



Riksrevisjonen

Office of the Auditor General of Norway

# The Office of the Auditor General's investigation into the Management of Aquaculture

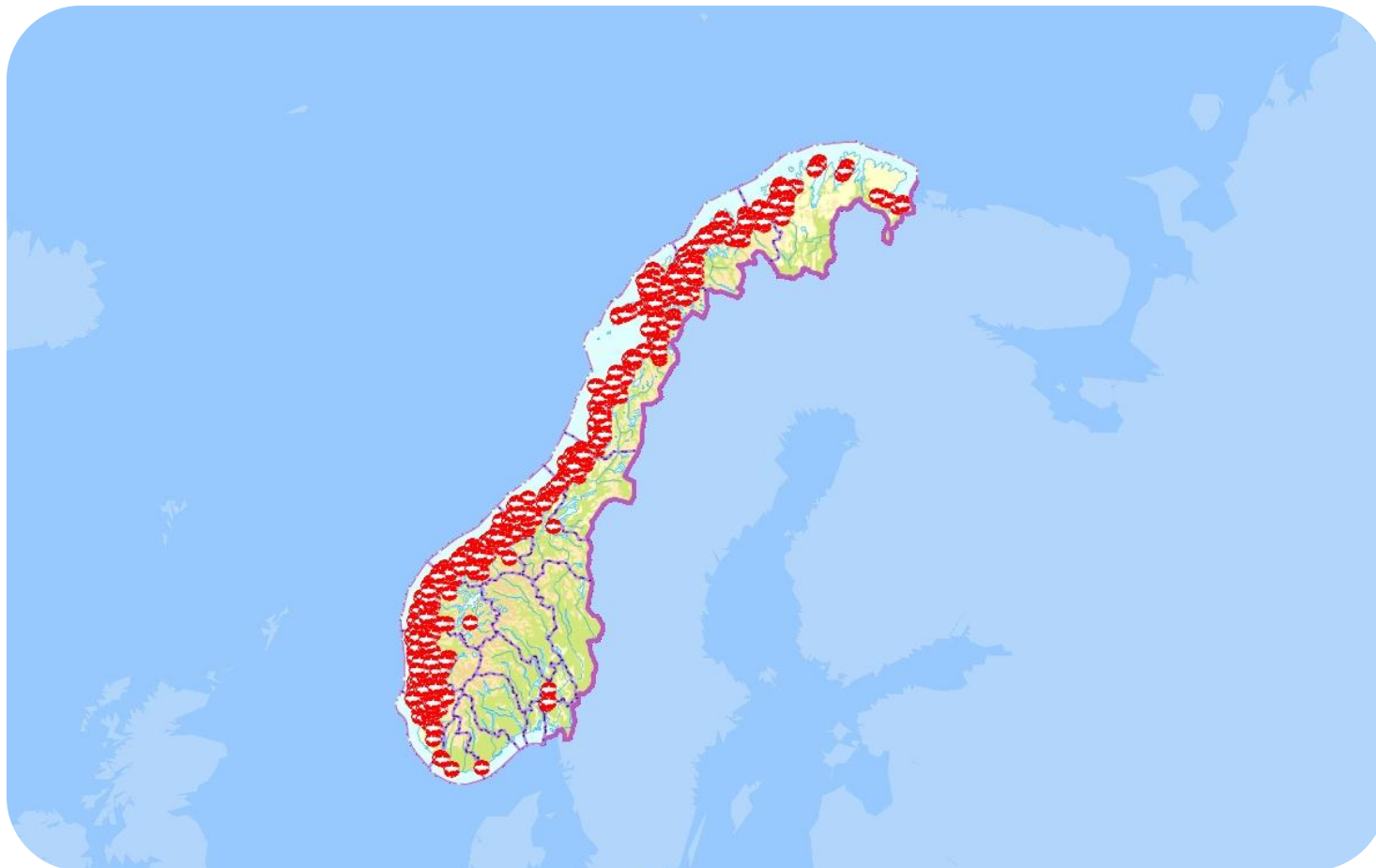
EUROSAI WGEA, Oslo May 16 2012



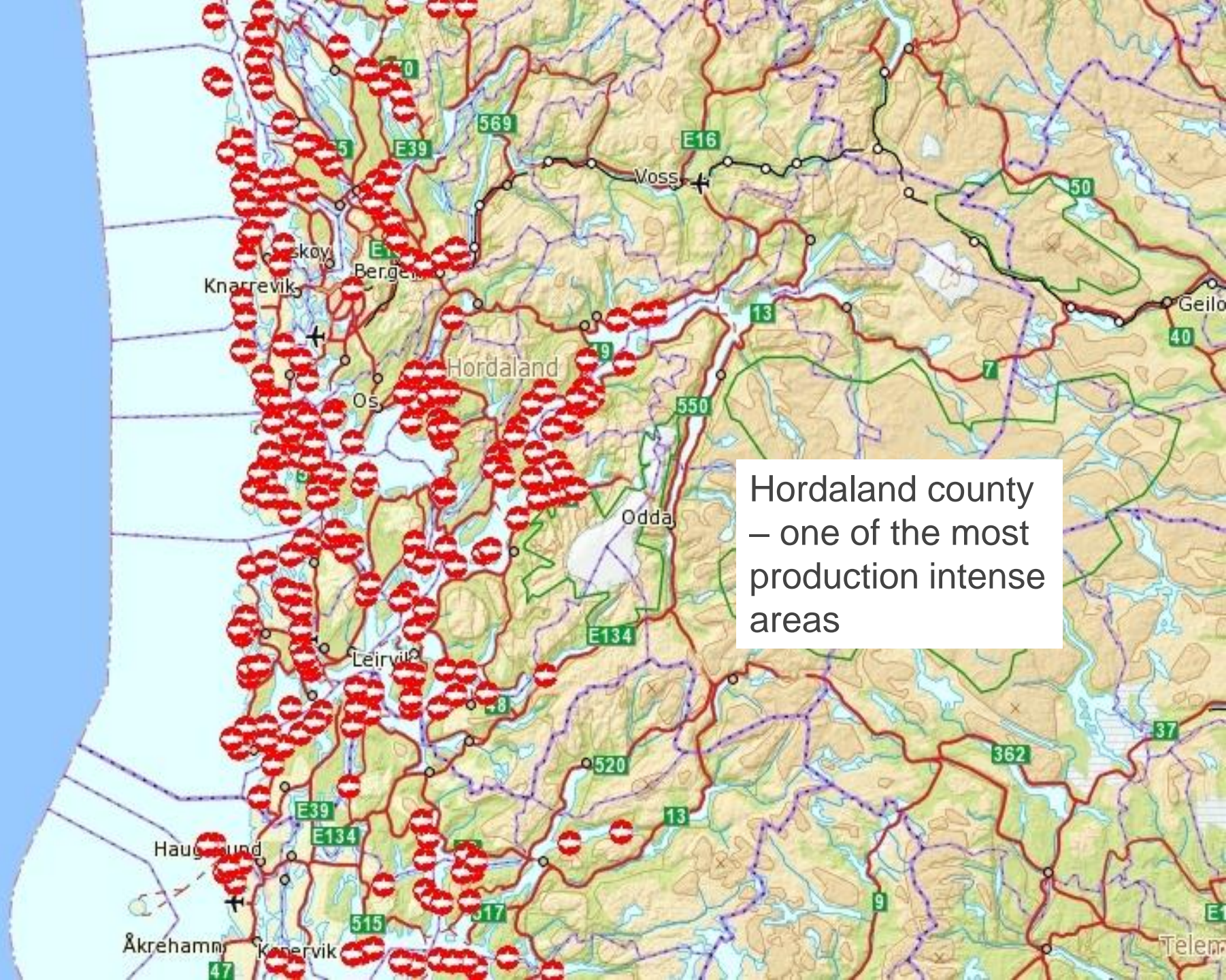
# Aquaculture Facilities

- Biomass of 700 or 945 tons
- Equals about 3000 cows
- Or about 27000 sheep

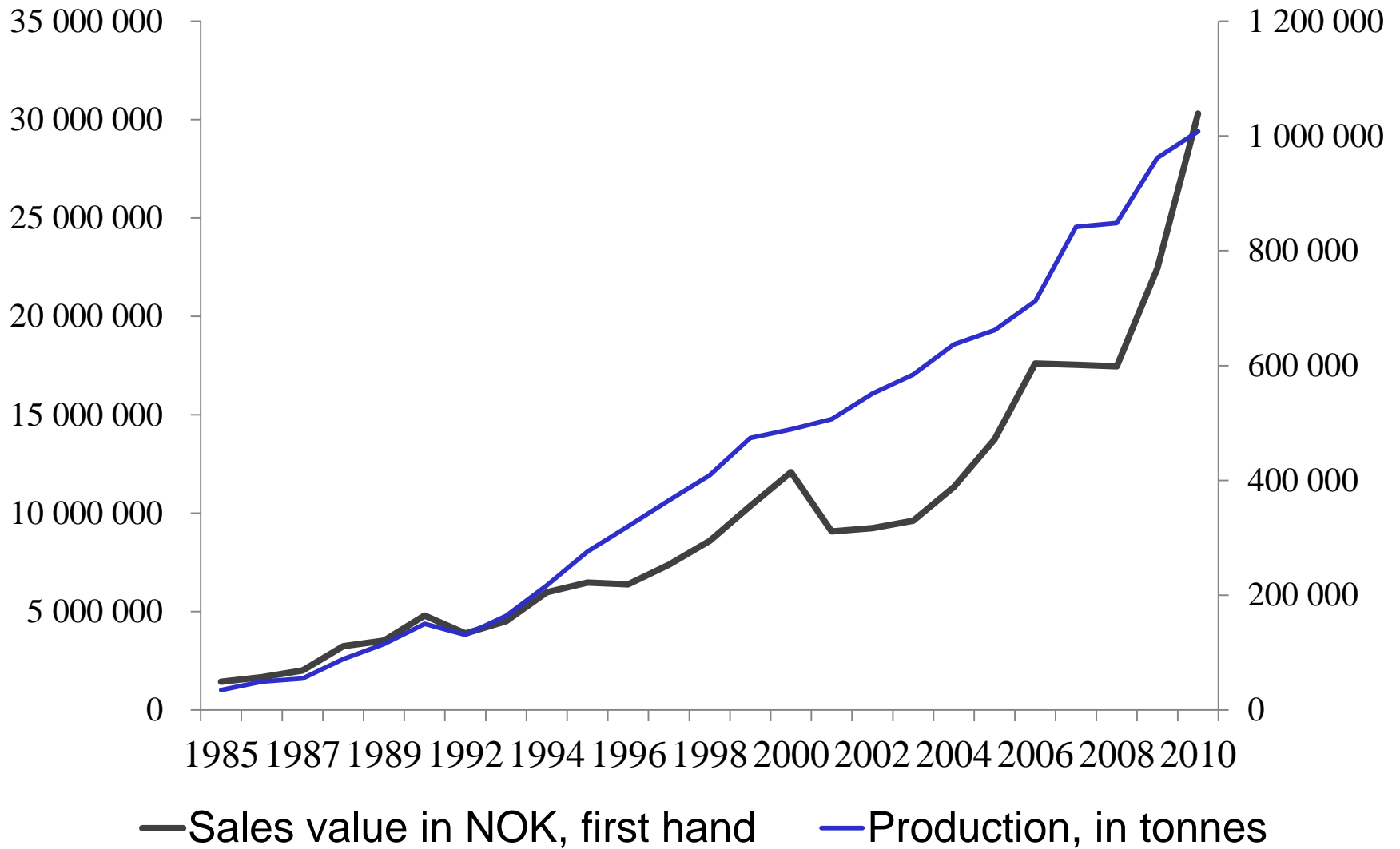
# Facilities on the coast line of Norway







Hordaland county  
– one of the most  
production intense  
areas



# Audit objective

The goal of the investigation is to assess the extent to which the development and status as regards the aquaculture industry are in line with the national goal that the aquaculture industry shall be sustainable and environmentally sound, and to assess whether the authorities' use of policy instruments and follow-up is efficient and sufficient.

## 3 paramount audit questions

1. Environmental situation
2. Policy instruments
3. Control and follow up



## Audit question No. 1

To what extent are the development and status of the aquaculture industry in Norway in line with the national goal that the aquaculture industry shall be sustainable and environmentally sound?

# Specification of Audit question No. 1

1. Escape and genetic pollution
2. Fish health
3. Pollution and discharges
4. Use of marine areas
5. Use of feed

# Methodology Audit question No. 1

Statistics

Document analysis

Interviews

Lists of questions

## Escapes and genetics - Findings and conclusions

- No. of escaped fish increasing  
900 000 – 100 000 – 365 000
- Proportion of escaped salmon among wild fish 15-28 % nationally
  - Too much and too high
  - Ministries agree



## Fish health - Findings and conclusions

- Close to 50 million fish are lost annually
- About 20 % of the production
- Main reason for loss – diseases
- Financial losses for the industry
- High level of salmon lice
  - Too much
  - Ministries agree



## Pollution - Findings and conclusions

- Organic, nutrient salts and chemicals
- Monitoring shows acceptable levels
- Data not sufficiently valid
- Various studies carried out
- Disagree on the effects of discharges
- Harmful chemicals

## Pollution - Findings and conclusions II

- Need for better understanding of the effects of discharges
- Consider the use of chemicals and the regulation of the use of chemicals
- Ministries agreed



# Use of marine areas – findings and conclusions

- Current use of marine areas contributes to some of the environmental challenges
  - No overall plan for the allocation of facilities
  - Deficient regulation by the municipalities
  - Ministry appointed a committee
- 
- Agree that there are challenges
  - New act will help municipalities

# Feed – Findings and conclusions

- Dependent on large amounts of wild fish for feed
- Some species have been heavily harvested



Blue whiting

## Recommended and allocated quotas and total catches of blue whiting 1995-2011 for the species' range in the North-East Atlantic



# Feed – Findings and conclusions III

- Underutilization of trimmings from fish for human consumption
  - Need for continues effort to ensure sustainable fisheries
  - Need for more use of trimmings
  - Ministry agreed



# Overall conclusion audit question No. 1

The aquaculture industry is not sufficiently adapted to the environment and that sustainability considerations do not seem to be taken into sufficient extent, cf. the Storting's recommendations.

➤ Ministries agreed partially

## Audit question No. 2

To what extent is the national goal of sustainable aquaculture achieved through the use of policy instruments?

# Specification of Audit question No. 2

1. Stipulation of the number of licences and maximum production
2. Processing of new and changing licences
3. Supervision and control

# Methodology Audit question No. 2

Statistics

Document analysis

Vignette surveys

Interviews

Lists of questions



## Licenses and maximum production - Findings and conclusions

- Several allocation rounds since the 1980s
- No environmental assessment prior to an allocation in 2009
- Extensive assessment prior to a planned expansion in 2010

## Licenses and maximum production - Findings and conclusions II

- All agencies were negative to increase the production
- Positive that more extensive assessments had been carried out in recent years

**Applicant**

submits an application to the county authority in the county in which the site is located

**Application**

**The county authority**

- quality assures the application and carries out a preliminary assessment in accordance with the Regulations on Environmental Impact Assessments
- sends the application to the relevant sector authorities and the municipality
- receives submissions after consultation
- decides the application pursuant to the Aquaculture Act

**Granted/rejected**

**The municipality**

- registers and makes the application publicly known, with a consultation deadline of four weeks
- clarifies the relationship to the marine area plan and issues a statement

**The Norwegian Food Safety Authority's district office**

decides the application in accordance with the Food Act and the Animal Welfare Act

**The county governor**

- decides the application in accordance with the Pollution Control Act
- issues a statement on natural diversity and interests relating to outdoor pursuits, fishing and wild game following an overall assessment

**The Directorate of Fisheries' regional offices**

issues a statement about traditional fisheries

**The Norwegian Coastal Administration's regional office**

decides the application in accordance with the Harbour Act

**The Norwegian Water Resources and Energy Directorate's regional offices**

are involved in cases that involve the withdrawal of water (for example smolt). Decide the application / issue a statement

# The vignette survey

- Identical cases (vignettes) sent to different offices
- Not to uncover incorrect decisions but variations
- 3 vignettes to 19 offices of the Food Safety Authority
- 3 vignettes to 8 County Governors Offices

# Processing of licenses - Findings and conclusions II

## The Norwegian Food Safety Authorities

Responses	Made a decision	Requests further information	Decision to grant	Decision to reject
19	15	4	9	6

Responses	Made a decision	Requests further information	Decision to grant	Decision to reject
19	19	0	8	11

## Processing of licenses - Findings and conclusions II

- Difficult to assess the quality of a site
  - Insufficient guidance
- 
- Ministry should ensure uniformity
  - Agreed

# Processing of licenses - Findings and conclusions III

## The county governor offices

Responses	Made a decision	Requests further information	Decision to grant	Decision to reject
8	7	1	7	0

Responses	Made a decision	Requests further information	Decision to grant	Decision to reject
8	7	1	2	5



## Processing of licenses - Findings and conclusions IV

- Outdated guidance
  - Ministry should ensure uniformity
  - Agreed

# Supervision – Findings and conclusions

	Number of inspections	Uncovered breaches	Administrative sanctions	Reports to the police
Dir. of Fisheries	380	638	48	5
Food and Safety Aut.	1022	701	125	0
County Gov	44	38	0	0

# Supervision – Findings and conclusions

- Need for better coordination
- Need to improve the preventive effect
- Need to harmonize the use of sanctions between offices
- Insufficient method to verify amount of fish
- Few inspections carries out by the County Gov.
- Ministries agreed

## Overall conclusion Audit question 2

- In the Office of the Auditor General's assessment, the environmental challenges in the industry are so extensive that they will require significant changes in the management of aquaculture and in how the aquaculture industry is regulated.

## Overall conclusion Audit question 3

- Important to develop indicators to govern the industry
- Ministry agreed



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**•Questions?**

