IMPORTANT DATA

- **Sea surface temperature (SST)**
- **Salinity**; more broadly, turbidity.
- **Light penetration**; specifically photosynthetically available radiation (PAR).
- **Micronutrient concentration**; specifically total oxidised nitrogen (TOxN). More broadly, nitrates and nitrites.
- **Dissolved oxygen (DO) concentration**; In correlation with SST, salinity, atmospheric pressure, water depth and biological activity.
- **Chlorophyll concentration** (which are used to inform Phytoplankton concentration); this determines the success of 'filter feeder' organisms like molluscs. If extending our aquaculture to include other farmable species, this is invaluable. Correlates with micronutrients and DO, etc.

LESS IMPORTANT DATA

- **Water current speed**; moderate flows benefit seaweed/other aquaculture growth due to increased through-rate of micronutrients.
- **Peak wave height**; large swells are bad ☹

LEAST IMPORTANT DATA

- **Bathymetry** (depth from seabed); possibly only relevant if proposing to scale globally; farmers may need by-foot (wading) access to the lines.
- **Substrata composition; r**elevant mainly for the benefit of other farmable species (cf. above). Sandy areas also affect other factors, above.
- **pH levels**; relevant if proposing to scale globally for the benefit of different environments/species; otherwise they're quite stable in a region.

NON-BUOY DATA

Expert knowledge of the ecology:

- Native species herbivory
- Competing algal species

Expert knowledge of the economy:

- Regional fuel and transport costs
- Regional labour and equipment costs
- Regional demand
- Regional competing infrastructures

NOTES

In terms of budget/feasibility: We're not going to be able to build an actual prototype that captures all the data we need. For instance, Arduino sensors for dissolved oxygen are plentiful! ✔ Sensors for measuring nitrates exist, but this may require super-engineering ? And there are remote/automated ways of measuring chlorophyll concentration via fluorescence spectroscopy or spectrophotometry… probably not with our budget/other constraints. ✕