DAY2 11.5 (THU) 9:30~11:30

What are the strategies to address warnings from the ocean?

Japan and EU marine strategies

Overfishing, climate crisis, COVID-19. Addressing multiple risks through the grand design



講演「水産改革について」

Keynote: Japan's fishery transformation



Regarding Fisheries Reforms

Fisheries Agency Commissioner Hideaki Yamaguchi



Source:

Ministry of Agriculture, Forestry and Fisheries "Fishery and Aquaculture Production Statistics" (Japan)



Resource Surveys

1. Up until now, resource evaluations have been conducted with a focus on marine resources distributed throughout a wide area.

2. In the future, sequential surveys and evaluations will be launched starting from items meeting the following conditions.

- (1) Fishery resources requested by prefectures
- (2) Fishery resources subject to minister approval for fishing
- (3) Fishery resources with catches in a wide area
- (4) Fishery resources with young released over a large area
- (5) Fishery resources in general circulation
- (6) Fishery resources expected to provide information which can be used for resource evaluations



Resource Surveys



Resource Evaluations

[Expansion schedule for resource evaluation fish species]



<Issues>

To expand the scope of resource evaluations to 200 fish species,

roles must be divided up among not only fishery research and education organizations (ocean research organizations) but also prefectures.



<Handling orientation>

For coastal fish species, have ocean research organizations provide support related to evaluation methods while building a system for prefectural governments to conduct resource surveys and resource evaluations in main fishery prefectures.

The "Kobe Chart" indicates trends from the past to the present by comparing resource volume (horizontal axis) and catch (vertical axis) with the maximum sustainable yield (MSY) achievement level (MSY Standard).

When the resource is plotted in the lower right quadrant shown in green, this indicates that both resource volume and catch levels are in a good place, while the red area in the upper left indicates resource volume below the MSY Standard and excessive catch through overfishing.

In addition, the naming for this chart was chosen because the 1st Joint Meeting of Administrative Authorities for Tuna Fishing Regions was held in Kobe in 2007.

MSY水準の資源量					
強	MSY水準より少ない	MSY水準より多い			
ふい ╋ 漁獲の強さ ➡ 弱	・資源量はMSY水準よりも 少なく、漁獲の強さも過剰	 資源量は適切な状態にある が、漁獲の強さは過剰 	MSY水準 より強い	MSY水準の	
	 資源量はMSY水準よりも 少ないが、漁獲の強さは適切な状態 	• 資源量も漁獲の強さも適切 な状態	MSY水準 より弱い	漁獲の強さ	
い	少ない ← _ 資源量の状態 ← _ 多い				

Resource Management Goals and Catch Management Rules (fishing scenarios)



Parent fish volume (1,000 tons)

In accordance with the revised Fishery Act, implement new resource management based on TAC.

Through new resource management trends, create a roadmap for achieving the goal of restoring catch volumes to their levels from 10 years ago by 2030 (2018: 3.31 million tons -> 2030: 4.44 million tons).

Achieve 80% TAC management (based on catch volume) by 2023 (increase from the current 8 species to more than 20 species, prioritizing those with the largest catch volumes), and implement IQ as a general rule for offshore fishing, which mainly targets TAC fish species.



Through the introduction of IQ, an annual catch limit is set for each individual vessel or fisherman.

The revised Fishery Act stipulates that TAC management should be carried out with IQ as a base.

Generally speaking, IQ management will be introduced to all minister-approved fisheries that mainly target TAC fish species by 2023.



Up until now, voluntary management initiatives were related to "resource management guidelines" created by the national or prefectural government, with the applicable fishermen drafting and implementing "resource management plans."

For the revised Fishery Act, both official regulations and voluntary management require basic matters related to resource management to be stipulated in the resource management basic policy and the prefectural resource management policy.



For coastal fishery, resources aside from TAC fish species (non-TAC fish species), which account for approximately 60% of total catch volume and approximately 80% of production are in a gradual decline. Effective resource management initiatives must be promoted.



Note: Statistical classifications were updated in 2010. Thereafter, some coastal fishing such as small trawling operations less than 10 tons and squid fishing are not including in the total catch volume. (Source) Ministry of Agriculture, Forestry and Fisheries "Fishing and O Aquaculture Production Statistics" <Transition from resource management plans to resource management agreements>



<Issues>

There are concerns about increasing workloads on-site due to increased submission of reports and data to the national and prefectural governments.



<Handling Policy>

As part of a smart fisheries industry, promote utilization of centralized and integrated catch data from producing area markets and fishery cooperatives for purposes such as resource evaluation, catch reporting, and TAC management.

[Initiatives for collection of catch information, etc.]



Seafood poaching conducted by both organization and non-fishermen has grown in recent years.

Trends in number of arrests by violator category (ocean surface)



Source: Prefectural surveys (arrests from January - December 2018 by prefectural authorities, Japan Coast Guard, and police)

Source: Survey of violations of fisheries-related laws and regulations related to the collection of aquatic animals and plants in coastal waters, etc. (Fisheries Agency)



(Tons)

Trends in sea cucumber export volume and value



(100 million yen)





2019 sea cucumber export volume (Includes dried sea cucumber)

#1: Hong Kong, approximately 3.4 billion yen#2: China, approximately 600 million yen

Source: Based on Ministry of Finance trade statistics Calculated by the Fisheries Agency

Source: Ministry of Finance "Trade Statistics": Total export volume and value of sea cucumber processed goods and dried sea cucumber

Strengthened Penalties



so (examples: turban shells, spiny lobsters, etc.).

[Pre-revision] Fines of up to 200,000 yen

vision]<u>Fines of up to 1 million yen</u>

OActual conditions of malicious and sophisticated illegal fishing



The offender was illegally operating diving apparatus at night. Blocking pursuit by supervision boats using searchlights, etc Photo: Yamaguchi Prefecture



ONecessity of handling illegal, unreported, and unregulated (IUU) fishing

SDGs global indicators (adopted by the United Nations Summit in September 2015)

In order to recover marine resources to a minimum of the level required for maximum sustainable yield (MSY) based on biological characteristics in the shortest possible time, <u>effective fishing regulations will be enacted by 2020 which effectively restrict catch volumes and eliminate overfishing, illegal, unreported, and unregulated (IUU) fishing, and destructive fishing methods, using scientific management plans.</u>

G20 Osaka Leaders' Declaration (June 2019)

In many areas around the world, illegal, unreported, and unregulated (IUU) fishing is posing a major threat to maritime sustainability. Accordingly, for both for the protection of maritime environments, including their biodiversity, and in order to secure sustainable use of marine resources, we have <u>reconfirmed</u> our awareness of the importance of stopping IUU fishing and our commitment to handling this problem.

Outline of Fisheries Distribution Correction System (Draft)

For fish species that are illegal to catch or considered overfished in Japan (Specified Type 1 Aquatic Animals and Plants), handling companies must (1) notify governing authorities, (2) communicate catch numbers, etc., (3) prepare and store transaction records, and (4) attach government-issued legal harvest certificates at time of export.
 For fish species at high risk of international IUU fishing (Specified Type 2 Aquatic Animals and Plants), handling companies must attach certificates issued by a foreign government agency, etc. at the time of import.



*Penalties will be incurred when violating obligations for notification, record-keeping, import/export certificate attachment, etc.



「海の産物が未来を救う―最新ネイチャー掲載論文の 著者が解説する『海からの食料の未来』」

Keynote: The future of food from the sea

The Future of Food from the Sea

Dr. Christopher Costello - UC Santa Barbara, California 21 October, 2020

Authors: Christopher Costello, Ling Cao, and Stefan Gelcich, Miguel Angel Cisneros, Christopher M. Free, Halley E.
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HIGH LEVEL PANEL for A SUSTAINABLE OCEAN ECONOMY





Article The future of food from the sea

ttps://doi.org/10.1038/s41586-020-2616-y	Christopher Costello ¹²²³⁹ , Ling Cao ¹²³⁹ , Stefan Gelcich ^{16,239} , Miguel A. Cisneros-Mata [*] , Christopher M. Free ¹³ , Halley E. Froehlich ¹⁴ , Christopher D. Golden ⁵⁹ , Gakushi Ishimura ¹¹⁰ , Jason Maier ¹ , Ilam Macadam-Somer ² , Tracey Mangin ¹⁴ , Wichael C. Melnychuk ¹⁴ , Masanori Miyahara ¹¹ , Carryn L. de Mor ¹⁵ , Rosamon Naylor ⁴⁵⁰ , Linda Nostbakken ¹⁸ ,		
eceived: 19 December 2019			
accepted: 29 June 2020			
ublished online: 19 August 2020	Elena Ojea ¹⁹ , Erin O'Reilly ¹² , Ana M. Parma ²⁰ , Andrew J. Plantinga ¹² , Shakuntala H. Thilsted ²¹ & lane Lubchenco ²²		
Chack for undator			

Demand for nutritious food is increasing as existing production is fraught with environmental externalities







Increased need for nutritious food

Traditional sources challenged

Environmental externalities



Food from the sea can uniquely contribute to food security

Low carbon footprint



High production potential



Highly nutritious



Efficient feed converters







Food from the sea



FAO FishStatJ 2019



What is the potential to expand economically and environmentally sustainable food from the sea?



Wild fisheries



Unfed mariculture





What is the potential to expand economically and environmentally sustainable food from the sea?



Wild fisheries

 Production potential includes biological, ecological, technological, and economic considerations.

Unfed mariculture

- Estimate present and future demand in each sector
- Estimate future <u>sustainable</u> production for different scenarios
- Current project is global; Could apply this to individual countries



Fed mariculture

sol Constructing the wild fishery supply curve

For all 4,500+ global fisheries...

1. Model future production for two policies:

- Current policies
- Improved management
- 3. For price *p*, calculate profit of production for each policy. The most profitable policy is pursued.

2. Calculate the cost of production for each policy:



- Cost of management
- 4. Aggregate production from fisheries. Repeat for all *p* values.





So Constructing the unfed mariculture supply curve

For each 0.217 degree patch of ocean...





Constructing the fed mariculture supply curve

For each 0.217 degree patch of ocean...





Overlaying demand





Future consumption

- Increases in all 3 sectors: Largest increase from mariculture
- 21-44 mmt more than today: much of what we need up to 2050
- More substantial increases are technically possible - demand is limiting factor





Action opportunities







「EUの新食料基本戦略『Farm to Fork (生産現場から食卓まで) ストラテジー』とは」

Keynote: The Farm to Fork Strategy: for a fair, healthy and environmentally-friendly food system

The Farm to Fork Strategy For a fair, healthy and environmentally-friendly food system

Veronika Veits, Director DG MARE B, International Ocean Governance and Sustainable Fisheries – European Commission

Farm to Fork(生産現場から食卓まで)戦略 公平で健康、環境に優しいフードシステムのために

ベロニカ・ベイツ EU海事・漁業総局 国際海洋ガバナンス・持続可能な漁業担当ディレクター





Challenges to the EU food system EUフードシステムの課題

SOCIAL **SUSTAINABILITY** 社会の持続可能性





Improve animal

welfare

Healthier diets reduce overweight

動物福祉の改善 健全な食事 -



Social rights workers in food chain

食糧産業労働者の 社会的権利



食品の値ごろ感



Tackle climate change 気候変動への取り組み

Protect the environment 環境保護



Preserve biodiversity Reduce food losses and waste 生物多様性の保護



Circular bio-based economy 生物ベースの循環 型経済

フードロスと食品廃棄物

の削減

ECONOMIC SUSTAINABILITY 経済の持続可能性





Fairer incomes for farmers. fishers & aquaculture producers

Just transition 公正な移行

農家、漁師、水産養殖業者へ のよりフェアな収入



New business & job opportunities 新規事業/雇用の機会



Farm to Fork Strategy: overall goals

Farm to Fork戦略:全体目標



2030 Targets for sustainable food production ^{持続可能な食品生産の2030年目標}

Reduce by 50% the overall use and risk of **chemical pesticides** and reduce use by 50% of more hazardous

pesticides 殺虫剤の全体使用とリスクを 50%削減し、より危険な殺虫剤 使用を50%削減する。

Reduce nutrient losses by at least 50% while ensuring no deterioration in soil fertility; this will reduce use of fertilisers by at least 20 % 土壌肥沃度が悪化しないことを保証 し、養分損失を最低50%削減する。 これにより、最低20%の肥料使用を 削減する。

Reduce sales of antimicrobials for farmed animals and in aquaculture by 50%

畜産動物と水産養殖への抗菌 剤の販売を50%削減する。

Achieve at least 25% of the EU's agricultural land under **organic farming** and a significant increase in **organic aquaculture**

EU農地の最低25%で有機農法 を達成し、有機水産養殖を大幅 に増加する。

Concrete actions: overarching _{具体的措置}

Legislative framework for sustainable food systems (2023):

- Framework with comprehensive set of general principles and requirements on the sustainability of food systems
- Basis to ensure policy coherence at EU and national level; mainstream sustainability in food-related policies
- Provisions on governance, collective involvement of stakeholders
 Development of a contingency plan (2021)
 for ensuring food supply & security in times of crisis

持続可能なフードシステムに対する法的枠組み (2023):

- フードシステムの持続可能性に関する一般原理と要求事項の包括的な一連の枠組み
- EUと国レベルでの政策の一貫性を保証する基礎:食品関連政策における主流の持続可能性
- 利害関係者のガバナンスと共同関与に関する規定

危機の際の食糧供給と安全保障を保証する危機管理 計画の作成(2021)

Actions for sustainable fisheries and aquaculture

持続可能な水産業と水産養殖の措置

Intensify **fight against fraud** through an enhanced traceability system

改善されたトレーサビリティシステムで不正行 為に対する闘いを強化

Reinforce efforts to bring fish stocks to sustainable levels via the **Common Fisheries Policy;** strengthen fisheries management in Mediterranean 共通の水産政策により水産資源を持続可能な レベルにする取り組み強化;地中海での水産 管理を強化

Actions for sustainable fisheries and aquaculture ^{持続可能な水産業と水産養殖の措置}

Adopt EU Guidelines on Aquaculture: pathways for Member States' national aquaculture development plans

水産養殖に関するEU指針の採 択:加盟国の国内水産養殖開発 計画のための進路 Support sustainable seafood farming

持続可能な水産養殖の支援

EU initiative on Algae

藻類に関するEUイニシアチブ

Promoting global transition of the seafood system 水産システムの世界移行を推進

- Zero tolerance in the fight against illegal, unreported and unregulated fishing
- Combat overfishing and promote sustainable fisheries management
- Promote ocean governance, including global standards
- International cooperation to support developing countries in their transition to sustainable food systems

- 違法・無報告・無規制漁業に対する断固とした闘い
- ・乱獲と闘い、持続可能な水産管理を促進
- 世界標準など、海洋ガバナンスを促進
- 持続可能なフードシステムへの移行における開発
 国支援のための国際協力

Enabling transition ^{移行を可能にする}

Research
Innovation
Investments
Partnership

•研究

・イノベーション

・投資・パートナーシップ

Thank you ご清聴ありがとうごさいます

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パネルディスカッション 「国際連携の強化により水産界の透明性を確保する」

Panel discussion: Ensuring transparency in the fisheries industry by strengthening international collaboration

A few thoughts on improving sustainability of high seas fisheries 公海漁業の持続可能性を向上させるための考え

- Strong supporter of the RFMO approach to high seas management
- RFMOs are now 70 years old (IATTC 1949)
- The world has moved on with civil society wanting a greater say reflected in the multitude of NGOs wanting to participate
- Its an odd world where countries participate and decide at meetings and industry fish but have limited input to the decision-making process. Time to change we need to engage with industry at the table
- New countries have emerged in world fisheries and emerging fleets have traditionally taken time to embrace RFMOs and fully comply with regulations
- On IUU specifically.....what is it now? What is the IUU problem we all talk about?
- More targeted approaches if we understand IUU in different environments then we can take action that makes a difference

- 公海管理に対するRFMOアプローチの支持
- RFMOの歴史は70年にも及ぶ(IATTC 1949年)
- ・ 世界は、市民社会やNGOの声が反映され、前進してきた。
- 実務(漁業)を行うのは水産業界であるにも関わらず、各国が参加する会議での意思決定プロセスに業界の声はあまりが反映されていない。水産業界との連携が必要である。
- ・新しい国が次々と公海漁業に参入している。こうした国の船団は RFMOの規制を完全に遵守するのに時間がかかる傾向にある。
- IUUについて具体的に議論する必要がある。各所で話されているIUU漁業の問題とは?
- 様々な場面、環境でのIUU漁業の影響を理解し、ターゲットを 絞ったアプローチをとることで変革を起こせる。

Foundation for the Seas ファウンデーション・フォー・ザ・シーズ(海のための財団)

- One of the major changes is that UN SDG 14 is now a reality
- SDG 14 criteria 14.4 deals specifically with fisheries sustainability and IUU but the reporting is by countries and it is a case of jockeys deciding the outcome of a horse race.
- No truly independent reporting on SDG 14 or on RFMOs performance in a constructive way to drive global change or improvement....we still have problems like IUU, Bycatch, compliance and data gaps...maybe they will always be there
- Global Ocean Commission 2014.....what was it
- The concept of the Global Oceans Accountability Board

- (これまでとの大きな違いは)SDG14の現実化
- SDG14の14.4は漁業の持続可能性とIUU漁業を具体的に 扱っているが、報告は国別であり、(その国の)リーダーにより結果は異なるであろう。
- 世界的な変化や改善を推進するための建設的な、SDG14や RFMOのパフォーマンスに関する独立した報告は存在しない… IUU漁業、混獲、コンプライアンス、データギャップのよう な問題がまだ存在する。
- グローバル・オーシャン・コミッション2014とはなんだったのか?
- グローバル・オーシャンズ・アカウンタビリティ・ーボードのコンセプト

Foundation for the Seas ファウンデーション・フォー・ザ・シーズ(海のための財団)

- What we have been doing and it is in its evolutionary phase
- Take SDG 14 and the concept in the Global Oceans Accountability Board of independent oversight
- Build an independent Foundation funded by philanthropic organisations that can:
 - independently review progress towards SDG14
 - Provide constructive advice to RFMOs on critical emerging issues they might like to consider
 - Acknowledging the importance of the global fishing fleets review and comment constructively on fishing practices and social accountability and responsibility for crews/observers etc
- The Foundation for the Seas is our initial thinking and we will develop it further over the next 12 months but it might give us a start on this important GOC recommendation.

- 今まで実施してきたことを踏まえ、進化の段階にある。
- SDG14とグローバル・オーシャンズ・アカウンタビリティー・ ボードの独立した監視コンセプトを採用。
- 慈善団体が資金を提供する独立した財団を構築することで 下記を実現。
 - SDG14に向けた進捗状況を独自にレビュー
 - RFMOで検討されるべき重要な課題について、RFMOに建 設的なアドバイスを提供する
 - ・世界の漁船団の重要性を認識し、漁業慣行、社会的説明 責任、乗組員・監視員等の責任について建設的に見直し、 コメントする
- ファウンデーション・フォー・ザ・シーズ(海のための財団)は、
 構想段階にあり、今後12ヶ月間かけてさらに発展させていくが、これは重要なグローバル・オーシャン・コミッションへのレコメンデーション策定に向けてのスタート地点である。

CCAMLR IUU catch estimates for Patagonian & Antarctic toothfish CCAMLRのマジェランアイナメ(Patagonian toothfish)と ^{Tonnes} ライギョダマシ(Antarctic toothfish)のIUU漁獲量の推定値

"..... IUU fishing is prevalent globally and has detrimental effects on commercial fish stocks and nontarget species. successful international environmental governance can be accomplished through interorganizational collaborations. **Such** cooperation requires trust, continuous funding, and incentives for actors to participate."

「…… IUU漁業は世界的に蔓延しており、商業魚の資源、それ以外の種にも有害な影響を与えている。…… 国際的な環境ガバナンスは、組織間の協力によって達成できる。このような協力には、信頼、継続的な資金調達、そしてステークホルダーが参加するためのインセンティブが必要である。」

The task forces of SeaBOS

