

Ad Hoc Expert Meeting on

**Climate Change Impacts and  
Adaptation: A Challenge for  
Global Ports**

29 – 30 September 2011

**Preparing for the Worst – the Shipowners’  
Perspective**

Presentation by

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# Preparing for the Worst – the Shipowners’ Perspective

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# Presentation Outline

- ➔ Why shipping (and ports) are important
- ➔ Possible implications for global shipping (*if dangerous climate change seriously affects ports – ships and ports will need to adapt!*)
- ➔ Financing climate change mitigation

# International Chamber of Shipping

- ➔ International trade association for merchant shipowners
- ➔ ICS represents all sectors and trades, 80% world fleet, national shipowners' associations from 36 countries
- ➔ ICS represents industry at intergovernmental bodies that impact on shipping, including IMO and UNFCCC





Bulk carriers



Tankers



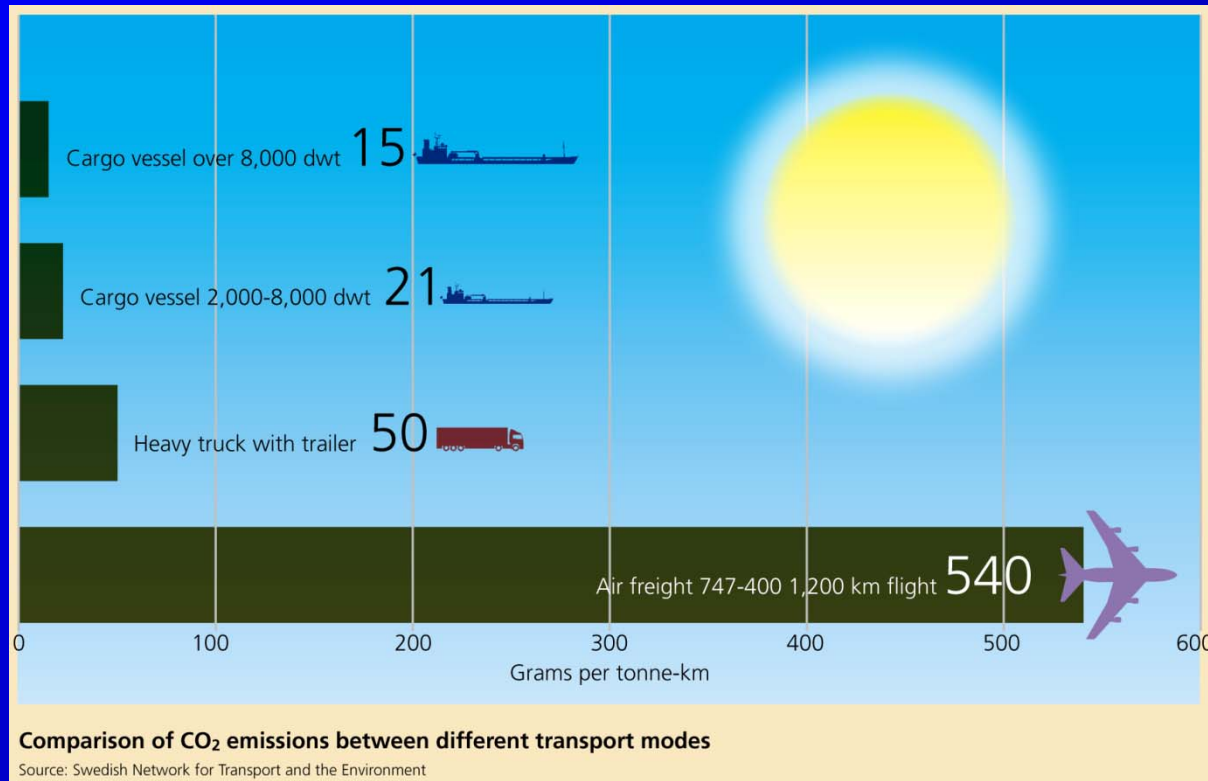
Passenger ships



Containerships

ICS represents all ship types and trades and  
80% of world merchant fleet

# Shipping is most CO<sub>2</sub> efficient form of transport





# 90% of World Trade Carried by Ships



2.7% CO<sub>2</sub> Emissions (Source IMO)

# Shipping and CO<sub>2</sub>

- ➔ Shipping industry accepts **international scientific consensus** on climate change, and the need to play its part
- ➔ Shipping industry actively pursuing CO<sub>2</sub> emissions reduction at the International Maritime Organization (IMO)





# Shipping and CO<sub>2</sub>

- ➔ Shipping industry committed to reducing emissions per tonne/kilometre by 20% by 2020
- ➔ Industry supports the historic IMO agreement to reduce ships' CO<sub>2</sub> (July 2011)

# IMO in Session



# IMO CO<sub>2</sub> Regulations (MARPOL Annex VI)

- ⇒ Energy Efficiency Design Index
- ⇒ Ship Energy Efficiency Management Plans

*Improved voyage planning; speed management; weather routing; engine power, fuel types*

# IMO Agreement on CO<sub>2</sub>

- ➔ First international CO<sub>2</sub> agreement for entire industrial sector
- ➔ Technical CO<sub>2</sub> reduction measures to be applied to entire world fleet
- ➔ Agreement on technology transfers to developing nations
- ➔ Enters into force in 2013



# Impact of Climate and Change on Ports: Expecting the Worse

Assuming scientists are correct:

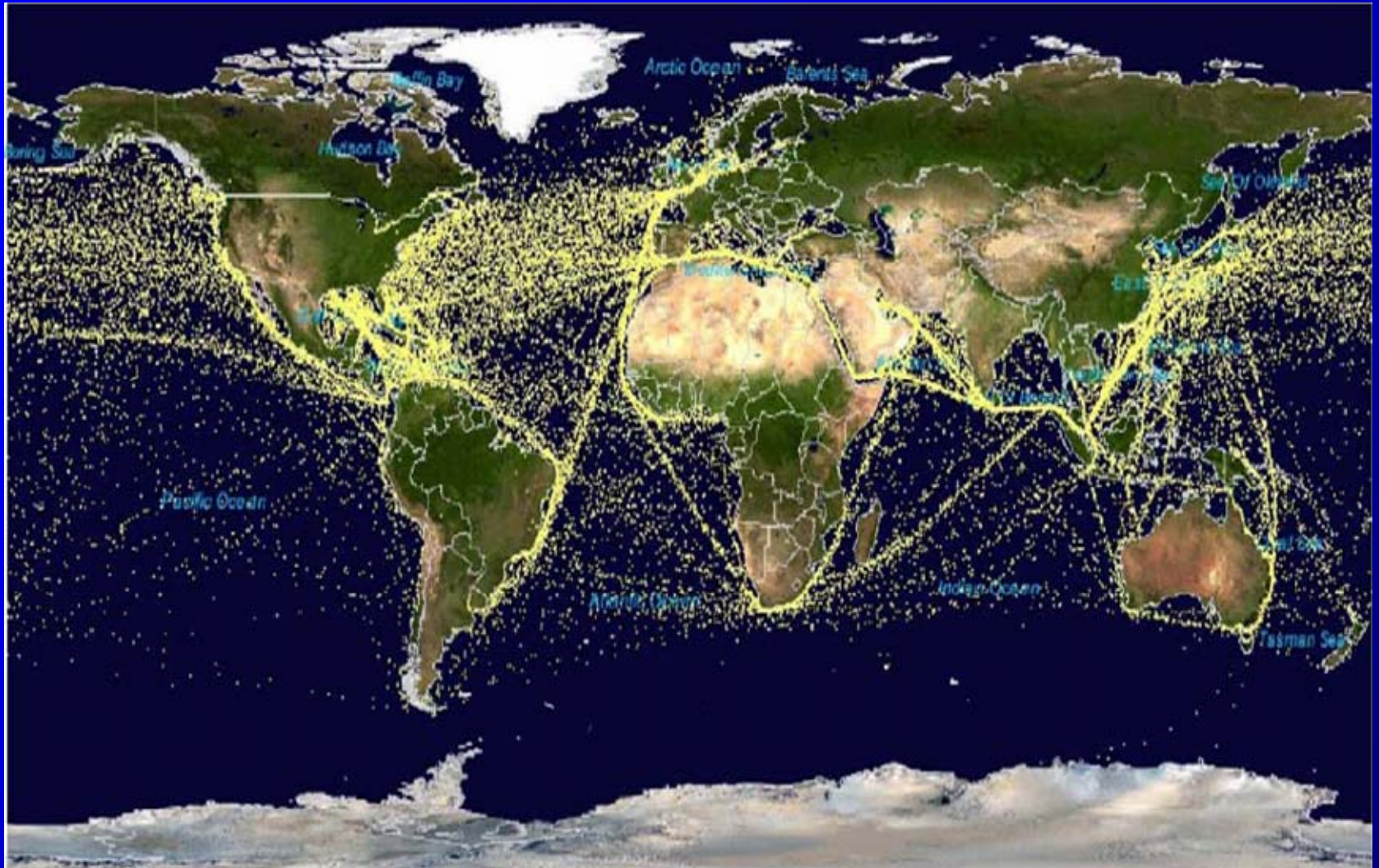
- ⇒ Higher sea levels
- ⇒ More frequent serious weather events
- ⇒ Risk of flooding

# Why Does Impact on Ships and Ports Matter?





# Shipping is lifeblood of world trade



# Lifblood of world trade...

⇒ 90% of world trade carried by sea via ports and terminals

⇒ **Without shipping and ports:**

intercontinental trade, bulk movement of raw materials and energy, and the import/export of affordable food and manufactured goods **would not be possible**



Shipping and ports deliver  
low cost transport!



# One gallon of petrol at the pump

Typical shipping cost

Arab Gulf - US

(crude)

\$US 0.01



# One tonne iron ore

Typical shipping cost  
Australia - Europe

\$US 20



# Bottle of whisky

Typical shipping cost

UK - Asia

\$US 0.15





# Without low cost maritime transport

Recent shift towards industrial production in Asia would not be possible – which has in large part driven improvements in global living standards



# Without shipping and ports

Half the world would starve and  
the other half would freeze!



# Impact of Climate Change on Ports?

- ⇒ Rising sea levels and increased risk of flooding and storms
- ⇒ Need for protective barriers, additional sea defences, extra dredging capacity etc.
- ⇒ Above all – need for planning and money!

# Relocation and reconstruction of new ports?

- ⇒ If major industrial and /or populations centres flooded - ports will relocate
- ⇒ If agriculture affected by climate, likewise effect on shipping movements and port expansion/decline or relocation

# Relocation and reconstruction of new ports?

- ➔ Hopefully evolutionary rather than catastrophic process
- ➔ Has happened before, e.g. closure of Port of London (once the largest port in the world)

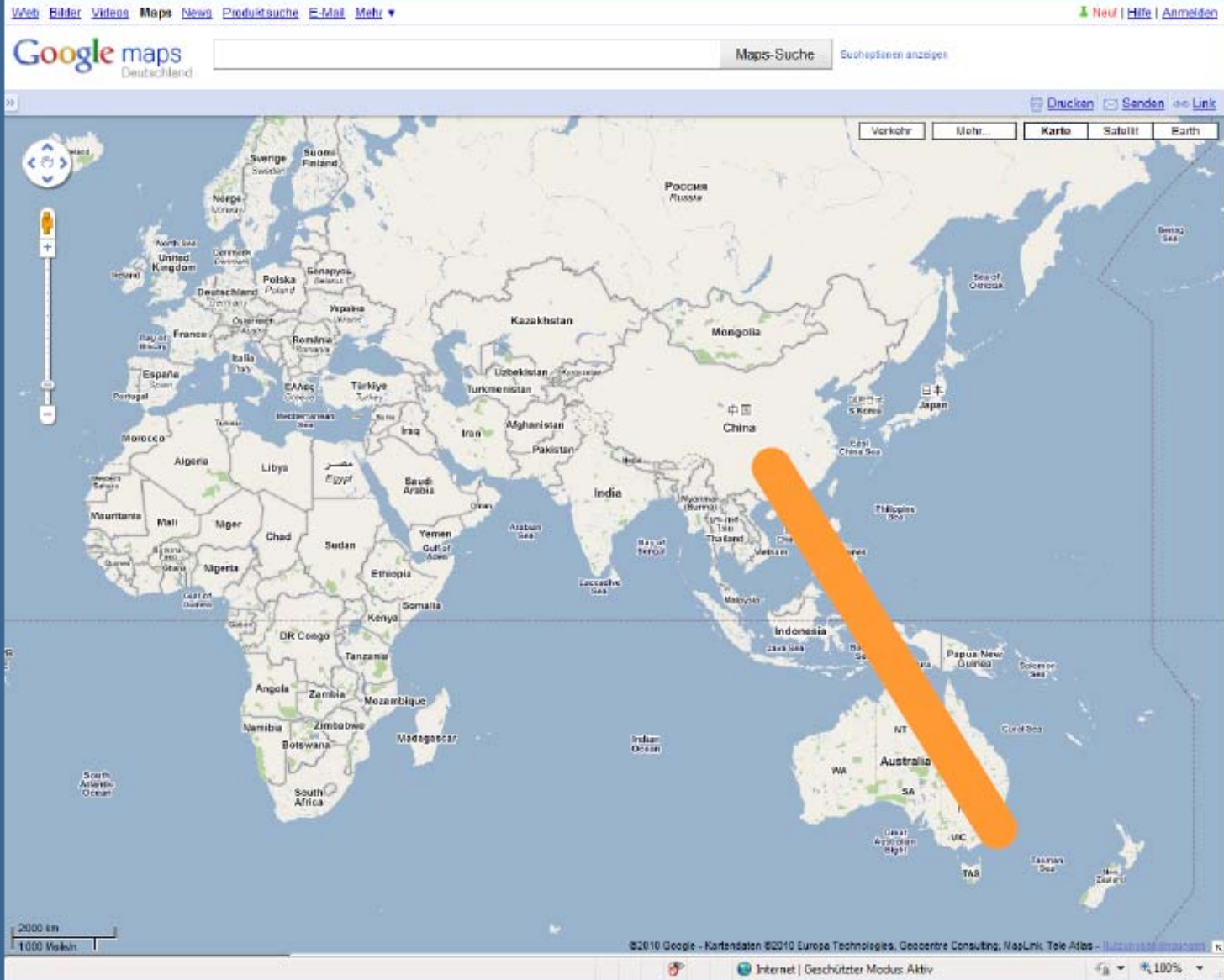
# New Arctic Shipping Routes?





# Arctic Routes?

- ⇒ If Arctic ice cap melts, theoretical opening up of North West and North East Passage
- ⇒ In practice (for immediate future) increase in trade to Arctic ports, rather than alternative to Suez Canal Route.....



(Source: Leyboldt, 2009)

# North East Route Distance Savings

- ⇒ Hamburg – Yokohama – 36%,
- ⇒ Hamburg – Shanghai – 25%
- ⇒ Hamburg – Melbourne + 4%

But slower speeds - 10 knots behind ice breaker, 20 knots Indian Ocean

Higher Charges -Ice Breaker – \$400K, Suez Canal Tolls – \$100K (20,000 GT tanker)

# North East Route?

Probably no scheduled Asia–Europe services (even in summer months) for several decades, unless climate change much faster than predicted

Also various political issues (same true with Canada and North West Passage)

But by 2050, who knows?



# Impact of Climate Change on Ports

- ➔ Increased need for deep water berths for **larger ships** due to economic and environmental efficiency of moving cargo using smaller numbers of large ships rather than greater numbers of smaller ships
- ➔ Ports will need to accommodate this



# Maersk 'Triple E Class' Ships



= 360.000 TEU

≈  3.640.000.000  
million iPads



# Impact of Climate Change on Ports

- ⇒(Linked to larger ships) Increase in feeder services and need for ports to accommodate these
- ⇒Feeder vessels will also be large – more like super containerhips of 10 years ago

# Impact of Climate Change on Ports

➔ For oil and gas cargoes, increased use of offshore loading installations linked to shore via pipelines to enable very large tankers to remain in deeper water?

If predictions of scientists are correct, impact on ports will be significant

So will the economic costs!



# Climate Change Funding

- ⇒ Developed nations will presumably have to plan and pay for the protection of their ports against dangerous climate change – hopefully they can afford it?
- ⇒ But what about ports in developing nations?

# The UNFCCC 'Green Fund'

⇒ UN Climate Change Conference in Durban will discuss UNFCCC 'Green Fund'

⇒ 'Green Fund' whereby developed nations pay developing nations \$100 billion per year for climate change mitigation (money to come from business) in return for CO<sub>2</sub> reduction

commitments



# UNFCCC 'Green Fund'

- ⇒ 'Green Fund' could conceivably help finance ports' adaptation to climate change?
- ⇒ But possible **IMO environmental compensation fund** could also be potential source of monies for ports?

# IMO Negotiations on Market Based Measures

- ➔ In addition to IMO technical measures to reduce shipping's CO<sub>2</sub> emissions; IMO is developing Market Based Measures to reduce CO<sub>2</sub>
- ➔ Discussions are complicated because of high level UN Climate Change negotiations and discussion about 'Green Fund'





# IMO Market Based Measures

- ⇒ Proposals from governments to IMO include CO<sub>2</sub> emissions trading schemes and an environmental compensation fund linked to ships' fuel consumption
- ⇒ Shipping industry has stated preference for environmental compensation fund - with monies raised via charges added to ships' fuel

# Attractions of Compensation Fund

- ➔ Large proportion of money more likely to go to environmental projects in **developing nations** – including **protection of ports** against climate change
- ➔ Means of reconciling UNFCCC principle of Common But Differentiated Responsibility with IMO need for same global rules for all ships

# Conclusions

- ⇒ Issues are complex – many unknown unknowns
- ⇒ Developing nations should pay close attention to treatment of shipping in CO<sub>2</sub> negotiations to prevent rich governments keeping most of any money raised from shipping – some of which could be used to help ports!



# Thank you

Additional information at

⇒ [www.ics-shipping.org](http://www.ics-shipping.org)

⇒ [www.shippingandco2.org](http://www.shippingandco2.org)

