

# Priorities of the EATIP Strategic Research and Innovation Agenda, SRIA - an ongoing consultation

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A unique organisation for supporting European Aquaculture  
[www.eatip.eu](http://www.eatip.eu)

# The SRIA

- Transparent and inclusive processes & management
- Eight thematic areas (industry led and assisted by researchers)
  - Work Groups (industry led and assisted by researchers)
  - Debate, decisions and involvement
- The activities of the EATIP Thematic Areas were assisted by the FP7 "Aquainnova" project
- The SRIA was published in 2012



# The prioritisation and update process

- Board decision in the spring of 2016
- Online survey accessible by ([www.eatip.eu](http://www.eatip.eu)) with 89 questions
- Available for all stakeholders of European aquaculture

Ongoing survey is looking at:

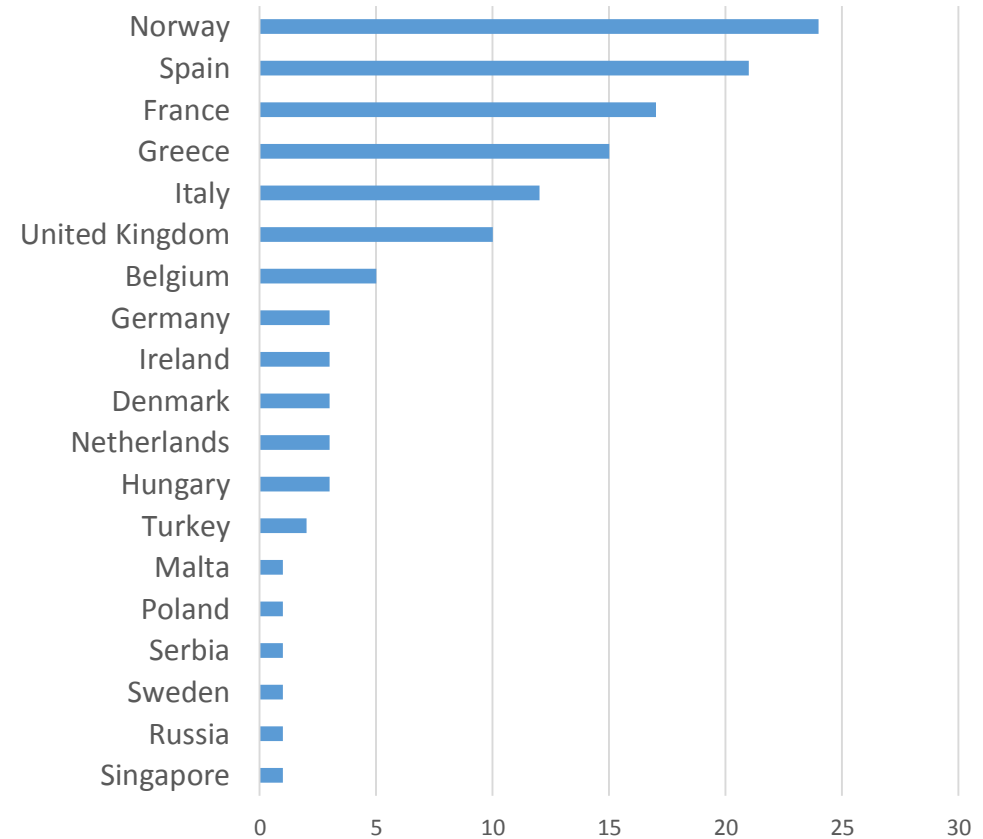
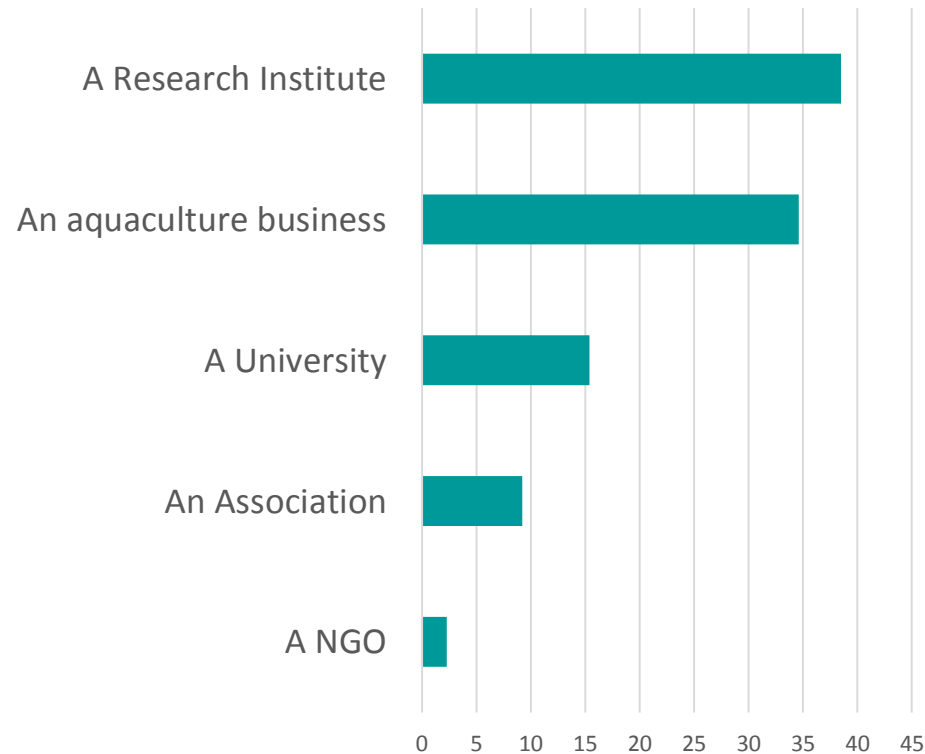
- What has been achieved in recent European and national RTD activities?
- What are the current and future priorities for aquaculture research?
- What is missing from the original SRIA? – gaps and/or new topics

As a trusted partner (ETP) the results will be provided to the European Commission and related national partners

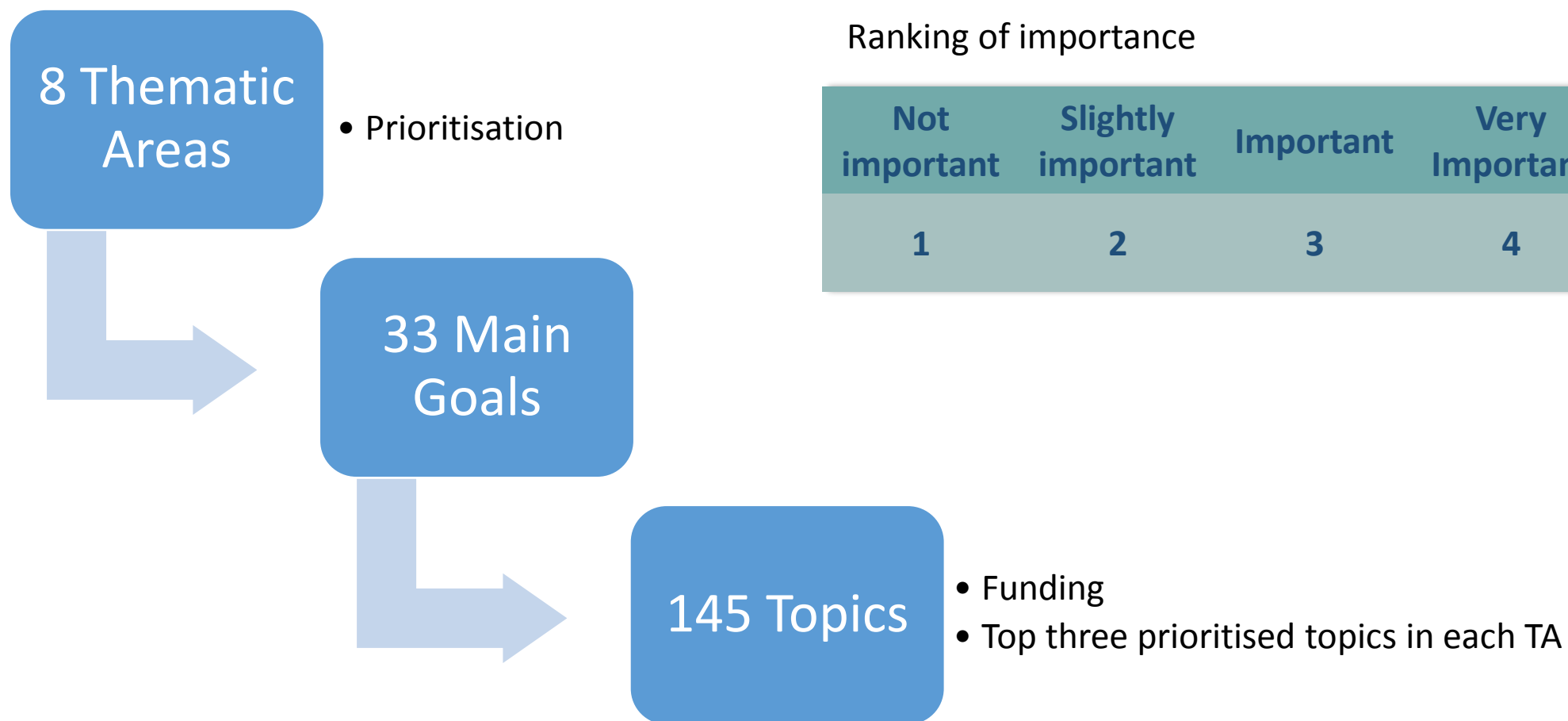


# Responses 130 responses

- Member of EATIP: 57%
- Participated in EU-projects in aquaculture: 89%
- Gender: 70% males, 30% females



# Structure of the SRIA and presentation

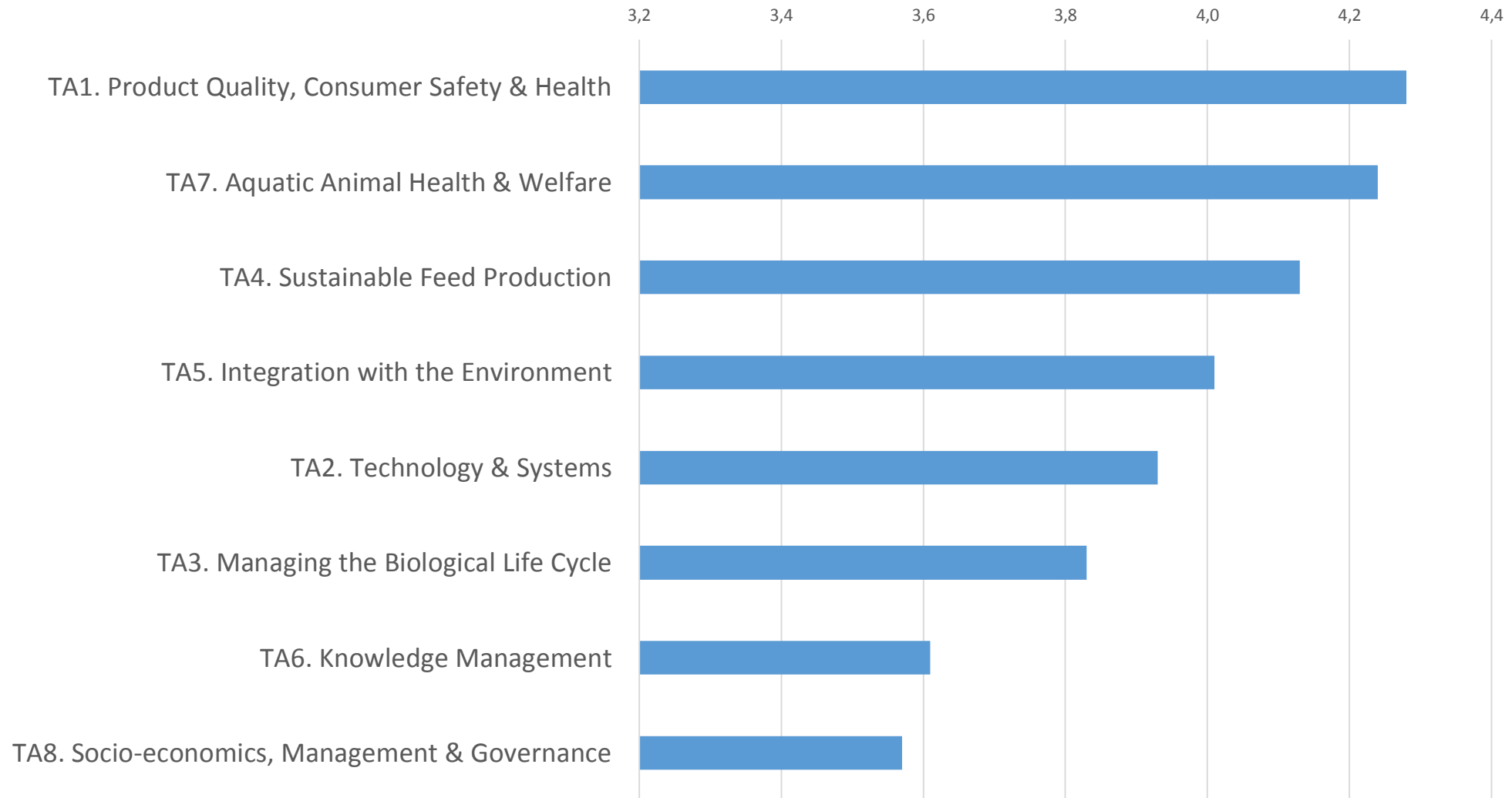


## Ranking of importance

Not important	Slightly important	Important	Very Important	Essential
1	2	3	4	5

# Prioritisation of the Thematic Areas

116 responses, rank 1-5



# TA1. Product quality, consumer safety and health

		Respondents Participation in Projects				Prioritisation of Sub-Goals	
Goals	Sub-goals	EU	National	Other	Response Count	Rating Average	Response Count
Maximise the health benefits of aquaculture products	Explore the differences in terms of health benefit between species and production methods including feed composition	11	14	5	21	3,5	57
Ensure the continuing safety of aquaculture products	Identify, manage and eliminate existing and potential physical, chemical and biological new hazards and emerging risks; including virus, bacteria, toxins, persistent organic pollutants (POPs) and other toxic substances	15	20	5	27	3,7	50
Deliver high quality European aquaculture products – fully meeting consumer expectations including appearance, taste, texture, nutrition and provenance claims	Define and standardise quality parameters of aquaculture products	9	12	4	21	3,6	44
Understand dynamics of European seafood markets	Identify and close commercially harmful gaps in consumers' perception about aquaculture products and the current scientific knowledge	5	10	4	14	3,8	42



# TA2. Technology and systems

		Respondents Participation in Projects				Prioritisation of Sub-Goals	
Goals	Sub-goals	EU	National	Other	Response Count	Rating Average	Response Count
Ensure an environmentally sustainable industry by the application of new knowledge and technology innovations	Reduce waste release from aquaculture production	11	23	3	27	3,6	50
Meet the demand for aquaculture products in Europe by the development of efficient technologies to support continued growth	Reduce the incidence of diseases by developing T&S	7	10	8	20	3,9	45
Ensure the profitability of the aquaculture industry by developing improved management systems and technology	Develop technologies for improved quality of seed for all present and future production systems	6	8	4	15	3,7	42
Ensure technology for ethical and healthy production of high quality aquatic products	Integrate technology management and biology to improve welfare and prevent disease outbreaks	8	13	5	19	4,0	45





# TA3. Managing the biological lifecycle

		Respondents Participation in Projects				Prioritisation of Sub-Goals	
Goals	Sub-goals	EU	National	Other	Response Count	Rating Average	Response Count
Establish predictability and improve output and cost control at every production stage of the lifecycle	Improve animal performance at all stages, including egg and larval quality and its effects on performance during grow-out	14	17	6	26	4,2	43
Genetic improvement of productive, health and animal welfare traits	Selective breeding to target important traits e.g. adaptation to alternative feed sources, disease resistance, feed efficiency, fillet yield, flesh quality, nutritional profile and human health factors	14	19	7	25	4,3	40
Improve broodstock management methods and control of sex and reproduction in captivity	Develop new sterilisation methods as an alternative to triploidy, and methods to allow production of triploids on an industrial scale. Acquire knowledge on impact/behaviour of sterile animals in the wild	2	5	1	5	3,9	39
Manage the lifecycle of carefully selected “new” species that have high economic importance	Develop innovative (e.g. generic) tools to domesticate more easily new species benefiting from the expertise acquired from already mastered species	6	9	3	13	3,4	37



# TA4. Sustainable feed production

		Respondents Participation in Projects				Prioritisation of Sub-Goals	
Goals	Sub-goals	EU	National	Other	Response Count	Rating Average	Response Count
Base formulation of future fish feeds on solid knowledge of fish nutritional and feeding requirements, and expand the number of well characterised and sustainable raw materials which can be used	Improve knowledge on nutritional requirements of fish commonly farmed in Europe and for promising new species	13	8	4	18	4,0	31
Advanced novel feed technologies to produce cost effective feed with improved quality	Improved understanding of the interactions between ingredient properties and processing conditions affecting physical feed quality and utilization of nutrients	7	4	5	13	3,7	31
Understand and minimise undesirable effects of alternative feed ingredients on fish health and welfare	Roles of nutrition, diet and feed additives on gastrointestinal and systemic immune system and disease susceptibility	7	5	6	15	3,7	30
Adapt and utilize advanced methods to understand and model nutritional responses	Integrative tools and 'omic' tools	6	2	4	11	3,2	29
Resolve strategic research problems in fish nutrition	Formulate targeted feed and feeding practices that condition farmed species to novel feeds, increase adaptability, reduce stress, and increase biological efficiency	8	7	3	14	3,9	29



# TA5. Integration with the environment



		Respondents Participation in Projects				Prioritisation of Sub-Goals	
Goals	Sub-goals	EU	National	Other	Response Count	Rating Average	Response Count
Establish fundamental scientific knowledge on the assimilation capacity of biogenic wastes from aquaculture to determine acceptable emission rates for benthic and pelagic ecosystems (Biogenic waste assimilation in ecosystems)	Establish integrated management tools for waste emission considering assimilation capabilities, hydrodynamic energy and presence of sensitive habitats as a tool for siting, spatial planning and ecosystem-based management of aquaculture	7	9	2	14	3,9	31
Establish technology to minimise emission of biogenic matter from aquaculture and to minimise the potential environmental influence of the actual emissions by means of environmental management and integrated multi-trophic aquaculture (technology to minimise biogenic influence)	Improve feeding technology, feeding management and feed composition in order to minimise biogenic emission from aquaculture installations per unit fish produced	3	7	3	12	3,9	31
Understand the fate and cumulative effects of synthetic agents used in aquaculture and minimising their impact on the environment ( <b>Fate of synthetic agents in ecosystem</b> )	Improve access to field data to build a transparent surveillance and reporting network on fish infections and volumes and classes of pharmaceuticals used by fish farms to regulatory agencies in order to minimise their use and environmental impact	4	4	1	6	3,5	27
Establish more fundamental knowledge to understand the interactions between farmed and wild stocks, including wildlife (Interactions of farmed and wild stocks)	Understand better disease and parasite interactions between farmed and wild organisms	3	5	2	6	3,6	30
<b>Develop or adapt tools and measures in support of appropriate environmental governance for aquaculture (Tools for environmental governance)</b>	Harmonise environmental regulations and legislation, implementing common regulations between European countries	7	4	1	8	4,1	29

# TA6. Knowledge management

		Respondents Participation in Projects				Prioritisation of Sub-Goals	
Goals	Sub-goals	EU	National	Other	Response Count	Rating Average	Response Count
Manage knowledge efficiently and effectively within the European aquaculture sector	Manage and transfer knowledge including the dedicated transfer to identified users and translation of research results for stakeholder uptake	8	8	2	13	3,8	30
Ensure the availability and efficient use of aquaculture research infrastructures across all boundaries to benefit the industry	Ensure international and inter-regional cooperation to develop research infrastructures that can meet emerging needs	13	6	3	17	3,4	29
Collect and collate evidence for informed communications on the benefits of the European aquaculture sector for society and the environment	Develop an evidence-based knowledge resource to inform communications on the environmental and societal attributes provided by the different sectors of European aquaculture	5	7	1	10	3,4	29
Foster and build the human capital of the European aquaculture sector	Create and sustain effective links between industry and research communities	4	6	2	10	3,8	27



# TA7. Aquatic animal health and welfare



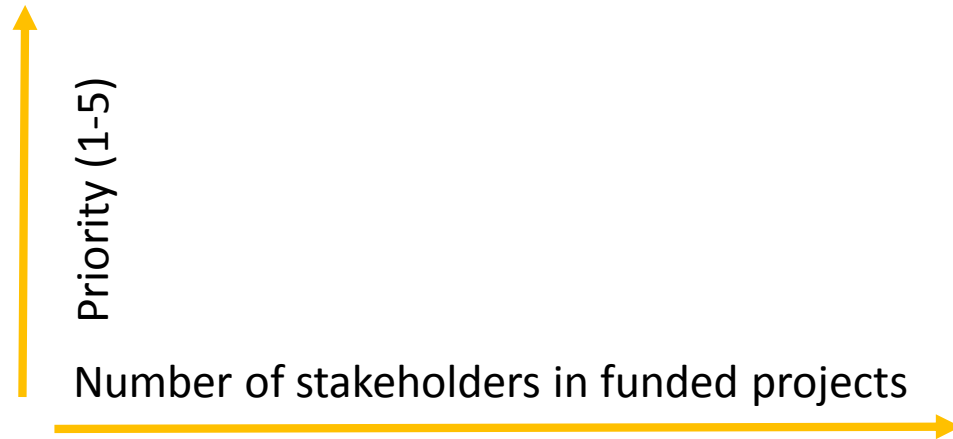
		Respondents Participation in Projects				Prioritisation of Sub-Goals	
Goals	Sub-goals	EU	National	Other	Response Count	<b>Rating Average</b>	Response Count
Improve fish health and welfare by increasing the understanding of host pathogen interactions and have access to effective vaccines and immunomodulators	Development of new vaccines & improvement of existing vaccines and diagnostic tests, including their application to all stages of finfish life cycles	6	12	9	21	<b>4,1</b>	34
Apply epidemiological principles to minimise the threat of existing, emerging and exotic diseases	Improve understanding of transmission mechanisms of pathogens at all levels from farm, through country, to Europe wide	6	6	4	13	<b>3,9</b>	33
Use and develop best practice to optimise efficacy of treatments and preventive methods	Minimise treatment when possible by using best practice	2	7	3	10	<b>4,1</b>	33
Measure welfare/stress and understand its consequences if compromised in order to incorporate welfare as core component of production management	Understand and quantify short and long term consequences of compromised welfare, such as reduced growth, reduced feed efficiency, health, treatment effects, product quality...	6	8	2	12	<b>3,6</b>	34

# TA8. Socio-economics, management & governance

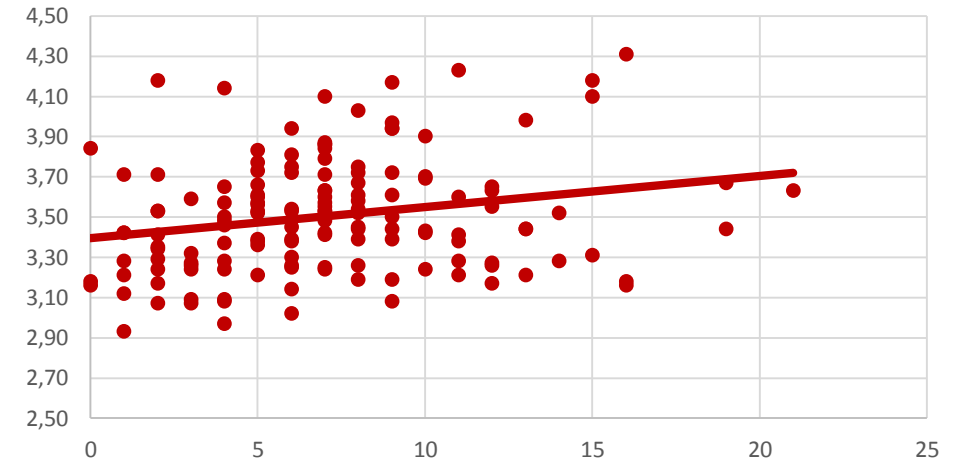
Goals	Sub-goals	Respondents Participation in Projects				Prioritisation of Sub-Goals	
		EU	National	Other	Response Count	Rating Average	Response Count
Promote effective governance – establishing a 'level playing field' for aquaculture within and outside Europe	Simplify legislation and reduce time from application to award of operating licence	5	2	3	7	4,2	18
Establish an enabling environment for innovation and growth to allow aquaculture to realise its full potential	Identify incentives to promote investment in aquaculture and ensure longevity of sustainable production	2	0	1	3	3,9	20
Understand better the social and economic dimensions of aquaculture at different scales	Understand and promote social and economic benefits associated with aquaculture through evidence-based scientific information, communicated using different media formats appropriate for different target audiences	4	2	3	6	3,6	18



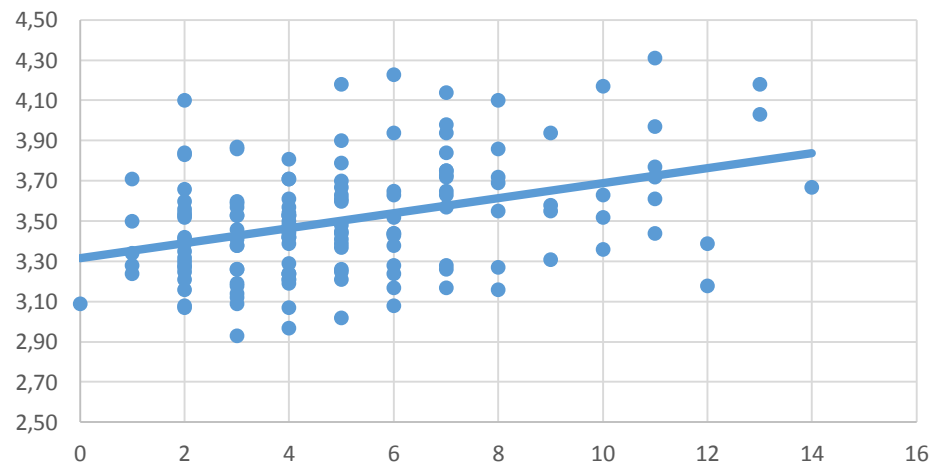
# Funding vs. priority



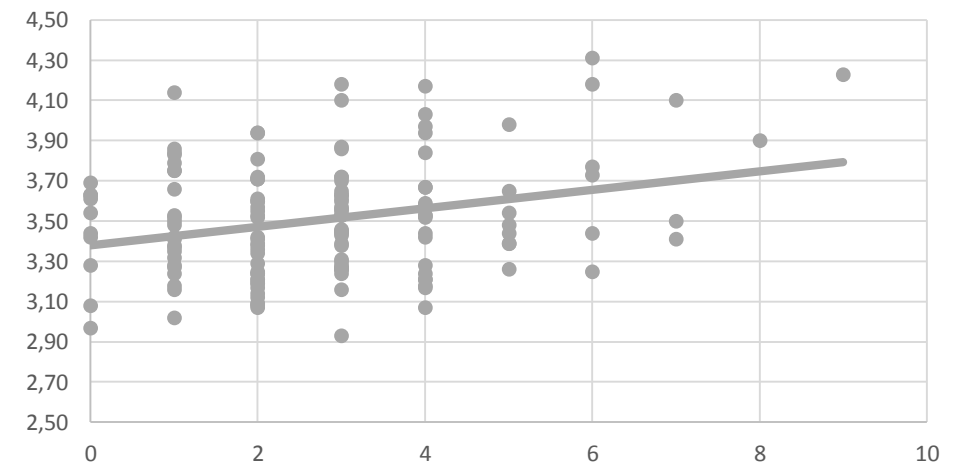
National funding



EU funding



Other funding





# New topics

SURVEY NEW TOPIC PROPOSALS & RELATION TO EATIP THEMATIC AREAS					
Technology and Systems	Managing the Biological Lifecycle	Sustainable Feed Production	Integration with the Environment	Aquatic Animal Health and Welfare	Socio-Economics Management & Governance
Offshore Aquaculture	Synthetic biotechnology	Derive LC n-3 rich feed resources	Coordinate extractive fisheries with aquaculture	Stress indicators for finfish	Improve enabling legislation
Equipment to evaluate biomass in cages	Improve bacterial control in larval rearing		Environmentally-responsible production enhancement		Ripple effect analysis of the European aquaculture sector
(Semi)-closed containment systems scale-up	Reduce malformations				Product and system social acceptability
Combining aquaculture technologies within production cycle	Feed x Breeding interactions				Aquaculture reputation
Integrate Multi-trophic aquaculture (IMTA)	New molecular tools for breeding programmes				Transparency and disclosure
Aquaponics					Social license
Technologies for extreme environments					
Underwater robotics & technologies					
Enabling technologies to improve farm operations					
Systems to improve feeding efficiency and growth performance					



*Thank you for your attention!*