GLOBAL TRADE FLOWS IN CEMENT SHIPPING

Ad Ligthart

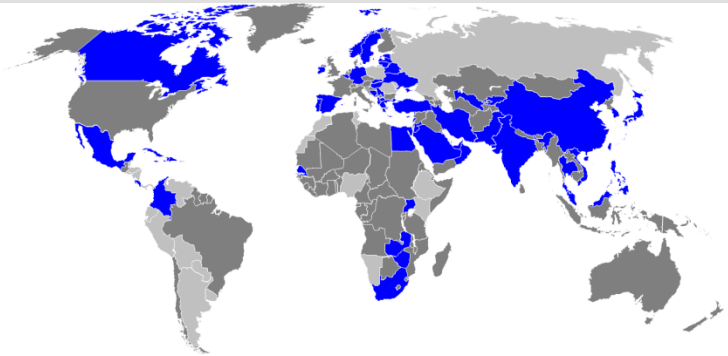
Cement Distribution Consultants

CEMENT DISTRIBUTION CONSULTANTS

24-01-2013

THE INTERCEM SHIPPING FORUM

CONTENTS OF PRESENTATION



- Overview of trade flows
  - 2006 – 2011 The big contraction
  - 2012 Trade flows globally and by continent
  - Forecast next years
- Shipping to developments
  - Challenges
  - New developments

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Cement Distribution Consultants an introduction

Market knowledge	Consulting	Project / interim management
• The global cement industry on Google Earth • Large database on waterside cement plants, waterside grinding plants and terminals • 30 Years experience	Logistical, economical and technical services • Feasibility studies of complete logistical chains for trade and distribution • Shipping solutions • Development of new facilities • Terminal and equipment design	Realising and managing projects Examples - Redevelopment of large "brown field" bulk terminal - Temporary cement and fly ash import project for construction of large concrete dam

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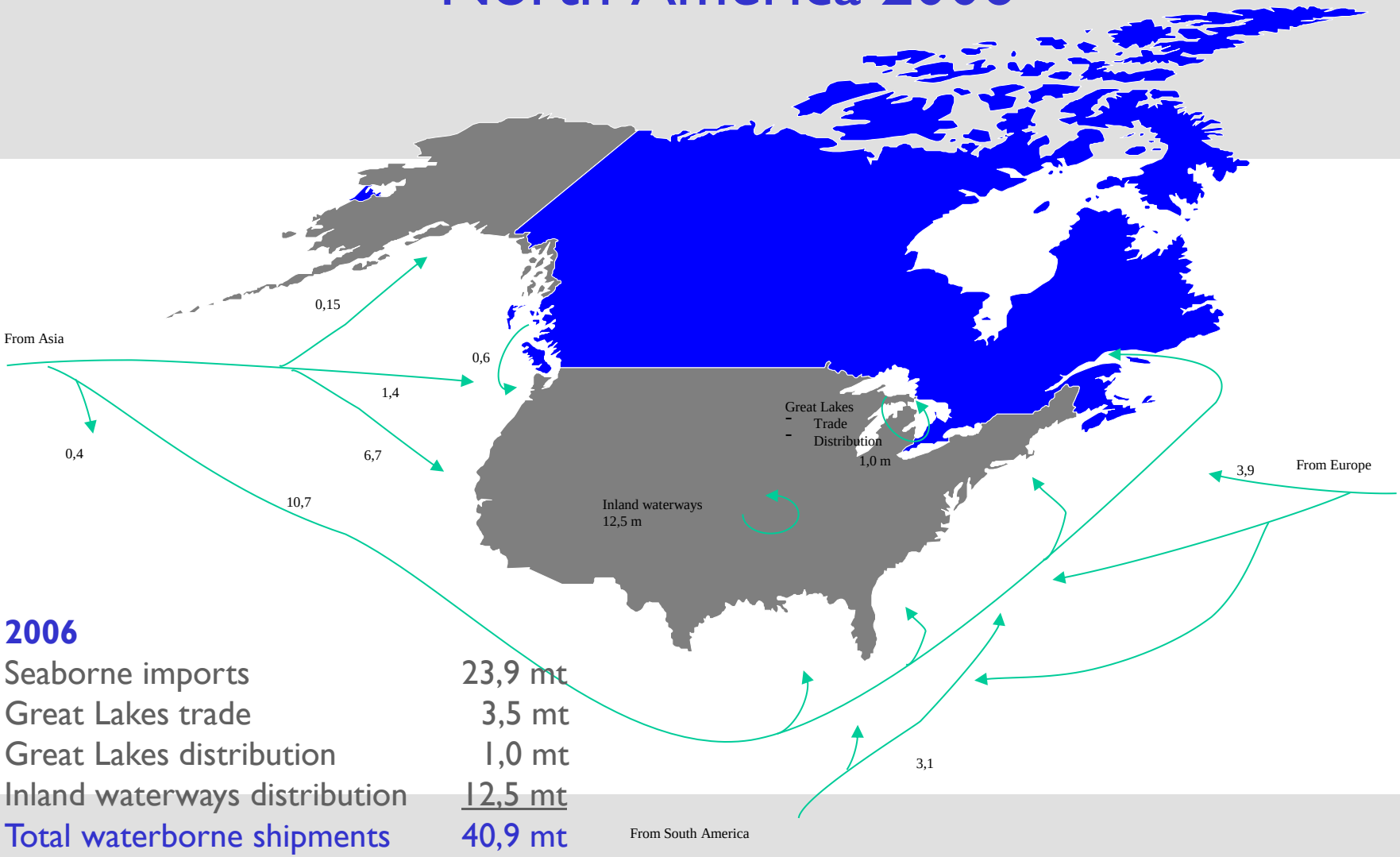
THE BIG CONTRACTION
North America 2006



2006

Seaborne imports	23,9 mt
Great Lakes trade	3,5 mt
Great Lakes distribution	1,0 mt
Inland waterways distribution	12,5 mt
Total waterborne shipments	40,9 mt

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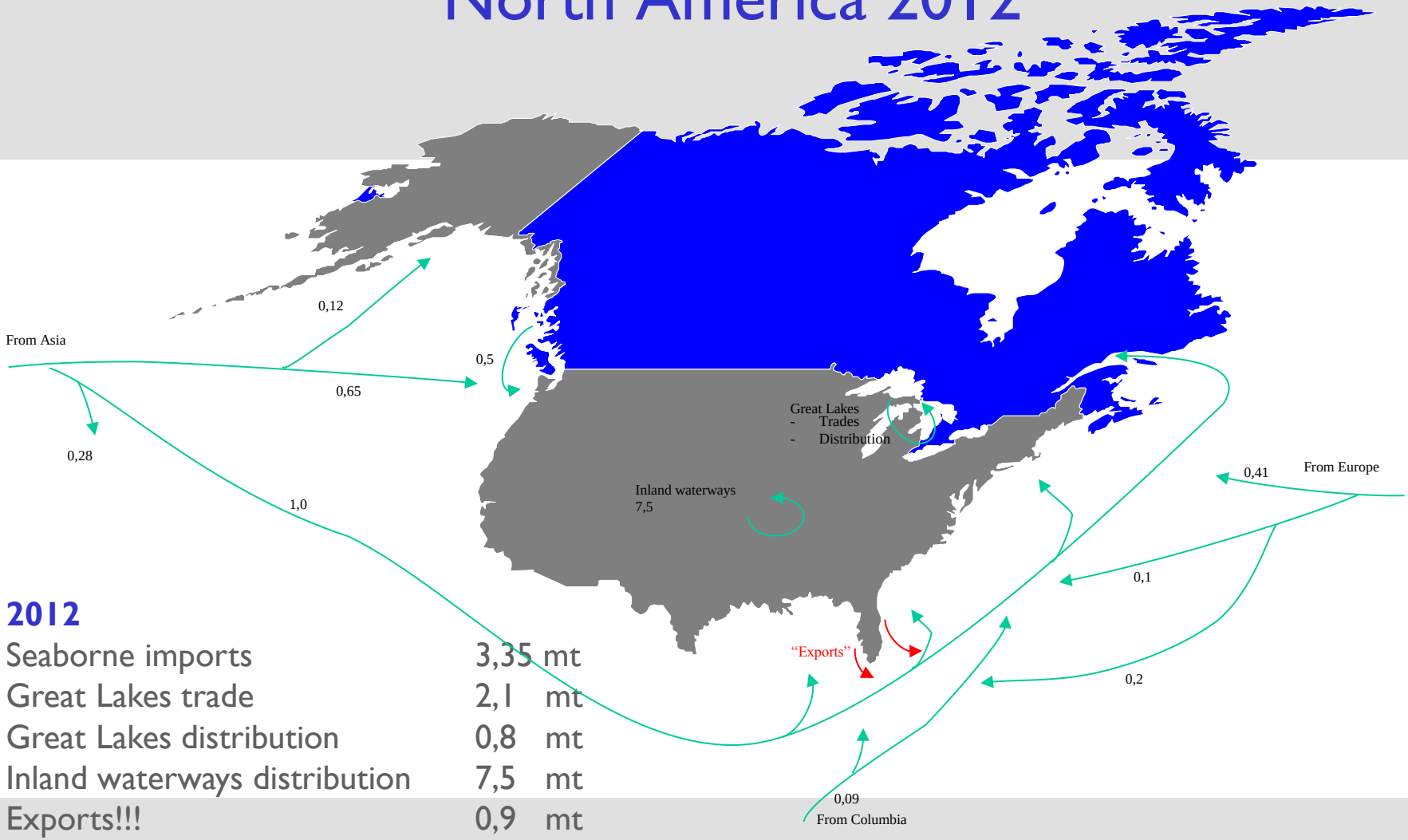
THE BIG CONTRACTION
North America 2012



2012

Seaborne imports	3,35	mt
Great Lakes trade	2,1	mt
Great Lakes distribution	0,8	mt
Inland waterways distribution	7,5	mt
Exports!!!	0,9	mt
Total waterborne shipments	14,7	mt

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The big contraction 2006-2012

- North America
  - Reduction in seaborne imports (20,5 mt) (Handymax)
  - Reduction in Great Lakes trade + distribution (1,4 mt) (70% self-discharging, 30% GL Bulk carriers)
  - Reduction in Inland waterways (5 mt) (50% self-discharging, 50% regular barges)
  - Increase in exports (0,9 mt) (20% self-discharging, 80% coastal bulk carriers)
- Europe
  - Reduction in Regional trade (6,7 mt) (50% coastal bulk carriers, 50% self-discharging vessels)
  - Reduction in domestic distribution (3,5 mt) (self-discharging, vessels)
  - Global Trade: About the same but US changed to Africa (Handysize, Handymax)
- South America & Caribbean
  - Fairly stable
  - Reduced exports to US (Handysize, Handymax)
  - Imports to Brazil, Chile (clinker, bagged cement)
- Africa
  - Strong increase in bagged cement and clinker (Handysize, Handymax)
  - Reduction in bulk cement to Nigeria
- Asia
  - Loss of exports to US
  - Strong increase in regional trading and domestic distribution (Handysize, self-discharging)

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2012 Global seaborne cement and clinker trade flows (est.)

Regional seaborne exports	45,1 mt
Global seaborne exports	51,3 mt
Waterborne domestic distribution	106 mt (excl. China)
Total	202,4 mt

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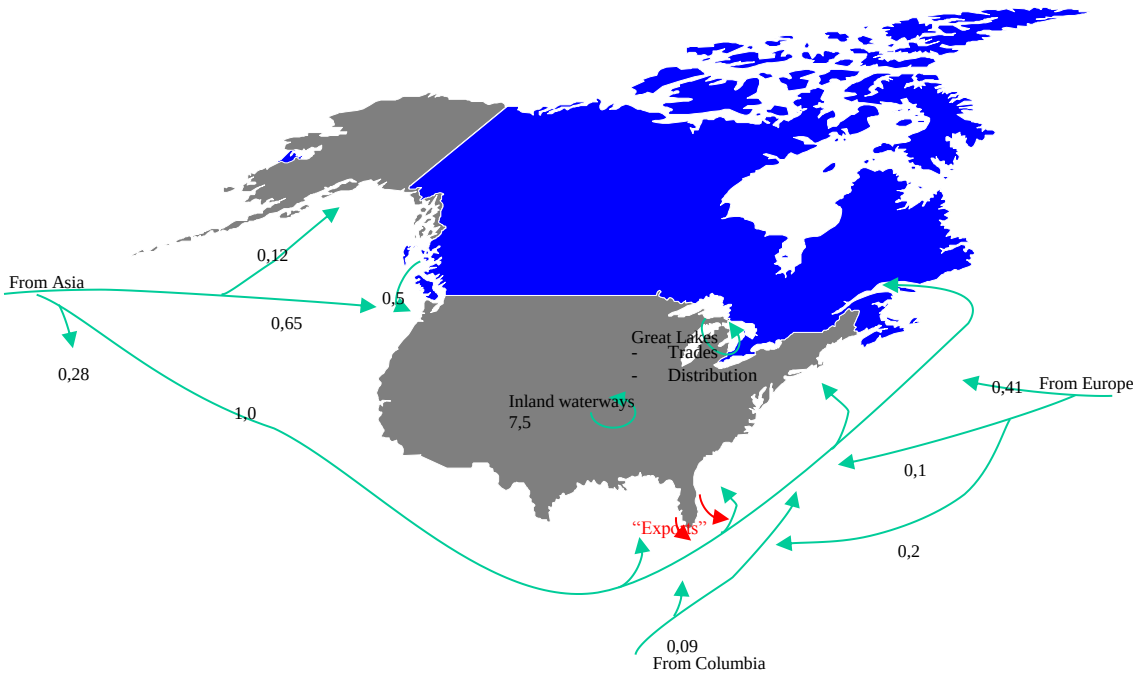
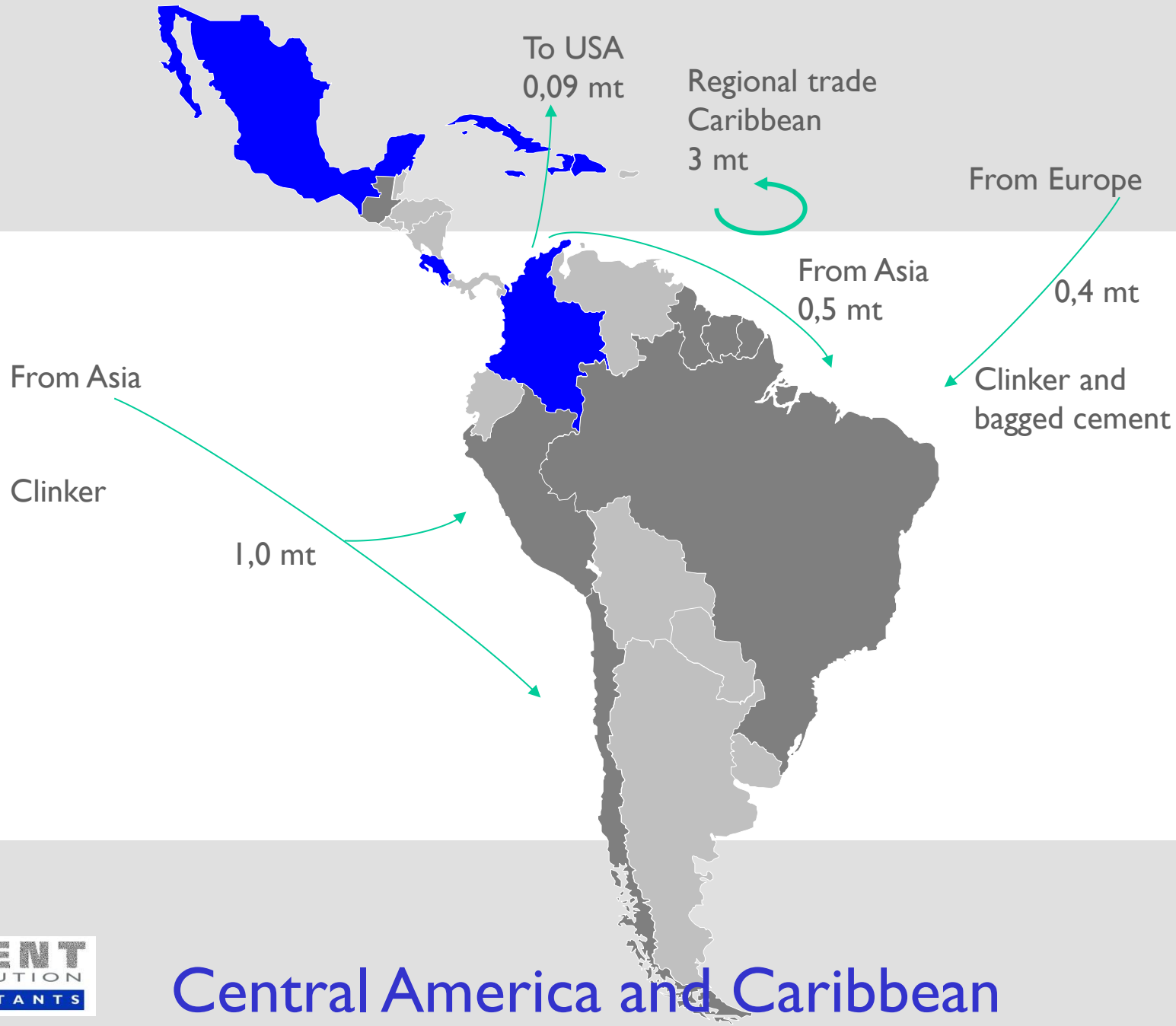
North America



- 30 Integrated plants with on site ship / barge loading facilities
- 1 Integrated plant railing cement to ship loading facility
- 1- 2 Integrated plants trucking cement to port and directly into ships
- 73 Terminals receiving ocean going bulk vessels
- 20 Great Lakes terminals
- 50 River terminals
- 13 Grinding plants receiving clinker and/or slag by water

189 Total of facilities

CEMENT DISTRIBUTION CONSULTANTS



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Central America and Caribbean

Caribbean

- 17 Cement plants involved in seaborne trade and distribution
- 15 Terminals receiving ocean going bulk vessels
- 6 Grinding plants receiving clinker and/or slag by water

38 Total of facilities

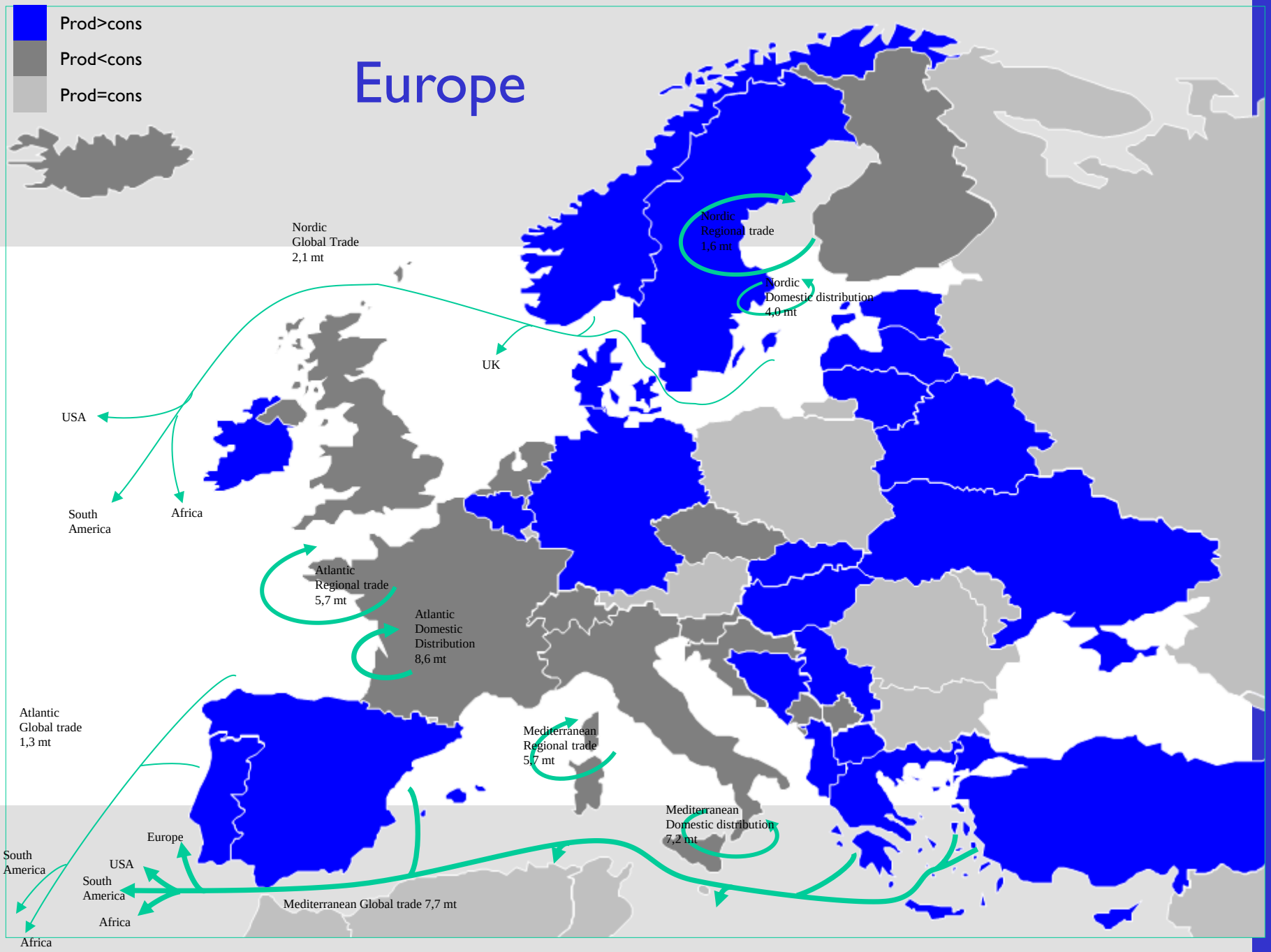
South America

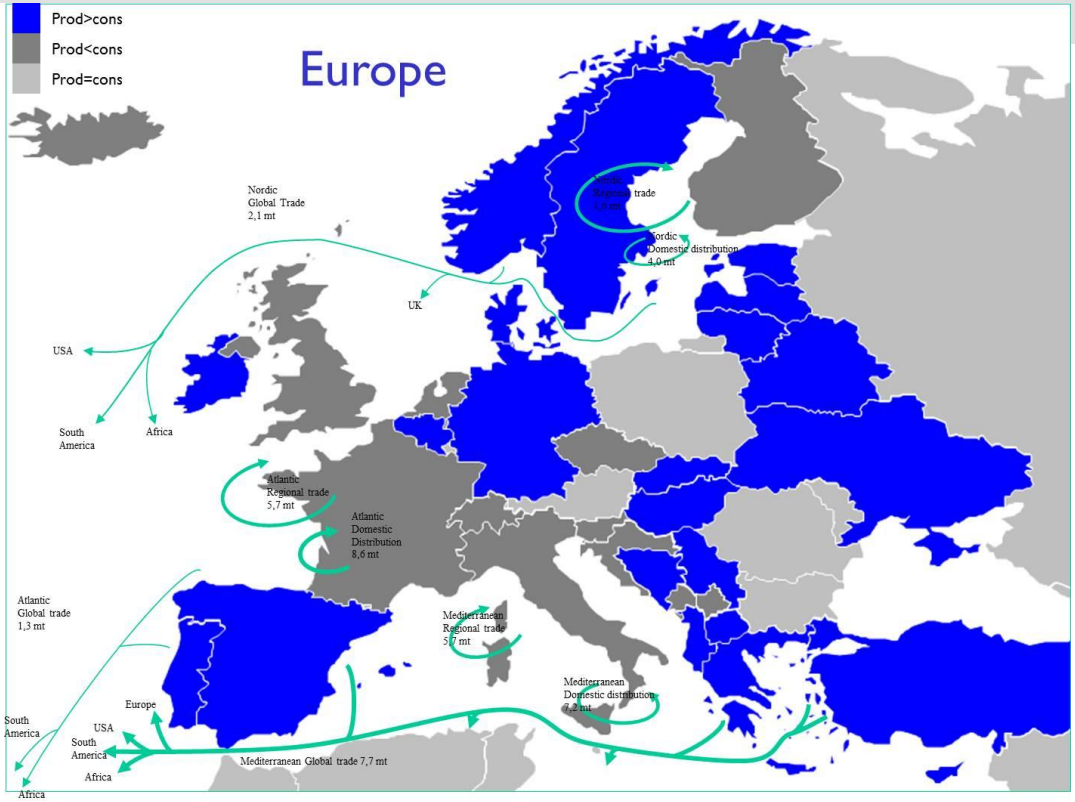
- 8 Cement plants capable for seaborne trade and distribution
- 0 Terminals receiving ocean going bulk vessels
- 7 Grinding plants receiving clinker and/or slag by water

15 Total of facilities

CEMENT DISTRIBUTION CONSULTANTS

Central America and Caribbean

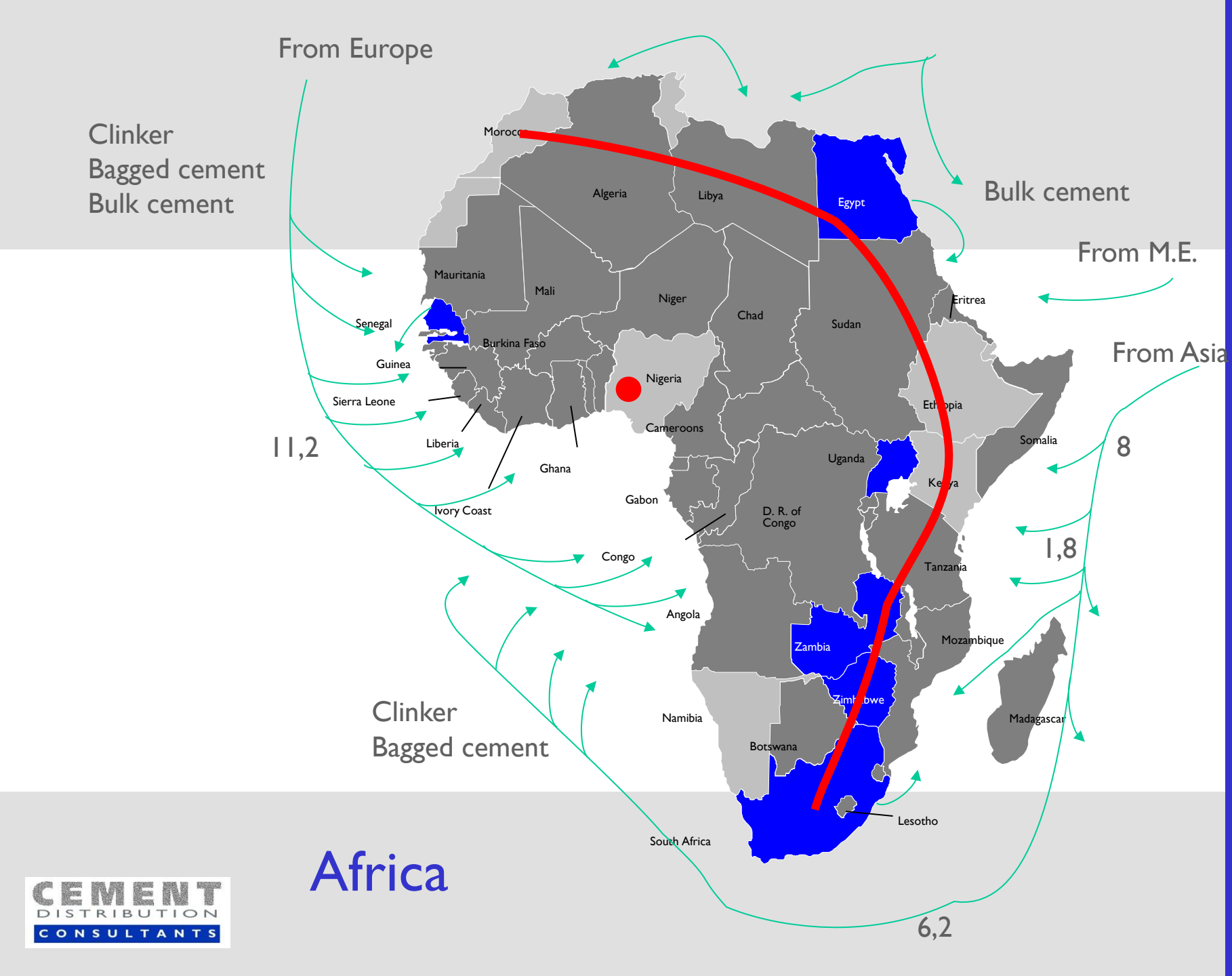

Prod>cons
Prod<cons
Prod=cons
Europe
Nordic
Global Trade
2,1 mt
Nordic
Regional trade
1,6 mt
Nordic
Domestic distribution
4,0 mt
UK
USA
South
America
Africa
Atlantic
Regional trade
5,7 mt
Atlantic
Domestic
Distribution
8,6 mt
Atlantic
Global trade
1,3 mt
Mediterranean
Regional trade
5,7 mt
Mediterranean
Domestic distribution
7,2 mt
Europe
USA
South
America
South
America
Africa
Africa
Mediterranean Global trade 7,7 mt

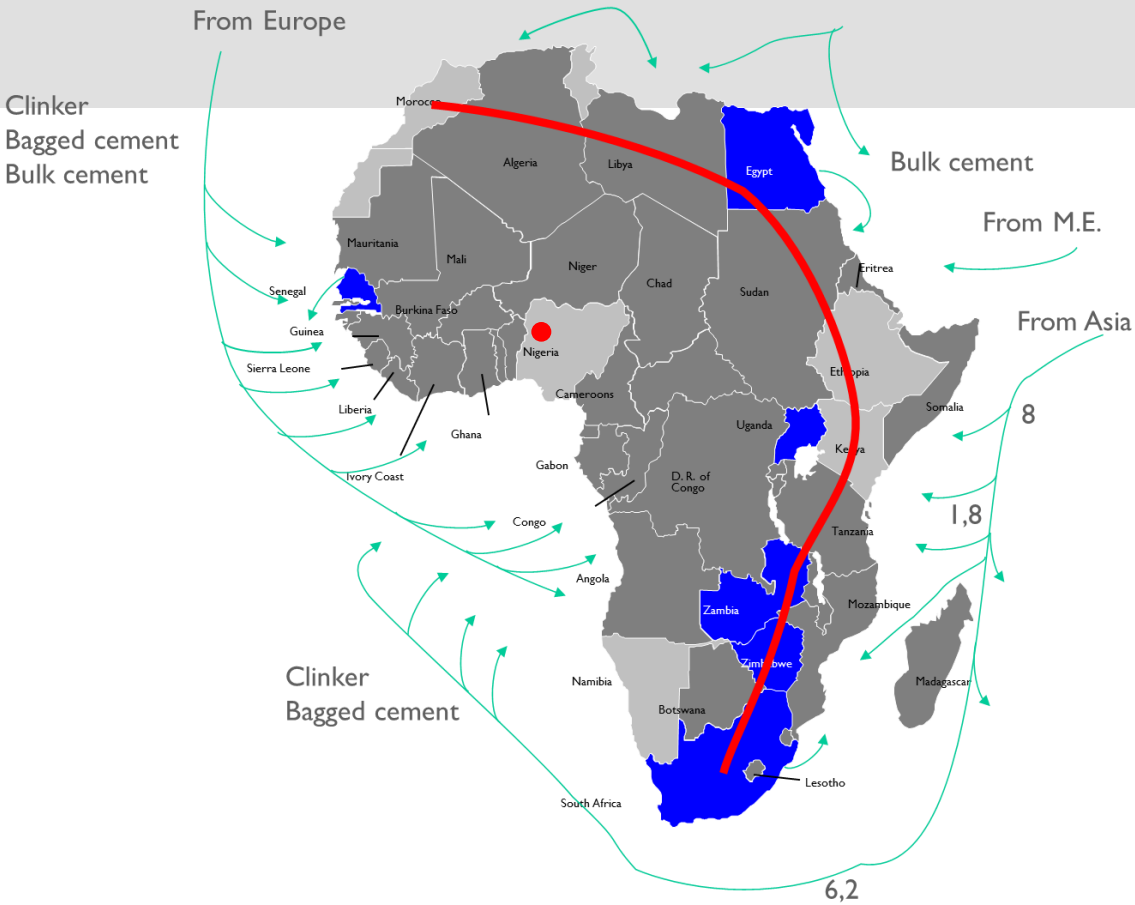


- 66 Cement plants involved in seaborne exports
- 221 Terminals receiving sea going vessels
- 36 Grinding terminals receiving clinker and / or slag by water

323 Total of facilities

Europe


From Europe
Clinker
Bagged cement
Bulk cement
Bulk cement
From M.E.
From Asia
11,2
8
1,8
6,2
Clinker
Bagged cement
Morocco
Algeria
Libya
Egypt
Mauritania
Mali
Niger
Chad
Sudan
Eritrea
Senegal
Burkina Faso
Guinea
Nigeria
Sierra Leone
Ethiopia
Cameroons
Liberia
Somalia
Ghana
Uganda
Kenya
Gabon
Ivory Coast
D. R. of Congo
Congo
Tanzania
Angola
Zambia
Mozambique
Zimbabwe
Namibia
Madagascar
Botswana
Lesotho
South Africa
Africa
CEMENT
DISTRIBUTION
CONSULTANTS



- 12 Cement plants capable for seaborne trade (8 in North Africa)
- 24 Bulk cement terminals (14 in Atlantic Island)
- 31 Grinding plants receiving clinker by sea

67 Total of facilities

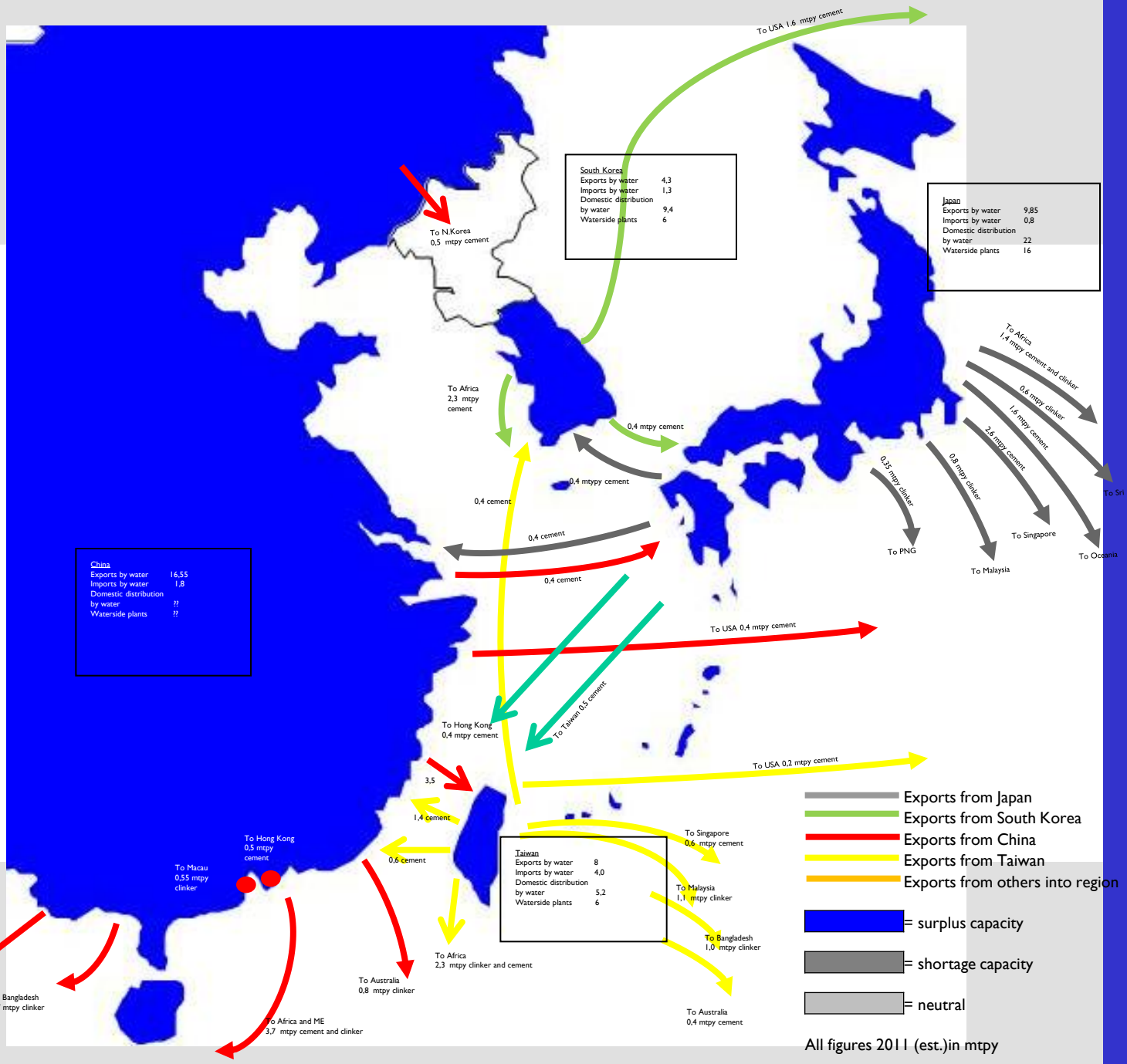
Africa

- 12 Export bases
- 14 Cement terminals
- 3 Grinding plants receiving clinker by sea

29 Total of facilities

Middle East

NE Asia



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Regional overview
North East Asia

Total exports in area	38,7 mt
of which :	
• Imported within the area	9,0 mt
• Exported to Asia – Australia region	17,8 mt
• Global exports	11,9 mt

Domestic distribution	
Japan	22 mt
South Korea	9,4 mt
China	?? mt
Hong Kong	2,3 mt
Taiwan	5,2 mt
Total	38,9 mt + China

Total waterborne cement and clinker movements in area 77,6 mt + China

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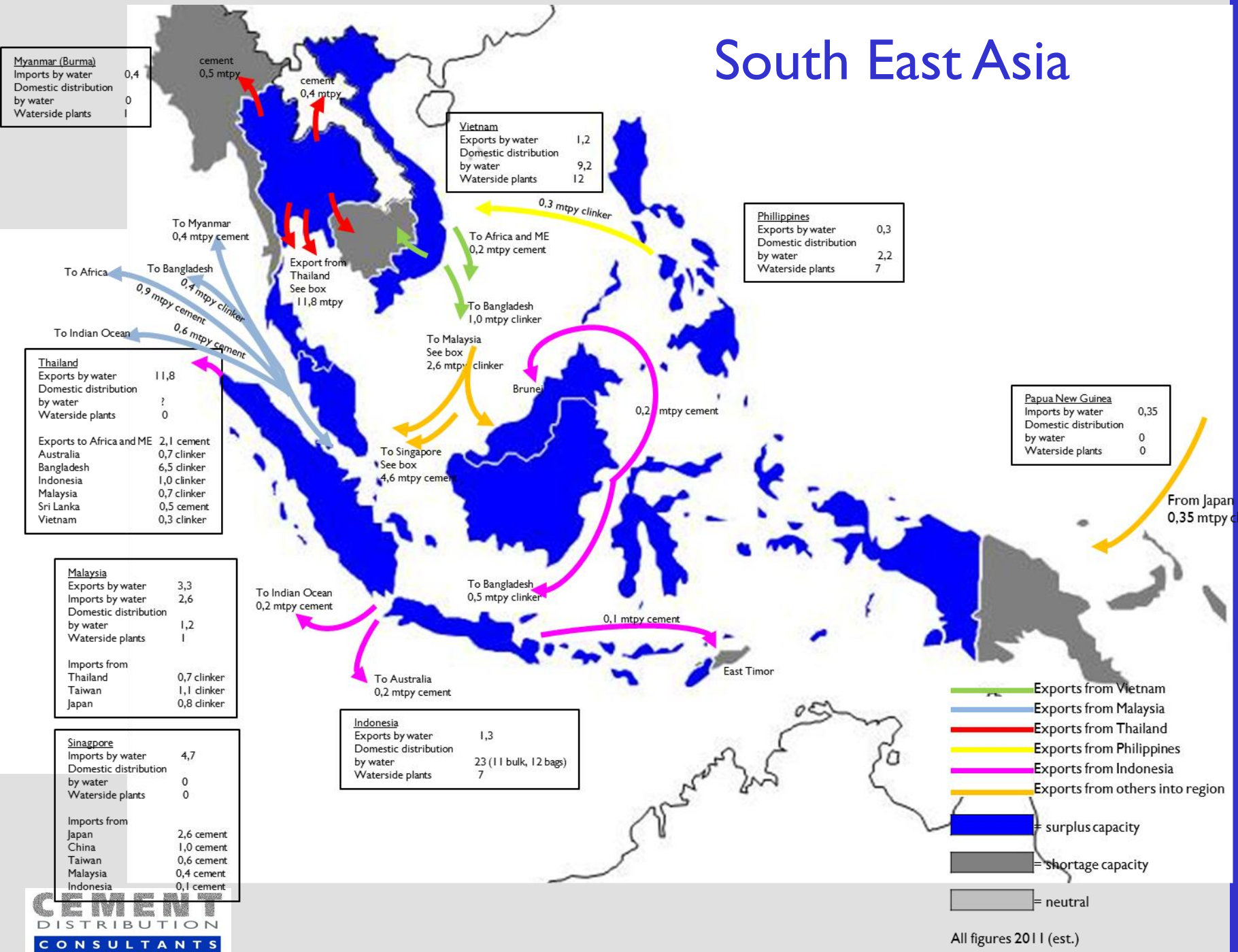
All figures 2011

South East Asia



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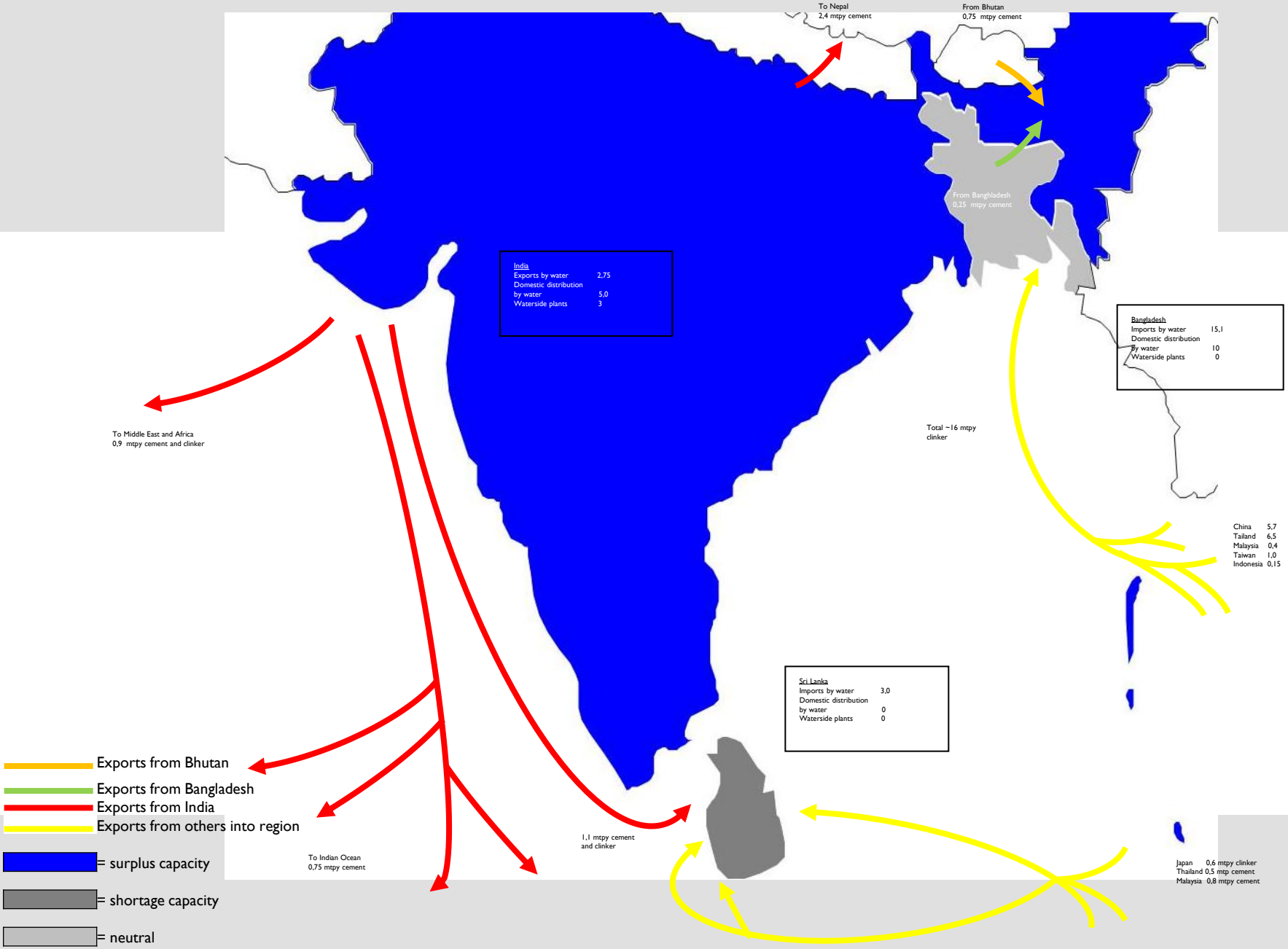
Regional overview
South East Asia

Total exports in area	19,1 mt
Total imports	
• From within the area	4,3 mt
• From within the Asia – Australia region	7,1 mt
Total exports outside the area	
To the Asia – Australia region	11,6 mt
• Global exports	3,2mt
Domestic distribution by water	
Philippines	2,2 mt
Vietnam	9,2 mt
Malaysia	0,6 mt
Thailand	0 mt
Indonesia	11 mt
Total	23 mt

CEMENT DISTRIBUTION CONSULTANTS

All figures 2011



All figures 2011 (est.) in mtpy

Regional overview
South Asia

Total exports in area	2,75 mt
Total imports	
• From within the area	1,85 .mt
• From within the Asia – Australia region	19 mt
Total exports outside the area	
• To the Asia – Australia region	0 mt
• Global exports	0,9 mt
Domestic distribution by water:	
Bangladesh	10 mt
India	5 mt
Sri Lanka	0,5 mt
Total	15,5 mt

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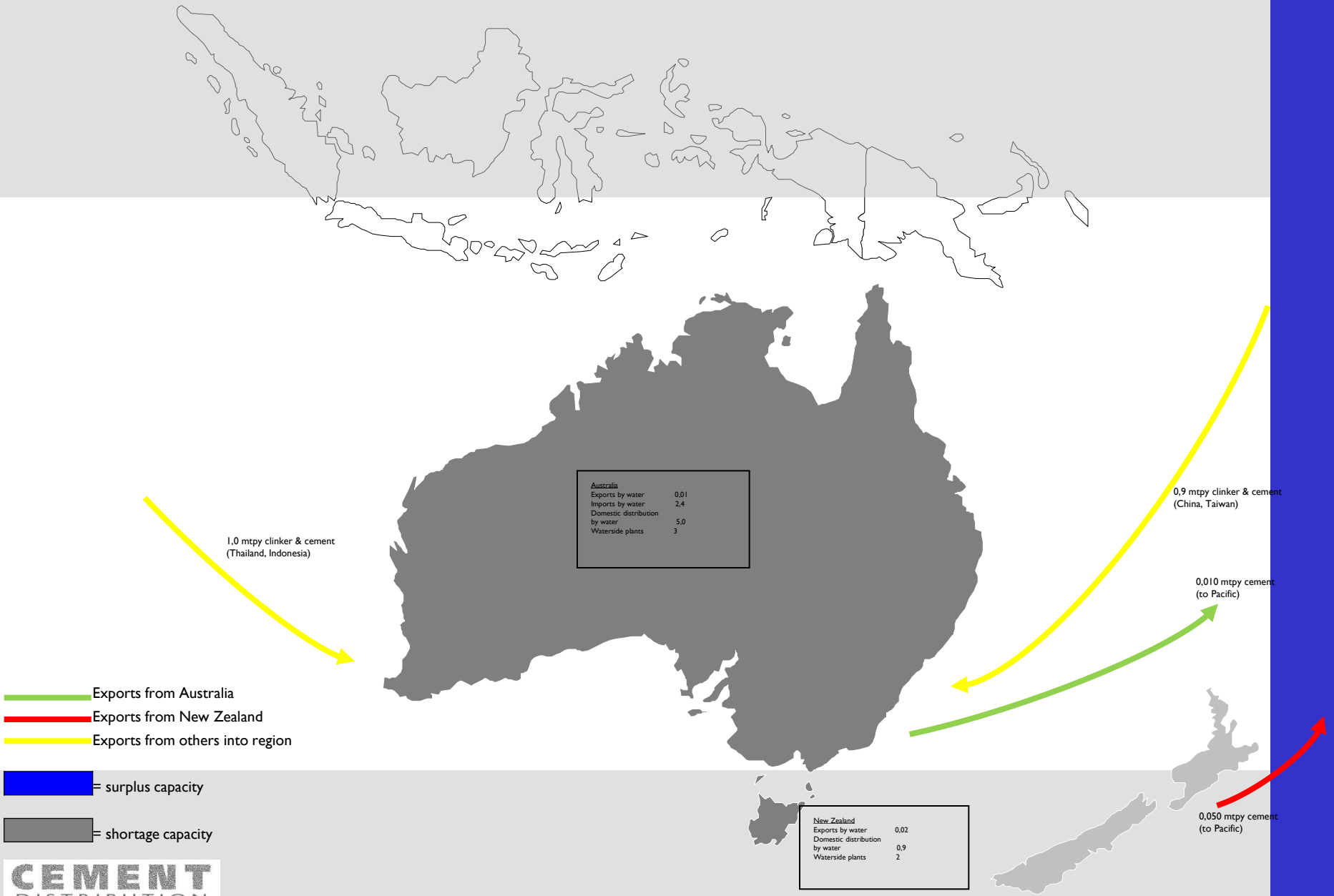
All figures 2011



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Country overview

Australia

Production	10,5	mt
Exports by water	0,01	mt
Domestic distribution by water	5	mt
Total waterborne	5	mt

(48% of production)

3 Coastal cement plants

Approx. 5 coastal terminals

9 Self discharging vessels

New Zealand

Production	1,4	mt
Exports by water	0,02	mt
Domestic distribution by water	0,9	mt
Total waterborne	0,9	mt

(64% of production)

2 Coastal cement plants

Approx. 10 coastal terminals

2 Self discharging vessels

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All figures 2011

5 Year forecast global cement & clinker shipping

- Return of US as largest cement importer
- Stagnation in Europe till national economies become more competitive again (but a growth in (G)GBFS and fly ash trade)
- Strong growth in developing nations (both international trade and domestic seaborne distribution)

Problems in shipping to developing nations

A) Usually poor port infrastructure and logistics (waiting time, long discharge time, receiving facilities located outside the port)

B) Risky investment climate (volatile economical political situations)

Problems in shipping to developing nations

A) Usually poor port infrastructure and logistics (waiting time, long discharge time, receiving facilities located outside the port)

Solution: Create ship unloading possibilities that do not require a port

B) Risky investment climate (volatile economical political situations)

Solution 1: Make facilities removable

Solution 2: Reduce the capital cost of the facilities as much as possible

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New developments

Small scale containerised grinding plant
(Plug & Grind, Cemengal)

- Midstream transfer bulk carrier ⇨ barges
- River transport to one or several small grinding plants
  (< = 100.000 tons per year)
- Plants located in key markets
- Low capital cost
- Plant can be moved when economical/political situation changes

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New developments

- Floating terminal with spud poles and floating pipeline
- Does not need a port facility, just a sheltered location
- Storage, bagging and truck loading facilities all build-up from containers

Floating terminal Lavioletta
23.000 tons

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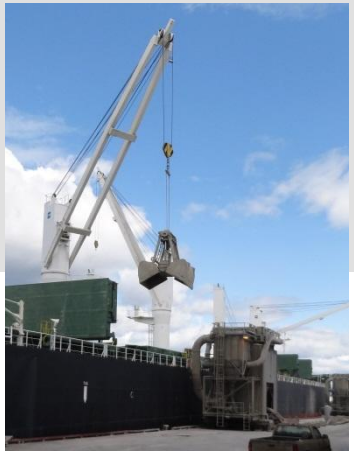
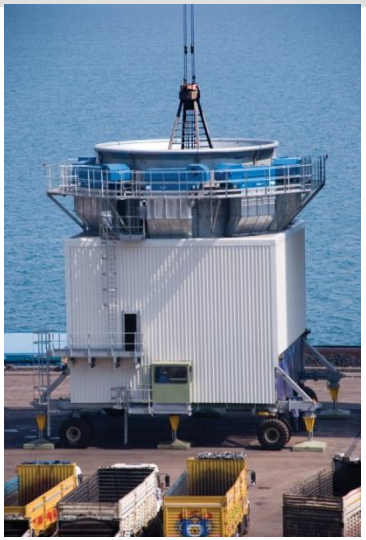
New developments



Low cost floating cement discharge system and shore terminal



- Geared bulk carriers discharging midstream
- Hoppers with dust collection and pneumatic convey system on pontoon or barge
- Floating pipeline to shore
- Flat storage (existing or new modular warehouse)
- Containerised reclaim and bagging systems

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VURMAK

New developments

Low cost terminals and ship unloaders

- Back to basics:
  Simple rugged machines manufactured in low cost countries

- Standardised component but flexible use

- Everything can be transported in containers or trailers and is removable

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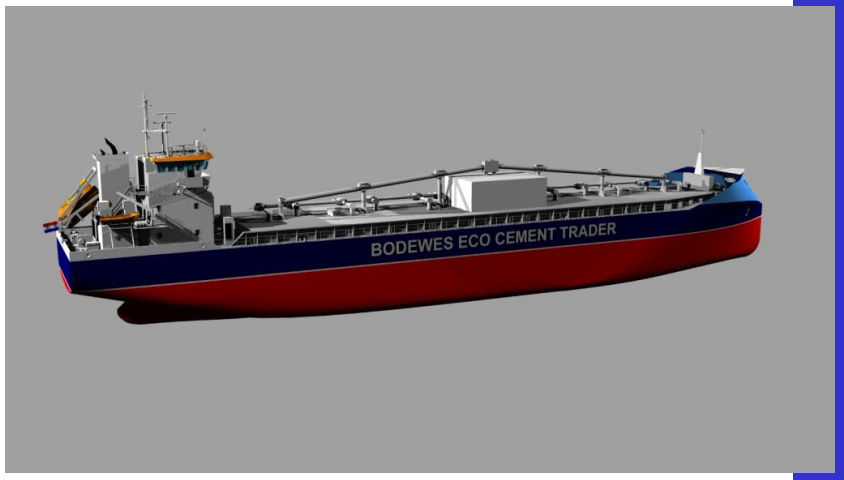
VURMAK

New developments

New class of high efficiency cement carriers based on Royal Bodewes Eco Trader 8700

Maximum fuel efficiency

- Improved hull design
- New cross bow
- Fuel consumption 11 tons per day at 13,5 kn.



Maximum cargo capacity

- Reduce steel weight by integrating cement handling system in ship construction
- Maximize hold volume (sg fly ash = 1)

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ROYAL BODEWES SINCE 1812

THANK YOU

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