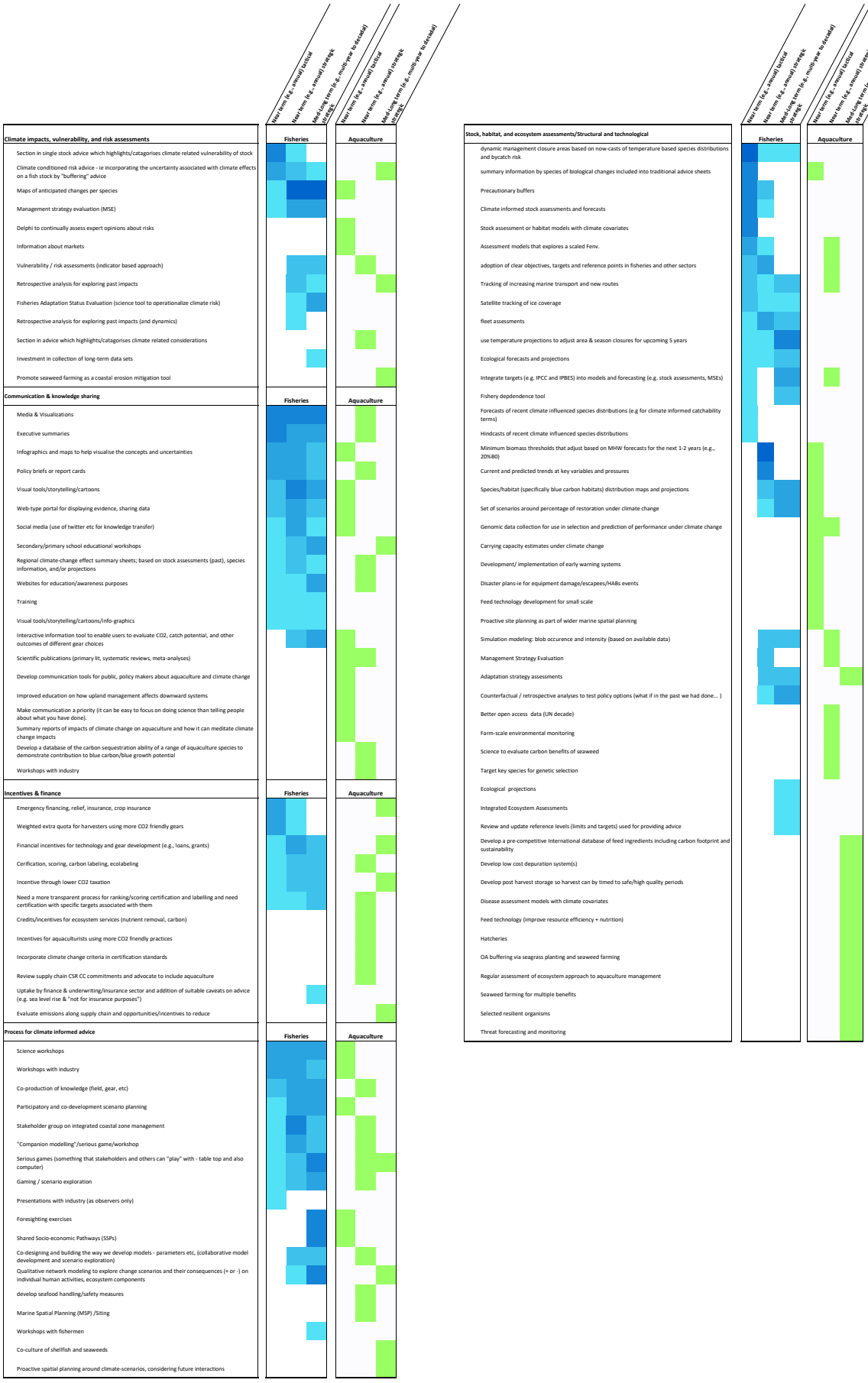
Near-term (e.g., annual) tactical
Near-term (e.g., annual) strategic
Med-Long term (e.g., multi-year to decadal) strategic
Near-term (e.g., annual) tactical
Near-term (e.g., annual) strategic
Med-Long term (e.g., multi-year to decadal) strategic
Climate impacts, vulnerability, and risk assessments
Fisheries
Aquaculture
Section in single stock advice which highlights/catagorises climate related vulnerability of stock
Climate conditioned risk advice - ie incorporating the uncertainty associated with climate effects on a fish stock by "buffering" advice
Maps of anticipated changes per species
Management strategy evaluation (MSE)
Delphi to continually assess expert opinions about risks
Information about markets
Vulnerability / risk assessments (indicator based approach)
Retrospective analysis for exploring past impacts
Fisheries Adaptation Status Evaluation (science tool to operationalize climate risk)
Retrospective analysis for exploring past impacts (and dynamics)
Section in advice which highlights/catagorises climate related considerations
Investment in collection of long-term data sets
Promote seaweed farming as a coastal erosion mitigation tool
Communication & knowledge sharing
Fisheries
Aquaculture
Media & Visualizations
Executive summaries
Infographics and maps to help visualise the concepts and uncertainties
Policy briefs or report cards
Visual tools/storytelling/cartoons
Web-type portal for displaying evidence, sharing data
Social media (use of twitter etc for knowledge transfer)
Secondary/primary school educational workshops
Regional climate-change effect summary sheets; based on stock assessments (past), species information, and/or projections
Websites for education/awareness purposes
Training
Visual tools/storytelling/cartoons/info-graphics
Interactive information tool to enable users to evaluate CO2, catch potential, and other outcomes of different gear choices
Scientific publications (primary lit, systematic reviews, meta-analyses)
Develop communication tools for public, policy makers about aquaculture and climate change
Improved education on how upland management affects downward systems
Make communication a priority (it can be easy to focus on doing science than telling people about what you have done).
Summary reports of impacts of climate change on aquaculture and how it can meditate climate change impacts
Develop a database of the carbon sequestration ability of a range of aquaculture species to demonstrate contribution to blue carbon/blue growth potential
Workshops with industry
Incentives & finance
Fisheries
Aquaculture
Emergency financing, relief, insurance, crop insurance
Weighted extra quota for harvesters using more CO2 friendly gears
Financial incentives for technology and gear development (e.g., loans, grants)
Cerification, scoring, carbon labeling, ecolabeling
Incentive through lower CO2 taxation
Need a more transparent process for ranking/scoring certification and labelling and need certification with specific targets associated with them
Credits/incentives for ecosystem services (nutrient removal, carbon)
Incentives for aquaculturists using more CO2 friendly practices
Incorporate climate change criteria in certification standards
Review supply chain CSR CC commitments and advocate to include aquaculture
Uptake by finance & underwriting/insurance sector and addition of suitable caveats on advice (e.g. sea level rise & "not for insurance purposes")
Evaluate emissions along supply chain and opportunities/incentives to reduce
Process for climate informed advice
Fisheries
Aquaculture
Science workshops
Workshops with industry
Co-production of knowledge (field, gear, etc)
Participatory and co-development scenario planning
Stakeholder group on integrated coastal zone management
"Companion modelling"/serious game/workshop
Serious games (something that stakeholders and others can "play" with - table top and also computer)
Gaming / scenario exploration
Presentations with industry (as observers only)
Foresighting exercises
Shared Socio-economic Pathways (SSPs)
Co-designing and building the way we develop models - parameters etc, (collaborative model development and scenario exploration)
Qualitative network modeling to explore change scenarios and their consequences (+ or -) on individual human activities, ecosystem components
develop seafood handling/safety measures
Marine Spatial Planning (MSP) /Siting
Workshops with fishermen
Co-culture of shellfish and seaweeds
Proactive spatial planning around climate-scenarios, considering future interactions
Near-term (e.g., annual) tactical
Near-term (e.g., annual) strategic
Med-Long term (e.g., multi-year to decadal) strategic
Near-term (e.g., annual) tactical
Near-term (e.g., annual) strategic
Med-Long term (e.g., multi-year to decadal) strategic
Stock, habitat, and ecosystem assessments/Structural and technological
Fisheries
Aquaculture
dynamic management closure areas based on now-casts of temperature based species distributions and bycatch risk
summary information by species of biological changes included into traditional advice sheets
Precautionary buffers
Climate informed stock assessments and forecasts
Stock assessment or habitat models with climate covariates
Assessment models that explores a scaled Fenv.
adoption of clear objectives, targets and reference points in fisheries and other sectors
Tracking of increasing marine transport and new routes
Satellite tracking of ice coverage
fleet assessments
use temperature projections to adjust area & season closures for upcoming 5 years
Ecological forecasts and projections
Integrate targets (e.g. IPCC and IPBES) into models and forecasting (e.g. stock assessments, MSEs)
Fishery depdendence tool
Forecasts of recent climate influenced species distributions (e.g for climate informed catchability terms)
Hindcasts of recent climate influenced species distributions
Minimum biomass thresholds that adjust based on MHW forecasts for the next 1-2 years (e.g., 20%B0)
Current and predicted trends at key variables and pressures
Species/habitat (specifically blue carbon habitats) distribution maps and projections
Set of scenarios around percentage of restoration under climate change
Genomic data collection for use in selection and prediction of performance under climate change
Carrying capacity estimates under climate change
Development/ implementation of early warning systems
Disaster plans-ie for equipment damage/escapees/HABs events
Feed technology development for small scale
Proactive site planning as part of wider marine spatial planning
Simulation modeling: blob occurence and intensity (based on available data)
Management Strategy Evaluation
Adaptation strategy assessments
Counterfactual / retrospective analyses to test policy options (what if in the past we had done....)
Better open access data (UN decade)
Farm-scale environmental monitoring
Science to evaluate carbon benefits of seaweed
Target key species for genetic selection
Ecological projections
Integrated Ecosystem Assessments
Review and update reference levels (limits and targets) used for providing advice
Develop a pre-competitive International database of feed ingredients including carbon footprint and sustainability
Develop low cost depuration system(s)
Develop post harvest storage so harvest can by timed to safe/high quality periods
Disease assessment models with climate covariates
Feed technology (improve resource efficiency + nutrition)
Hatcheries
OA buffering via seagrass planting and seaweed farming
Regular assessment of ecosystem approach to aquaculture management
Seaweed farming for multiple benefits
Selected resilient organisms
Threat forecasting and monitoring