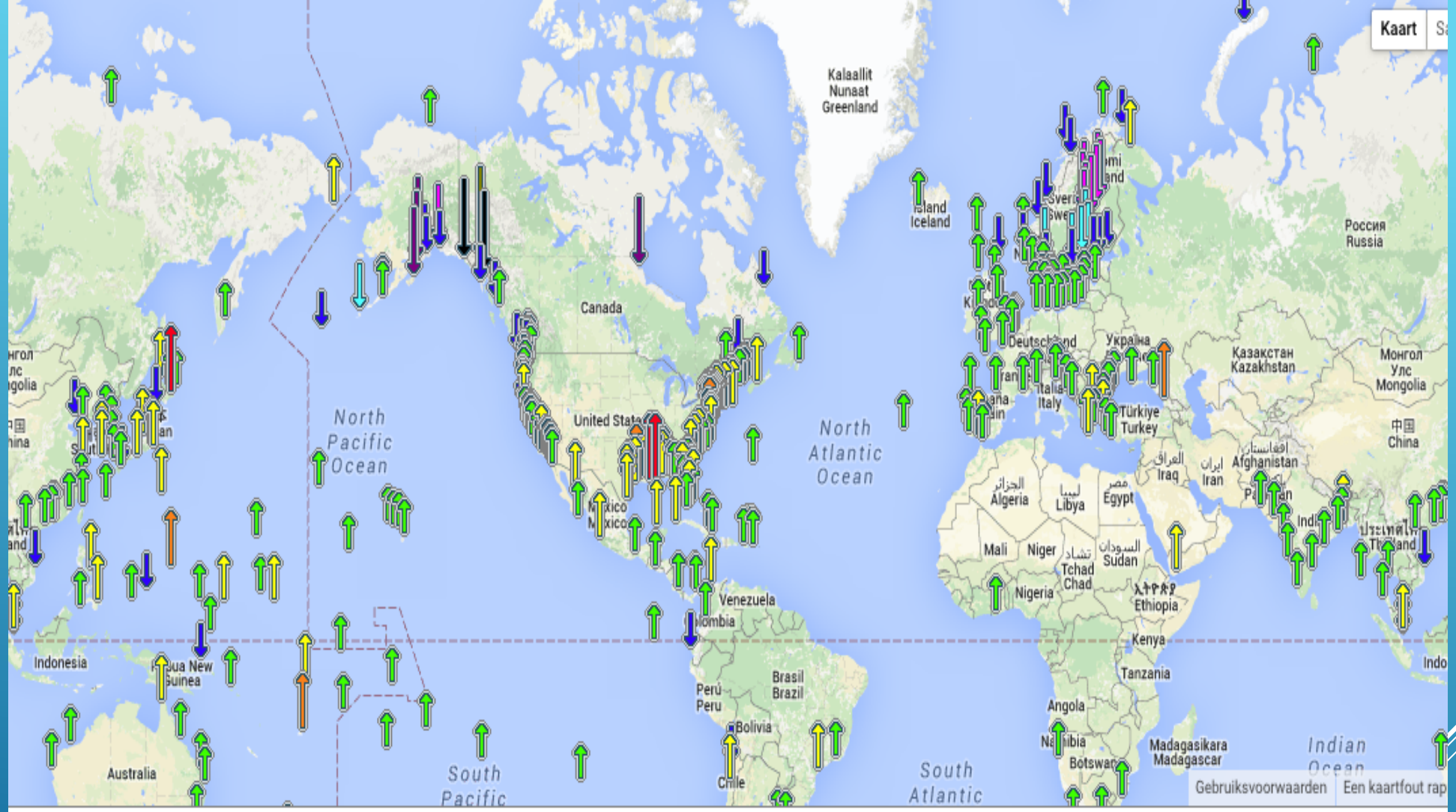
SALFAR – SALINE FARMING

Innovative Agriculture in Times of Climate Change and Sea Level Rise


Sea-level deviation (millimeters)
100
50
0
−50
−100
−150
−200
1880
1900
1920
1940
1960
1980
2000
Year
Global Mean Sea Level Variations
Rate = 3.5 mm/year
DMSL (mm)
60
50
40
30
20
10
0
1994
1996
1998
2000
2002
2004
2006
2008
Year



Satellite-measurements of the Greenland ice-mass loss
(Kahn et al., GRL 2010)
(a) Feb 2003 - Feb 2007; (b) Feb 2003 - Jun 2009



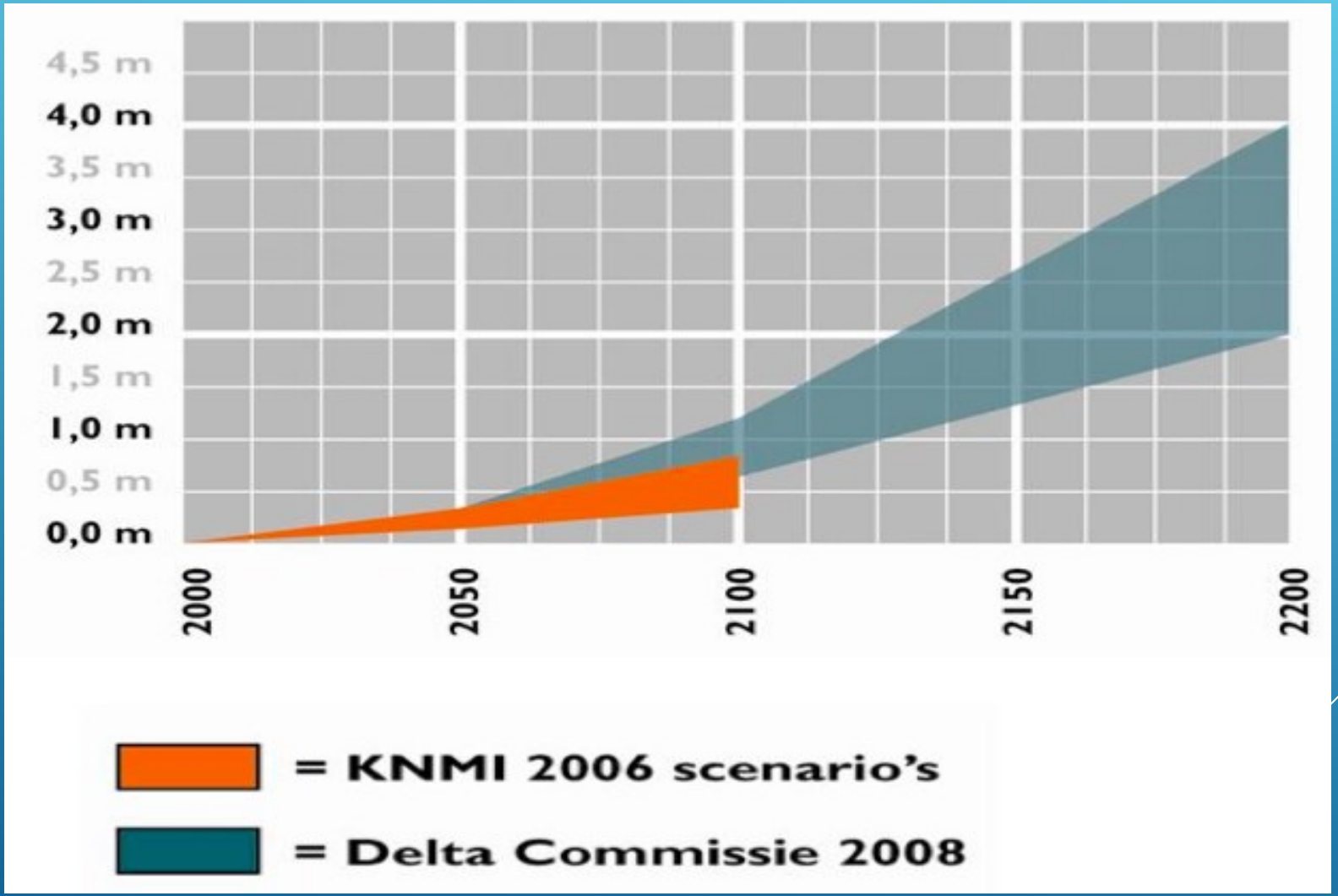
ustrates regional trends in sea level, with arrows representing the direction and magnitude of change. Click on an arrow to access additional information about that station.

Sea Level Trends

mm/yr (feet/century)

15 to 21 (5 to 7)	6 to 9 (2 to 3)	-3 to 0 (-1 to 0)	-12 to -9 (-4 to -3)
12 to 15 (4 to 5)	3 to 6 (1 to 2)	-6 to -3 (-2 to -1)	-15 to -12 (-5 to -4)
9 to 12 (3 to 4)	0 to 3 (0 to 1)	-9 to -6 (-3 to -2)	-18 to -15 (-6 to -5)

Sea-level rise projection



FUTURE AGRICULTURE?

- Progressive sea level rise
- More frequent flooding
- Land-degradation due to increased soil salinity

POSSIBLE SOLUTIONS

- Try new saline farming methods
- Test the adaptation potential of traditional crops
- Cost benefit analysis of coast protection and water-management practices
- Develop viable and sustainable alternatives, such as saline agriculture and the development of new food product chains

FIELD EXPERIMENTS

OPEN AIR LAB

SEAWATER IRRIGATION

IRRIGATION SYSTEM

IRRIGATION SYSTEM DETAILS 01

IRRIGATION SYSTEM DETAILS 02

RESULTS 01 CARROTS

RESULTS 02 POTATOES

RESULTS 03 VARIOUS

IRRIGATION SYSTEM DETAILS

SMALL EXPERIMENTS

Vijf vormen van “zilte teelt”

- Zout bestendig maken van bestaande “zoet water” gewassen;
- Verdere teelt en markt ontwikkeling van typisch zilte gewassen zeekraal, zeekool etc…
- Culinaire, recreatieve en educatieve locale voedsel voorziening;
- Schelpdieren
- zeewieren

Soil degradation

Region	Area (10^6ha)
Australia	84.7
Africa	69.5
Latin America	59.4
Near and Middle East	53.1
Europe	20.7
Asia and Far East	19.5
Northern America	16.0

WHY SALINE AGRICULTURE?

SaltFarm Texel
Tested on Texel

-Saline agriculture-

why are we doing it?

water

- Shortage of fresh water
- 70% water use by agriculture
- Produce more food with less water

salinization

- 1.5 billion ha salt affected
- Plus 3 ha per minute
- $27 billion crop salt damage