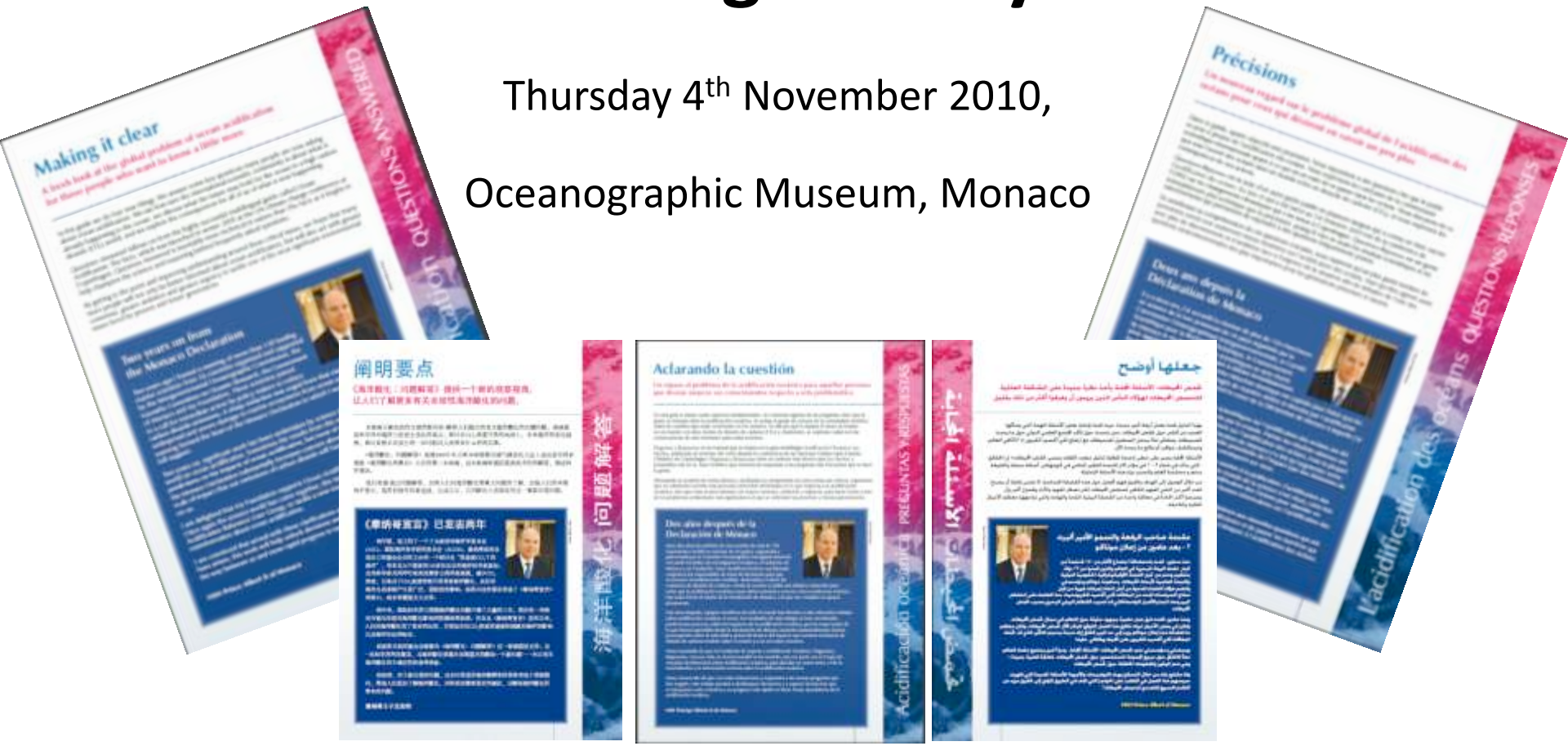
Closing Plenary

Thursday 4th November 2010,

Oceanographic Museum, Monaco



Moderator

Carl Gustaf Lundin

Head, Global Marine and Polar Programme, IUCN

Welcome

Dan Laffoley

Chair, Ocean Acidification Reference User Group

The Ocean Acidification Reference User Group

- Provides a forum for EPOCA, UK, BIOACID and MedSeA projects
- Advise on the types of products that will help
- Advise on what those products should look like
- Advise on how to get them out with impact
- Helps to keep key sector and parent organisation well informed and to look beyond the boundaries of current research initiatives

Copenhagen COP 2009

Gaetan Luci / Palais Princier

阐明要点

《海洋酸化：问题解答》提供一个新的观察视角，
让人们了解更多有关全球性海洋酸化的问题。

本指南主要包括四方面的新内容：解答人们提出的有关海洋酸化的关键问题；谈谈国际科学界对海洋已经发生变化的观点；探讨在CO_2浓度升高的地球上，未来海洋的变化趋势；探讨目前正在发生的一切可能对人类带来什么样的后果。

《海洋酸化：问题解答》是继2009年冬天哥本哈根联合国气候变化大会上成功发布的多语版《海洋酸化的事实》之后的第二本指南，这本指南将提供更具技术性的解答，推进科学理念。

我们希望通过问题解答，加深人们对海洋酸化等重大问题的了解，加强人们的环境保护意识，提高积极性和紧迫感，达成共识，共同解决人类面临的这一重要环境问题。

《摩纳哥宣言》已发表两年

两年前，我主持了一个了由政府间海洋学委员会（IOC），国际海洋科学研究委员会（SCOR）、摩纳哥政府及我自己的基金会共同主办的一个研讨会"高浓度CO_2下的海洋"，有来自26个国家的150多位杰出的海洋科学家参加。这些科学家共同呼吁政府决策者立刻采取措施，减少CO_2排放，以免由于CO_2浓度持续升高导致海洋酸化，从而对海洋生态系统产生更广泛、更深刻的影响。很高兴这些倡议形成了《摩纳哥宣言》的核心，我非常愿意全力支持。

两年来，国际科学界已围绕海洋酸化问题开展了大量的工作，得出的一些结论可能与早期对海洋酸化影响的预测结果相悖。但自从《摩纳哥宣言》发布以来，人们对海洋酸化有了更多的认知，并更加关注CO_2排放的速度和规模对海洋的影响以及海洋对此的响应。

我很高兴我的基金会能够为《海洋酸化：问题解答》这一指南提供支持。这一次科学界再次聚首，与海洋酸化资源共享联盟共同解决一个新问题——纠正有关海洋酸化的不确定性和误导信息。

我相信，对于新出现的问题，这本问答里所做的解释和回答将有助于消除疑问，帮助人们更加了解海洋酸化，并将给决策者更好的建议，以解决海洋酸化所带来的问题。

摩纳哥王子艾伯特

海洋酸化问题解答

- Answer some key questions many people are now asking about ocean acidification.
- Say how sure the international scientific community is about what is already happening to the ocean.
- Discuss what the future may hold for the ocean in a high CO_2 world.
- Explore the consequences for all of us of what is now happening.

Divided into 5 sections:

•**Setting the scene** – putting ocean acidification in context with climate change and seeking to provide clarity where there was confusion.
•**Getting the facts straight** – explaining the chemistry of ocean acidification and concepts such as saturation horizons in as simple terms as possible, and presenting the evidence that ocean acidification is really happening.
•**Learning from history** – using historical records to show what has happened in the past and predicting what might be the consequences of current ocean acidification.
•**Exposing the consequences** – using examples of natural acidified waters to illustrate future conditions.
•**Understanding our options** – starts to look at what options we have to try to reduce, halt, reverse the rate of ocean acidification.

What happens next?

2009

2010

The Monaco Ocean Acidification Action Plan

Understanding the range of measures that need to be taken to address ocean acidification

(?launch Brussels 2011)

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Monaco RUG meeting → Monaco Economics of Ocean Acidification meeting → The London Ocean Acidification meeting

Introduction to the *Monaco Ocean Acidification Action Plan*

What needs to happen

John Baxter

Deputy Chair, Ocean Acidification Reference User Group

The Monaco Ocean Acidification Action Plan

What needs to happen

Strategic publication in 5 languages

A multi-agency perspective for action – including science, policy and communications and outreach and more.

Major opportunities for utilising the Action Plan include:

Reference User Group meeting 2011

US National Council for Science and the Environment 'Our Changing Oceans'

What actions are missing that are needed to move ocean acidification forward quickly and effectively?

What are the questions we really need answers to?

Three challenges:

Formulating the actions

Implementing the actions

Monitoring the effects of the actions

The 2010 Ocean Acidification Reference User Group Meeting

Policy: Conservation International, ESF, IUCN, ONERC, Irish Marine Institute, Norwegian DoF, DECC, Greenpeace, UEA.

Research: NOAA; IFM-GEOMAR; Scientific Committee on Oceanic Research; SeaWeb; Centre National de la Recherche Scientifique; Antarctic Climate and Ecosystems Cooperative Research Centre (Australia); Universitat Autònoma de Barcelona; The Laboratoire des Sciences du Climat et de l'Environnement.

Outreach: The Nature Conservancy; The Shellfish Association of Great Britain; The Oak Foundation; Plymouth Marine Lab.

What policy outcomes on Ocean Acidification are needed in the next 5 years?

- Recognition as a critical policy driver to reduce carbon dioxide emissions.
- Mechanisms are in place to address ecological, socio-economic and cultural impacts through national and regional environmental policies.
- Recognition of the greater vulnerability of developing countries and more effective accounting for this in policy processes.
- Programmes are in place for capacity building, outreach and education, in order to build public, industry and political will.

How can these policy changes be brought about?

Ocean acidification is incorporated into policy actions such as:

- Strongly highlighting the consequences through IPCC.
- Explicitly recognising Ocean Acidification within national policy and international frameworks such as UNFCCC, CBD, and regional agreements.
- Implementing measures to enhance resilience of vulnerable ecosystems and people for example ecosystem-based management, protected areas.
- Providing extensive funding for compensation, capacity building, etc. for example through the adaptation fund (GEF) and national aid programmes.

Strengthen existing research:

- Address and support research priorities already identified.
- Coordinate international research to develop an ocean acidification research international coordination office.
- Develop global north-south collaborations.
- Develop and support large-scale collaborative research infrastructure.
- Connect socio-economists and natural scientists through integrated research programmes.

New audiences, new research initiatives:

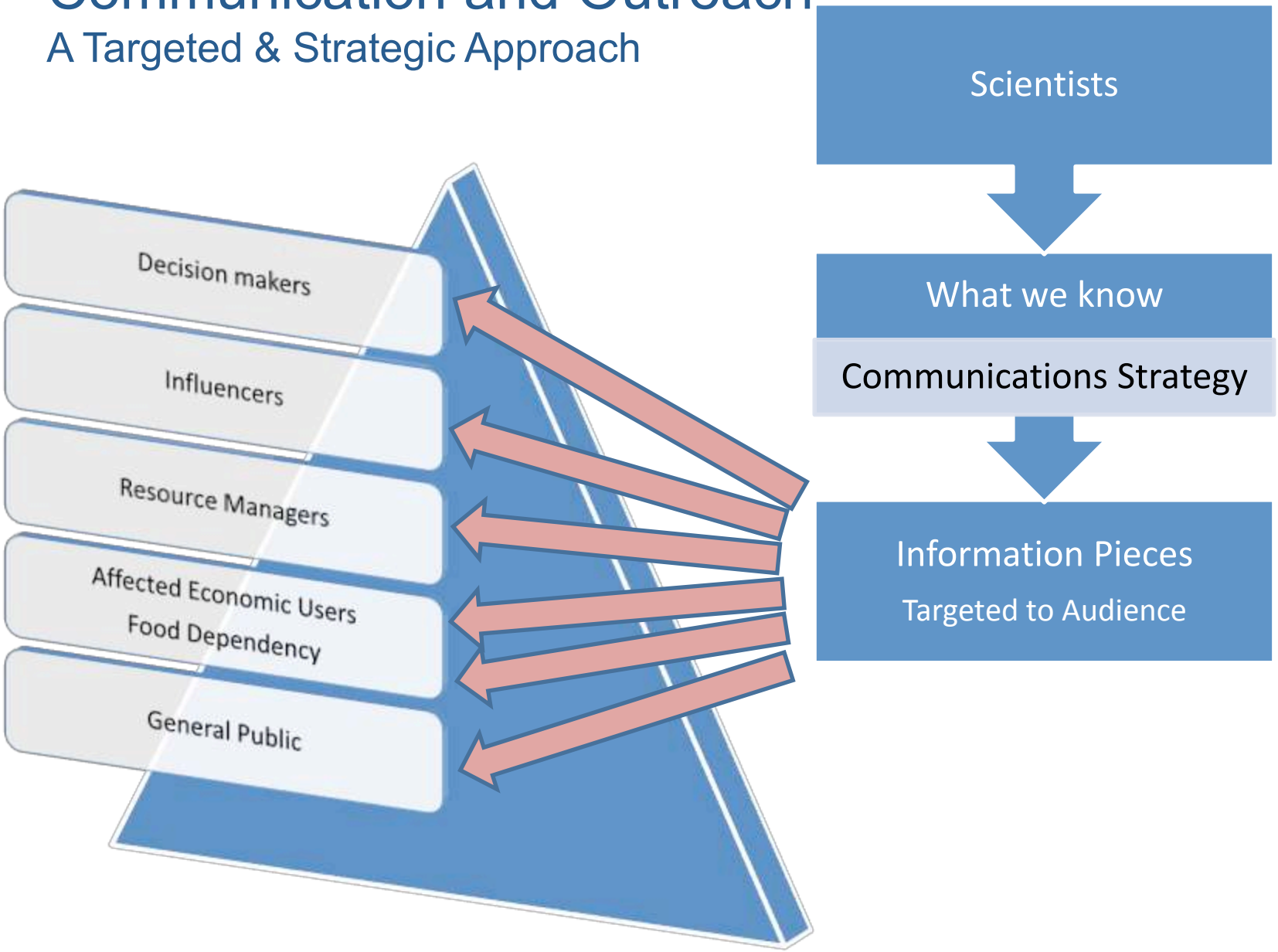
- Bring together science & industry (fisheries, aquaculture, tourism) to undertake cooperative applied research.

- Work with local and regional managers to develop practical actions that mitigate and reduce cumulative impacts.

- Expand opportunities to share knowledge & resources between developed and developing countries to enhance capacity to address ocean acidification.

Communication and Outreach

A Targeted & Strategic Approach



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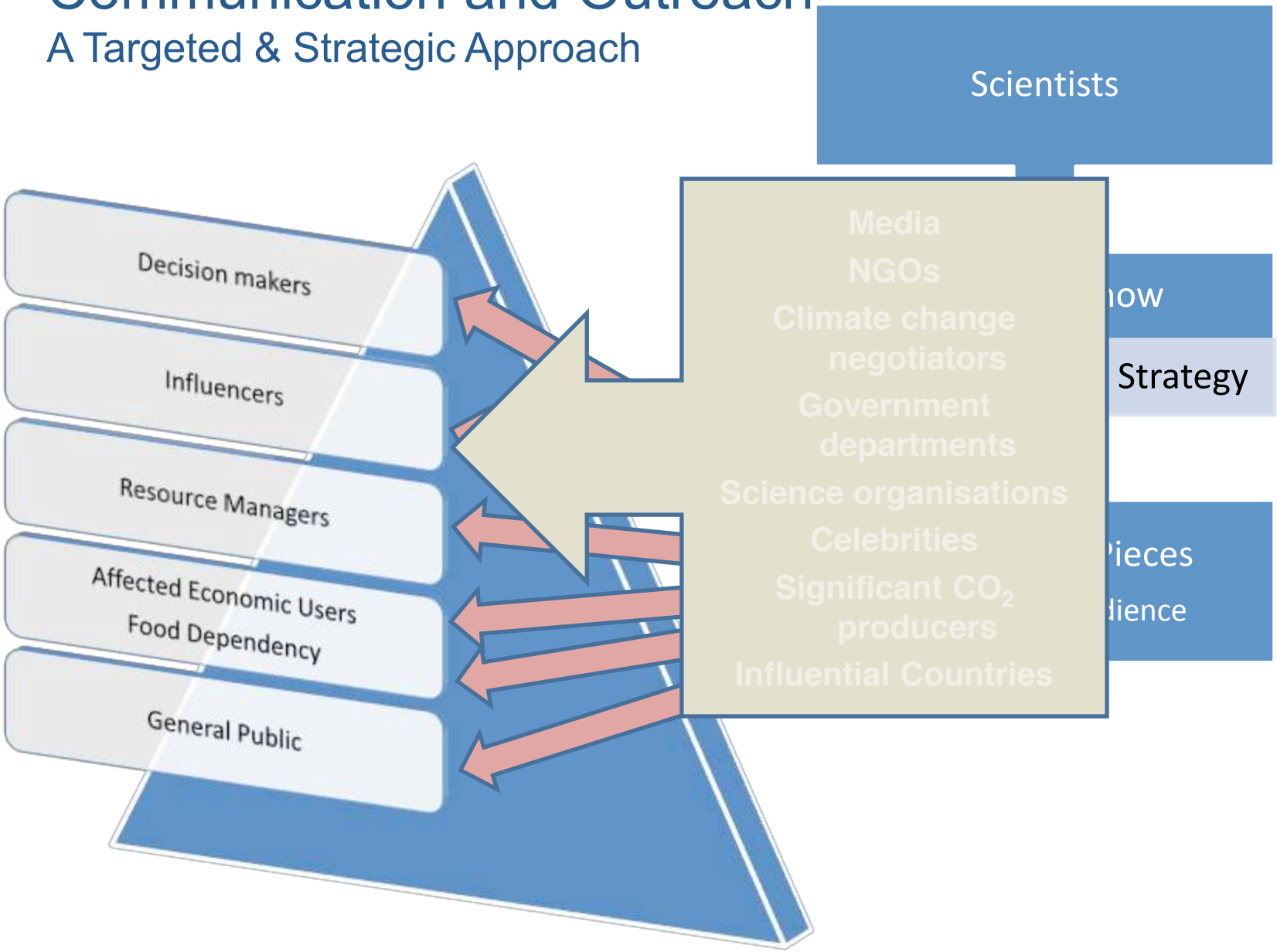

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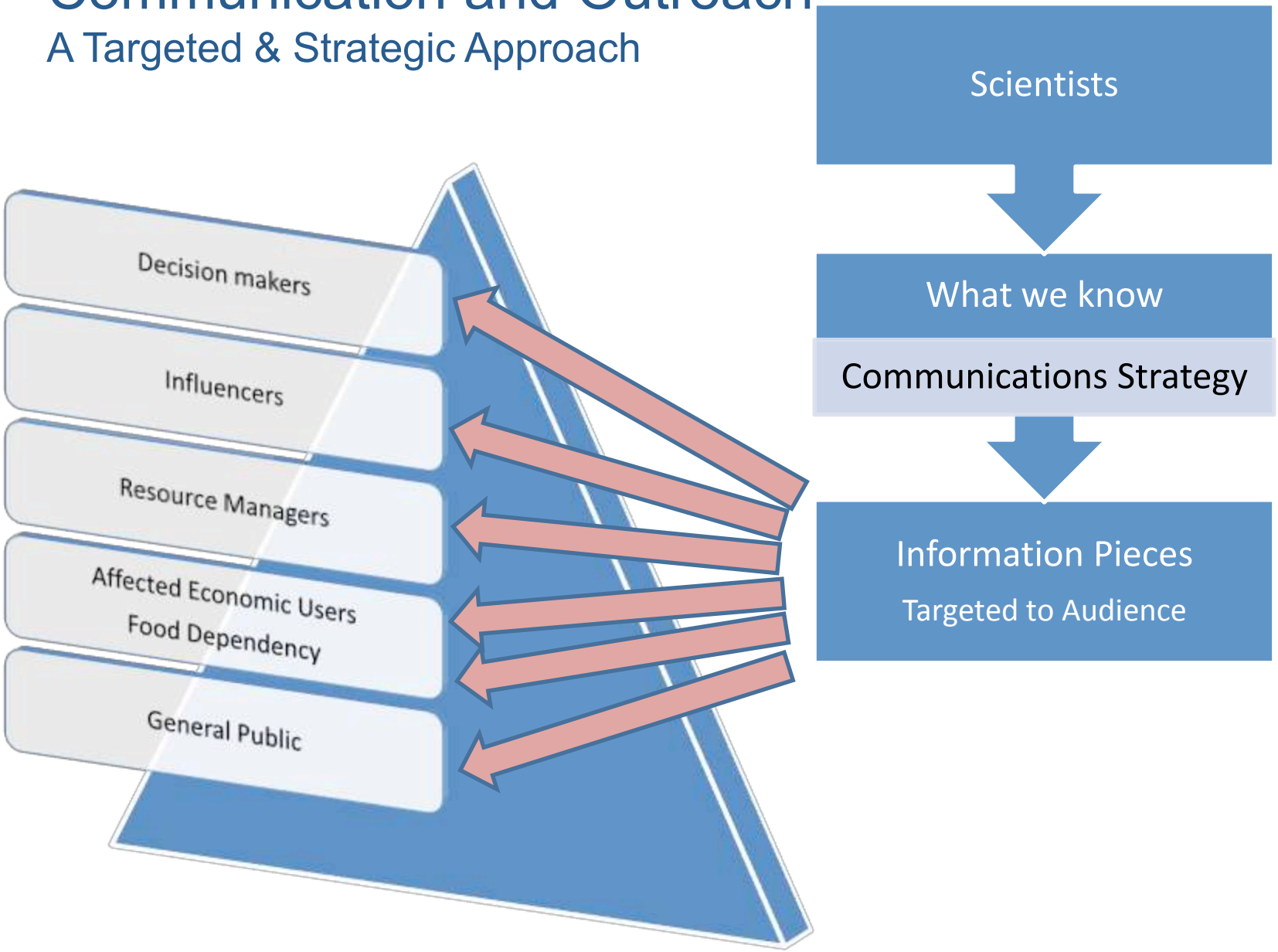

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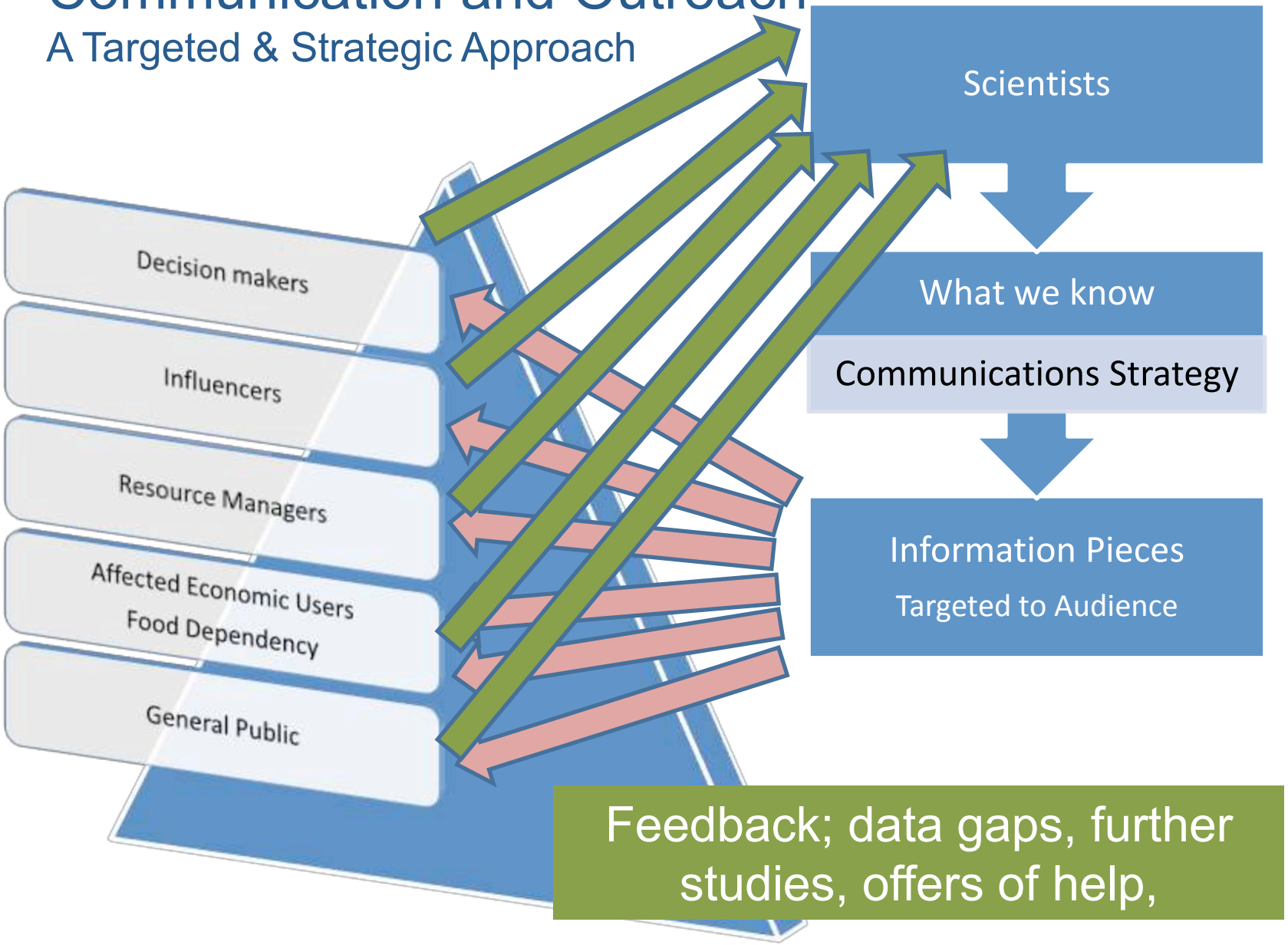

Develop a communications strategy for ocean acidification that:

- retains the scientific rigour and credibility of existing EPOCA products;
- targets messages and mechanisms to SPECIFIC audiences and specific needs;
- includes a dedicated RUG Communications Team and a network among partner organizations;
- anticipates and responds to challenges and discussion around the science and impacts ocean acidification.

By taking a multi-disciplinary perspective this Action Plan:

- gives voice to areas of critical importance that have been ignored or poorly supported up till now;
- aims to stimulate attention and funding to accelerate how ocean acidification is addressed world wide.

Ocean Acidification in the European Research Framework Programme

Elisabeth Lipiatou

Head of Unit 'Climate Change and Environmental Risks',
European Commission

H.S.H. Prince Albert II of Monaco

Vote of thanks

Carl Gustaf Lundin

Head, Global Marine and Polar Programme, IUCN