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## **Stakeholder Consultation on Progressive Management Pathway (PMP) to Improve Aquaculture Biosecurity**

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# **Aquatic Animal Diseases and Bio-Security Norway**

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# Content

- 1) Short about NOR Aquaculture
- 2) Description of NOR management system
- 3) One example of a challenge (Infectious Salmon Anaemia)
- 4) Mitigation measures/Aquaculture Biosecurity measures developed
- 5) Top 5 issues
- 6) NOR contribution to Aquaculture Biosecurity globally

# Welcome to Norway



# The Norwegian Aquaculture Industry

- A relative young industry (less than 50 years old)
- +/- 120 companies – mix of small, medium and large companies
- Creates about 30 000 jobs, including spin-off effects, in coastal areas
- Production volume of 1,3 million MT in 2017 (99 % salmon/trout)
- Export value of 64 billion NOK in 2017 (9 billion USD)



# Current technology 2017



**In 2000: 500.000 MT produced at +/- 1500 sites. Average site-biomasse 2500-3000 MT**  
**In 2017: 1,2 mill MT produced at +/- 900 sites. Average site-biomasse 4000-4500 MT**

# Future Norwegian farming technology is here



# Relationship between institutions involved in regulating aquaculture industry

## Policy making

- Ministry of Trade, Industry and Fisheries

## Scientific support

- Institute of Marine Research
- National Veterinary Institute

## Decision making and inspection service

- Directorate of Fisheries
- Food Safety Authority

## Risk assessments

- Scientific Committee for Food Safety (VKM)
- European Food Safety Agency (EFSA)

## Note:

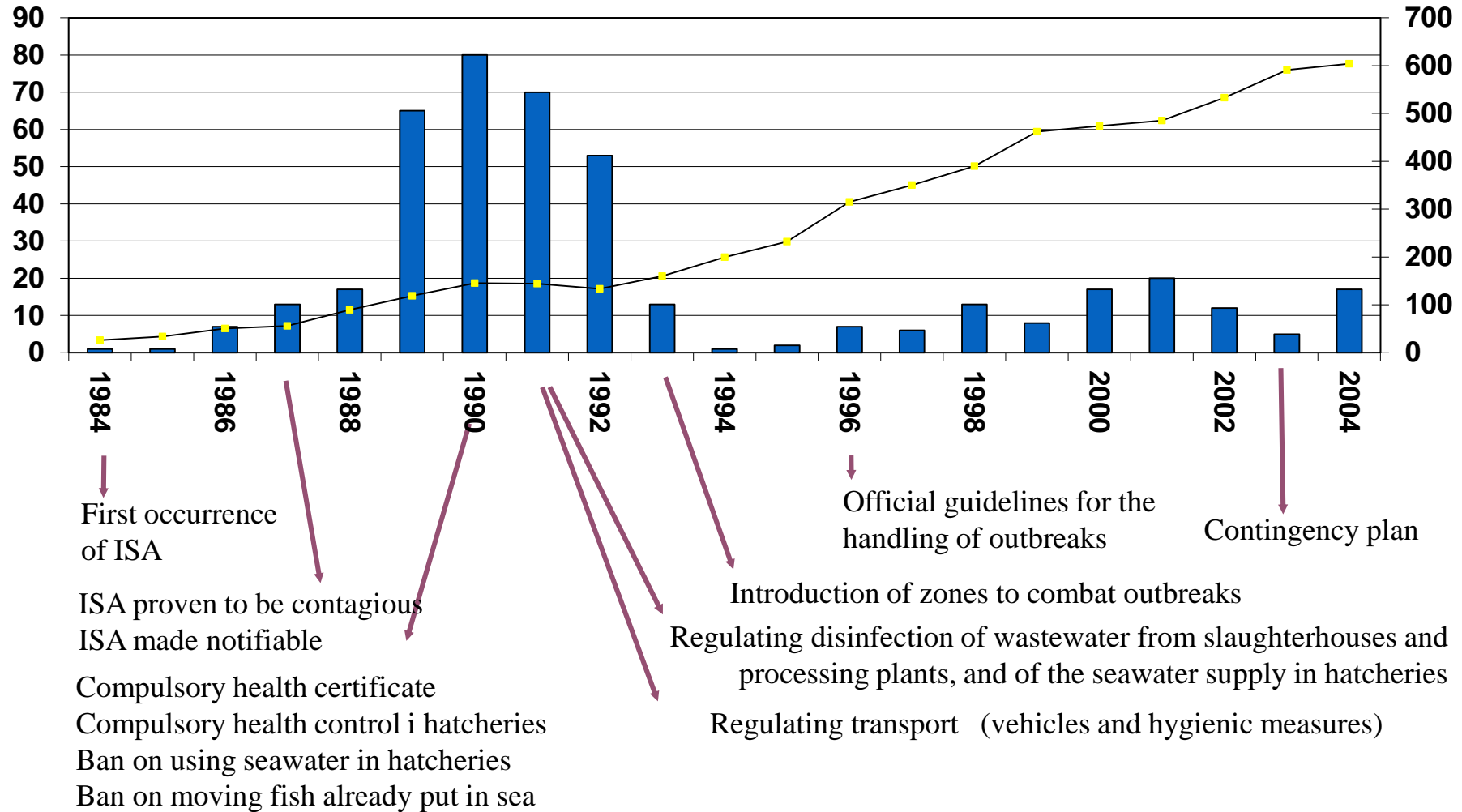
- No extension services
- Industry highly dependent of private companies delivering services
- Well established aquaculture education at college and university level

# An important lesson learned - ISA

- First described mid-80'ies as Bremnes syndrome
- Aetiology unknown until late 80-'ies
  - Understood to be of virus origin but virus not isolated and cultivated
- Virus first isolated and cultivated early 90'ties
- Huge impact – high mortality
- Economic impact – losses
- Fish welfare
- Possible trade impact - EU



# Verified outbreaks of ISA in Norway 1984 – 2004



# **Top 5 challenges issues on aquaculture biosecurity and aquatic animal health that need to be addressed - 1**

- **Lack of knowledge and/or understanding**

- Need basic knowledge/understanding of general concepts of infectious diseases; in the field (at site/pond level) as well as at a higher (geographical) level

- **Awareness of the risk profile**

- Identify the introductory routes of a specific farm as most farms have very few and very obvious ones that can easily be addressed
- Strategic use of biosecurity measures at farm and regional level
- Address transboundary issues related to trade and costal /waterway – neighbourhood.

# **Top 5 challenges issues on aquaculture biosecurity and aquatic animal health that need to be addressed - 2**

- **The impression of biosecurity as something complex**
  - Biosecurity is a concept and an attitude; for most farms, biosecurity should be a generic, simple concept - don't make it too complicated or it can never be enforced/implemented
  - Biosecurity should be tailor-made according to exposure risk of the farm, type of production and place in the production cycle
  - Identify simple stimulators/drivers that will encourage investments in biosecurity.
- **(Easy) access of antibiotics substitutes for lack of biosecurity**
  - Aquaculture biosecurity is needed, but not for prevention due to bad environmental conditions or as a general remedy for lack of proper diagnoses – stimulate systems for field diagnostics
  - Cost – benefit analyses at farm, consumer and society level to document the cost of aquaculture biosecurity

# **Top 5 challenges issues on aquaculture biosecurity and aquatic animal health that need to be addressed - 3**

- **Focus on vaccination and licensing**

- Stimulate use of existing vaccines (cost/benefit and will lowering the use of antibiotics)
- Stimulate development of new efficient vaccines (autogenic vaccines)
- Research on practical delivery systems (oral) – reducing the price/applicability of vaccination
- Stimulate/simplify licensing procedures – the authorities must encourage vaccination

# How NOR can contribute to PMP

## Fruit for thoughts

- Work through standard and normative organisations such as OIE and FAO
- Acknowledge the fact that there are many well educated/trained people out there
- Make them able to do their job
  - Budget
  - Basic epidemiological info (who are in business, with what and where)
  - A legislative platform
  - Laboratory services
- Fish For Development

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**Care for the ocean, and the ocean will care for us!**