

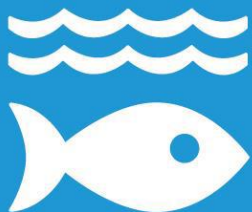


# SDG14: Challenges and Opportunities for the GEF Marine Community

Andrew Hudson  
UNDP Water & Ocean Governance Programme

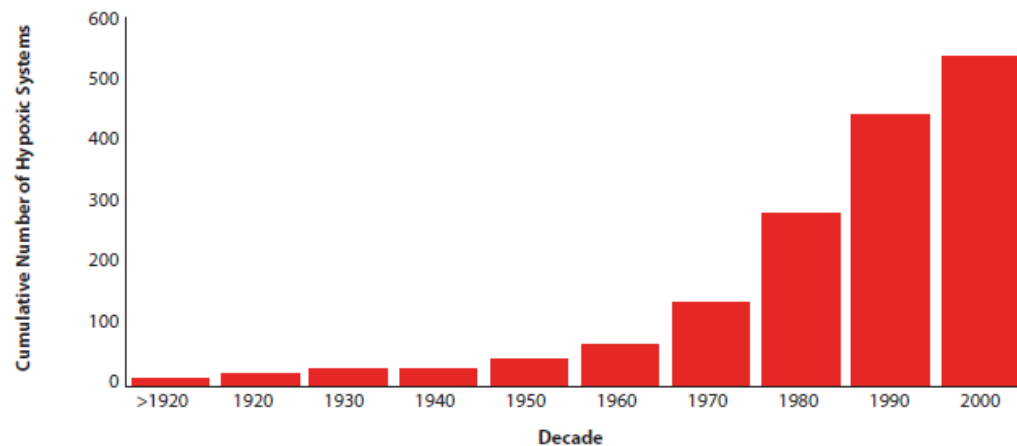
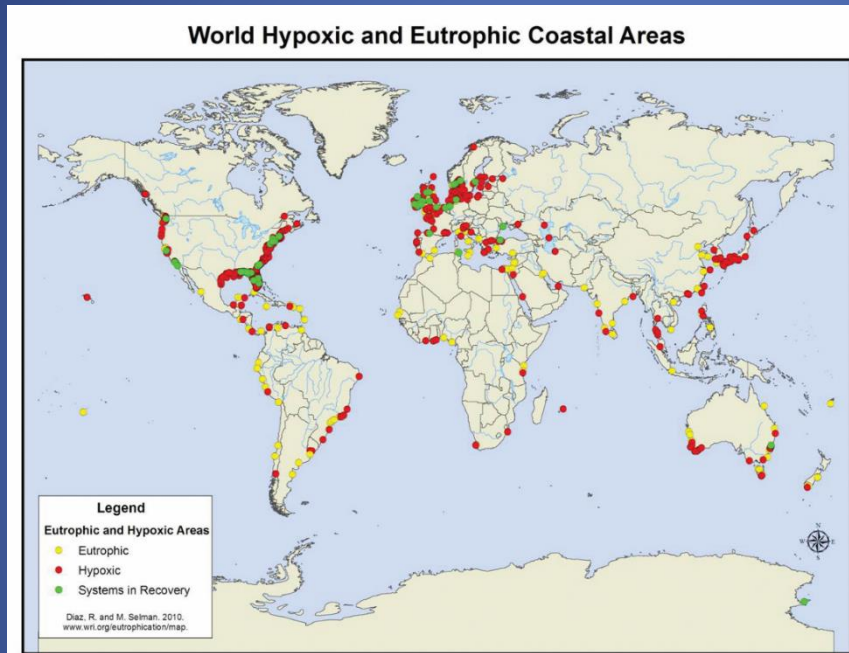
Session: 1 – Opening Session  
6 December 2016

14 LIFE  
BELOW WATER



# 14.1 By 2025, prevent & significantly reduce marine pollution esp marine debris & nutrients

*Indicator: Index coastal eutrophication & floating plastic density*

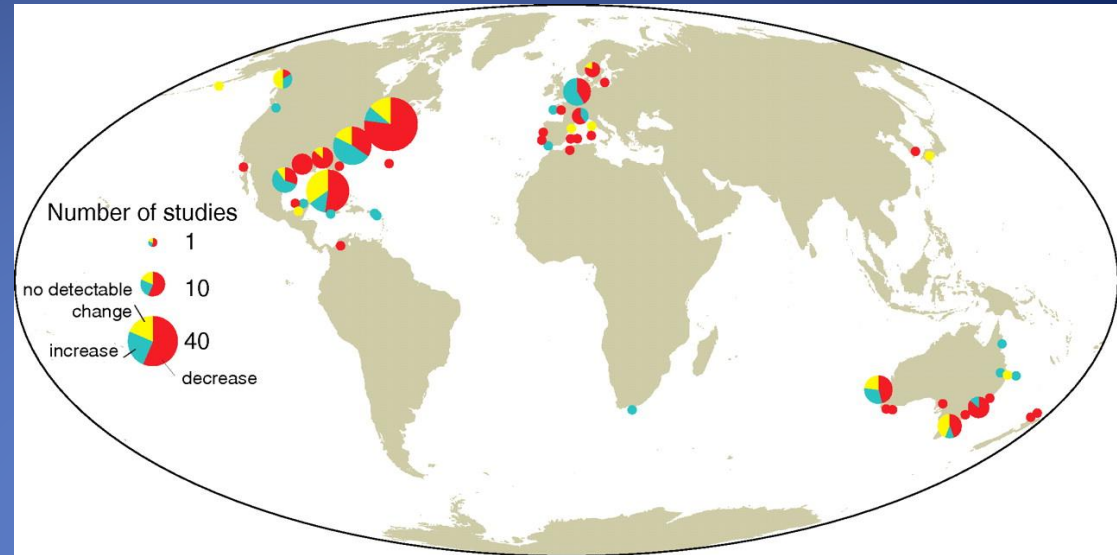


# 14.1 By 2025, prevent & significantly reduce marine pollution esp marine debris & nutrients

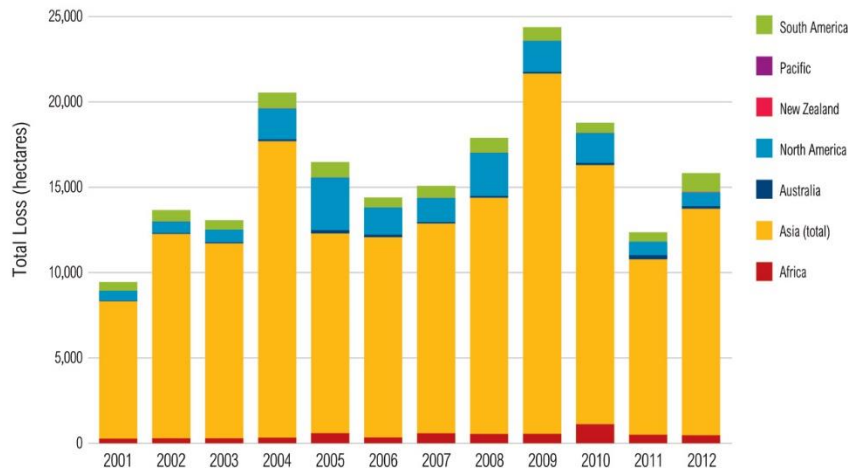
The past and present....	The future....?
<p>Nitrogen loads to oceans roughly tripled from pre-industrial times (fertilizer, manure, wastewater)</p> <p>Geometric increase in hypoxic zones</p> <p>Global economic damage N pollution \$200 – 800 billion/year (UNDP, 2012)</p>	<p>Transformational policy changes and economic incentives in nitrogen management across multiple sectors needed at all levels of governance (UNEP et al., 2012)</p> <p>GEF well positioned to (continue to) demonstrate nitrogen pollution/hypoxia reduction strategies via TDA/SAP, ICM, R2R/S2S and investment programs.</p>
<p>World produces 300 million mt/year plastics</p> <p>Global plastics recycling rate ~24%</p> <p>8-20 million mt/year plastics entering oceans and growing rapidly (x10 by 2025) esp in developing regions</p> <p>Damage to marine ecosystems \$13 billion/year (UNEP, 2014)</p>	<p>There are numerous proven strategies and models that can deliver large reductions in plastics pollution, need widespread adoption and scaling up</p> <p>GEF STAP (2011, 2012) has confirmed that marine debris is a global environmental threat (BD, IW).</p> <p>Marine debris is transboundary at TWO levels – river basins and global ocean – GEF IW needs to formally include marine debris in GEF7; incorporate into TDA/SAP, ICM/IWRM, etc.</p>

# 14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts

*Indicator: % EEZs using EBA*

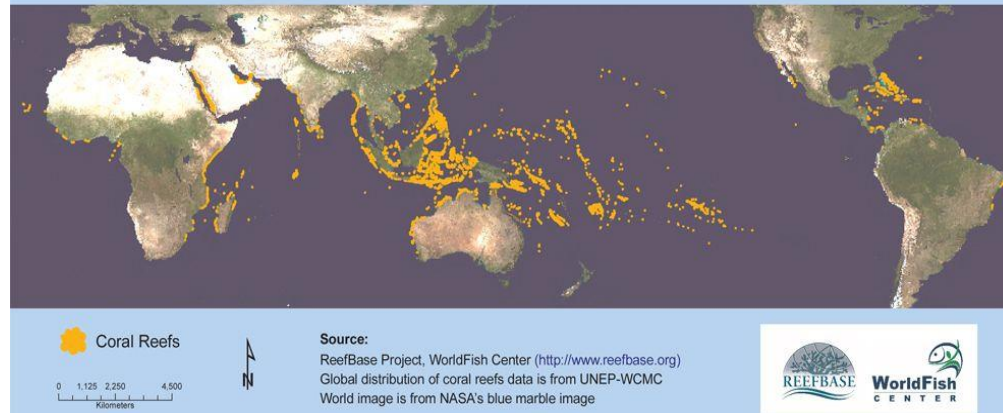


Tree Cover Loss in Mangroves by Year, 2000-2012



Source: <http://bit.ly/1ztb5ZI>

Coral Reefs of the World



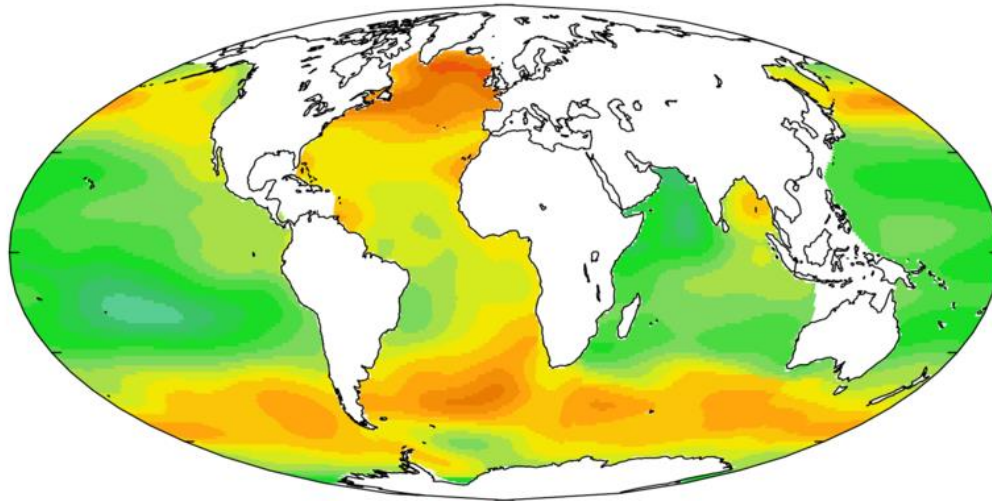


## 14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts

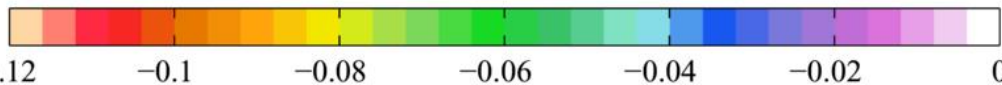
The past and present....	The future....?
20% global mangroves lost since 1980	<p>Need to properly value ecosystem services such habitats provide including nurseries for fisheries, protecting coasts from storm surges, tourism, nutrient and carbon sinks - <i>LME:LEARN ecosystem valuation</i></p> <p>Blue carbon to promote protection &amp; restoration of key carbon sinks esp mangrove &amp; seagrass, broader environ &amp; socioeconomic benefits: <i>GEF/UNEP Blue Carbon</i></p> <p>Reduce stresses on coral reefs – pollution, destructive fishing, invasives, coastal development, CC (bleaching, OA)</p> <p>Negotiations on UNCLOS implementing agreement on BBNJ</p> <p>GEF important role to play through its IW and BD portfolios: LMEs, RFMOs, shipping, MPAs, national fisheries reform, mainstreaming BD into marine sectors, etc.</p>
19% coral reefs disappeared	
29% seagrass habitat lost	
Ongoing and emerging threats to high seas biodiversity (fishing, deep sea mining....)	

# 14.3 Minimize and address ocean acidification

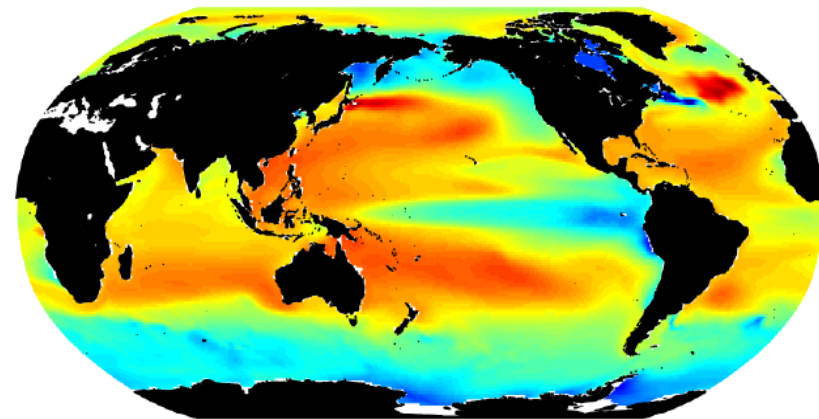
*Indicator: Average marine pH at representative stations*



$\Delta$  sea-surface pH [-]



Changes in Aragonite Saturation of the World's Oceans, 1880–2012

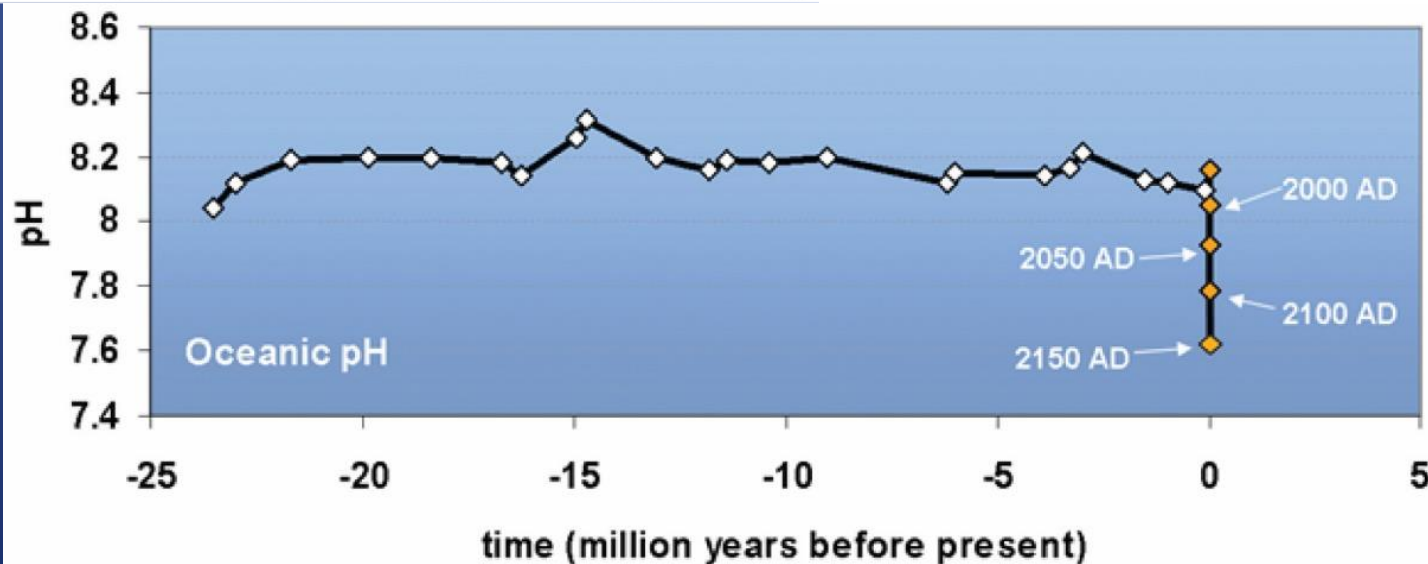


Change in aragonite saturation at the ocean surface ( $\Omega_{ar}$ ):



Data source: Feely, R.A., S.C. Doney, and S.R. Cooley. 2009. Ocean acidification: Present conditions and future changes in a high- $\text{CO}_2$  world. *Oceanography* 22(4):36–47.

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at [www.epa.gov/climatechange/indicators](http://www.epa.gov/climatechange/indicators).

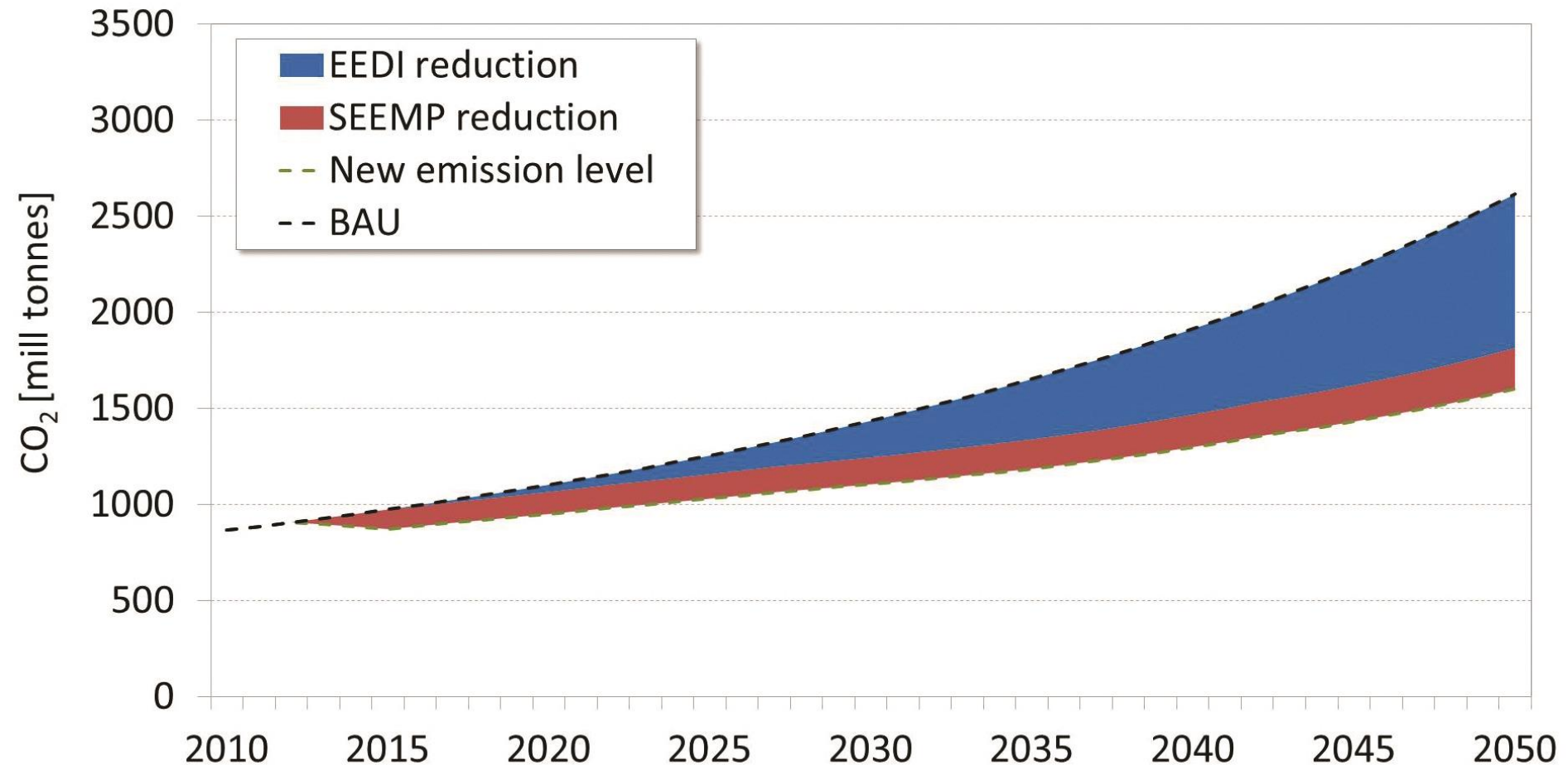


# 14.3 Minimize and address ocean acidification

The past and present....	The future....?
30% anthropogenic CO <sub>2</sub> dissolves into surface oceans	BAU GHG pathway ocean pH decreases another 0.3-0.4 units, virtually certain major deterioration ocean ecosystems
Ocean pH already decreased about 0.1 pH unit	BAU economic costs \$1.2 trillion/year by 2100 (Brander, 2011)
Increased acidity prevents CaCO <sub>3</sub> organisms from producing shells & skeletons; reverberates thru ecosystem	Global action on climate change mitigation (Paris agreement) is directly correlated with reversing ocean acidification
Several ecosystems, especially polar regions, already showing impacts	GEF taking action on reducing GHG footprint of largest marine emitting sector - shipping – GloMEEP  In fact, EVERY GEF CC Mitigation project helps to mitigate both CC and ocean acidification

# GEF-UNDP-IMO GloMEEP supporting shipping sector GHG reduction

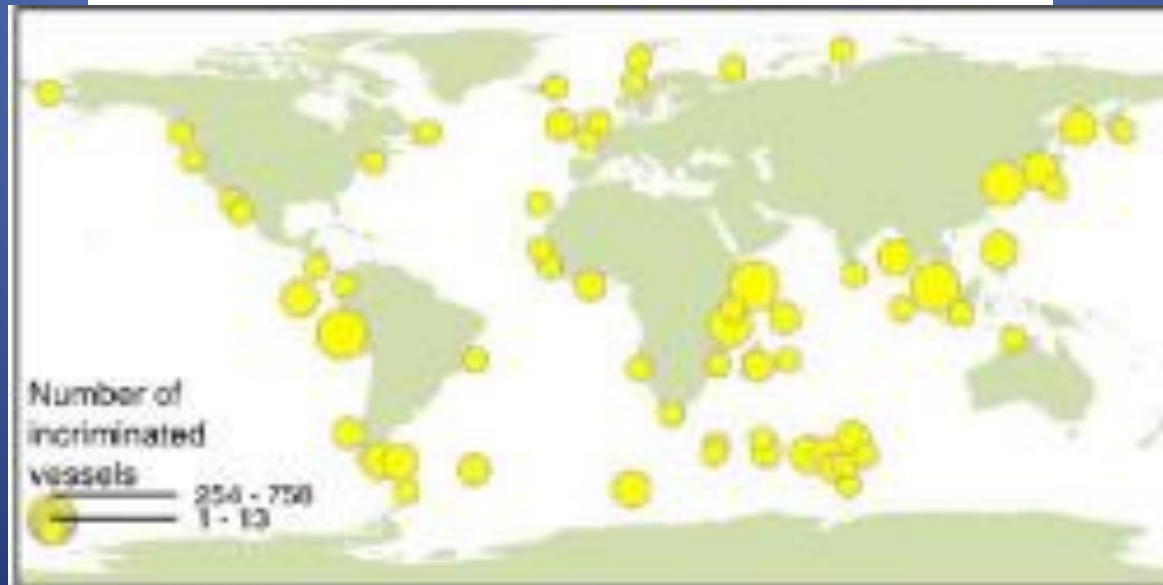
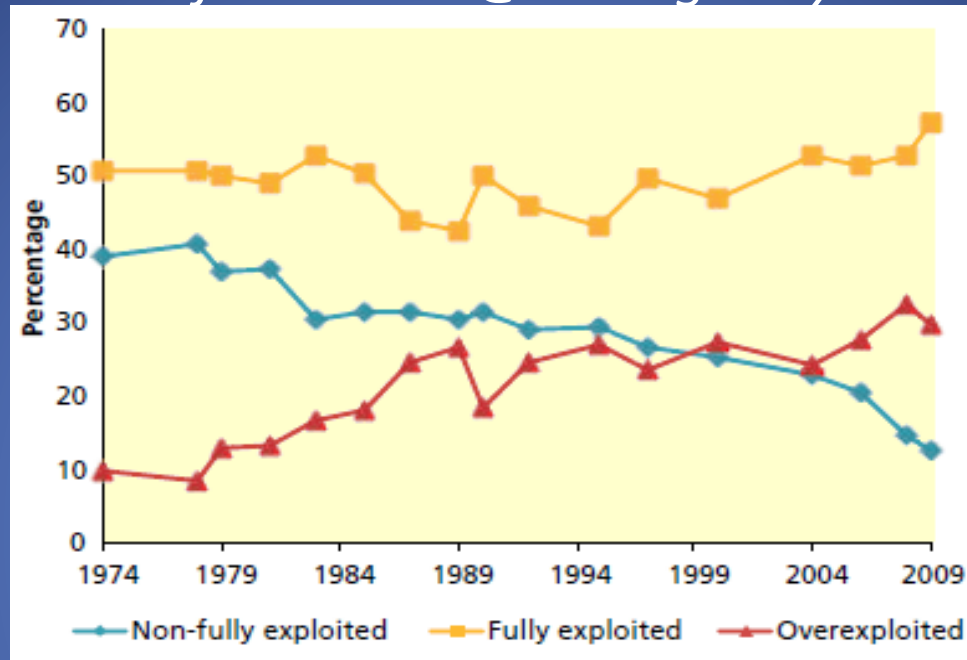
World fleet - Average scenario: A1B-4 and B2-1





## 14.4 By 2020 End IUU and Overfishing

*Indicator: Proportion fish stocks @ biologically sustainable levels*

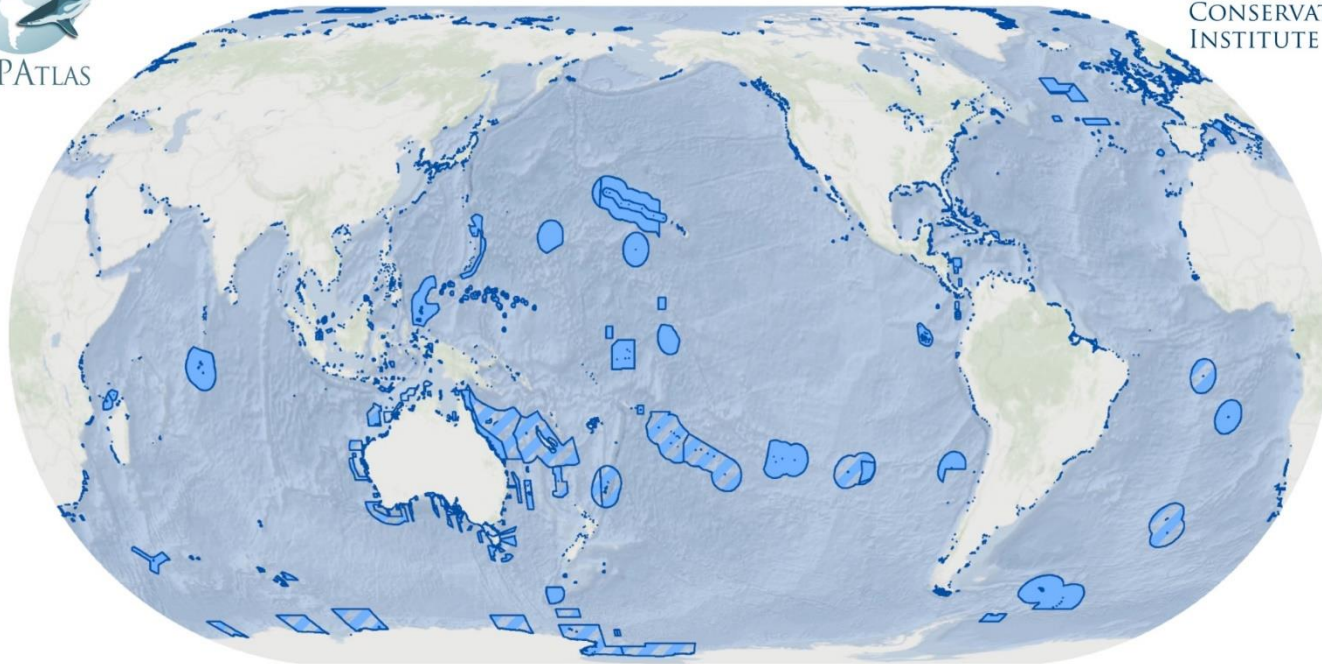
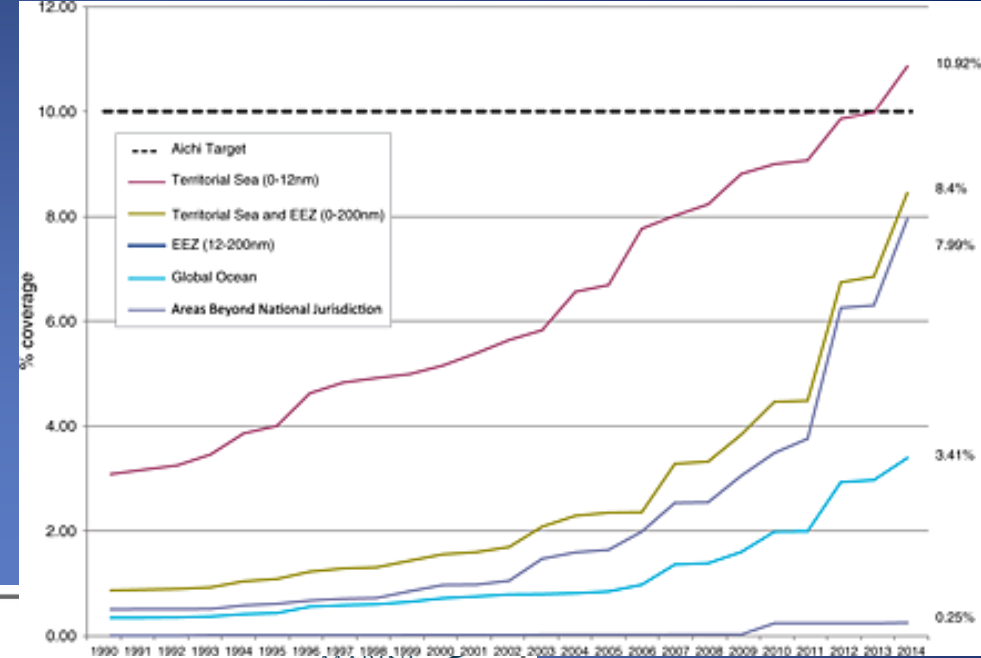


# 14.4 By 2020 end IUU & overfishing

The past and present....	The future....?
<p>About 30% fish stocks overexploited</p> <p>IUU affects about 20% global fish yields worth about \$23 billion/year</p> <p>Strong relationship between IUU &amp; over-fishing and weak fisheries governance (Agnew et al. 2009)</p>	<p>Average 6% per year of stocks moved towards sustainable use by 2020</p> <p>Eliminate average 4% IUU per year to 2020</p> <p>GEF has important role to play through its support to improving governance in RFMOs, LMEs, national and local (SGP) fishing sectors</p> <p>GEF6 corporate IW target – 20% of overexploited fisheries -&gt;sustainability (equiv to ~5.4 million mt/yr)</p>

# 14.5 By 2020 conserve at least 10% coastal & marine areas

*Indicator: % coverage Marine Protected Areas*



MARINE  
CONSERVATION  
INSTITUTE

# 14.5 By 2020 conserve at least 10% coastal & marine areas

The past and present....	The future....?
8.4% EEZs under MPAs, Aichi 10% EEZs projected to be achieved in 2016 (CBD)	10% by 2020 requires 1.3% more ocean under MPA per year (4.7 million sq km/yr), 5x rate from 2004-14
SDG calls for 10% of entire OCEAN under MPA, presently at 3.9%	Progress/concluding on ABNJ agreement may take time => focus of near-term action in EEZs
World added ~0.26% ocean per year 2004-14	GEF has made modest contribution to global progress on MPAs (esp compared to TPAs); needs to step up efforts in this area significantly (UNDP, 2016)
Very small proportion of high seas protected (0.25%); key negotiations on UNCLOS implementing agreement on ABNJ have begun	Many scientists concur that 10% isn't sufficient for true protection and sustainability, more like 30% desired.



# 14.5 By 2020 conserve at least 10% coastal & marine areas

**Table 4: Estimated costs to achieve 10% of global ocean under Marine Protected Areas (MPA)**

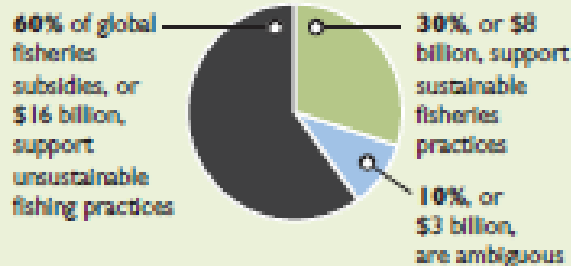
Number MPAs (2006)	Average Area per MPA	Area (km <sup>2</sup> )	% MPAs of this area	Establishment Cost (\$/km <sup>2</sup> )	Total Establishment Cost for MPAs 10% ocean	Management Cost (\$/km <sup>2</sup> /yr)	Total Operational Cost for MPAs 10% ocean
1,220	0.5	610	28%	\$ 63,752	\$ 598,288,000	\$ 293,639	\$ 2,755,689,077
1,530	5	7,650	35%	\$ 21,110	\$ 2,484,484,615	\$ 47,623	\$ 5,604,860,769
900	50	45,000	21%	\$ 6,990	\$ 4,839,230,769	\$ 7,723	\$ 5,346,692,308
500	500	250,000	12%	\$ 2,315	\$ 8,903,846,154	\$ 1,253	\$ 4,819,230,769
150	5,000	750,000	3%	\$ 766	\$ 8,838,461,538	\$ 203	\$ 2,342,307,692
10	50,000	500,000	0.2%	\$ 254	\$ 1,953,846,154	\$ 33	\$ 253,846,154
3	300,000	900,000	0.1%	\$ 60	\$ 830,769,231	\$ 5	\$ 69,230,769
<b>4,310</b>		<b>2,453,260</b>	<b>100%</b>		<b>\$ 28,448,926,462</b>		<b>\$ 21,191,857,538</b>

# 14.6 By 2020, prohibit destructive fisheries subsidies

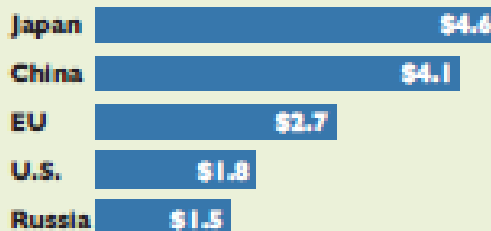
*Indicator: Country progress in implementation of international IUU instruments*

## OVERALL BREAKDOWN

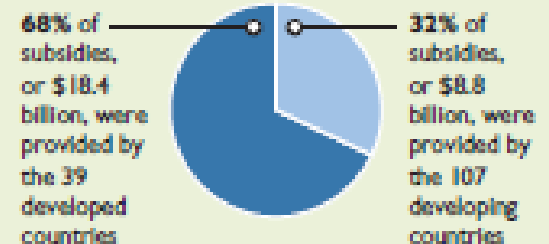
### Sustainability



### Highest spenders in billions of dollars (2003)



### Developed/developing nations



\*A country's development status is based on the U.N. Development Programme's Human Development Index; adjustments are made for countries with highly developed industrial fishing fleets such as Russia and China, which are categorized as developed.

# 14.6 By 2020, prohibit destructive fisheries subsidies

The past and present....	The future....?
<p>Currently about \$16 billion per year (Sumaila, 2010) - ship fuels, boat construction &amp; renovation, tax breaks, access rights, and other transfers</p> <ul style="list-style-type: none"><li>• 68% by 39 developed countries</li><li>• 32% by 107 developing countries</li></ul>	<p>Subsidies need to be reduced to close to zero in the next 5 years thru WTO mediated processes that have been underway since 2000</p> <p>Steering negative subsidies towards sustainable fishing (and aquaculture) could provide massive infusion of financial resources</p>

# 14.7 By 2030, increase economic benefits to SIDS & LDCs from marine resources

*Indicator: Sustainable fisheries as % GDP in LDCs & SIDS*

The past and present....	The future....?
<p>SIDS exports of fish products US\$1.75 billion (2012), ~7% of Exports and 1.7% GDP; increased about 50% 2006-12</p> <p>SIDS tourism exports \$24 billion, 50% of their services exports. Hotel related FDI to SIDS increased to ~\$0.5 billion in 2012</p> <p><b>BUT...</b></p> <p>Fisheries in SIDS subject to as much as \$872 m. in harmful subsidies (Sumaila)</p> <p>~60% of SIDS stocks overfished; realization of only 48% of potential economic benefits in EEZ</p>	<p>SIDS need assistance in developing and implementing their 'blue economy' strategies to optimize their roles as 'Large Ocean States' and grow economies</p> <p>GEF well positioned to support SIDS:</p> <ul style="list-style-type: none"><li>• MFA Ridge-to-Reef/ICM-IWRM</li><li>• LMEs involving SIDS</li><li>• SIDS in RFMOs</li><li>• Biodiversity/MPA</li><li>• CC-Adaptation/resilience</li><li>• CC Mitigation (ocean energy)</li><li>• Blue Economy Strategies (GEF7?)</li></ul>



# 14.b Provide access for Small Scale Fisheries (SSF) to marine resources & markets

*Indicator: Country progress application legal/policy/inst'l frameworks for SSF access*

	Small Scale Fisheries	Large Scale Fisheries	Aquaculture
Annual catch/production for human consumption (mt)	30,000,000	30,000,000	51,650,000
Annual catch to meals & oils (mt)	0	25,000,000	0
By-catch (mt)	0	8-20,000,000	0
Number employed	12,000,000	500,000	10,793,000
Jobs/mt fish product	0.400	0.009	0.209

# 14.b Provide access for Small Scale Fisheries (SSF) to marine resources & markets

## The past and present....

SSF supply almost 1/2 world's seafood supply, employ ~ 90% of those involved in the sector, contributing to far more livelihoods on a per volume seafood basis.

SSF use 1/4 energy of large scale to catch same volume fish. Most SSF providing raw products to domestic and int'l markets so gaining little in value added.

Small scale fisheries disadvantaged by much greater subsidies to large scale, lack of co-management arrangements, lack of access to markets even domestically, lack of pricing power.

## The future....?

SSF have significant capacity building and financing needs. Governments need legislation to incentivize wholesalers and processors to source fish from SSF. Fish pricing needs to be more transparent and accessible.

GEF can support SSF in this SDG through innovative new initiatives such as GEF Coastal Fisheries Initiative, UNDP/GEF Marine Commodities Project, LME SAP implementation, SGP IW, etc.

Achieving SDG 14 is extremely ambitious\* and in several cases requires transformational changes in ocean – and land-based - management and governance

“....more, better, sooner”

GEF IW can – does - play a substantial role in supporting implementation & achievement of most SDG 14 targets



\* What were they smoking when they came up with all the 2020s....?