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ECONOMIC ADVICE IN FISHERIES MANAGEMENT:

A TRILOGUE BETWEEN SCIENCE, ADMINISTRATION AND STAKEHOLDERS
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This conference gathered some 250 participants from the EU and a number of OECD countries (USA, Canada, and Korea) including policy makers, academics and scientists and a broad range of stakeholders. It focused on:

- the state of the art on methodologies to generate economic advice;
- the methods to improve advisory work (e.g. data from the sector, integrated advice, methodologies to update assessments based on outdated data);
- the involvement of new actors in the production of economic advice (e.g. NGOs creating bio economic models, EP carrying out its own impact assessments);
- the recent evolution of the fisheries sector and its likely future.

This allowed participants to:

- identify the needs for economic advice to support CFP implementation, in the context of the recent evolution of the fisheries sector and of the growing need for better economic advice;
- find out more about the ways other major fishing nations integrate economic advice in their fisheries management processes and decision making;
- explore ways of generating and integrating this advice into the fisheries management process over the short and medium term.

1. OPENING SESSION

Moderator: **Jacki Davis,** Managing Director, Meade Davis Communications

1. **Karmenu Vella**, EU Commissioner for Environment, Maritime Affairs and Fisheries
2. **Leo Brincat,** Minister for the Environment, Sustainable Development and Climate Change, **Roderick Galdes**, Parliamentary Secretary for Agriculture, Fisheries and Animal Rights
3. **Russell Smith,** Deputy Assistant Secretary for International Fisheries, NOAA

EU Fisheries Commissioner **Karmenu Vella** said in his welcome address that the European Commission can best manage fisheries through sound data, analysis and advice, both biological and economic.

The three main challenges the Commission is facing are: economic advice is needed to back up its policy proposals; new tools need to be developed to help it improve the quality of its analyses and advice; and economic advice needs to take into account the ever more integrated and globalised seafood markets.

Quite an effort has been made in recent years to develop a better understanding of the economics of the fisheries sector so Commissioner Vella is optimistic. He sees a culture change with policy makers being more aware that fishing is indeed an economic activity. More and new economic intelligence is at the European Commission's disposal through various annual economic sectorial reports. It is also getting better at measuring the economic impact of its activities, in particular our funding for fisheries and aquaculture projects.

Commissioner Vella appealed for the assistance of those present to:

- identify ways to improve data quality, making the European Commission's annual economic reports even better and allowing them to give it a more reliable – and up-to-date – picture of the performance of EU fleets;
- measure fishing capacity more accurately through economic – and of course biological – indicators;

- find out which market failures public funding should focus on; and
- find out how to support fisheries-dependent communities more effectively.

The EU prides itself with a fisheries policy that is grounded in science. Now it needs to ensure that this science is up to scratch, with all the components of the Common Fisheries Policy deeply rooted in economic and biological grounds.

Minister **Leo Brincat** said sustainability has much value added to contribute to the proceedings of the conference. Economic data is a key instrument in our shared resource management as well as a pivotal component in helping us manage our seas better but, even more so, more professionally. This will ensure sustainability in fisheries sector production as well as the facilitation of the ocean governance process.

Sustainability is a complex interplay with a range of factors that includes ecological aspects, socio-cultural characteristics, administrative considerations and also, importantly, economic elements. Understanding each of these aspects and striking a fine balance between these diverse dimensions is, in Minister Brincat's opinion, not only recommended but essential. Policies need to be guided by sound advice and any such recommendations need to lead decision-makers to identify an equilibrium that would allow the fisheries industry to flourish in co-existence with the ecosystems that it depends on.

Parliamentary Secretary **Roderick Galdes** said due consideration to economic advice is crucial to achieve our ultimate goals. For fishers to feel they are receiving an equitable return for their efforts, we need to continuously strive to improve the socio-economic aspect of the fisheries sector.

He mentioned as an example female participation, which was active where artisanal fishing prevails but excluded due to modernisation and fishing further afield from the home waters. Economics, he concluded, will become more and more central in the development of policies and plans for the sector.

In his intervention, **Russell Smith** spoke on the US experience of fisheries management, whose primary goal is to ensure that its fisheries are managed sustainably on an eco-system basis. Economic analysis is an important tool to ensure that it achieves that goal while also ensuring that its fishers and society recover maximum economic benefit from these resources.

He explained the regulatory set-up that, apart from considering economic impacts and how those considerations are to be implemented provides the conservation and management measures that shall, where practicable, consider efficiency in utilisation of fisheries resources. It also provides that no such measures should have economic allocation as their sole purpose.

Conservation and management measures do not only take appropriate account of the economic impact but through a cost-benefit analysis brings net benefits to the nation and assesses adverse economic impacts. Tools have also been developed to determine whether their programmes are achieving their objectives, including the economic objectives.

Moderator **Jacki Davis** asked the Commissioner what were the key challenges that needed to be addressed. Mr Vella said it was both a matter of provision of advice and its

integration. “We are trying to give an economic perspective to an economic activity by looking at what we need: timely data about both the past but also that anticipates our policies.” The EU cannot do this on its own, so it needs an outreach.

We should not look just at the fisheries aspect but other economic activities linked to it like processing, restaurants and the nutritional aspect. Among the challenges is the time lag between collection of data, its analysis and the issuing of the relevant policies. This revolves around better quality data more relevant to current issues.

The key challenge for Minister Brincat is communicating economic advice effectively. On a technical subject such as this, the worst thing a decision-maker can do is to take a decision that is not well grounded and well informed.

For Parliamentary Secretary Galdes, the challenges include an aging population, the difficulty to attract new blood to the fisheries sector, the lack of female participation, the restriction of the fishing effort that is diminishing the participation of the younger generation of fishers, the difficulty to upgrade and modernise vessels because of restrictions on tonnage and kilowatt engine power and state aid regulations.

Mr Smith said that there are a variety of difficult issues: collecting data that is good, accurate and complete, analyse it, creating regional models and processes that do not treat the biological and economic information separately. There is an interplay between these two and social factors. Then, there is the political reality of implementing the advice given.

In response to another question from Ms Davis on the need to change the mind-set on the use of biological and economic advice, Mr Vella said that the key was to stop talking about seeking a balance between the two since it implied that this was between two conflicting activities. “We prefer to talk about the integration between the economy and the environment – two sectors that have to progress together.”

He went on to call for much-needed advice based on the three major reports produced by the EU on the fishing fleet, marketing and aquaculture. EU policies affect both the biological and economic state. We need to work together to come up with a common methodology.

In terms of integrating economic and biological advice, Mr Smith said that the key priority for action is to communicate why this discussion on the role of economic advice in fisheries management in supporting the sustainable management is important to build the type of support that is necessary to allow for the collection of data, its analysis and use as a tool for supporting sustainable management.

Mr Galdes said economics is very important not only for the sector but also for the policy-makers. It closes the circle with all the collective grievances like the traditional sector attitude, linking economists with fisheries experts and the policy-maker’s role, which should be integrating between generations.

For Mr Brincat communication is a top priority but, he added, if we want to be on the ball on an issue like this with the fishing sector constantly evolving, the key operative word should be ‘effective management’, co-ordinating our efforts effectively and efficiently.

Mr Vella said we have come a long way in convincing the economic sector to think environmentally and the way forward is to get the environmental sector to think economically. This will be a little harder than the first but it can be achieved by not taking the balance approach but taking the integration approach.

2. PLENARY SESSION – HOW DOES ECONOMIC ADVICE CONTRIBUTE TO FISHERIES MANAGEMENT IN MAJOR FISHING NATIONS?

Moderator: **Jacki Davis,** Managing Director, Meade Davis Communications

- **Dale Marsden**, Senior Economist, Fisheries and Oceans Canada: *How Economic Advice contributes to Fisheries Management in Canada*
- **Ms Shinhee Cho,** Director General, Distant Water Fisheries Division Ministry of Oceans and Fisheries: *How Korea's Fisheries Management has been driven by Social and Economic Factors: Historical Perspective and Current State of Play*
- **Alain Laurec,** Director Fisheries Conservation, EC (ret.): *How Economic Advice contributes to Fisheries Management in the CFP*
- **Rögnvaldur Hannesson,** Prof. Emeritus, Norwegian School of Economics: *How Economic Advice contributes to Fisheries Management in Norway*
- **Javier Garat Pérez**, Europêche: *How to integrate Up-to-date Information from the Industry into Fisheries Management.*

Dale Marsden spoke of the high-level policy issues behind the design of Canada's fisheries management system, how to set standards within that system and other oceans-related policies that have a potential to effect fisheries. Canada generally adopts individual quotas that are non-transferable with the possibility to combine licences among fishermen. Stock conservation is the main basis for the TAC decisions.

He explained how Canada designed its fisheries management policies and sets the parameters, giving examples of other policies that affect fisheries including the designation of MPAs – Marine Protected Areas - and the Species at Risk Act (SARA). Both require regulations that in turn need a cost-benefit analysis.

Shinhee Cho spoke on how social and economic factors have driven Korea's fisheries management from the 1950s to the present, and how policy-makers and stakeholders interact. This had led to increased income for the fishers while balancing out ecological considerations with a focus on community-based fisheries management.

Alain Laurec spoke on how economic advice contributes to fisheries management in the CFP. Myths, false debates and clichés pollute the discussions related to fisheries economics, even more than the scarcity of fisheries economists. He agreed with Commissioner Vella that choosing between biology and economics is nonsense. Most times it is a choice between short-term losses and longer term benefits and the linkage between the two is still weak. There are still major issues that are not attracting fisheries economists' attention. Joint work between biologists and economists should be supported.

On the subject of economic advice in fisheries management in Norway, **Rögnvaldur Hannesson** said it is not regular and institutionalised but provided on an *ad hoc* basis to various committees over time that discussed issues related to fisheries. The most important economic advisor is reality. Governments should keep their hands off the industry and limit themselves to setting quotas, monitoring catches and enforcing

regulations. The industry should decide when, how and what to do with the allowable catches.

Javier Garat Pérez dwelled on the economic dimension of European fisheries management. Almost nobody is listening to economists' advice. The main objective of fisheries management is the long-term sustainable use of recourses. He explained what drives the market, how the sector responds, how successful current fisheries management tools are and the challenges for the future.

Among these challenges are huge competitions from other regions, heavy regulation, with the market moving towards product certification and the possible introduction of an EU ecolabel to guarantee sustainability.

Moderator **Jacki Davis** asked whether enough is known about how fisheries respond to different policies, and invited the panellists to give their views of the key challenges to make sure that economic advice is used.

Mr Marsden said there are two: whether there is the demand for the information; and because the demand for that detailed analysis is not there, we do not have the capacity to develop it.

Ms Cho said the major focus in South Korea was the involvement of the stakeholders. M. Laurec stressed the importance of combined biological and economic analysis. Mr Hannesson said he did not believe governments should try to micro-manage the fishing industry. What worked when individual quotas were set may not work with other types of control – by fishing effort – because the issue then becomes how to control fish stocks. Then there is a greater need for economic advice.

Mr Garat said economists had a role in giving advice when forecasts are to be made.

In the first round of questions from the floor Ms Davis stressed the efficacy of what we have at the moment or whether new mechanisms were needed.

Mr Marsden said we have some really good data sets on what is caught, where it is caught and what is the landed value for fish caught across the Atlantic coast. What is lacking is more economic data on costs, fleets and the industry.

Ms Cho said South Korea is not using existing tools as it should because of the differences between the two sides, the fishers and the government.

M. Laurec praised the European Commission for moving in the direction of multi-annual management planning, which is the only way to give time to everybody to have the combined analysis we all need.

Mr Garat said it was more an issue of political will. Economists need more resources and a better budget to do their job.

Mr Hannesson said it was more a matter of analysis. The basic problem of fisheries management is that nature sets the limit to how much you can take out of the ocean and then we need to make economic sense to maximise the value.
M. Laurec said you cannot get out of the present context without, not only integrated analysis, but analysis involving the industry. You cannot discuss economics without the

industry. Mr Garat suggested economists be integrated in the advisory process. Mr Hannesson pointed to the secondary importance of economists in setting sustainability targets like TACs behind the biological and scientific advice given.

Scientists should not make recommendations, M. Laurec said, but assess what is likely to happen under the various scenarios. And the politicians should shoulder responsibility.

In the second round of questions, Ms Davis focused on the gap between the two sets of analysis and what was the trigger in countries where economics has been better integrated. For Mr Marsden it was regulation driven. M. Laurec said he was convinced that the best way to move forward is to convene a mixed group of economists and biologists working on specific case studies with ample time for reflection. Mr Hannesson recommended dividing quotas between different regions and fleet groups. For Norway, the ITQ system worked and it is also a good solution in the northern parts of the EU.

Ms Davis then asked the panel what the EU can learn from the countries represented and how this information can be shared more internationally. Ms Cho said one of the priorities was to integrate economic advice more and for the government to strike the right balance between conservation and economics, involving all the stakeholders. Mr Marsden said there is a lot of value in discussions like these and sharing experiences.

Mr Garat said that when socio-economic assessments are integrated the right decisions and better decisions are taken. Economic scientists are only being called on for special occasions. He suggested that DG MARE set up an *ad hoc* working group to deal with these issues. The industry is collaborating with all the stakeholders more than ever. Europêche offers its collaboration to scientists, the European Commission and Member States to provide more information.

Asked for one priority to make best use of the economic advice, Mr Garat suggested obtaining more data asked for more collaboration, use more resources to analyse and process the data, and integrate this economic data in the policy-making.

How much dialogue and data you need, according to Mr Hannesson, is a question of how much or how deeply governments should be in regulating fisheries. He questioned the quality of the data industry provides. M. Laurec said it is important for all Member States to do the job.

3. PARALLEL SESSION 1: THE TOOLS FOR ECONOMIC ADVICE: THE EXPERIENCE OF THE CFP

Moderator: **Angel Calvo**, DG MARE, European Commission

- **Pavel Salz,** Managing Director, Framian: *The Tools of Economic Advice in the CFP.*
- **Anton Paulrud**, Senior Economist, Swedish Agency for Marine and Water Management, Chair of the STECF Working Group on the Annual Economic Report, and **Natacha Carvalho**, Fisheries Economist at the European Commission's Joint Research Centre: *Improvements in the Production and Use of Economic Advice in the CFP, the Annual Economic Report of EU fleets.*
- **Evelina Sabatella,** Senior Economist, NISEA, DCF national correspondent for Italy: *Economic Advice to support Impact Assessments in the CFP, Socio-economic Data Needs and the Role of STECF.*

- **Griffin Carpenter,** Economics Modeller, New economics Foundation, *Bio-economic Modelling for Economic Advice in Fisheries Management.*

Evelina Sabatella described the progress made in the Annual Economic Report on the EU fleet since its inception, highlighting how both economic data and analysis have improved over the years. Still, there is room for improvement. She emphasised the importance of impact assessments as a way to test different policy options to reconcile the twin objectives of environmental sustainability of the policy and the economic dimension of fisheries management.

Natacha Carvalho highlighted the role that STECF has played in providing economic analysis on the basis of data from the Data Collection Framework. She provided an overview of the uses of the Annual Economic Report, highlighting a number of limitations and improvements, including the need to increase the involvement of the fishing industry, review the data collection requirements and incorporate market information. More information is needed on small-scale fisheries and recreational fisheries, where data is limited.

Anton Paulrud, former Chair of the STECF working group on the Annual Economic Report, talked about the cost-benefit analysis as the basis for economic advice. He drew a distinction in the reasons why people fish commercially between large scale and small fisheries. People fish for different reasons and that is not reflected in the economic analysis. He argued that the main strengths of the Annual Economic Report are its coverage and availability but that data issues meant that often the Annual Economic Report was not complete, in particular given its macro-perspective. He gave the example of small-scale fisheries where, more often than not, the vessel has already been paid for but, given that the analysis focuses on profits, it may give a misleading picture.

Griffin Carpenter explained how bio-economic modelling can combine biological and economics aspects of a fishery to explain stock, catch and effort dynamics. He explained how this type of modelling cannot just focus on stocks but rather on a fishery that maximises benefits. He listed some of the many successes, saying that, because of better data through the DCF, there are better models. He argued that bio-economic models will always be a case of 'horses for courses'. They are there to serve different purposes. Having one giant model would not be productive. He argued that the transition to MSY has benefited many objectives but that trade-offs between objectives emerge the closer we move to MSY. He welcomed the move from a single species approach to a multispecies approach, but argued that we should still go further to an ecosystem approach. He concluded by highlighting a number of next steps, such as a more transparent and active role for socioeconomics in management decisions like TAC setting.

Pavel Salz praised the EU's data collection framework, arguing that Europe had the biggest set of fisheries economic data in the world – something to be proud of. He argued that not every question can be answered. He stressed the need to better define the question. He raised a number of questions that remain to be answered, such as economic efficiency and social costs, and the EU-wide tradability of fishing rights, particularly important with the issue of choke species in the implementation of the landing obligation. Other unanswered questions that require further economic analysis are incentives, aging fleets and sector consolidation. The question is under which conditions can business thrives. This is not just about data and regulations.

The session concluded with a discussion on the urgent need for better data and economic analysis in the Mediterranean, a specific suggestion to include presentations by economists in the Advisory Councils, and ways in which we can improve data collection.

4. PARALLEL SESSIONS 2, 4 & 5: GLOBAL DRIVERS, THE ECONOMICS OF SUPPLY & INTERNATIONALISATION OF FISHERIES

Parallel session 2: Global drivers on Fisheries

Moderator: **Miguel Angel Peña Castellot**, DG MARE, European Commission

- **James Anderson**, Prof. Institute for global Food Systems, U. of Florida: *The Use of Indicators to measure and compare Performance in Fisheries Management.*
- **Melanie Siggs**, Senior Director, EU Oceans Program, Environmental Defense Fund: *Main Drivers and Economic Incentives affecting the Sustainability of the Fisheries Sector and likely Impacts in the Future.*
- **Gerard Van Balsfoort**, President, Pelagic Freezer-trawler Association: *EU Industry's View: main Drivers affecting the Industry Performance, likely Impacts in the Future.*
- **Alastair Macfarlane**, Executive Secretary, International Coalition of Fisheries: *Industry's View: Main Drivers affecting the Industry Performance, likely Impacts in the Future, a Global Perspective.*

Parallel session 4 "The internationalization of fisheries"

Moderator: **Dominique Levieil**, Deputy Head of Unit, DG MARE, European Commission

- **Valerie Hickey**, Practice Manager, Environment, World Bank: *Trading and Sustainable Fisheries Development: Emerging Perspectives*.
- **Ivan Lopez van der Veen,** Director General en Pesquera Ancora SL**:** *The Internationalization of the EU Fishing Fleets, recent and likely future Evolution.*
- **Hyacinthe Cloarec,** Buying Director for Marine Products, Metro Ltd: *Metro's Strategy to secure access to resources and markets in the light of existing opportunities and threats in the sourcing and trading of sustainable fisheries products.*
- **Simon Rilatt**, Espersen: *Adaptation to the challenges of international competition: horizontal and vertical integration in the fish processing sector.*

Parallel session 5: "The Economics of Supply: Where will the Fish come from?"

Moderator: **Simkje Kruiderink**, DG MARE, European Commission

- **Susan Steele,** Authority Chair Sea-Fisheries Protection Authority, National Seafood Centre, Ireland: *Developments in the Fish Food Supply. How to learn from existing Bottlenecks and take advantage of Opportunities to secure Sustainable Supply.*
- **Guus Pastoors**, President of the European Federation of Processors and Importers/Exporters of Fish: *How can the Processing Industry face the Challenges of securing appropriate Supplies for its Sustainable Development?*
- **Miguel Herrera**, Deputy Manager of OPAGAC: *Economics of Tuna Fisheries Sustainability*

James Anderson presented the World Bank's work on indicators. He said there is a a positive correlation between economics and ecology variables, and between economics and community issues. He emphasised the multidimensional nature of sustainability.

Melanie Siggs presented EDF's later works in the field of ITQ and discards. She also presented the results of a bio-economic model: well managed fisheries translate into more fish in the water and far better profitability and landings.

Gerald Van Balsfoort examined drivers from the perspective of the Netherlands. He saw innovation and science as positive drivers and the complexity of the CFP as a negative one. In terms of challenges, he expects regionalisation of the CFP to develop. 2015 was a very good year for all these involved in fisheries: good fish prices, low fuel prices and favourable € vs $ exchange rate.

Alastair Macfarlane focused on profitability as the main driver. He then analysed the importance of access costs and unfair competition by using the tuna fisheries in the western and central Pacific as an example.

Valerie Hickey explained the process through which the economics of fisheries has become an important element for the World Bank. She explained two factors that particularly affect artisanal fishermen: access to markets and access to finance. Economic advice should aim at reducing uncertainty by increasing science and data, and by fostering good governance. It is necessary to convince governments that sustainability brings more jobs and adds to the GDP.

Hyacinthe Cloarec explained the strategy of the Metro Group: fewer resources, issues of traceability, price increases of fish, and issues related to safety are challenges they have to respond to. A group like Metro needs to be flexible and to continuously adapt to changing conditions.

Ivan Lopez emphasised that EU external fleets play by the rules and should be supported. They are playing fair also with third countries, creating jobs and growth in these countries, in a very different manner to other fleets, such as the Chinese that are replacing EU fleets in places like Mauritania. He requested support for joint ventures. As to data collection, he emphasised that vessels are data collectors and that lots of data are collected. The issue is integrating all these economic and environmental data.

Simon Rilatt gave the processor's viewpoint. For him, processors have to be as close as possible to consumers and this is a challenge since the raw material and the operating costs are extremely different across regions and fisheries. However, that is inherent for their business and they try to be as flexible as possible.

Susan Steele began with the idea of developing new behaviours and adaptation to come up with common (governments, scientists…) solutions to tackle the complexity of the most complex issue of fisheries and the sea.

Guus Pastoors developed possible scenarios for the future of processing and imports/exports of fish. In economic terms, it is bigger than fishery itself, and made of many SMEs. Developments are positive . The market is 12.6 million tons, the catches might be 2 million tons in the future, however no high growth is foreseen in aquaculture. 0.5 % consumption is foreseen, as well as shortage of fish (namely in Asia). This is quite a challenging situation as fish is being more and more consumed, and this might lead to an explosion of market demand (cf. China now asking to access the pangasius market)**.** Food security is or should be high on our agenda, as well as for instance stimulation of innovation in processing and logistics, IUU fight and data use.

Miguel Herrera presented his view on the tuna industry, in Spain and abroad, mainly concerning purse seiners under the Spanish flag for the tropical tuna species. To keep this fishing industry alive, he insisted that we should ensure the sustainability and the catch level, as the well as maintaining the processing sector. The EU fleet, in terms of market, is very regulated, with high social standards, high running costs, and heavy taxes, which also imply a high cost for the EU fleet**.** He insists on the fact that the EU should avoid positive discrimination, but guarantee minimum ecological and social or labour cost standards (cf. IUU Reg. to be completed).

The moderator of the second parallel session, **Miguel Angel Peña Castellot,** focused the debate on whether demand conditions have to be taken as a given. Following a lively debate followed, the most important conclusion was that, once a market is lost for a local product (such as plaice), it is by no means guaranteed that it will be recovered (imports of tilapia and pangasius for instance) or at least that prices will go back to normal.

The moderator enquired what can be done for the market to recover. Ideas like efforts in marketing, re-thinking the product or finding new markets inside and outside the EU were put forward.

The panellists were also asked about the ways the costs generated by various types of regulations could be estimated. They also considered the possible implementation of the Key Performance Indicators approach to EU or other fisheries. The interest of the method to benchmark fisheries management practices and to proceed toward their improvement was underscored.

The debate in the fifth parallel session focused on the potential revision of the Regulations to create a level playing field, with the outcome being what we actually want in a globalised market**.** IUU Regulations can correct those aspects, since it interconnects with all the points mentioned before (labour costs, a level playing field, illegal fish, quality of catch data, globalisation, price, supply and consumption patterns).

For OPAGAC, implementation of EU law is a problem. High seas fishing is adding another legal layer. For the processing industry, the raw material is the main topic in a number of ways. We don't know where the economic market is going to go, but there is huge potential. We need to think slightly differently. We have valuable compounds we have not explored yet (blue ocean thinking), and we have to keep this on the agenda as well.

João Aguiar Machado mentioned that security of fish supply is also the responsibility of the consumer**.** The IUU can address part of the problems. He also mentioned the SFPAS, securing supply through agreement as being sustainable and asked if China impacted the delocalisation strategy. The industry thinks that the SFPAs secure supply, but they are confronted with the non-limitation of the capacity allocation for the coastal states and suggests RFMOS' role to enforce these capacity limitations. Finally he emphasized as a key challenge the fact that Europe's food security is at risk, as fish supplies might go elsewhere in the future. By working together in an integrated manner, we can reduce the regulatory costs in the fishery sector.

5. PARALLEL SESSION 3: ECONOMIC EVALUATION OF ECOSYSTEM SERVICES IN FISHERIES MANAGEMENT

Moderator: **Ernesto Penas Lado**, Director, DG MARE, European Commission

- **Christopher Costello**, Prof. Environmental and Resource Economics, UC Santa Barbara: *The Economics of Fishery Management and Ecosystem Services.*
- **Serge M. Garcia,** IUCN advisor: *Fisheries Management and Fisheries Biodiversity Impact Mitigation.*
- **Douglas Lipton,** Senior Scientist for Economics in NOAA's National Marine Fisheries Service and **Lee G. Anderson, Prof.** Emeritus, University Delaware: *The US Experience with an Economic Perspective to Ecosystem Approach in Fisheries.*
- **Catarina Grilo**, Project officer, Gulbenkian Oceans Initiative: *The Valuation of Ecosystem Services and its Role in Fisheries Management.*

The session presented the future development of fisheries management through the evaluation of ecosystem services, knowing that the ecosystem approach is problematic (cf. question of its definition), is embedded sometimes with legislation (cf. EU level), and requires trade-offs when using the integration process.

Christopher Costello raised three key questions on ecosystem services. He described how single-species tools fixed the multi-species problems and solved the question of by-catch species mortality, and more generally many ecosystem service challenges. He tackled ITQs and other rights, and how they can incentivise ecosystem protection, including choke species (with namely the creation of the tradeable and transferable by-catch quotas), i.e. a right-based methodology such as ITQs can – positively – impact and increase the incentives for ecosystem approaches. In conclusion he insisted on the following points:

- the smart application of single-species tools can solve many ecosystem service challenges;
- well designed, rights-based approaches can increase incentives for ecosystem services; and
- ecosystem service trade-off analysis provides useful information for policy-makers.

Serge Garcia emphasised the benefits of economic services as a bridge between fisheries management and biodiversity conservation, and named economic services as the common currency for sustainability. Economic services are able to interconnect the bioecological, technical, economical and socio-cultural dimensions of sustainability through the monetary value of nature.

Douglas Lipton highlighted the dichotomy between economic advice and economic research and how, however, the integration of economics into ecosystem research and models was developing with some areas of interaction (water quality, fisheries interactions, multi-species models, for instance). Numerous modelling approaches can be incorporated into economics (ecosystems models, but not only; statistical models, agent based models, etc.). Since none dominates, he underlined the necessity of a multiple or ensemble approach for application to the policy domains and concludes that ecosystem approaches afford even greater opportunity for economic advice.

Catarina Grilo explained how ecosystem services can contribute to fisheries management and allow to assess the combined impacts of human activities on the marine environment.

The debate following the presentations raised the question of the complexity of ecosystem dynamics and, as such, of their reliability (cf. indicators). However, they are a potentially useful tool as long as the concept of uncertainty is taken into account.

6. PARALLEL SESSION 6 - SOCIO-ECONOMIC IMPLICATIONS OF FISHERIES MANAGEMENT

Moderator: **Isabelle Garzon**, Head of Unit, DG MARE C3, European Commission

- **Rosa Quintana Carballo**, Regional Minister for the Sea and Rural Development, Regional Government of Galicia, *Socio-economic Implications of Fisheries Management Decisions in Galicia, Artisanal fishing and shellfish gathering.*
- **Jeremy Percy,** Executive Director of the Low Impact Fishers of Europe Organisation: *The Socio-economic Implications of Fisheries Management Decisions on Small Scale Coastal Fisheries.*
- **Rebecca Metzner**, Branch Head, Policy, Economics and Institution Branch, FAO : *Dealing with the Socio-economic Implication of Fisheries Management in World Fisheries*
- **Mario Vella,** Executive Chairman, Malta Enterprise: *The Economics of Fisheries Competitiveness in Small Island Countries and Isolated Regions.*

Minister **Rosa Quintana Carballo** spoke of Galicia's experience as one of the most important regions for fisheries and aquaculture in Spain and the European Union. She stressed the importance of trust between the administration and those working in the sector, and the collection of data while outlining the importance of law enforcement through the local Coast Guard service.

Jeremy Percy outlined the importance of SSCF, observing that LIFE sees the consequence of oversight, specifically with the landing obligation and generally in fleet economic performance. Socio-economics should be integrated into decision making and both policies and tools should be implemented, used and published. He suggested a shift in thinking and values was needed.

Rebecca Metzner argued that fisheries management was about managing people. New tools have become available in the past decade. This involved both the socio-economic aspect through impact analysis and surveys, and the sharing of experiences. Although there are common principles, there are regional, national and local differences. She spoke of new collaborative approaches, new partnerships for financing and a wave of coherence with organisations at regional level emerging.

Mario Vella spoke of micro-realities that go beyond the shores of a small island state like Malta. Fisheries are marginal to the Maltese economy, even in exports, which are skewed towards tuna. Figures were presented for employment and the major sectors where the island derived value added. Most of the fleet is over 20 years old and small in size, needing to be renewed. Still, fishery is important and the country needs to think beyond economics if it was to retain this culturally rich aspect of its national identity.

Among the points taken by **Isabelle Garzon** from the session was that greater effort in Europe need to be made to collect socio-economic data on small-scale fisheries, how to gain the trust of the small-scale fishermen to collect data from different regions, also enabling the fishers to present data other than on fish to scientists.

7. PLENARY SESSION – WHAT KIND OF PUBLIC SUPPORT FOR FISHERIES

Moderator: **Frangiscos Nikolian**, Head of Unit, DG MARE A3, European Commission

- **Ragnar Arnason**, Professor, School of Social Sciences - Faculty of Economics, University of Iceland: *Fisheries Subsidies worldwide: State of play, Trends and Impacts in the Environmental and Economic Sustainability of the Fisheries.*

- **John Connelly**, President of National Fisheries Institute, USA: *Public Support and privately funded Services in the US Fisheries.*
- **Pablo Múgica**, General Manager, Krustagroup: *Innovation in the Fisheries Industry: privately funded Innovation and the Role of Public Support.*
- **Jose Manuel Gaiteiro Rey**, Subdirector de Pesca de Andalucia, Dirección General de Pesca y Acuicultura, Junta de Andalucía: *Public Support to adapt to the Impacts of the Changes of Regulatory Requirements brought by the CFP Reform.*

Ragnar Arnason said subsidies fundamentally modify economic activity. They are not just a transfer from one part of society to fishers. They also have a real, generally negative impact on fishing behaviour, reducing economic efficiency, although cleverly designed subsidies can improve the situation.

Having distinguished between positive and negative subsidies, Mr Arnason said positive subsidies are a long-term threat to fishing communities. He demonstrated the impacts of subsidies: increased fishing effort, lower fish stocks, benefits go down and landings go down. He then gave estimates of global subsidies and concluded that fisheries subsidies are severely detrimental environmentally, economically and socially. These subsidies are substantial relative to the value of landings, significantly harmful to global welfare and should be ended as soon as possible.

John Connelly said it is important to bear in mind who pays for subsidies, who benefits from them and who competes with those benefiting from the service. The fisheries harvesting sector is the 7th most regulated sector in the US, so harvesters pay an enormous economic cost to work that lifestyle. There are very few subsidies in the US and companies working in different states have varying costs to process the catches.

Three examples were given of private investments in research studies on harvesting and the food supply chain across borders. This is done because the industry wishes to lead government in addressing an issue; to 'get ahead' of a pending government regulation; and to shape a pending regulation. He then raised two concerns: industry can supplement but not supplant the government's authority and power; and industry cannot be seen as an external funding source for basic government services due to the perceived undue influence of the paymaster on the outcome.

Pablo Múgica told the story of how fishermen in the Basque country in the north of Spain invested in the mid-1970s in a line of Alaskan Pollock Surimi that mimicked the local baby eel and set off on the consumer innovation curve by changing consumer habits from a non-sustainable species to a sustainable one. This type of innovation is a great opportunity for European fishing companies to regain global leadership in the seafood industry.

Fish, he observed, is still sold very much as it was sold 50 years ago. There is an opportunity to add to this primary economy, building a business based on innovation and knowledge, changing consumer habits through advertising by encouraging them to switch to more sustainable fish consumption. Increasing production value can create more wealth, meaning a potential €8 billion income for the industry, an extra €1 billion in EU exports and creating at least 100,000 new jobs.

He appealed for assistance from the EU Commission and national governments to help these fisheries companies break the high barriers to entry. Before innovating, step off the boat and go talk to consumers.

Jose Manuel Gaiteiro Rey spoke of the public support needed for fisherman in his home region of Andalucia in southern Spain to adapt to the impacts of changes in regulatory requirements brought about by CFP reform. Among the benefits have been subsidies, management of fishing stocks based on better knowledge, the cutting of excessive fleet capacity and the development of aquaculture.

Among the failures was the cost to the social network, no longer having a fleet that previously fished in third countries and limitations of the business at a regional level. In terms of the way ahead, fishing activities have to be competitive and sustainable; there is the need to diversify the coastal areas living off fishing, including the development of aquaculture; bringing fishermen, biologists, economists and decision-makers closer together; and preserving fishing, fishery and fishing ports as a value for the EU.

Moderator **Frangiscos Nikolian** pointed out that, according to the last economic report**,** in the five years between 2008 and 2013 fleet profitability went up and stocks also increased at the MSY level. The sector meanwhile received €3-€3.5 billion in assistance.

Prof. Arnason said there had been many measures in the European fishing industry, including improved fisheries management, improved stocks and reduced fishing effort and some countries have introduced rights-based fisheries management systems – all in combination with subsidies that are coming down.

He initially tackled the long-term impact of subsidies in equilibrium. Tax revenue is needed to fund subsidies and those taxes also have an impact on other sectors of the economy, which will probably reduce economic activity in other sectors.

Mr Nikolian then asked Mr Rey whether the assistance granted to Andalucia led to an addiction that prevented them better managing their profession. Mr Rey said the assistance is needed to address changes in the fishing fleets. Subsidies should not be *ad aeternum*. The fishers want a political and economic situation to allow them to be competitive. These communities cannot be left to their own devices and must be offered opportunities in other areas. **Mr Connelly** said that the US followed a different model.

Prof. Arnason said there is a case for subsidising private good generation, like environmental conservation. Fishing villages can be enjoyed by other sectors of society or the world, quite apart from any income from tourism. **Mr Múgica** said subsidies should help industries and countries to transform, not to maintain things as they are, unsustainably.

The panel was then asked: how do we go about assessing the economic impact of these subsidies? **Prof. Arnason** said we need a general equilibrium model of the economy. In the absence of this model, we have to use simple models and make a case with the burden of proof lying on the entity receiving the subsidy. Mr Rey said profitability and yield goals should be set for those entities to receive the funds, with those benefiting being measured and evaluated periodically. **Mr Connelly** stressed the importance of seeing other policy objectives.

The Director General asked the panel whether there are other forms of public support other than subsidies to the fisheries sector. **Mr Connelly** said very strong science dictating fishery management levels is the basis of all good fishery management. This

could include the conservation community, academics, the fishers and others. This is what governments bring – transparent and open science which people need to live with.

Prof. Arnason agreed. The provision of public goods in the form of knowledge and understanding – science and data – are not subsidies and do not affect fishing industry profits directly. However, this forms a basis for better decision-making both on the micro level within companies and on the macro level by governments that are doing fisheries management. Another really important support from the public sector to the fishing industry is to install and operate a fisheries monitoring system and make it possible for most commercial fisheries to become profitable.

In his final remarks Mr **Rey** said the goal must be community fishing fleets that have reached equilibrium as a result of annual action plan of the member states in line with the CFP and public support is needed for the safety and livelihood of these communities.

8. PANEL DISCUSSION – THE ROLE OF ECONOMIC ADVICE ON THE PATHWAY TO SUSTAINABLE FISHERIES

Moderator: **Jacki Davis,** Managing Director, Meade Davis Communications

- **Serge Garcia,** IUCN
- **Javier Garat Pérez**, Europêche
- **Douglas Lipton,** National Marine Fisheries Service, NOAA
- **Erik Lindebo,** Environmental Defense Fund

Moderator **Jacki Davis** said she intended to inject some elements from the various sessions of the conference in the panel discussion. Having heard about what we know and, in the various sessions, what we need to know, Ms Davis asked the panel to identify the most urgent needs for economic analysis and what the next steps are.

Serge Garcia asked which arena we are talking about when we talk about economics. Economics has been behind fisheries and all its problems for the past five decades. There was no transparency on the table participating in the debate on management. What was not discussed at the conference was the tragic disconnection between fisheries development and fisheries management. In the end there is over-capacity. There is a wealth of data that is being crunched by economists in private companies but there is a dearth of data in the management system.

The key question is how to transfer between the two. He cited examples dating back to the 1970s of biologists and economists working together side by side in institutions working for the benefit of the industry, and with trade unions to promote exports. They do not work well today in the existing institutions for fisheries management.

On an optimistic note, **Douglas Lipton** agreed with Mr Garcia that there are examples of economists contributing to fisheries management, giving the US perspective. There is very little economic input in the management and setting a total allowable catches. Moving to implementation at regional fisheries council level, all sorts of economic questions start entering the equation. US laws require economic analysis: cost-benefit and social analyses. There is also guidance on how this analysis has to be conducted, despite regional differences.

From an NGO perspective, **Erik Lindebo,** called for more economic thinking in fisheries management, moving beyond data and impact assessment. The challenge for the CFP,

which is a conservation policy and has to come through the Member States, is to address the disconnect in the implementation stage by the 23 Member States. It is also a challenge for the European Commission to bring in more economic thinking into fisheries management, where there are opportunities.

Ms Davis asked Mr Lindebo how to change the mind-set from environmentalists to economists. He said he tries to think like a fisheries manager, promoting more dialogue and strategic thinking, sitting down with governments and the industry to see how to make it work.

Also an optimist, **Javier Garat Pérez** said this much-needed conference has provided agreement all round that, as the Commissioner said, there is a need for integrating the socio-economic dimension into the system, together with the biological dimension. He said he trusted that the Commissioner has indicated clearly the way forward and we would go from words to action.

Ms Davis then asked the panel about the key questions to be answered by the policy-makers and communicating them well to those who can answer them. Most industry players who talk about transparency do not like it, M. Garcia said, because private business makes business based on information asymmetry. A system is needed with a large amount of information to deal with those who survive by making money where information is not totally available to everybody. In the absence of information, the challenge is how to replace the informal fragmented system into a better common reflection.

Mr Lipton said fisheries were not a homogeneous whole. There are the models and there is an ever-increasing amount of data. Mr Lindebo said the major question for the CFP is how to get from where we are today to 2020, when a landing obligation and MSY fisheries have to be achieved. We have to sit down at a regional level to talk about specific issues to identify the challenges.

Managers and economists, according to Mr Garat, need to tell the industry what type of data they need to integrate the economic data into the system. The European Commission is not taking socio-economic impacts into consideration when they adopt proposals. They are only taking the biological data into account. His industry body would like to see economic impact assessments done whenever TAC and quota regulations are going to be proposed for discussion and take them into account at the outset. Similarly, this needs to be done for the multi-annual plans.

Giving the US experience on MSY management, Mr Lipton said it took 30 years to be brought in but, once accepted, it occurred fairly quickly because it is cheaper to pay economists than lawyers to fight the battle in court. Mr Lindebo said data needs to be more up to date and there needs to be more efficient ways of collecting information from the users.

When talking of transparency in economic data, Mr Garat said we are talking about providing that data to the scientists, economists and the managers to improve the management system, not to NGOs, the ‘man in the street’ or their business competitors. EU ESF subsidies are all positive or clever subsidies. The negative subsidies belong to the past.

On timeliness, M. Garcia said there were also elements of quality and detail, with a trade-off in between. It depends on the level. Day-by-day or hour-by-hour data are needed for operational economics to optimise fuel consumption of a fleet. If you are planning European fisheries in the face of climate change, knowing that many stocks are going to move north, you can take five years to do that and produce maps predicting what will happen based on data over five years.

The issue is: where does the State stop? There is too much micro-management of the industry where a lot of data is needed every day. If Government asks the industry to give operational data, industry wants the certainty that it is not going to be leaked. Some data have fiscal implications and there are countries that have removed that data from the fiscal system once it is shared.

Still on timeliness, Mr Lipton said fisheries economists work between providing fisheries managers with management decisions, and the longer-term studies and the role economics can play. This is ongoing – always going to the next step. It gets back to communicating what the problems are. As the questions get asked, the process starts where, as M. Garcia said, industry can be asked to bring along the data, but a process has to be in place where you can integrate and collaborate.

M. Garcia said there is sometimes misunderstanding at the beginning of the exercise on what needs to be communicated and what is required of the economists. Then multi-disciplinary teams of experts are brought together. It is good for each member to have a basic knowledge about other aspects of the team. What the politician then needs is composite advice. With policy planning there is time; with a management crisis, there is little time. As Mr Lipton said, if these could be anticipated, there would be fewer crises.

Mr Lindebo said the task ahead is to engage with the fishing industry and the Member States to identify 'choke' situations. Where mismatches are identified between current catches and the allocated quota, you have to look at your toolbox and see to what extent you can mitigate these imbalances.

Ms Davis asked what the next step should be. M. Garcia said the data issue was addressed by creating fisheries research centres, which were a source of manpower and computers, and directly accessible by the Fisheries Ministers. That model can be repeated today. There already are resources at Universities, so the challenge is to mobilise them on a project basis. There are a lot of institutional barriers which impede that exchange.

For Mr Lindebo advisory councils will enable this to work. There is an opportunity to develop that further. Mr Lipton said the regional centres would have an economist and a social scientist and the broader team would be in the fishery research centres – having critical infrastructure to respond to both the short term needs and do the longer term research.

Finally, Ms Davis asked the panel to imagine, if they were European Commissioner for Fisheries for a day, what would be the one thing they would do to get the economic advice needed and to use it on the pathway to sustainable fisheries. Mr Garat said he would call Europêche every month to send over a representative.

Mr Lindebo would bring in the economic dimension and, with the replacement of the subsidy regime imminent, giving guidance on economic tools in fisheries management and how to do it better.

Mr Lipton would think about his legacy and impose the requirement that a cost-benefit analysis be done on the major regulations being contemplated. This will require the allocation of resources and the guidance, implanting a peer review process ensuring that advice would be used in the taking of decisions by the Commission and Member States.

M. Garcia would bring one or two innovative economists into the office and draft a system to give economic value to the data being sought and then ensure that the data can be traded on this system.

9. CLOSING SESSION

In his concluding address, **Director General João Aguiar Machado** said the entire issue of the economic analysis of fisheries is extremely important – so much so that he spent the entire duration in attendance, participating in specific sessions. Economic advice is still some years away since it is still difficult to execute on the economic impact of policy initiatives, let alone the advice.

Mr Machado identified **three main topics** that achieved consensus and were shared:

1. the type of economic advice and analysis needed and that would be useful for policy makers to devise good policies;
2. how to improve existing tools and methodologies to deliver and generate this kind of analysis that is a contributory factor and enriches decision making; and
3. how to take into account of the continuous evolution of the fisheries sector, particularly in a context of globalisation of the seafood markets, anticipating the changes that are already happening and that would be even more pronounced in the years to come.

On the **type of economic advice** we could and should be using, Mr Machado said it is not a question of biology vs economics, but both disciplines need to interact and contribute before reaching the analysis stage. Economic analysis in fisheries is not limited to time and quota setting – where positive gains need to be balanced with negative pain. It is about the implications and the impact of various policy decisions in fisheries management within an evolving global market. There is an enormous field of work that has yet to be fully exploited and Mr Machado intends to make every effort necessary to take a step forward in this direction in the work being done in Brussels.

On the need to **improve tools and methodologies**, although data is plentiful, it is scattered, not always accurate or reliable, and not very timely – essential for economic analysis. Mr Machado stressed the importance of obtaining data from industry since, without that raw material, it cannot be processed and looked forward to working together with industry so that the decision-makers can have all the information they need to take account of the impacts on the industry. It is Mr Machado's intention to see what DG MARE can deploy to have better economic tools to enable it to conduct economic analysis.

In terms of the **continuous evolution of the fisheries sector and globalisation**, Mr Machado observed that that security of fish supply, even given current consumption levels, looks bleak. This will have implications on the fishing industry's strategy, strategies of delocalisation or otherwise and even on the efficiency of tools like the SFAs. Tools are needed to take a more prospective analysis of the trends and how to better equip industry and our fishermen to face the challenges that are just around the corner.

In **conclusion** Mr Machado said it was important to continue to work together, bringing together the two disciplines – biologists and economists, along with other professions when necessary – to obtain the best quality information to produce the best policy decisions.

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