



## Ocean Problem: Cause & Effect Mapping

**Goal:** Create a cause & effect map for your ocean problem and implement solutions.

**What to Do:** Get to know your group members; over the coming weeks, you will analyze your ocean problem with your group and research solutions. Follow the instructions on page 2 of this handout.

### 1. Define The Problem

(a) Group #  will research the following ocean problem:

- Unsustainable fishing
- Inadequate protected areas
- Tourism & development
- Shipping
- Oil & gas
- Pollution
- Aquaculture
- Climate change

(b) Fill in the names and contact information of your group members.

#### Group Members

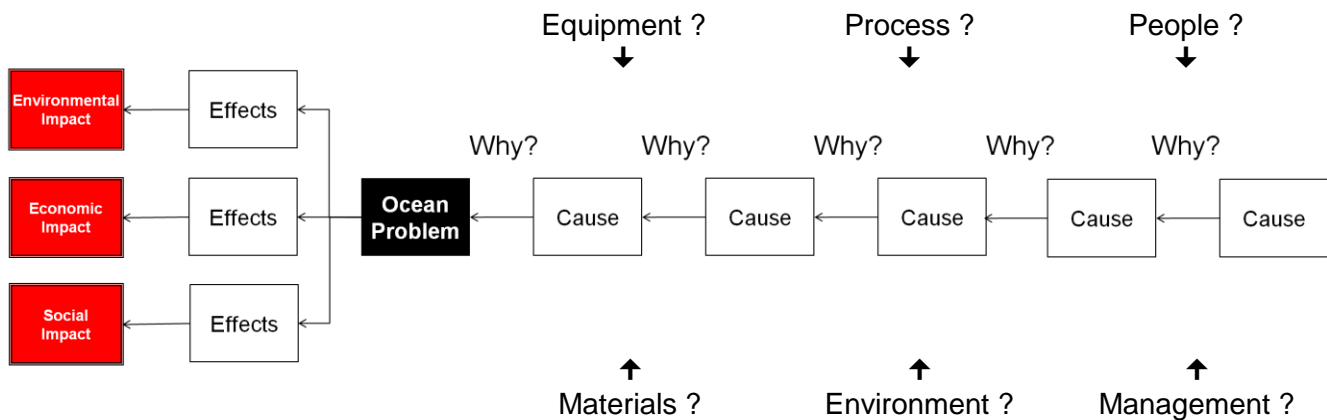
1. _____	3. _____
2. _____	4. _____

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Due date:	Week 07 Lecture	Value:	5%	Marks:	5
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## 2. Analysis (identify the causes)

- Ask 'Why' questions to develop your cause & effect map. Use the internet and/or other resources to get answers to your questions.
- Use the 'Five Whys of Kaizen' to expose the root cause(s) of your problem. Keep asking why things happen and then get the right answers. Remember, there may be more than one cause for an effect (see links for Deepwater Horizon and Exxon Valdez Oil Spill in Week 2 Lecture).
- Consider how the six variables of the Ishikawa Fishbone Diagram may contribute to your problem (i.e. equipment, process, people, materials, environment, and management).
- Show how your problem impacts on environmental, economic, and social dimensions.
- To see how a cause & effect map is developed, visit the Sinking of the Titanic Cause Map page: <http://www.thinkreliability.com/Titanic.aspx>
- Use time in class to organize how your group can work most effectively.



## 3. Solutions (reduce the risk)

- Determine where in your cause & effect map you can implement changes to help solve or mitigate the effects of your ocean problem, i.e. something that could be done differently, started, stopped, etc.
- Your solutions need to be sustainable. For instance, a sustainable solution to overfishing does not necessarily mean that fishing should stop altogether. Although this solution would have a positive impact on the environment, the economic and social dimensions would be impacted negatively.
- Each person in your group is responsible for researching one solution.
- Each solution must be associated with a different cause in your map.
- Each person will use their solution to form the basis of their My Solution report (25%) and My Presentation (15%) to the class. Details for the report and presentation will be provided on additional handouts.