

## Discussion – key elements of a research agenda on stock structure

### Key questions:

- Is there persistent genetic structure in the spawning grounds that is temporally stable and indicative of stock structure?
- How do juvenile and adult populations mix?
- Is there spawning location fidelity / natal homing?

# PHASE 1 – Spawning ground surveys (3 years)

- Define spatial / temporal characteristics of potential spawning areas – SEAPODYM spawning habitat would be a convenient tool
- Decide a reasonable regional structure for which to conduct sampling
- Collect samples within these areas ideally within a small time window and repeat in years 2 and 3. Possibly need more than one time slot per year if there is bi-annual spawning in some areas (e.g. monsoon driven)
- Samples to be of small (<40 cm, but smaller if possible) individuals, so samples from PS fishery
- Need to check larval drift patterns (or could be some active movement if older than about 3 mo) to see potentially how far away and over what area samples may have been spawned – IKAMOANA or SEAPODYM would be good for this.
- Samples to be accumulated from as many PS sets as possible – target sample sizes of 50-100 over 50 different sets for each spatial-temporal stratum
- Collect muscle samples and otoliths from all fish – otoliths for potential micro-constituent analysis and possibly for age checking

## PHASE 2 – Broad scale sampling to determine mixing characteristics (only undertaken if clear temporally stable spawning areas found to exist)

- Sampling widely throughout stock range, including non-spawning areas (e.g. Japan)
- Samples to be size/age stratified to indicate patterns of mixing over time
- Attempt to classify samples to spawning areas (if they exist)
- Samples that are from actively spawning fish can indicate spawning site fidelity
- Maybe appropriate to have larger numbers of individuals per set (PS or LL) to check for close-kin associations