



d4SCIENCE

EGEE

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Scientific Data Infrastructure Ecosystem

The Integrated fisheries Capture Information System (ICIS)



Marc Taconet
marc.taconet@fao.org



e-infrastructure



→ The “Fishery” community

ICIS – a response to institutional needs

GRID technologies: opportunities and challenges

Who are we?

National and Inter-Governmental Organizations dedicated to:

- ❑ sustainable exploitation of fishery resources
- ❑ conservation of habitats and ecosystems

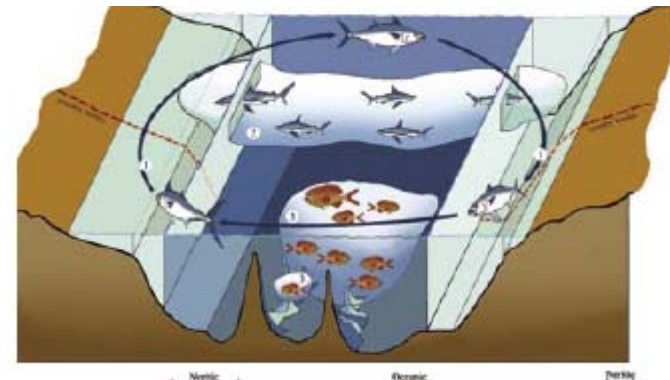
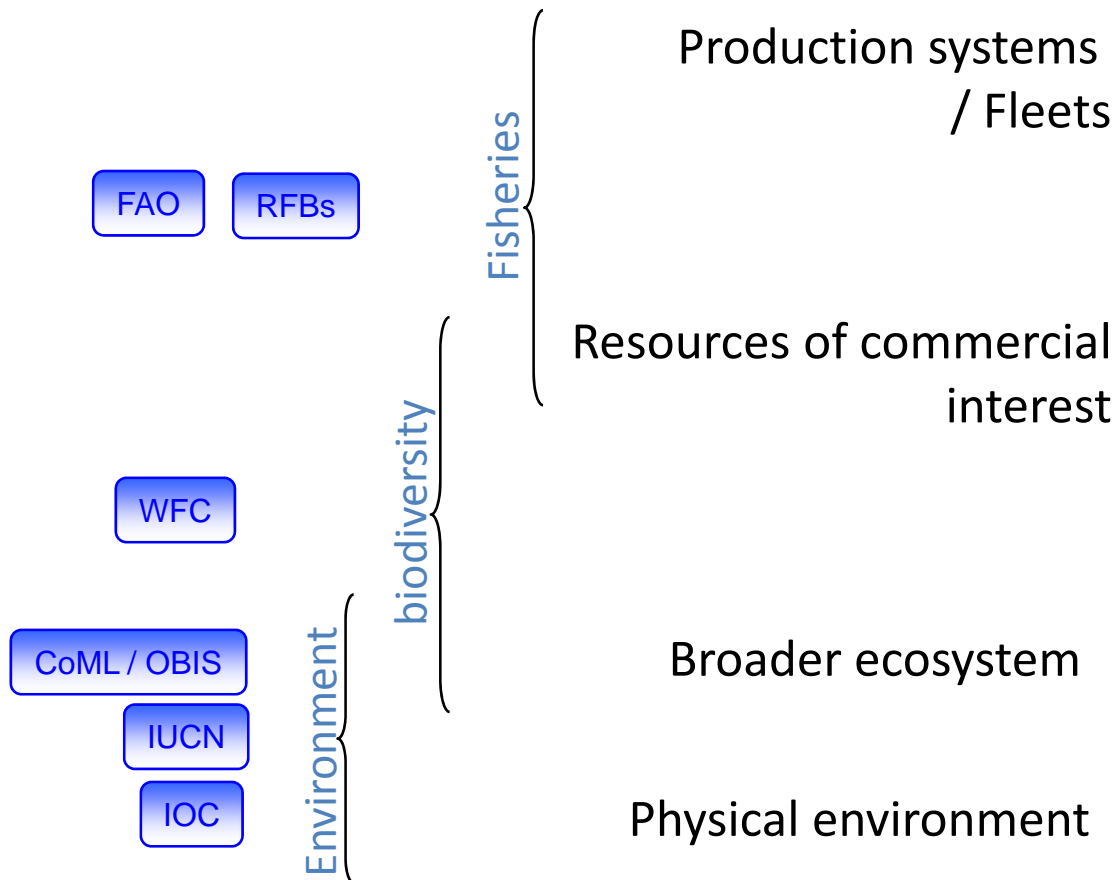
What are our objectives?

Implementation of the Ecosystem Approach to Fisheries Management (EAF)

The World Summit on Sustainable Development, Johannesburg, 2002, encourages nations to apply the ecosystem approach by 2010...

- "An ecosystem approach to fisheries strives to **balance diverse societal objectives**, by taking into account the **knowledge and uncertainties** about **biotic, abiotic** and **human components** of ecosystems and their interactions and applying an **integrated approach** to fisheries within ecologically meaningful boundaries."

Implementation of the EAF: Components of knowledge



needs and institutional set-up

Distributed roles :

by geographical scale:

- Global level
- Regional level
- National level

by themes

- Biodiversity – environment
- Fisheries

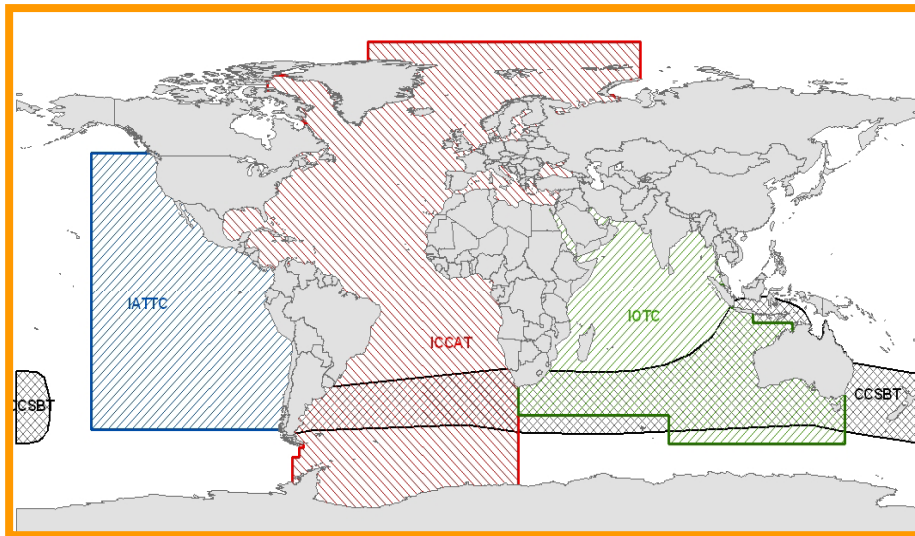
by mission:

- Policy – management – development
- Research
- Control and enforcement

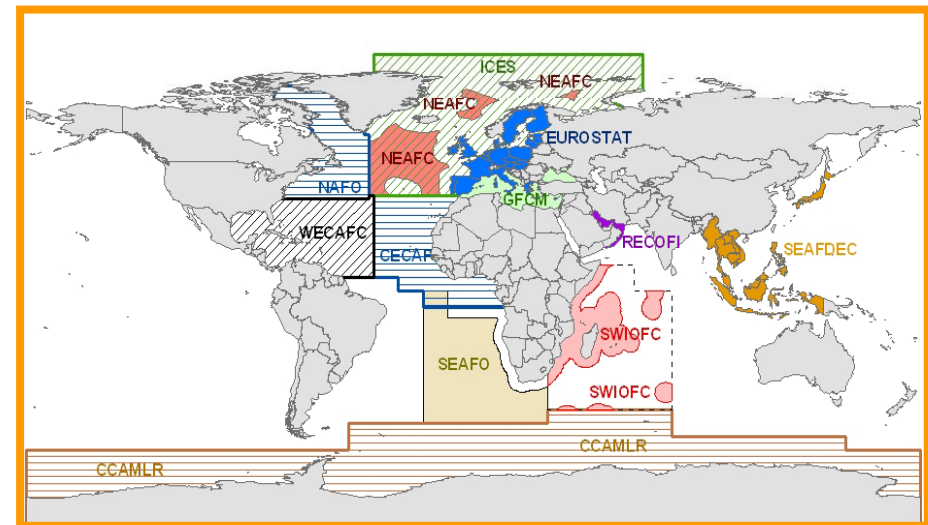
	FAO	WFC	RFBs	National research center	National administration
Global level	X	X			
Regional level			X		
National level				X	X
Biodiversity – environment	X		X	X	X
Fisheries		X	X	X	
Policy – management – development	X		X		X
Research		X	X	X	
Control and enforcement			X		X

Focus on Fisheries agencies

Information networks: FAO's coordinating role



Tuna RFB agencies



non-tuna RFB agencies

Focus on Fisheries agencies

Information networks: FAO’s coordinating role

- ❑ Coordinating Party on Fishery Statistics (*since 1960*)

coordinate fishery statistical programmes

standards setting body

CWP

- ❑ Fisheries Global Information System (*since 1999*)

Distributed e-Infrastructure to promote data integration,

streamlined workflow, information standards



- ❑ Fishery Resources Monitoring System (*since 2004*)

Monitoring state of world fishery resources

mechanisms for data sharing



The “Fishery” community

→ ICIS – a response to institutional needs

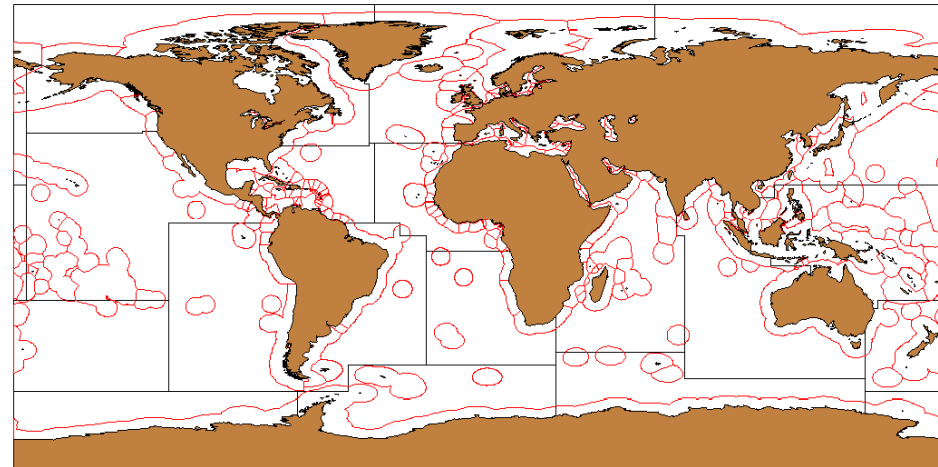
GRID technologies: opportunities and challenges

UN recommendations:

- ❑ FAO should provide indicators for assessment of High Seas stocks

*“distinguish catch in the High Seas
from catch within EEZs”*

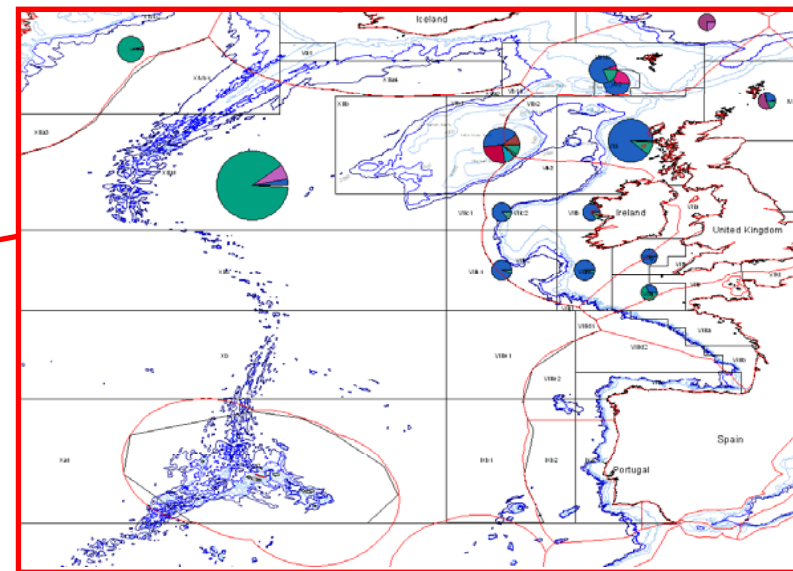
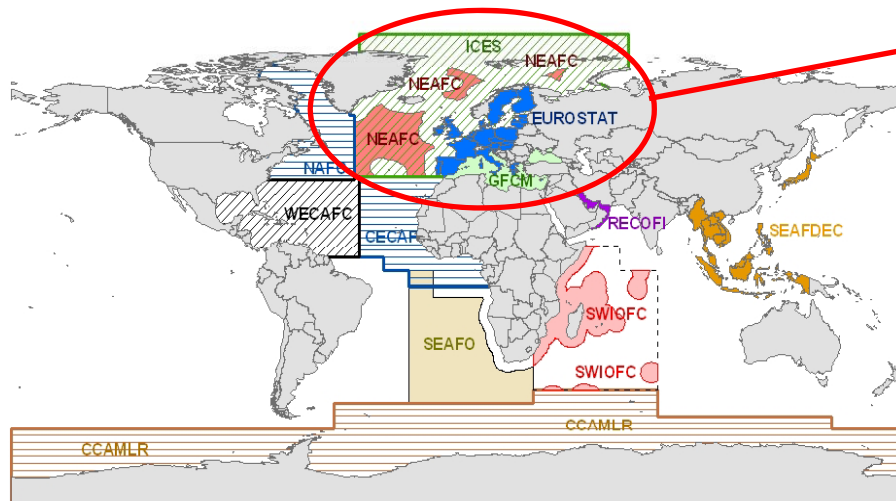
- ❑ current status:
reporting by statistical area:



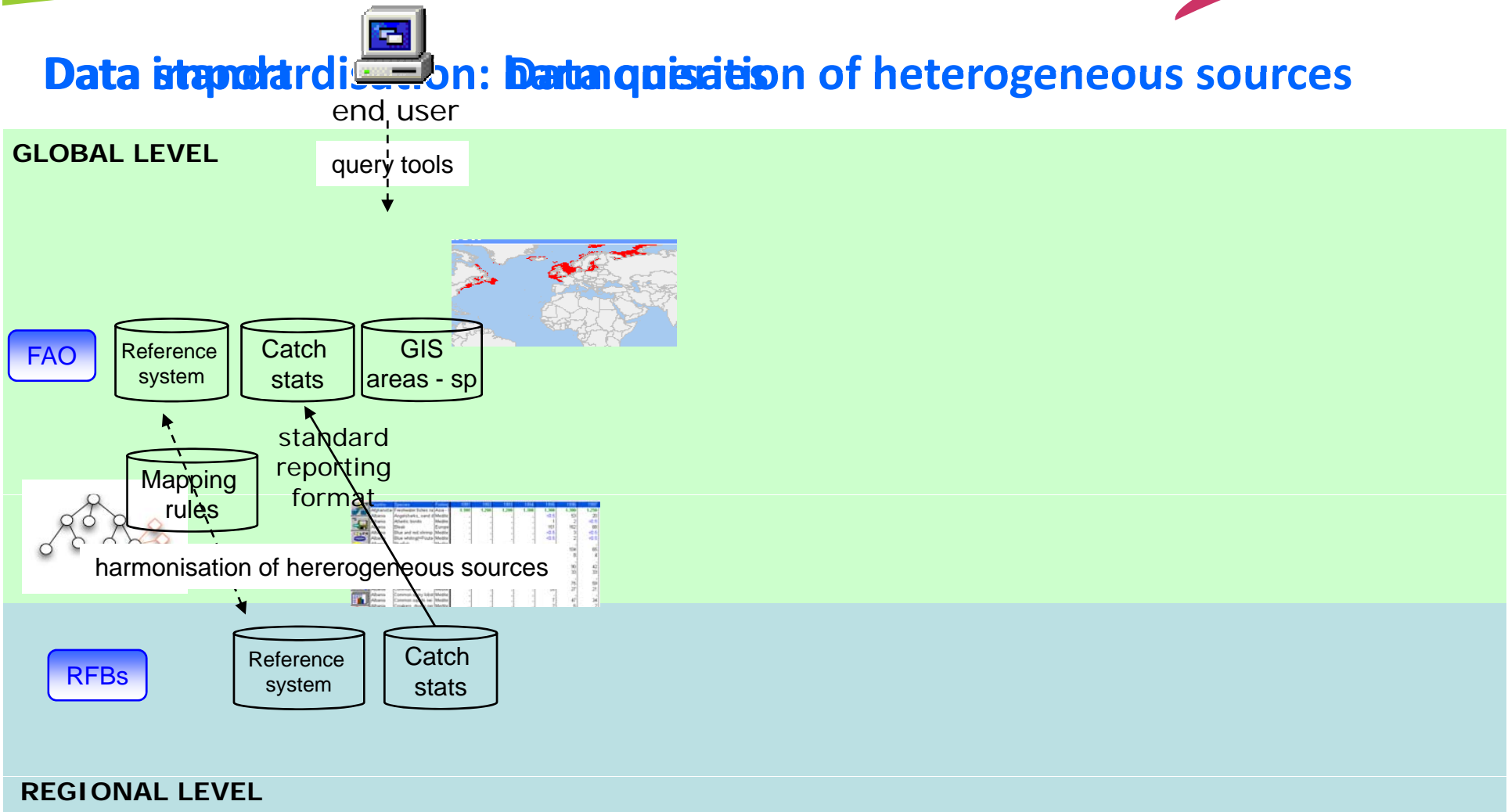
CWP recommendations:

- ❑ enhance quality of global catch statistics
“stronger integration of existing catch Databases”

- ❑ current status:
shared standards
non-integrated databases



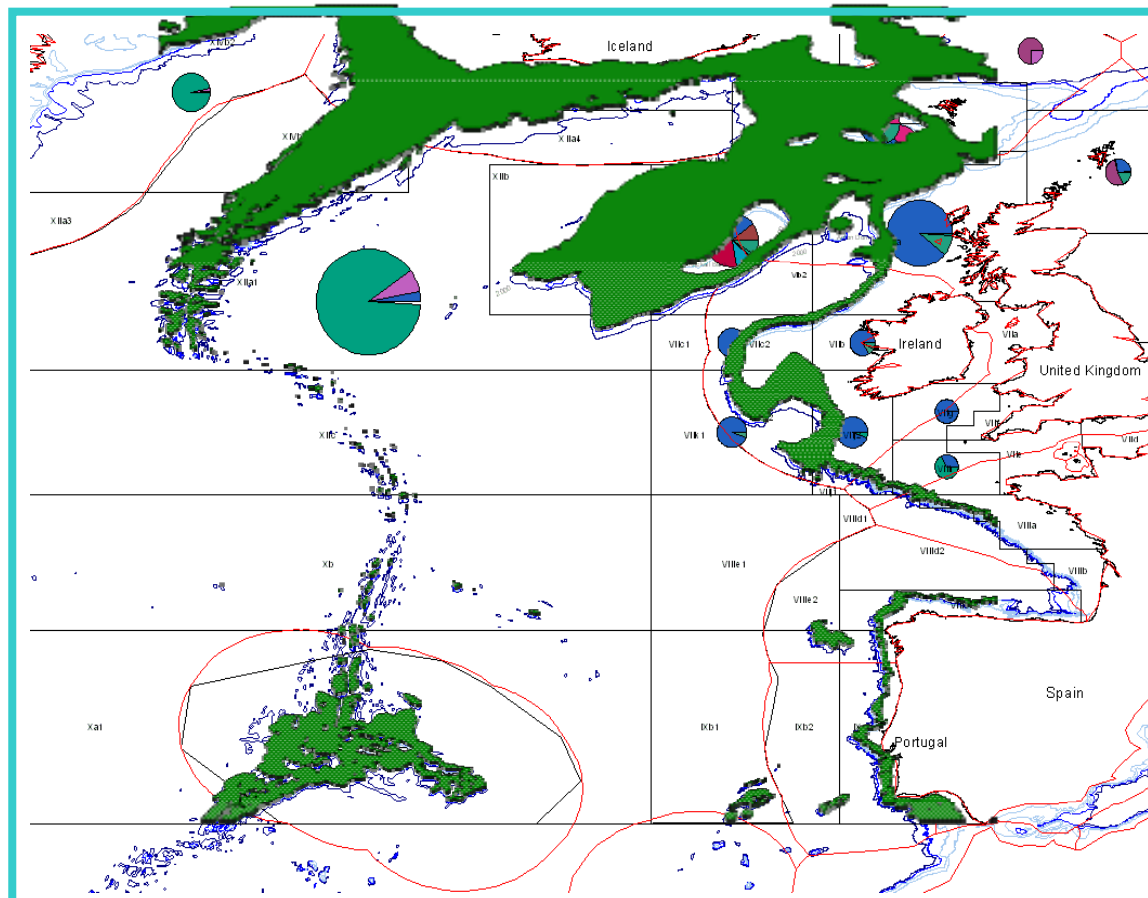
Data interoperability: Data acquisition of heterogeneous sources

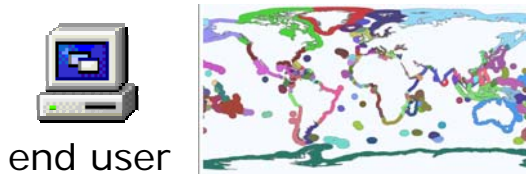


Fishery

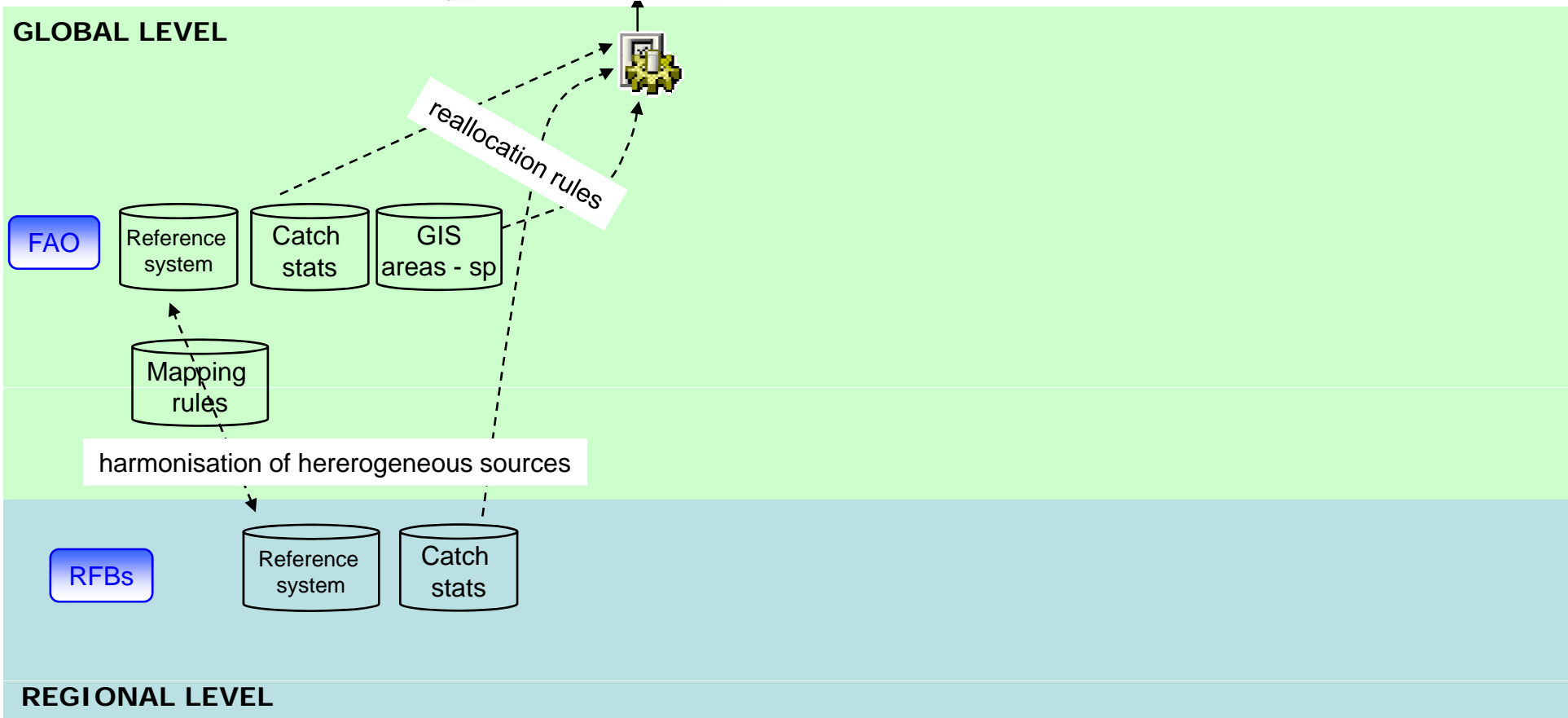
Biodiversity

Data processing: reallocation rules





Products dissemination: maps - tables

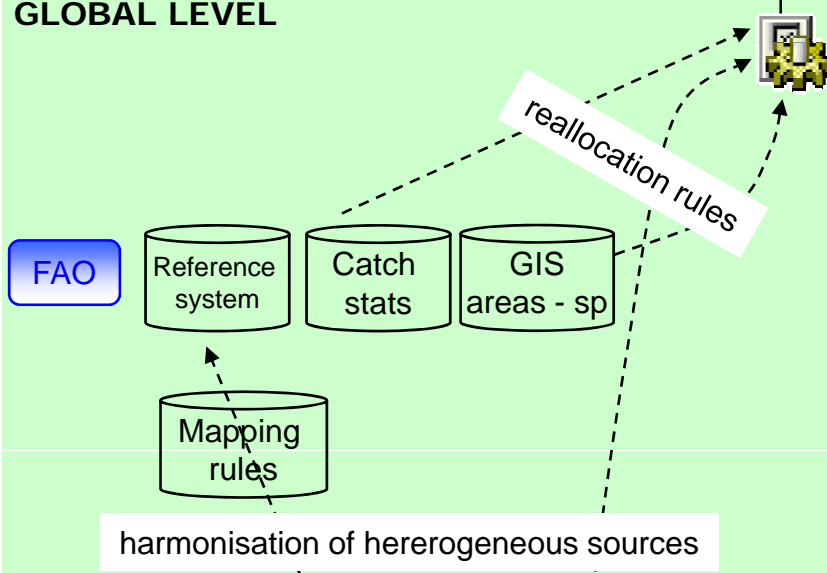


Fishery

Biodiversity



GLOBAL LEVEL



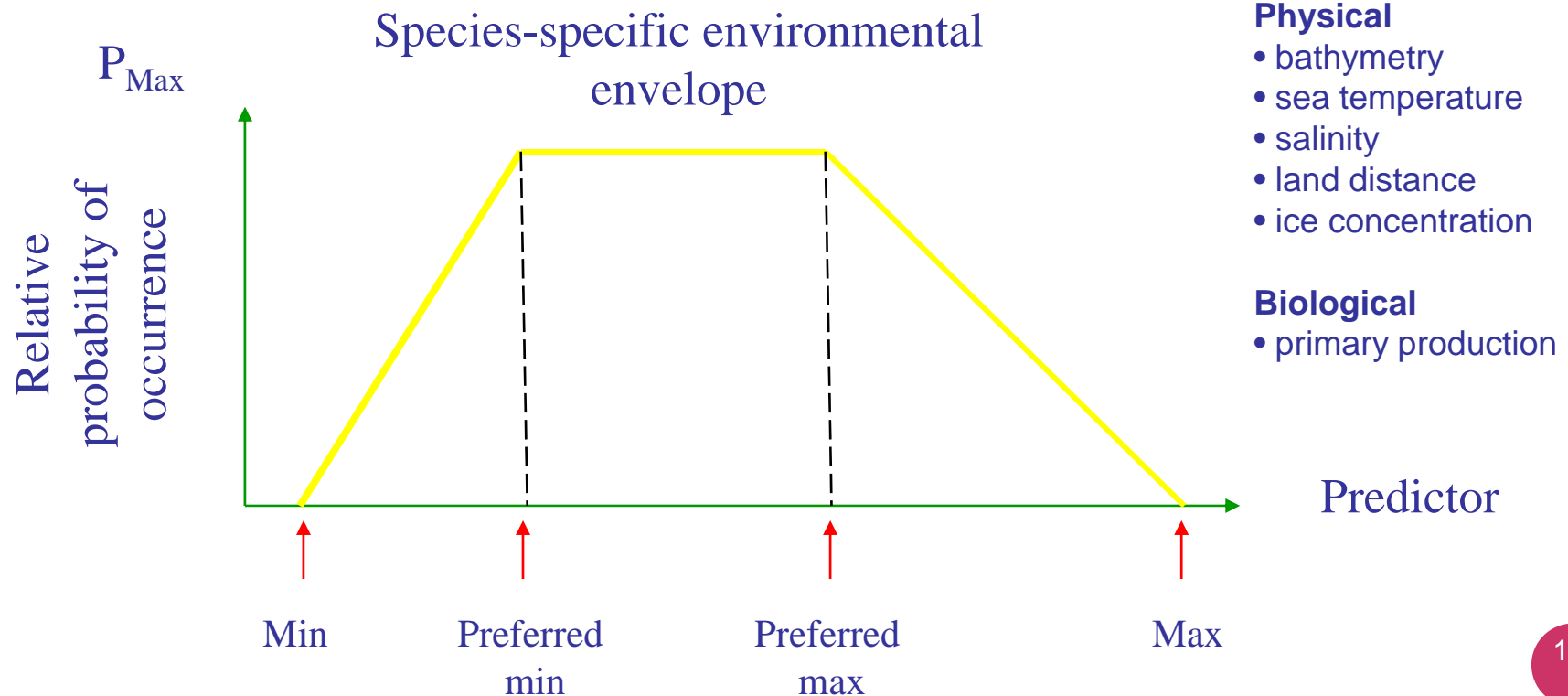
REGIONAL LEVEL

Fishery

Biodiversity

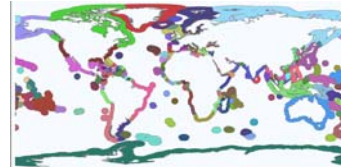
Data processing: Predicting species distribution

- Environmental envelope type modeling approach

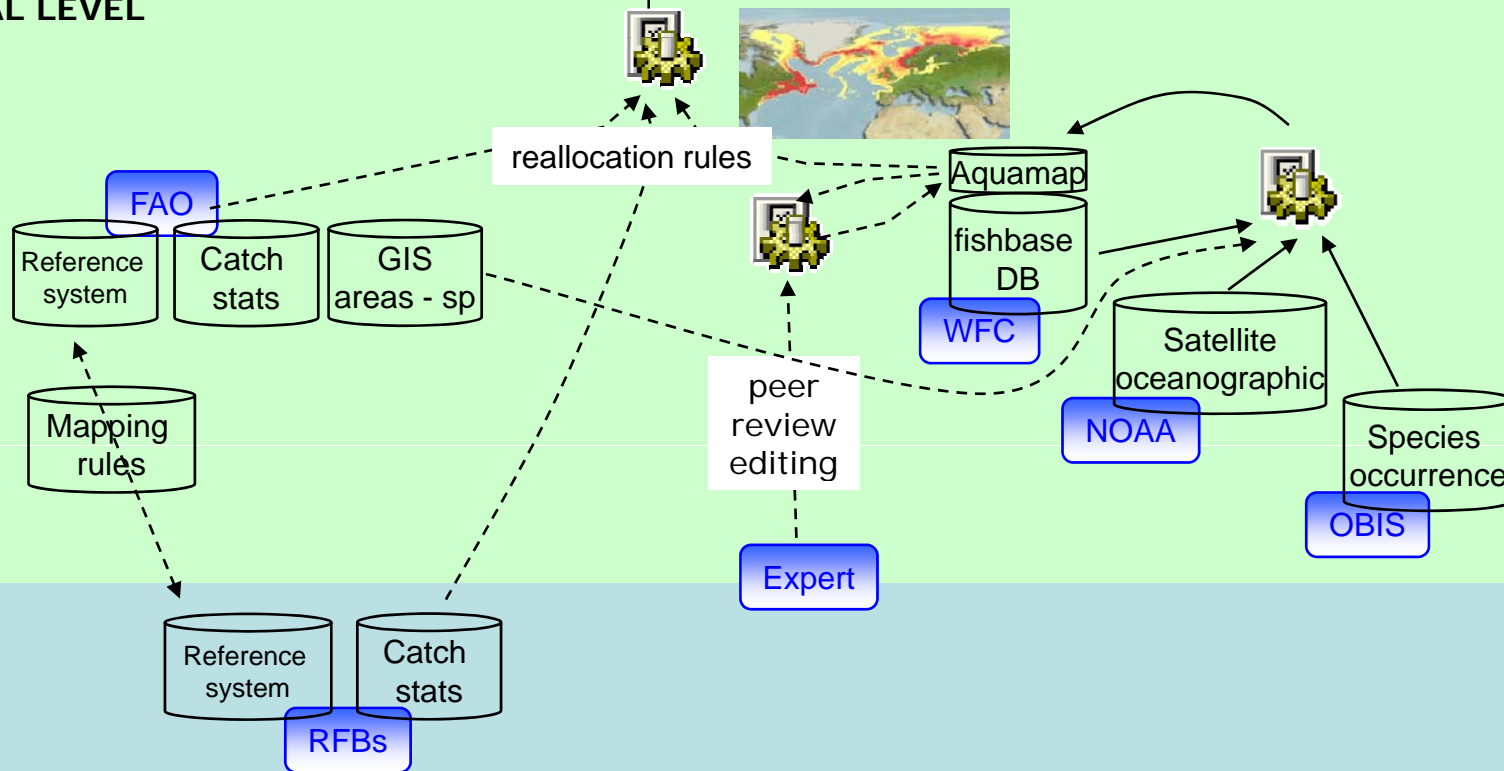




end user



GLOBAL LEVEL



REGIONAL LEVEL

Fisheries

Biodiversity

Summary of needs

- Create an information system which will facilitate ...
 - the dissemination through tables or maps of credible estimates of catch data, according to users' choice of spatial resolution, based on best available statistic sources and with transparent algorithms.
 - the comparison of catch statistics among various sources.

- through mechanisms allowing ...
 - semi-automated import of distributed data sources
 - harmonization of heterogeneous sources
 - implementation of re-allocation rules
 - intensive data processing
 - support for query, output and annotation.
 - easy updating and feedback processes

The “Fishery” community

ICIS – a response to institutional needs

→ GRID technologies: opportunities and challenges

Current status:

- ❑ communities of practices (CoP):
 - with e-infrastructures
 - using structured data

- ❑ research needs in Marine sciences
 - enable data sharing beyond established CoP
 - enable collaborative approaches

- ❑ generalizing solutions to interoperability is desirable

Opportunity

- ❑ D4Science offers an approach

Many outstanding questions

→ of Technical nature

- ❑ is toolkit in line with our IS-IT strategy/needs?
 - logical extension of our current infrastructure, which breaks the current limits
 - respecting highly structured info sources based on semantic meaning

- ❑ are technical goals realistic?
 - duplicating existing tools, or building on existing services?
 - ability to build over other interoperability solutions: Networked ontologies

Broader strategic issues

→ how to maintain momentum / commitment from communities

- ❑ imperious need to reconcile diverging logics
 - informatic sciences: fast, demo of potential, swap to next challenge
 - user communities: inertia, “data” investments, gap between sponsors and final users vested with knowledge generation

- ❑ solutions?
 - strong buy-in supported by institutional needs
 - software co-ownership
 - stepwise approach to delivery
 - modular design – benefits from each module
 - long term commitment from sponsors

THANKS FOR YOUR ATTENTION

LOOKING TOWARDS
A FRUITFUL DISCUSSION