Earth Observations (EO) for Tuna Fisheries Workshop Series



Integrating EO data and certifications for reducing IUU fishing towards a sustainable seafood production

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Keeping Momentum to Achieve the 2030 Agenda

DELIVERABLES

regional and

international levels

2030: Increased economic benefits to SIDS and LDCs from sustainable use of marine resources (SDG target 14.7) **2025**: Marine pollution significantly reduced (SDG target 14.1) Fish mainstreamed into food security and nutrition policy by end 2030 of UN Decade of Action on Nutrition **2020**: Marine ecosystems sustainably managed (SDG target 14.2) FAO Committee on Fisheries (COFI) An end to overfishing and IUU fishing (SDG target 14.4) and subsidies that contribute to them (SDG target 14.6), for every two years earliest possible restoration of fish stocks **2022**: International Year of Artisanal Fisheries and Aquaculture (IYAFA) At least 10 percent of coastal and marine areas conserved **2018**: First International Day for the Fight (SDG target 14.5 and Aichi target 11) Against IUU Fishing (every 5 June) 2017, 2020: UN Ocean Conferences **2016**: PSMA enters into force; data exchange 2016-2025: UN Decade of Action on Nutrition operational at national,

> **2016**: First Global Integrated Marine Assessment: World Ocean Assessment I

UN ACTIVITIES: RAISING AWARENESS, PROMOTING ACTION

Forms of Illegal, Unreported, and Unregulated (IUU) Fishing



11-26 million tonnes per year, \$10-23 billion





Voluntary Sustainability Standards (VSS) and Certifications

 Overall lack of guidance for governments
VSS are a non-mandatory market-driven tool to address key social, economic and environmental issues

management, hence the FAO developed

and adopted guidelines for ecolabelling of

wild capture fish and aquaculture

•To provide assurance in the **supply and value chain**







 Promote improvements in seafood certification schemes

- Individuality
- Effective supply and promotion of certified seafood
- •Allowing **information flow** across the supply chain
- Lower costs and transparency



Seafood Certification Scheme



Combating IUU through certification

Port Arrival Notification and Risk Determination As vessels approach a port, they send a request to land to dockside authorities. Based on a wide range of information made available to them, authorities determine the risk profile of the vessel.

Arrival, Inspection and Legality Determination

Vessels are inspected based on their risk profile.

Authorities grant landing authorization codes to catch that they deem to be legal.

Traceability Through the Supply Chain

LACs can become a KDE and move through the supply chain with the fish. LACs should be interoperable with other databases, inventory management, and tracking systems.

Inputs into Other Traceability and Documentation Systems

LACs can be used in many ways as they move towards different markets. For example, they can serve as the basis for import/export certificates.



Minimum requirements of VSS

- •Requirements are specified for each of three areas:
 - •The management systems
 - •The stock under consideration
 - •Impacts of the fishery on the ecosystem

Collection, maintenance and assessments of adequate **data**

- **Best scientific evidences** for conservation and management measures
- Monitoring, surveillance, control and enforcement
- Protection of stocks and preservation of the environment

Data requirement for IUU



Issues with conventional data

- Very expensive,
- Time-consuming
- Require special permissions, licences and Bureaucracy
- Human resources
- Complex logistics and planning



Why EO in Fisheries-Pirate attacks

• Gulf of Guinea are currently losing a sum of \$2 billion to pirate attacks annually



Why EO in Fisheries- IUU

- USD 100 million losses per year
- Threat to conservation and management of fish stocks
- Causing adverse consequences for
 - Fisheries,
 - Coastal and marine ecosystems,
 - People depending on the resources



Variables Required from EO and Satellite Instruments

Sea temperature	Ocean colour	Currents	Wind and wave conditions
Positioning of the Vessels and Boats	Bathymetry and seafloor maps	Fish distribution	Sea level rise
	Coastal communities' agglomeration	Genetic information	

Monitoring of unsustainable and Illegal Fishing through EO and AIS Data in Ghana



End users

Fishing Zone and Fish Aggregation



Matching and mapping sea surface temperature (SST) with ocean colours showing chlorophyll



The satellite-derived SST and chlorophyll gives fish aggregation



SST maps are used by Tuna fishing fleets



Physical features such as gyres, eddies, inversions and upwelling

Case study

Shrimp fisheries certification in Atlantic region, Nigeria And

Supporting Mi'kmaw Indigenous development of Indigenous certification for the lobster commercial fishery in the Atlantic Nova Scotia, Canada







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