In recent years there has been greater demand for applying a more “holistic” & “ecosystem-sensitive” approach to fisheries management.

Such an approach demands far more data & a far better understanding of fish & their natural environment than we presently possess.
The present trend in data needs and data availability is:

An ecosystem approach requires much more data

As a result...

The % of available data versus “needed” data is declining
How does management deal with the huge gap between knowledge & management requirements?

1. Action must be taken: “The absence of adequate scientific information should not be used as a reason for postponing or failing to take measures…” FAO 6.5
2. But risk must be mitigated: “fisheries management organizations should apply a precautionary approach…” FAO 6.5

By deploying a tsunami of regulations which often makes fisheries management:

- Very difficult to implement
- Very expensive and
- Almost impossible to monitor and enforce
It also leaves fishers:

and extremely frustrated
So what is the solution?

Insanity: doing the same thing over and over again and expecting different results.

Maybe the time has come to start again & try a totally different approach to fisheries management.
Olrac-RTI: A novel practical and operational approach to holistic management of fisheries for multiple commercial species and ecosystem objectives

Presented by
Amos Barkai
Olrac SPS, Cape Town, South Africa
What is RTI?

Real Time Incentives - or “RTI” - is an incentive-based, novel approach to fishing management which takes into account multiple quantitative & qualitative biological & ecological factors while significantly reducing the complexity of the regulatory process.

The RTI management procedure consists of:

1. RTI annual budget in the form of RTI points
2. RTI spending map which determines the rate at which RTI points are spent during fishing trips

Each RTI map consists of many small cells (rectangles) with different colours which represent the rate at which RTI points are spent during the vessel’s stay in this area. Maps are vessel-specific, based mainly on gear used & the assumed or calculated biological & ecological sensitivities of different cells.
Practical implementation of RTI system using the Olrac eLog system

Real time exchange of data between vessels & shore: Slide show

Shore Fleet web-based Elog server

Vessel eLog unit

EM (optional)

VMS
Step 1: RTI Points Allocation

**Shore unit**

[Image of RTI Fisheries Management (on the shore) software interface]

**Vessel unit**

[Image of vessel unit interface showing RTI Points registered on eLog]

Message notice

200 RTI Points sent to vessel unit

RTI Points registered on Vessel eLog
Step 2: Tariff Maps Allocation

Two maps are created or selected & sent to vessel

Vessel unit

Shore unit

Vessel is ready to start fishing
Step 3: Spending of Points

RTI points left
Fishing days left

RTI points left
Fishing days left
Step 4: Changing Maps – By Gear

A diamond mesh 80 mm codend was changed to a square mesh 100 mm codend.

New, more friendly map, are automatically loaded on the vessel unit GIS system.
Step 5: Changing Maps from Shore: New Information

New map with new close areas are sent to all vessels because Leatherback turtle catches were observed.
Possible benefits of the RTI system

Under RTI management regime:

• Holistic approach which takes into account variety of **biological** and **ecological** factors

• It has no catch/landings **QUOTA**.

• The fisher is almost **FREE** to fish wherever and whenever he wants, given the RTI tariffs...

• **COSTS** of overfishing and other costs to the ecosystem are internalized: fishers have to take them into account in their business considerations.

• The actual monitoring mechanism of the RTI system can be greatly **AUTOMATED**.

• Maps can be **DYNAMICALY** updated with any kind of information & new information can be weighted according to any objectives/aims in near real-time situations.
Many Thanks. I can answer questions, mainly with relation to the RTI deployment mechanism. For more info please look at http://rti-for-fisheries.info/

I can also demo Olrac-RTI to interested people on my computer during breaks time.