



Fisheries Management Course: Stock Assessment, Harvest Control Rules and Fishing Surveillance



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Introduction:

Fisheries management, covering stock assessment, harvest control rules and fishing surveillance, is a 5-day course for fisheries authority, environment and coastal development teams that ends with a Coastal Fisheries Management Plan for a case fishery. Wild stocks decline when licences, quotas and gear rules are set without catch and effort evidence, when vessels go unmonitored and when fishers are left out of decisions, so landings, incomes and food supply fall. Nominees license, monitor or advise on capture fisheries and work through case studies on landing records, logbook data and inspection files. CoreConcept Training Center delivers this fisheries management course.

Course Objectives:

- Apply the ecosystem approach to fisheries and the FAO Code of Conduct for Responsible Fisheries to set management objectives for a capture fishery
- Organise catch and effort data collection from logbooks, landing sites and sampling, and standardise catch per unit effort as an abundance index
- Interpret surplus production and length-based stock assessment outputs against maximum sustainable yield and biological reference points
- Design a harvest control rule that links total allowable catch, licences, effort limits and gear measures to stock status
- Plan vessel tracking, observer coverage, dockside inspection and sanctions that detect and deter IUU fishing
- Draft a fisheries management plan with spatial closures, co-management arrangements, value chain actions and monitoring indicators

Target Audience:

- Fisheries authority teams responsible for licensing vessels, setting catch limits and drafting fishery regulations
 - Fisheries statistics and research teams that collect landing data and prepare stock status advice for decision makers
 - Monitoring, inspection and enforcement teams accountable for vessel tracking, dockside checks and fishing offence cases
 - Environment and marine resource teams that assess bycatch, spatial closures and the ecosystem effects of fishing
 - Coastal development and fishing community liaison teams that work with fisher cooperatives, landing sites and seafood buyers
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Course Outline:

Day 1: Capture Fisheries Landscape and the Ecosystem Approach

- Capture Fisheries Segments From Artisanal Boats to Industrial Fleets
- Ecosystem Approach to Fisheries Principles and Management Objective Setting
- FAO Code of Conduct for Responsible Fisheries Precautionary Principles
- Fish Life History Basics of Growth, Maturity and Recruitment
- Fishery Status Baseline Using Overfishing and Fleet Overcapacity Indicators

Day 2: Catch and Effort Data and Stock Assessment Concepts

- Catch and Effort Data Collection Through Logbooks and Landing Surveys
- Catch Per Unit Effort Standardisation as a Stock Abundance Index
- Schaefer Surplus Production Model and Maximum Sustainable Yield Estimates
- Biological Reference Points Fmsy, Bmsy and Limit Spawning Biomass
- Length-Based and Age-Structured Assessment Outputs Read by Managers

Day 3: Harvest Control Rules, Licensing, Quotas and Gear Measures

- Harvest Control Rule Design With Target and Limit Reference Points
- Total Allowable Catch Setting and Individual Transferable Quota Allocation
- Vessel Licensing Schemes and Days at Sea Effort Limits
- Minimum Mesh Size, Gear Restriction and Minimum Landing Size Rules
- Bycatch Reduction Devices and Discard Monitoring for Non-Target Species

Day 4: Spatial Measures, Fishing Surveillance, Landing Sites and Co-Management

- Marine Protected Areas and Seasonal Closures as Fishery Spatial Tools
- Vessel Monitoring System Tracking and Onboard Observer Coverage Planning
- Dockside Inspection, Catch Verification and IUU Fishing Risk Profiling
- Landing Site Value Chain Mapping From First Sale to Market
- Fisheries Co-Management Committees With Fisher Associations and Cooperatives

Day 5: Case Study Practice on a Coastal Fisheries Management Plan

- Fisheries Information System Data Pack Review for Case Coastal Fishery
 - Case Fishery Stock Status Diagnosis From Catch and CPUE Trends
 - Harvest Control Rule and Effort Package Selection for Case Fishery
 - Surveillance, Co-Management and Monitoring Indicator Plan for Case Fishery
 - Coastal Fisheries Management Plan Completion and Peer Review Panel
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Skills You Will Gain:

- Fishery Objective Setting
- Catch and Effort Data Analysis
- Stock Status Interpretation
- Harvest Strategy Design
- Fishing Licence and Quota Administration
- Bycatch and Gear Regulation
- Fisheries Inspection Planning
- Fisher Stakeholder Facilitation

Why Attend This Course:

- Deliver a Coastal Fisheries Management Plan for a case fishery to the fisheries director and the management advisory committee
- Decide when catch limits, licence numbers or fishing days must be cut, held or eased according to stock status against reference points
- Avoid stock collapse, closed fishing grounds and disputes with fishers caused by rules that lack data, enforcement or community support
- Share logbook templates, CPUE worksheets, harvest control rule tables and inspection checklists with statistics and enforcement colleagues

Conclusion:

Back at work, the participant presents the Coastal Fisheries Management Plan to the fisheries director, the management advisory committee and fisher representatives. They use it to approve the harvest control rule, catch and licence limits, gear and closure measures, the surveillance plan and the co-management arrangements for the fishery. After the first fishing season under the plan, the authority should compare landings, CPUE, compliance rates and fisher feedback against the plan indicators, update the stock status advice and revise the measures before the next season opens.

Frequently Asked Questions FAQ:

What should participants know before the fisheries management course on stock assessment and harvest control rules?

Participants should already license, monitor or advise on wild capture fisheries and read basic landing statistics. No modelling software skill is needed. Bringing anonymised landing records, licence lists or inspection reports from a fishery they know helps them apply the case work.

How does fisheries management differ from aquaculture or marine conservation courses?

Fisheries management regulates wild fish stocks through stock assessment, catch and effort limits, gear rules, surveillance and co-management. Aquaculture courses cover running fish farms, while marine conservation courses focus on protecting and restoring habitats rather than setting fishing rules.

Why does fisheries management rely on biological reference points?

Reference points such as F_{msy} and limit spawning biomass turn stock assessment results into clear signals. A harvest control rule then states in advance how catch or effort changes when the stock moves toward or below those points, which keeps decisions consistent and precautionary.

What do participants take back from the fisheries management course on stock assessment and fishing surveillance?

Participants take back a Coastal Fisheries Management Plan with management objectives, a stock status summary, a harvest control rule, licence, quota and gear measures, a surveillance and inspection plan, co-management arrangements and monitoring indicators.