

Table S1: Management Effectiveness and Governance Quality Survey Template, including instructions to experts and a glossary of terms. See Excel file (NameOfYourEcosystem-human dimension-TG3.xls)

GUIDELINES

IndiSeas Expert Survey to assess the effectiveness and efficiency of management, and quality of governance

Many thanks for agreeing to complete the survey for the IndiSeas Project. The objective of this survey is to assess the effectiveness and efficiency of management, and the quality of governance of the fisheries in an ecosystem that you are knowledgeable about.

We recognise that in most ecosystems, there could be many different types of fisheries (e.g., pelagic, groundfish, etc.) or different fishing sectors (e.g., small-scale vs. large-scale). We are asking you to complete the survey for the majority of those accounting for at least 80% of the total catch. If separate management plans exist for the different fisheries, we ask that you complete the questions for each main management regime. Note that within any grouping, fisheries management plans must be similar.

EXAMPLES: You may complete the questionnaire by:

- grouping the fisheries by target species, e.g., pelagic, groundfish, etc.
- grouping the fisheries into sectors, e.g., small-scale and large-scale
- grouping the fisheries by operation, such as small scale longline, small scale trap fishery, mid-water trawl fishery, large scale pelagic and large scale trawl.

Alternatively if you feel that this type of grouping cannot be undertaken, complete the questionnaire for each fishery in the ecosystem.

The survey contains 11 multiple choice questions. Please consult the glossary of terms for definition clarification. In addition to providing answer to each question, we ask that you provide document(s), as e-mail attachments along with the returned questionnaire, in support of your responses. These may include stock assessment reports, proceedings from meetings, management plans and media reports. If the information is available on the web, please provide the link and the relevant page numbers, tables or figures.

If there are questions in this survey and/or there are fisheries sectors for which you don't have information to answer these questions, please invite other knowledgeable experts to join you in completing the survey.

Please see the confidentiality clause below. For more information about IndiSeas, please see the brief summary below and visit our website at www.indiseas.org

PLEASE RETURN THE SURVEY BY 31 MARCH 2012

With many thanks,

Alida Bundy and Ratana Chuenpagdee (IndiSeas Human Dimensions Task Group co-chairs)

(alida.bundy@dfo-mpo.gc.ca, ratanac@mun.ca)

Confidentiality clause

Please note that your participation in this project is completely voluntary and that you may wish to withdraw from this research at any time. By completing this questionnaire, it is understood that we have your permission to use the information you have provided for the purpose of this research. If you wish to withdraw the information you have provided, please inform us in writing by 31 October 2012.

You may be assured of the complete anonymity of data gathered in this project. Your identity will remain confidential and anonymous, and will not be made public without your consent. To ensure anonymity, the following steps will be taken:

1. No names or other similar uniquely identifying data will be made public.
2. No information about your participation in this research will be made available to your employer or any other organisations involved.
3. No individually identifying information will be presented in any research report.

IndiSeas Program

IndiSeas is a multi-institute collaborative program endorsed by IOC-UNESCO and the European Network of Excellence EUR-OCEANS. It aims at using ecosystem indicators to evaluate the status of the world's exploited marine ecosystems in support of an ecosystem approach to fisheries, and global policy drivers such as the 2020 targets of the Convention on Biological Diversity and the European Commission Marine Strategy Framework Directive. Key issues addressed relate to the selection and integration of multi-disciplinary indicators, including climate, biodiversity and human dimension indicators, and to the development of data- and model-based methods to test the performance of ecosystem indicators in providing support for fisheries management. IndiSeas provides graphic web-based indicators (www.indiseas.org) to inform the public, and fisheries managers, of the relative state and recent trends in the world's exploited marine ecosystems for information and policy development

IndiSeas Expert Survey to assess the effectiveness and efficiency of management, and quality of governance

	EXPERT INFORMATION	Expert 1	Expert 2
	Name		
	Affiliation		
	Job title and description		
	Specialization		
	Highest degree		
	Number of years in this job		
	Number of years experience in Fisheries		
	Number of years experience in related field (e.g. sociological research/fisheries management)		
>>> Please review guidelines	International experience (Yes/No, Where?)		
see sheet "Instructions" & the document "guidelines for indiseas data and website.pdf" pp 8-9	Member of IndiSeas (Yes/No)		
>>> Please fill the yellow cells	FISHERY/SECTOR INFORMATION	Fishery/Sector 1	Fishery/Sector 2
answer ALL questions, and add comments, explanatory notes where necessary	Name of country		
>>> Please feel free to confer with colleagues	Name of ecosystem		
>>> If you have any questions, email: Alida Bundy (alida.bundy@dfo-mpo.gc.ca) & Ratana Chuenpagdee (ratanac@mun.ca)	Number of different fisheries/fisheries sectors in the ecosystem		
	Name of fishery or fishery sector		
Send completed surveys by 31 March 2012	Year of current management plan		
to alida.bundy@dfo-mpo.gc.ca and	Number of different fisheries included		

ratanac@mun.ca	in this sector						
	Total number of targeted species in this sector						
	Annual total catch for this fishery or fishery sector from most recent year (indicate year)						
Assess the effectiveness and efficiency of management	GLOSSARY OF TERMS	Score	Evidence	Comments	Score	Evidence	Comments
1. How frequently are stock assessments* carried out in your fishery or fishery sector? i. No stock assessments are being carried out ii. Infrequent for less than 50% of commercial stocks iii. Infrequent for more than 50% of commercial stocks iv. Every 1-5 years for less than 50% of commercial stocks v. Every 1-5 years for more than 50% of commercial stocks	*Stock assessment: this includes any formal review process where the status of the stock is evaluated with respect to the levels of fishing activity that is recommended, and scientific advice provided for management purposes. It does not have to be an analytical or modelling assessment						
2. Are limit reference points*, thresholds*, or other targets*, set and used for the management of commercial stocks and/or species at risk? i. No reference points exist ii. Reference points exist for less than 50% of stocks/species but are not implemented iii. Reference points exist for less than 50% of stocks/species and are implemented iv. Reference points exist for more than 50% of stocks/species and are implemented v. Reference points exist for more than 50% of stocks/species are implemented and regularly reviewed	*Reference points, threshold or targets: These terms are used interchangeably in this question to recognise that there are a variety of ways (formal and informal) that this concept of “reference point” can be used and defined. These terms refer to: A target/point/threshold which a management plan has agreed it is aiming to achieve, or not exceed, as is appropriate to the circumstance.						

<p>3. Are depleted stocks* or species* being successfully rebuilt?</p> <p>i. No</p> <p>ii. The intention to rebuild is in the management plan, but there is no mechanism in place to enable rebuilding</p> <p>iii. Rebuilding effort occurs, but it is not effective</p> <p>iv. Effective rebuilding** of less than 50% of depleted stocks/species</p> <p>v. Effective rebuilding of more than 50% depleted stocks/species</p> <p>vi. No depleted stocks or species caught in this fishery or fishery sector</p>	<p>*Depleted stocks: Catches that are well below historical levels, irrespective of the amount of fishing effort exerted (FAO, http://www.fao.org/newsroom/common/ecg/1000505/en/stocks.pdf)</p> <p>**Effective re-building: Stock biomass has increased to the point where catches are again increasing after having been depleted.</p>						
<p>4. Are management measures* being reviewed frequently enough to maximise the prospect that the management intentions** are met?</p> <p>i. No review</p> <p>ii. Infrequent review and management intentions not being met</p> <p>iii. Infrequent review, but some management intentions being met</p> <p>iv. Frequent enough review to maximise the prospect that most management intentions are met</p> <p>v. Frequently enough review to maximise the prospect that all management intentions are met</p>	<p>*Management measures: these can include catch control (TAC), effort control, limited access, area closures, seasonal closures, gear restrictions, etc.</p> <p>**Management intentions: i.e., are the objectives of management in setting these management measures being met?</p>						
<p>5. Are ecosystem impacts* of fishing assessed, and are they being addressed?</p> <p>i. No ecosystem impact assessment</p> <p>ii. Some ecosystem impact assessment but no impacts are being addressed</p> <p>iii. Some ecosystem impact assessment and some impacts are being addressed</p> <p>iv. Comprehensive ecosystem impact assessment and some impacts are being addressed</p>	<p>* Ecosystem impacts can include by-catch of non-targeted species, incidental mortality, indirect impacts through trophic interactions, altered community structure, impacts on benthic habitat</p>						

v. Comprehensive ecosystem impact assessment and all impacts are being addressed							
<p>6. Is Illegal*, Underreported** and Unregulated*** (IUU) fishing being addressed by management?</p> <p>i. No</p> <p>ii. The intention to address IUU is in the management plan, but there is no mechanism in place to enable action</p> <p>iii. Some mechanisms to address IUU are in the management plan, but they are not effective</p> <p>iv. Mechanisms to address IUU are in the management plan and they are partly effective</p> <p>v. Mechanisms to address IUU are in the management plan and they are effective</p> <p>vi. Not applicable (i.e., there is no IUU)</p>	<p>* Illegal fishing takes place where vessels operate in violation of the laws of a fishery. This can apply to fisheries (both domestic and foreign) that are under the jurisdiction of a coastal state or to high seas fisheries regulated by regional organisations.</p> <p>** Unreported fishing is fishing that has been unreported or misreported to the relevant national authority or regional organisation, in contravention of applicable laws and regulations.</p> <p>*** Unregulated fishing generally refers to fishing by vessels without nationality, or vessels flying the flag of a country not party to the regional organisation governing that fishing area or species, or fisheries with no management mandate (e.g., most recreational fisheries, many subsistence, and small-scale fish</p>						
Assess Quality of Governance	GLOSSARY OF TERMS	Score	Evidence	Comments	Score	Evidence	Comments

<p>7. Is this fishery managed so as to minimize conflict* with other fishery sectors?</p> <p>i. Conflict is not acknowledged ii. Conflict is acknowledged but not addressed iii. Conflict is addressed, but has little effect iv. Conflict is addressed, but only partly effective v. Conflict management is very effective vi. Not applicable</p>	<p>* Conflict: Opposition, disagreement or variance that results in activities affecting the effectiveness of management objectives, or injury to stakeholders in the fishery as a result of fisheries management plans.</p>						
<p>8. Does the fishery or fishery sector management plan have long term objectives*?</p> <p>i. no long term objectives in management plan ii. yes, but no specific ecological, social or economic long term objectives iii. yes, but only with one of the following long term objectives: ecological, economic social iv. yes, but only with two of the following long term objectives: ecological, economic or social v. yes, with ecological, economic and social long term objectives</p>	<p>* Long term: more than 5 years Inclusion of long-term objectives in a management plan is about moving away from reactive crisis management and towards strategic management. The long-term objectives must relate to the sustainability of the ecosystem-fisheries system rather than the individual sustainability of each of the exploited components of the ecosystem.” http://www.nsrac.org/wp-content/uploads/2011/01/Long-Term-Management-of-N-S--Fisheries-Mar-061.pdf http://www.uncover.eu/uploads/media/Review_Recovery_Plans_2007.pdf</p>						
<p>9. Are the social impacts of the fisheries management plan considered and formally evaluated in management decisions?</p> <p>i. Social impacts not considered ii. Social impacts considered, but not formally evaluated* iii. Social impacts formally evaluated, but with no change to management decisions iv. Social impacts formally evaluated, with some</p>	<p>* Formally evaluated: there is an transparent process which is documented and can be accessed for public review.</p>						

<p>required changes reflected in management decisions v. Social impacts formally evaluated, with all required changes reflected in management decisions</p>							
<p>10. Are economic impacts of the fisheries management plan considered and evaluated in management decisions? i. Economic impacts not considered ii. Economic impacts considered, but not formally evaluated* iii. Economic impacts formally evaluated, but with no change to management decisions iv. Economic impacts formally evaluated, with some required changes reflected in management decisions v. Economic impacts formally evaluated, with all required changes reflected in management decisions</p>	<p>* Formally evaluated: there is an transparent process which is documented and can be accessed for public review.</p>						
<p>11. Is the participation of the harvesting sector a requirement in fisheries management? i. No requirement ii. Required but limited to information provision to harvesting sector iii. Required and includes some two way information exchange iv. Required and involves full exchange of information v. Required, involves full exchange of information and input to management decisions.</p>							