

SubsidyExplorer – User Guide

English

The Sustainable Fisheries Group at the University of California, Santa Barbara

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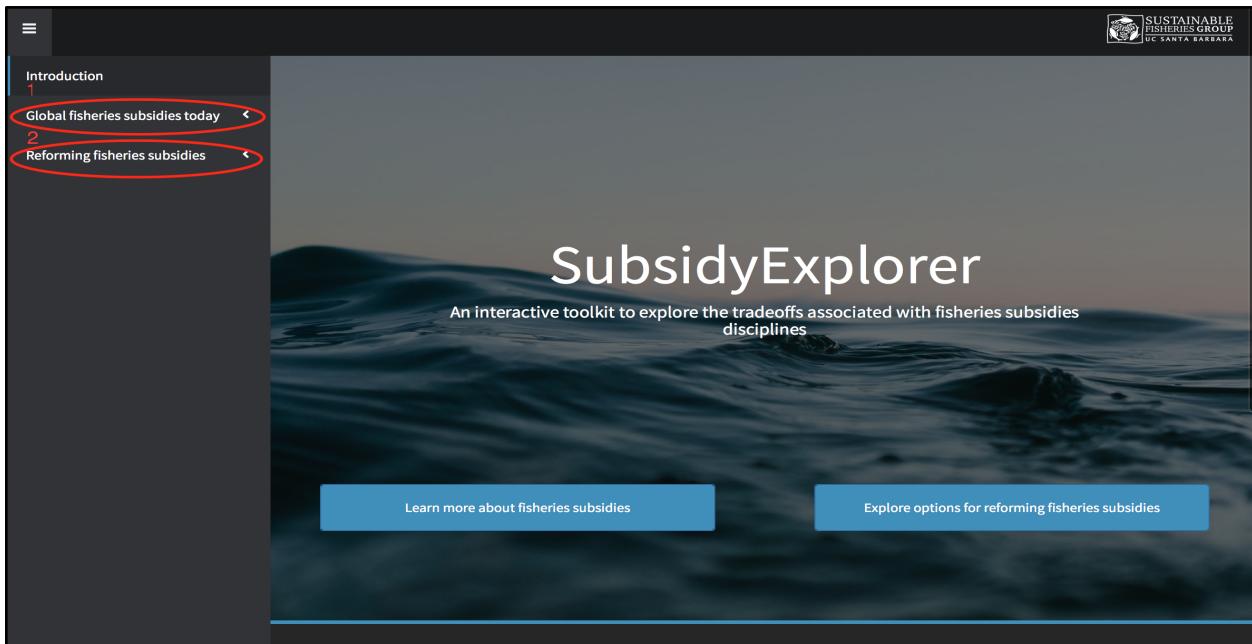
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Introduction

This step-by-step guide will help you navigate SubsidyExplorer – an online, interactive toolkit that allows users to explore biological and economic tradeoffs across a range of proposed global fisheries subsidies prohibitions. SubsidyExplorer is made up of two component parts (Figure 1). Part 1 allows you to explore the global distribution and magnitude of fisheries subsidies, learn more about the fisheries sectors of individual countries, and visualize the current status of the global fishing effort footprint. Part 2 allows you to investigate the way various policy definitions (i.e., various interpretations of a policy's scope) are likely to impact the geographic distribution of fishing effort, as well as the health of global fish stocks.

Figure 1

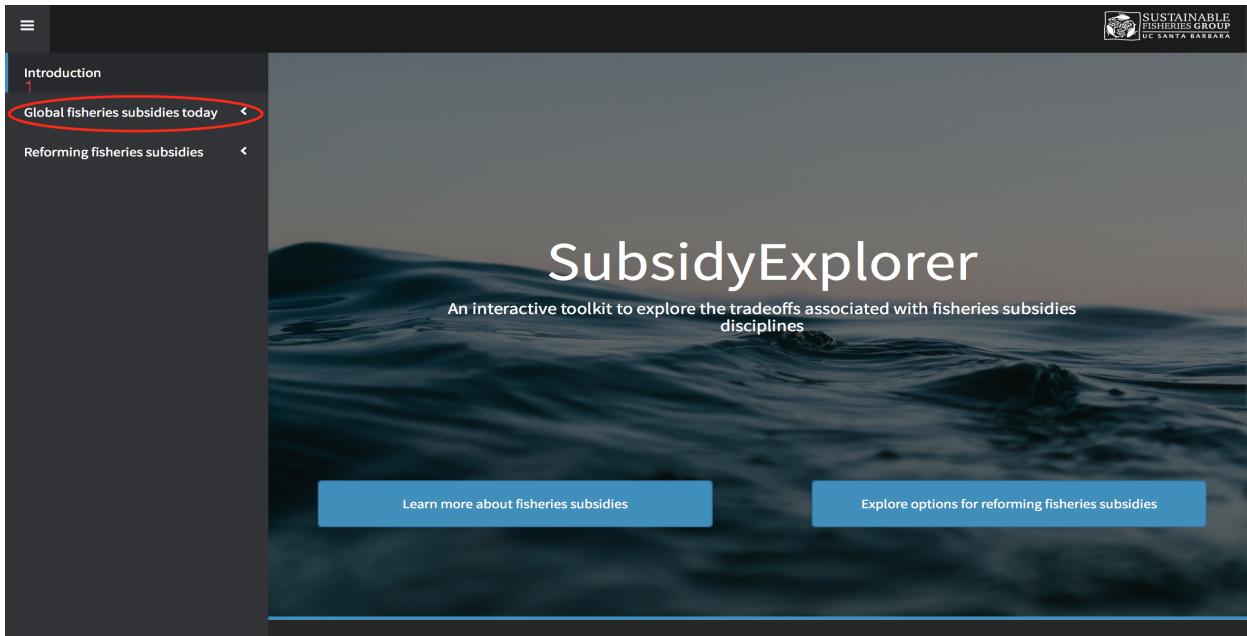


SubsidyExplorer was designed by the [Sustainable Fisheries Group](#) (SFG) at the University of California, Santa Barbara. SFG is an interdisciplinary research team whose scientific and economic analyses yield insights that are leveraged by governments and NGOs around the world to drive more sustainable fisheries management and policy.

Section 1 – Global fisheries subsidies today

From the introduction, you can navigate to the first section of the toolkit by opening “Global fisheries subsidies today” from the sidebar menu on the left, or by clicking on the blue button entitled “Learn more about fisheries subsidies” (Figure 2).

Figure 2



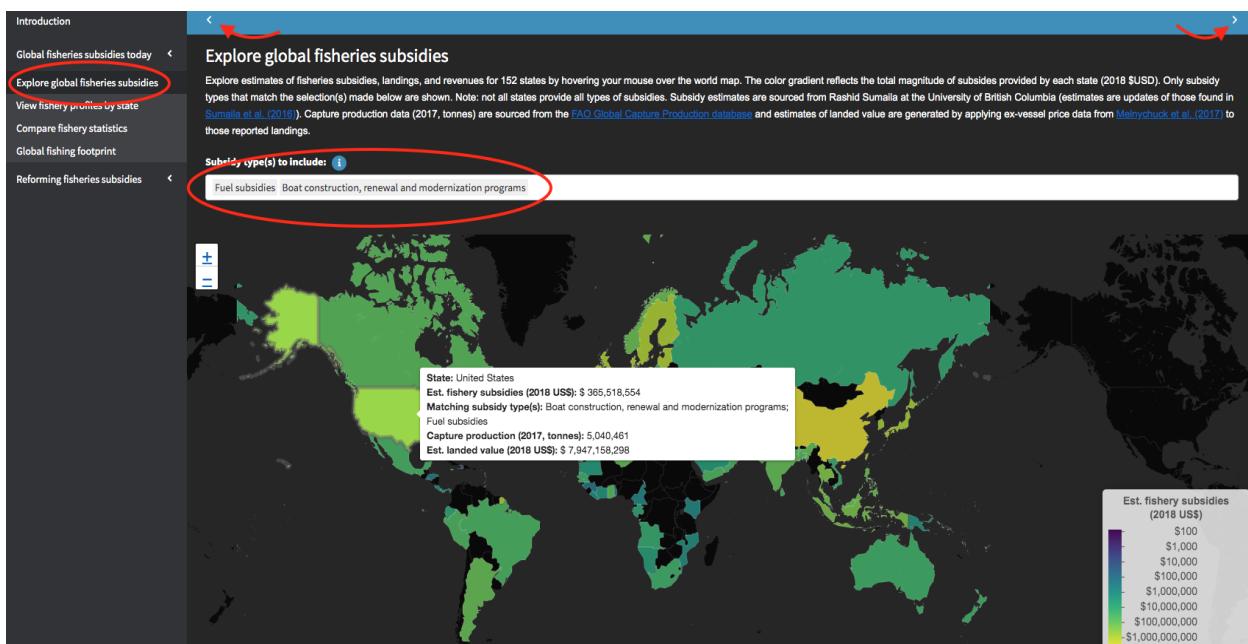
Tab 1.1 – Explore global fisheries subsidies

On this tab, you can explore the global distribution of capacity enhancing fisheries subsidies estimates by state, as well as reported landings and their estimated value by country. By default, a map will be shown with states colored based on the magnitude of fuel subsidies they are estimated to provide. The color gradient corresponds to total amount in 2019 US\$, with purple hues indicating smaller values, and yellow hues indicating larger values.

Above the map, you can select other subsidy types to be viewed on the map by selecting them from the dropdown list. For more information on how fisheries subsidies are classified, click on the blue info button next to “Subsidy type(s) to include”.

You can also hover your cursor over a state on the map to view summary statistics for that state (Figure 3).

Figure 3

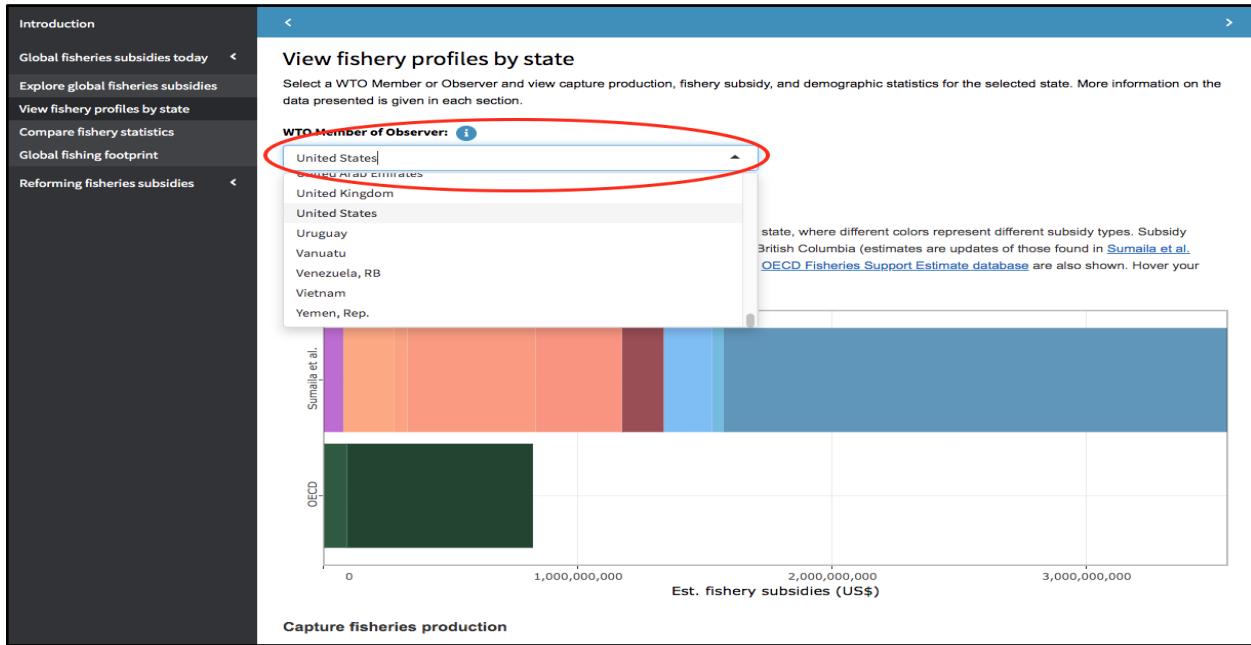


The blue bar at the top of the tab has two arrows allowing you to move to the previous tab (Introduction) or to the next tab (View fishery profiles by state). Alternatively, you can navigate to any of the tabs using the sidebar menu on the left.

Tab 1.2 – View fishery profiles by state

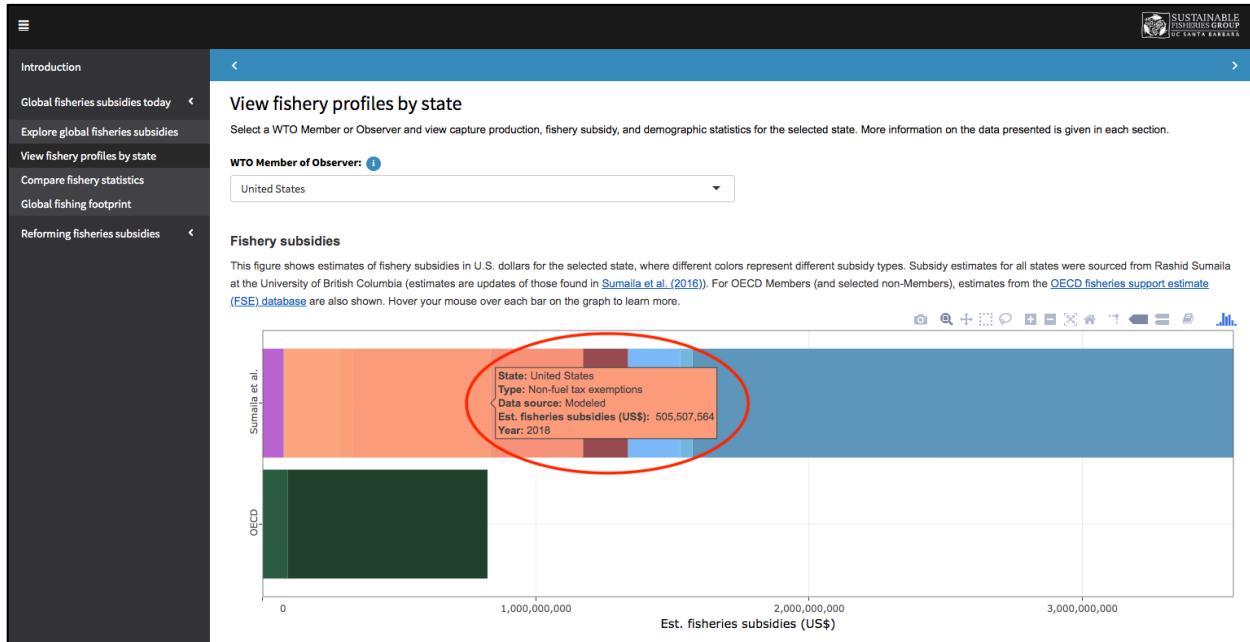
On this tab, you can view fisheries subsidies, capture production, and demographic statistics for a selected state. To begin, select a WTO Member or Observer state (Figure 4) from the dropdown menu at the top. For a more detailed explanation of which states are included in this analysis, you can click on the blue info button next to “WTO Member or Observer”.

Figure 4



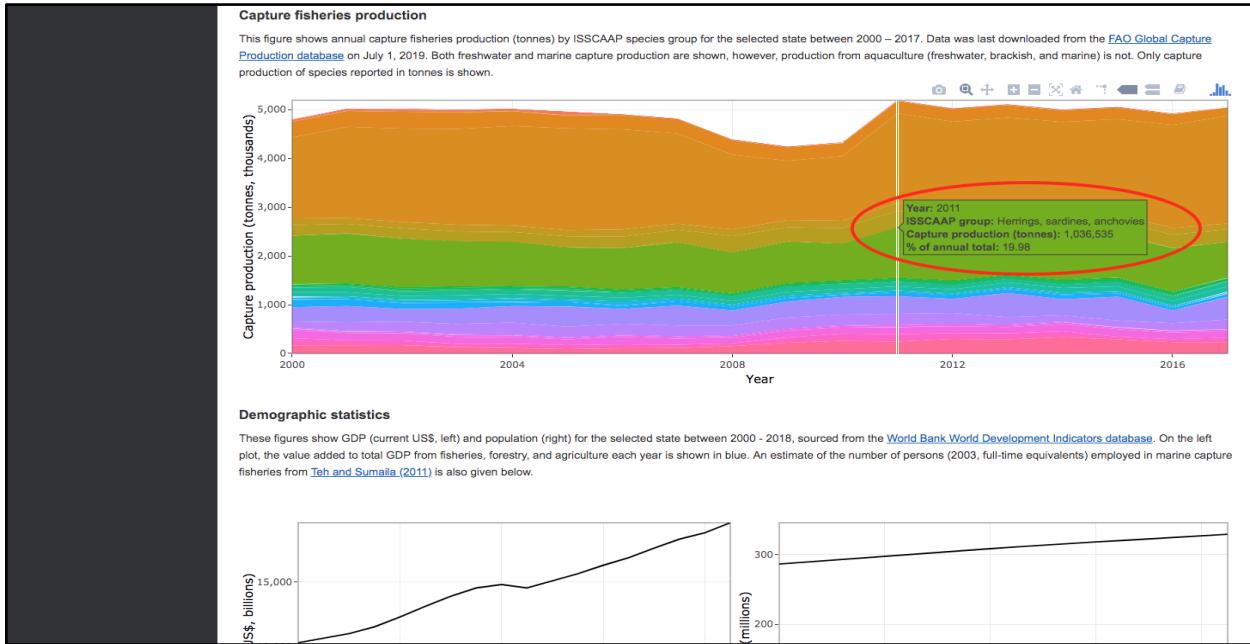
Once you have selected a state, hover your cursor over the graph to learn about estimates of fisheries subsidies for that state (Figure 5). If the state is not an OECD member country (or selected non-member), only estimates of fisheries subsidies from Sumaila et al. are available.

Figure 5



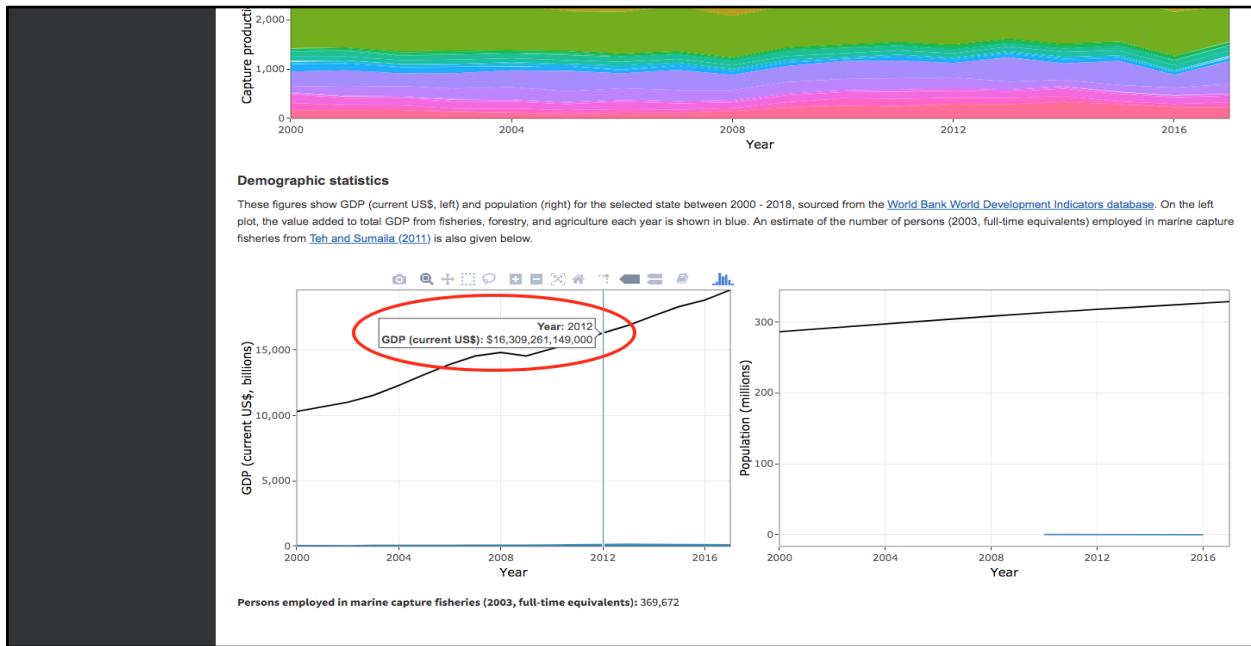
Next, scroll down to view more information about the selected state's capture fisheries production between 2000 and 2017. Hover your cursor over the graph to see more information about the reported production for different species groups for each year (Figure 6).

Figure 6



Finally, scroll down to view demographic statistics for the selected state between 2000 and 2018 (if available). GDP is shown on the left, and population is shown on the right. Hover your cursor over the lines on each graph to get more information for each year (Figure 7). You can also hover over the blue lines on each graph for information on the amount of that state's GDP coming from agriculture, forestry, and fisheries, or the number of fishers.

Figure 7

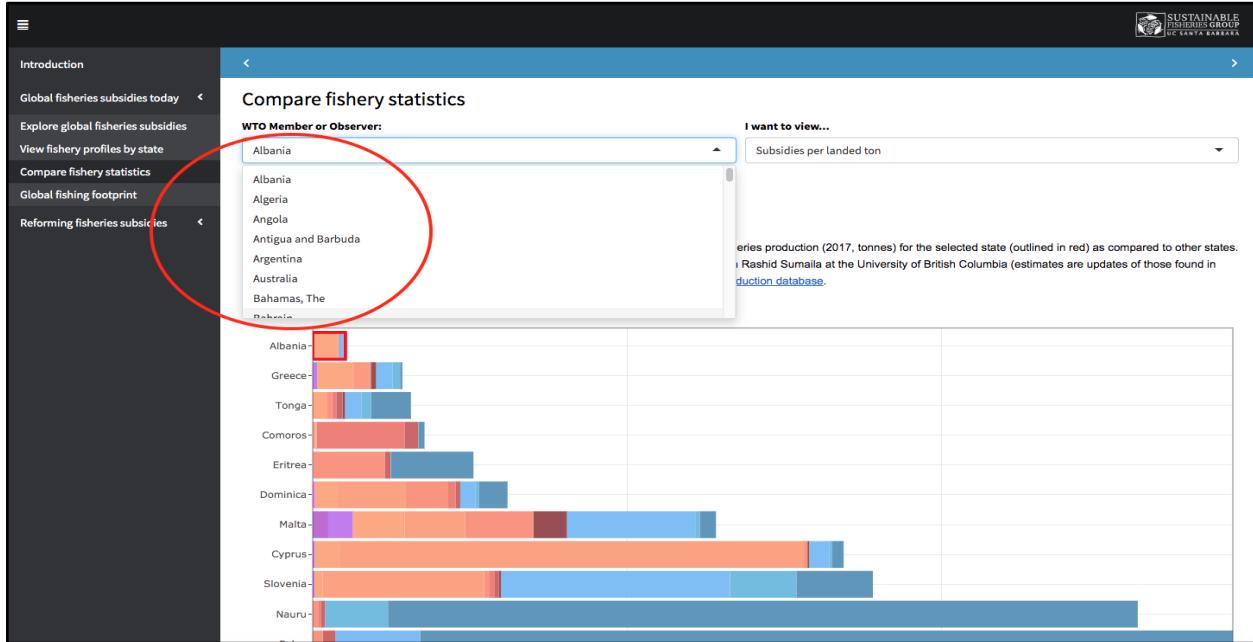


The blue bar at the top of the tab has two arrows allowing you to move to the previous tab (Explore global fisheries subsidies) or to the next tab (Compare fishery statistics). Alternatively, you can navigate to any of the tabs using the sidebar menu on the left.

Tab 1.3 – Compare fishery profiles

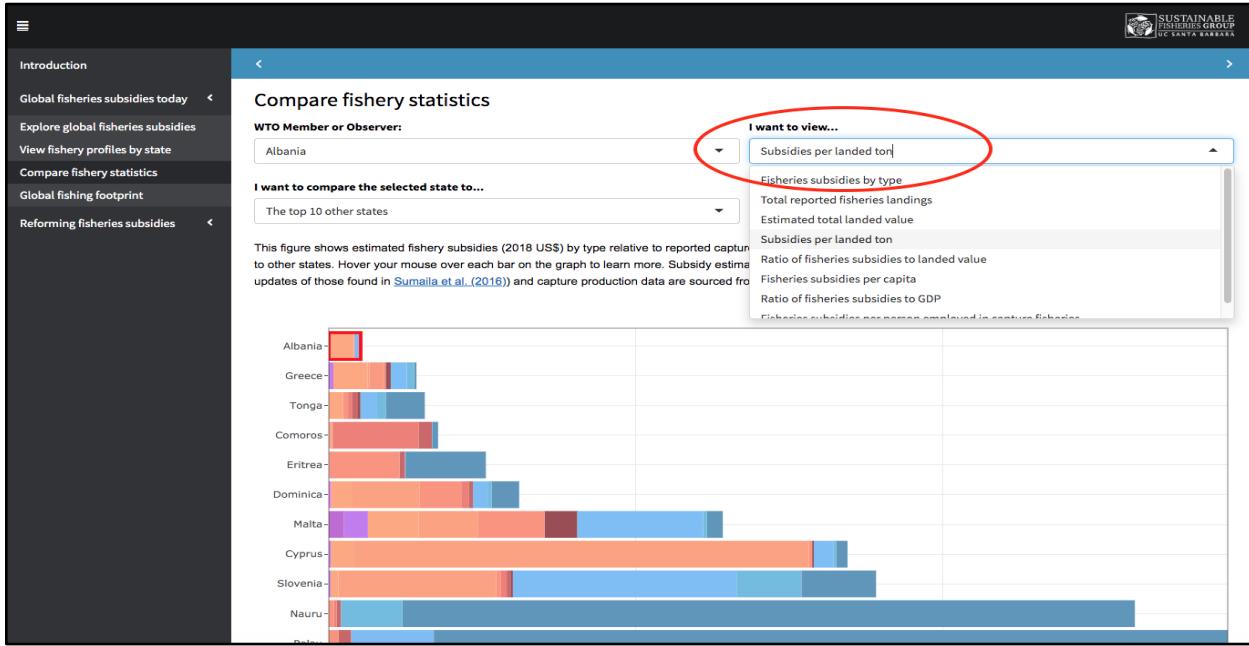
On this tab, you can compare the fishery statistics of a selected state with those of other states. To begin, select a WTO Member or Observer state from the drop-down list at the top (Figure 8).

Figure 8



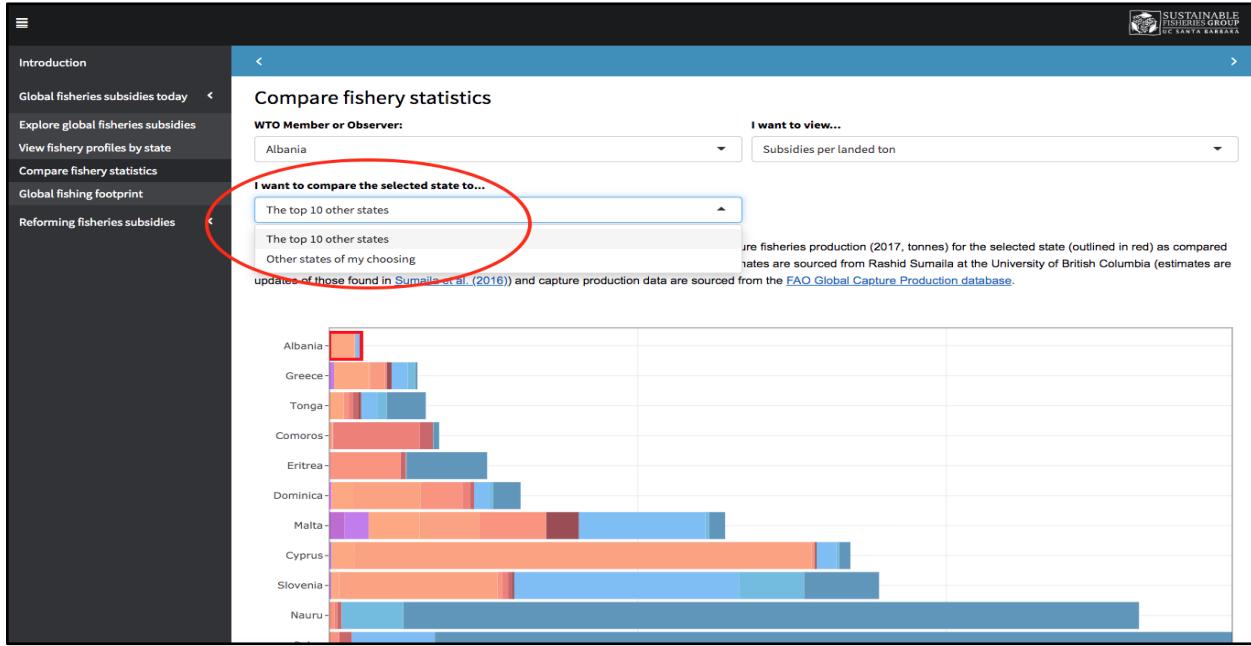
Next, choose which fishery statistic you would like to compare using the drop-down list on the right (Figure 9).

Figure 9



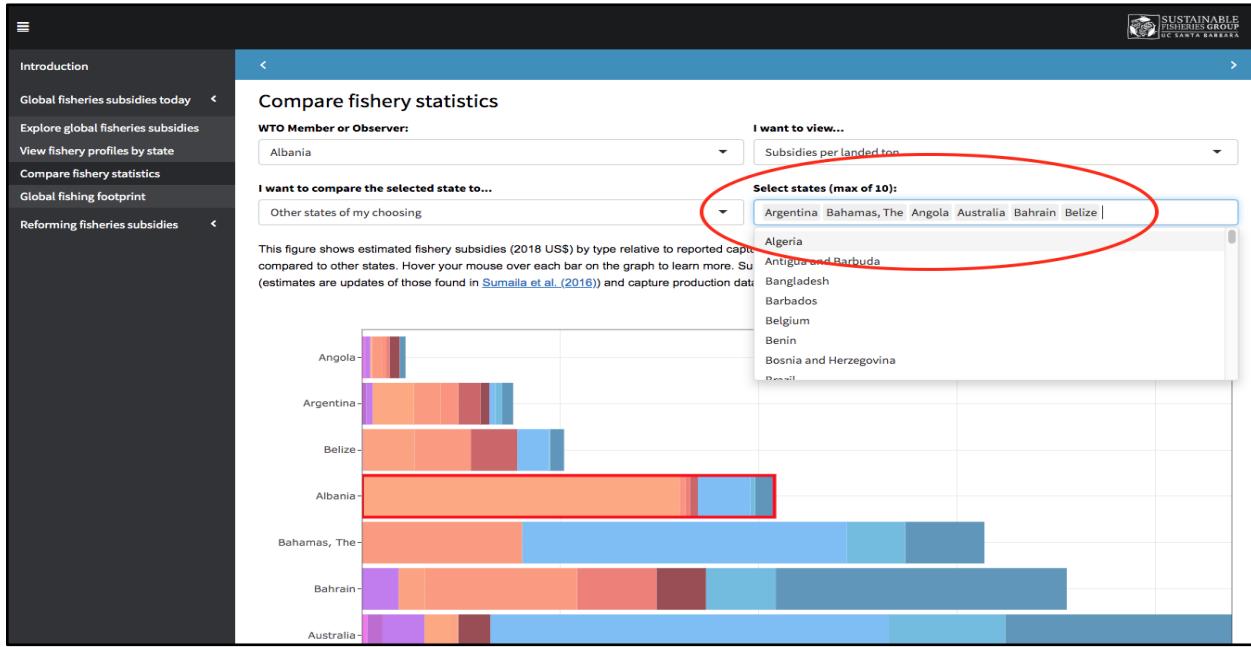
Then choose whether you would like to compare your selected state to the top-ten other states for that statistic, or whether you would like to manually select other states for comparison (Figure 10).

Figure 10



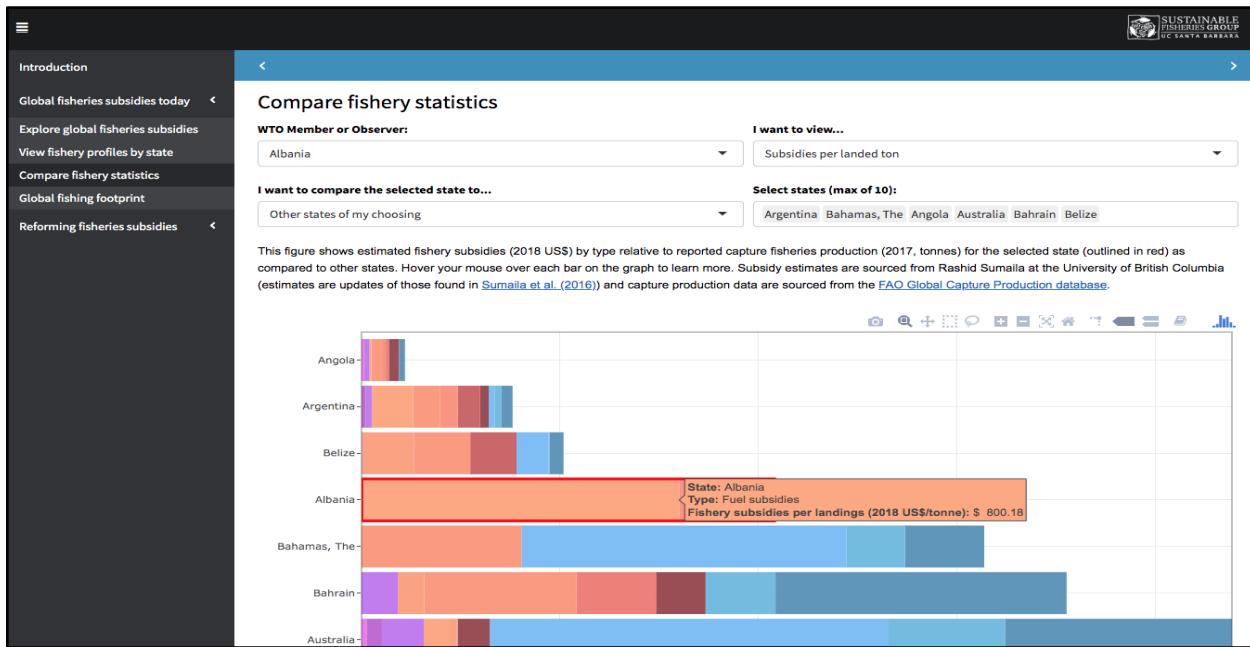
If you decide that you want to compare the selected state to other states of your choosing, select up to 10 states from the drop-down menu that appears (Figure 11).

Figure 11



Once all selections have been made, hover your cursor over the graph to learn more about each statistic for the selected state and how it compares to other states (Figure 12). Your selected state will be outlined in red on the plot.

Figure 12



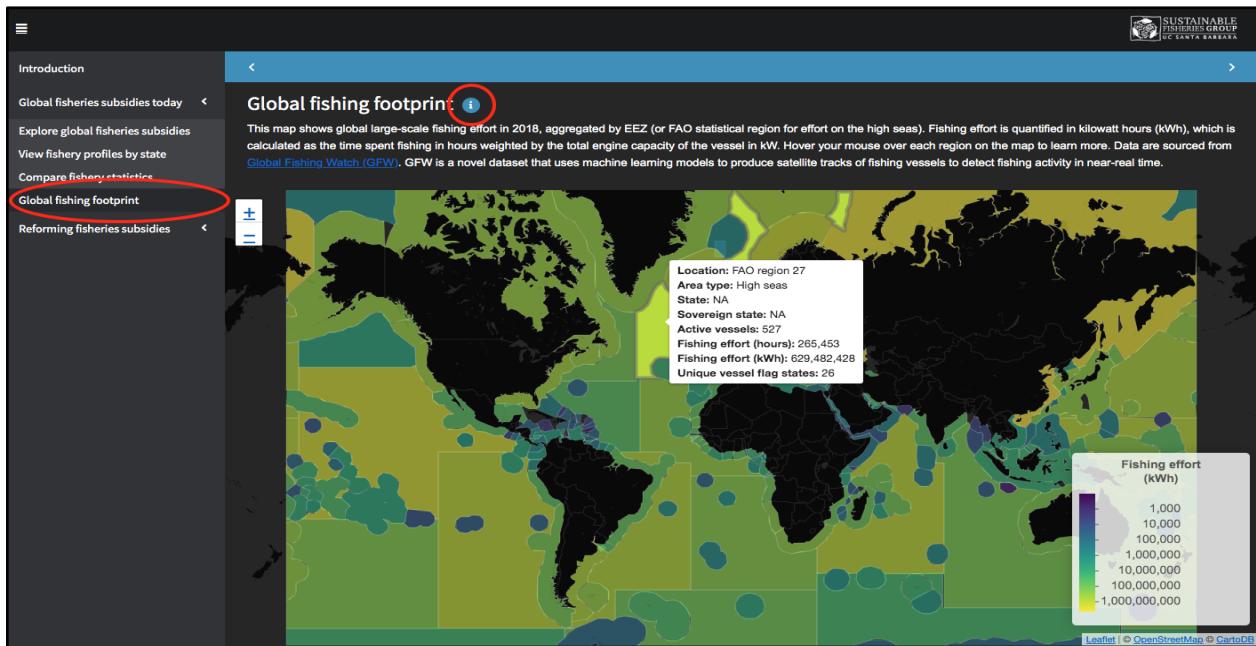
The blue bar at the top of the tab has two arrows allowing you to move to the previous tab (View fishery profiles by state) or to the next tab (Global fishing footprint). Alternatively, you can navigate to any of the tabs using the sidebar menu on the left.

Tab 1.4 – Global fishing footprint

On this tab, you will see a map that shows global industrial fishing effort in 2018, aggregated by exclusive economic zone (EEZ) (or FAO statistical region for effort on the 'high seas'). For a more detailed explanation of the data shown on this map, you can click on the blue info button next to "Global fishing footprint".

Hover your cursor over each region on the map to learn more about fishing effort in that region, including the number of vessels that fished there in 2018 and the number of flag states represented by those vessels (Figure 13)

Figure 13

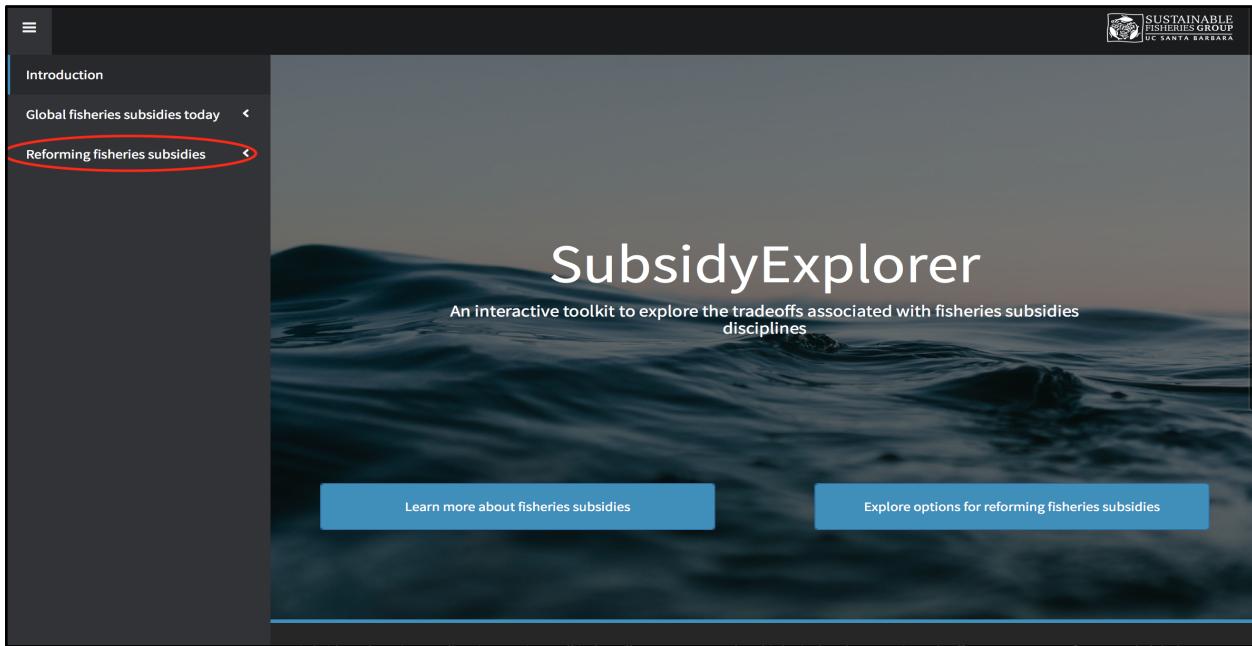


The blue bar at the top of the tab has two arrows allowing you to move to the previous tab (Compare fishery statistics) or to the first tab in the next section (Select a policy). Alternatively, you can navigate to any of the tabs using the sidebar menu on the left.

Section 2 – Reforming fisheries subsidies

From the introduction, you can navigate to the second section of the toolkit by opening “Reforming fisheries subsidies” from the sidebar menu on the left, or by clicking on the blue button entitled “Explore options for reforming fisheries subsidies” (Figure 14).

Figure 14



Tab 2.1 – Select a policy

On this tab, you can select the subsidy disciplines for which to model the effects of. These selections will be used on later tabs to generate (1) the total percentage of fishery subsidies for each flag state that would likely be affected by the selected disciplines, (2) the geographic distribution of industrial fishing effort that would likely be affected by the selected disciplines, (3) the geographic distribution of fishing effort that could be indirectly affected by the selected disciplines (e.g., fishing effort that responds to reform-driven effects on biomass or price), and (4) the potential impacts that the selected disciplines may have on the future health of fish stocks.

There are four categories of subsidy disciplines you can choose from on this tab: (1) subsidies that support illegal, unregulated, and unreported (IUU) fishing; (2) subsidies to fishing on overfished and unassessed stocks; (3) subsidies contributing to overcapacity and overfishing; and (4) total subsidy caps with a tier system (Figure 15). To begin, click on the “+” sign next to one of the four categories to learn more about and select possible subsidy disciplines in that category.

Figure 15

The screenshot shows the 'Select a policy' tab of a web application. The left sidebar has a dark background with white text. The 'Select a policy' tab is highlighted with a red oval. The main content area has a light blue header bar with the title 'Select a policy'. Below it, there is a brief description of the task: 'Select subsidy discipline(s) from the list below. Possible disciplines are sorted into four categories: 1) illegal, unreported, and unregulated (IUU) fishing, 2) overfished and unassessed stocks, and 3) overfishing and overcapacity, and 4) subsidy caps.' There is also a 'Custom description of policy:' input field and a 'Process selection' button. The main list of categories is displayed as follows:

- 1. Illegal, unreported, and unregulated (IUU) fishing
- 2. Overfished and unassessed stocks
- 3. Overcapacity and overfishing
- 4. Subsidy caps

Each category has a red circle with a '+' sign next to it, indicating it can be expanded. The top right corner of the main content area features the logo for 'SUSTAINABLE FISHERIES GROUP UC SANTA BARBARA'.

Before advancing to the next tab, you need to have selected at least one discipline from one of the four categories (i.e. Figure 16). For more information on selected discipline options, click on the blue info buttons next to each discipline description.

Figure 16

Select a policy

Custom description of policy:

Process selection

Illegal, unreported, and unregulated (IUU) fishing

Subsidies for fishing shall be prohibited to those... ⓘ

- Currently listed as having engaged in IUU fishing activities by an RFMO or international agreement
- Currently listed as having engaged in IUU fishing activities by the coastal state
- Currently listed as having engaged in IUU fishing activities by the flag state
- Currently listed as having engaged in IUU fishing activities by one subsidizing Member state

Note: At present, no data exists on a global scale to identify vessels listed as having engaged in IUU fishing activities by a coastal state, flag state, or subsidizing Member state.

Would you like to make an assumption about IUU fishing worldwide instead? ⓘ

- Yes
- No

Overfished and unassessed stocks

Subsidies for fishing shall be prohibited if the fish stock... ⓘ

- Is considered to be overfished ($B/B_{MSY} < 0.8$) as determined by the most recent stock assessment in the RAM Legacy Stock Assessment database

Discipline(s) apply to:

- All Members
- Select Members...

Allow S&DT?

- Yes
- No

Once you have selected at least one discipline, you may specify which Members that discipline should be applied to (Figure 17), any special and differential treatment (S&DT) (Figure 18), and any other assumptions. Relevant options will appear based on your selection. For example, if S&DT is selected, you can then select which Members to which S&DT should apply, as well as what that S&DT should include (Figure 18).

Figure 17

Select a policy

Select subsidy discipline(s) from the list below. Possible disciplines are sorted into four categories: 1) illegal, unreported, and unregulated (IUU) fishing, 2) overfished and unassessed stocks, and 3) overfishing and overcapacity, and 4) subsidy caps.

Once you have selected at least one discipline from a category, you will be able to specify the scope of all disciplines from that category, as well as any special and differential treatment. Once you are happy with your selection(s), press the "Process selection" button, which will move you to the next tab.

Illegal, unreported, and unregulated (IUU) fishing

Subsidies for fishing shall be prohibited to those... ⓘ

Currently listed as having engaged in IUU fishing activities by an RFMO or international agreement

Currently listed as having engaged in IUU fishing activities by the coastal state

Currently listed as having engaged in IUU fishing activities by the flag state

Currently listed as having engaged in IUU fishing activities by the subsidizing Member state

Note: At present, no data exists on a global scale to identify vessels listed as having engaged in IUU fishing activities by a coastal state, flag state, or subsidizing Member state.

Would you like to make an assumption about IUU fishing worldwide instead? ⓘ

Yes

No

Overfished and unassessed stocks

Subsidies for fishing shall be prohibited if the fish stock... ⓘ

Is considered to be overfished ($B/B_{MSY} < 0.8$) as determined by the most recent stock assessment in the RAM Legacy Stock Assessment database

Custom description of policy:

Process selection

Discipline(s) apply to:

- All Members
- Select Members...

Allow S&DT?

- Yes
- No

S&DT applies to:

- LDCs only
- Both developing countries and LDCs

S&DT:

- All Member-flagged vessels are exempted
- Member-flagged vessels fishing solely within their own EEZs are exempted

Figure 18

Select a policy

Select subsidy discipline(s) from the list below. Possible disciplines are sorted into four categories: 1) illegal, unreported, and unregulated (IUU) fishing, 2) overfished and unassessed stocks, and 3) overfishing and overcapacity, and 4) subsidy caps.

Once you have selected at least one discipline from a category, you will be able to specify the scope of all disciplines from that category, as well as any special and differential treatment. Once you are happy with your selection(s), press the "Process selection" button, which will move you to the next tab.

Illegal, unreported, and unregulated (IUU) fishing

Subsidies for fishing shall be prohibited to those... ⓘ

Currently listed as having engaged in IUU fishing activities by an RFMO or international agreement

Currently listed as having engaged in IUU fishing activities by the coastal state

Currently listed as having engaged in IUU fishing activities by the flag state

Currently listed as having engaged in IUU fishing activities by the subsidizing Member state

Note: At present, no data exists on a global scale to identify vessels listed as having engaged in IUU fishing activities by a coastal state, flag state, or subsidizing Member state.

Would you like to make an assumption about IUU fishing worldwide instead? ⓘ

Yes

No

Assumed amount of fishing effort identified as IUU (%):

80

Custom description of policy:

Process selection

Discipline(s) apply to:

- All Members
- Select Members...

Allow S&DT?

- Yes
- No

S&DT applies to:

- LDCs only
- Both developing countries and LDCs

S&DT:

- All Member-flagged vessels are exempted
- Member-flagged vessels fishing solely within their own EEZs are exempted

Once you are happy with your selections from all four sections, please input a short description of the policy you have selected (Figure 19). Then first press the "Process selection" button and wait. When your selection has been processed, you will be automatically redirected to the next tab (Which states would be affected).

Figure 19

SUSTAINABLE
FISHERIES GROUP
UC SANTA BARBARA

Select a policy

Select subsidy discipline(s) from the list below. Possible disciplines are sorted into four categories: 1) illegal, unreported, and unregulated (IUU) fishing, 2) overfished and unassessed stocks, and 3) overfishing and overcapacity, and 4) subsidy caps.

Once you have selected at least one discipline from a category, you will be able to specify the scope of all disciplines from that category, as well as any special and differential treatment. Once you are happy with your selection(s), press the "Process selection" button, which will move you to the next tab.

Illegal, unreported, and unregulated (IUU) fishing

Subsidies for fishing shall be prohibited to those... ⓘ

Currently listed as having engaged in IUU fishing activities by an RFMO or international agreement

Currently listed as having engaged in IUU fishing activities by the coastal state

Currently listed as having engaged in IUU fishing activities by the flag state

Currently listed as having engaged in IUU fishing activities by the subsidizing Member state

Note: At present, no data exists on a global scale to identify vessels listed as having engaged in IUU fishing activities by a coastal state, flag state, or subsidizing Member state.

Would you like to make an assumption about IUU fishing worldwide instead? ⓘ

Yes

No

Assumed amount of fishing effort identified as IUU (%):

0 80 100

Discipline(s) apply to:

All Members

Select Members...

Allow S&DT?

Yes

No

Custom description of policy:

Process selection

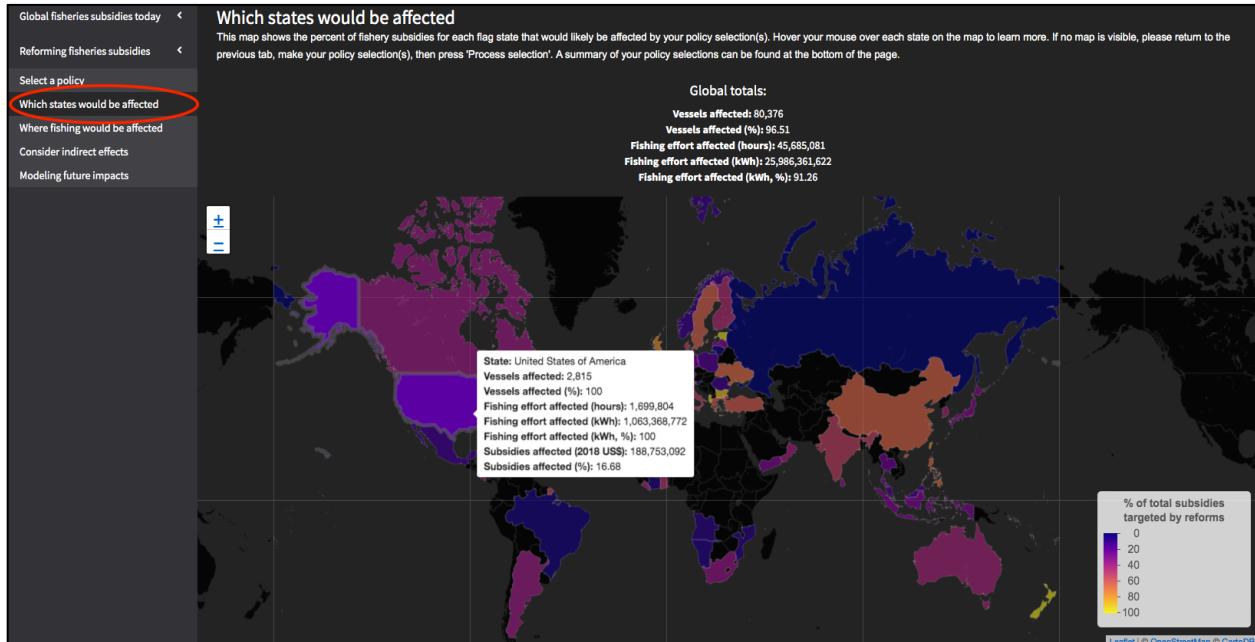
The blue bar at the top of the tab has two arrows allowing you to move to the last tab in the previous section (Global fishing footprint) or to the next tab (Which states would be affected). Alternatively, you can navigate to any of the tabs using the sidebar menu on the left.

Tab 2.2 – Which states would be affected

On this tab, you can view the percentage of fisheries subsidies by flag state that would be likely to be affected by the disciplines selected on the previous tab (Figure 20). You can hover your cursor over each state on the map to learn more about the number of vessels that would be likely to be affected and the percent of fishing effort that would be likely to be affected.

Global totals are shown above the map, and you can also see a summary of which disciplines you had selected at the bottom of the page.

Figure 20



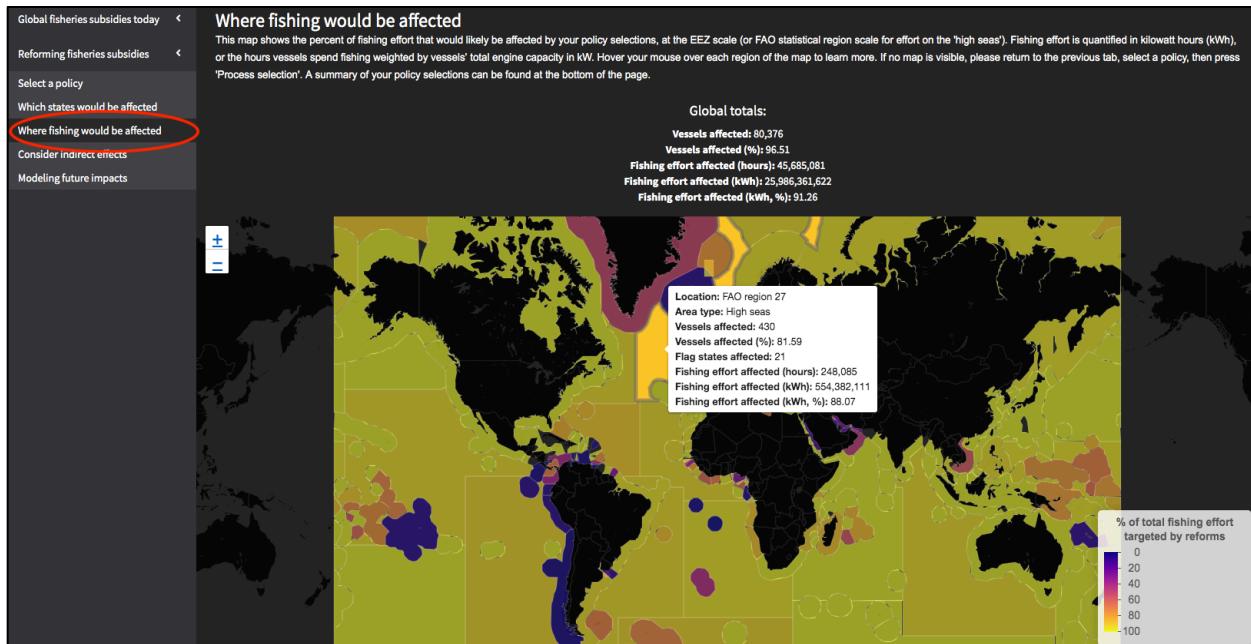
The blue bar at the top of the tab has two arrows allowing you to move back to the previous tab (Select a policy) or to the next tab (Where fishing would be affected). Alternatively, you can navigate to any of the tabs using the sidebar menu on the left.

Tab 2.3 – Where fishing would be affected

On this tab, you can view the percentage of fishing effort in each EEZ (or FAO statistical region for effort on the 'high seas') that would be likely to be affected by the disciplines selected on the "Select a policy" tab (Figure 21). You can hover your cursor over each region on the map to learn more about the number of vessels that would be likely to be affected and the percent of fishing effort that would be likely to be affected.

Global totals are shown above the map, and you can also see a summary of which disciplines you had selected at the bottom of the page.

Figure 21



The blue bar at the top of the tab has two arrows allowing you to move back to the previous tab (Which states would be affected) or to the next tab (Consider indirect effects). Alternatively, you can navigate to any of the tabs using the sidebar menu on the left.

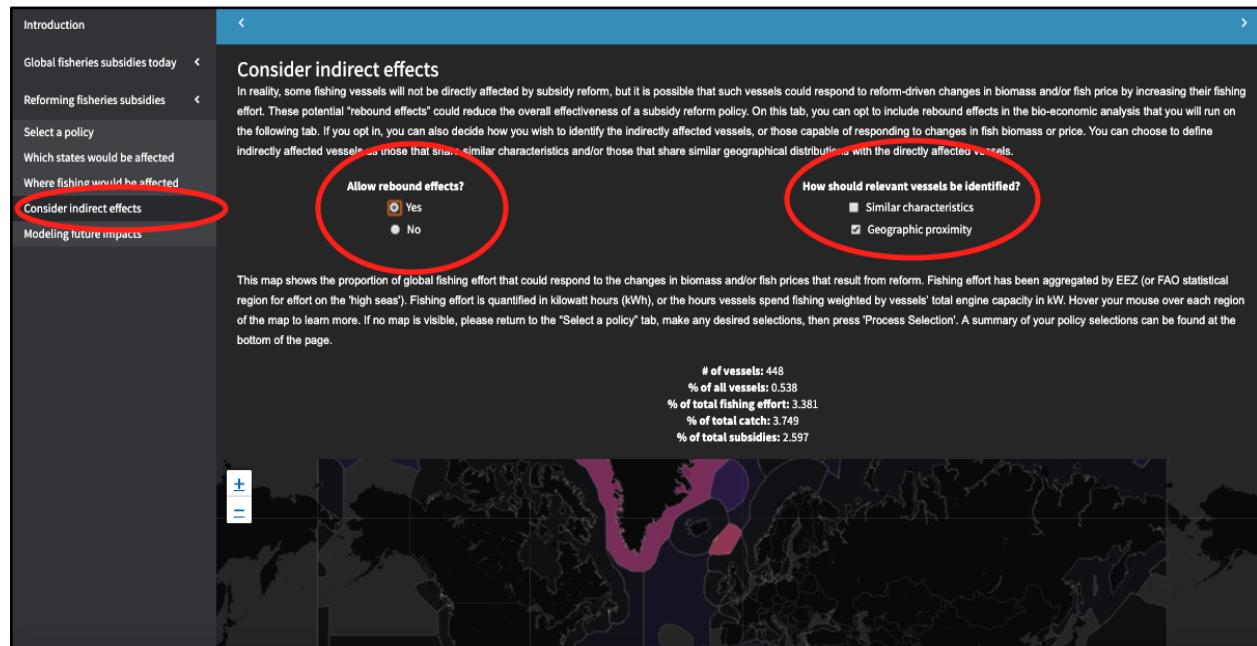
Tab 2.4 – Consider indirect effects

On this tab, you can decide if you would like the bioeconomic analysis to include vessels not affected by the selected disciplines, but that might respond to reform-driven changes in biomass and/or price by increasing their fishing effort. These vessels' responses ("rebound effects") could reduce the effectiveness of a subsidy reform policy. If you choose to account for rebound effects, you must also decide on how such vessels should be identified (similar characteristics and/or geographical distributions with vessels affected by the reforms) (Figure 22).

If you opt to include indirect effects, a map will appear showing the percentage of fishing effort in each EEZ (or FAO statistical region for effort on the 'high seas') that could be indirectly affected by the disciplines selected on the "Select a policy" tab. You can hover your cursor over each region on the map to learn more about the number of vessels that would be likely to be indirectly affected and the percent of fishing effort that would be likely to be indirectly affected.

Global totals are shown above the map, and you can also see a summary of which disciplines you had selected at the bottom of the page.

Figure 22

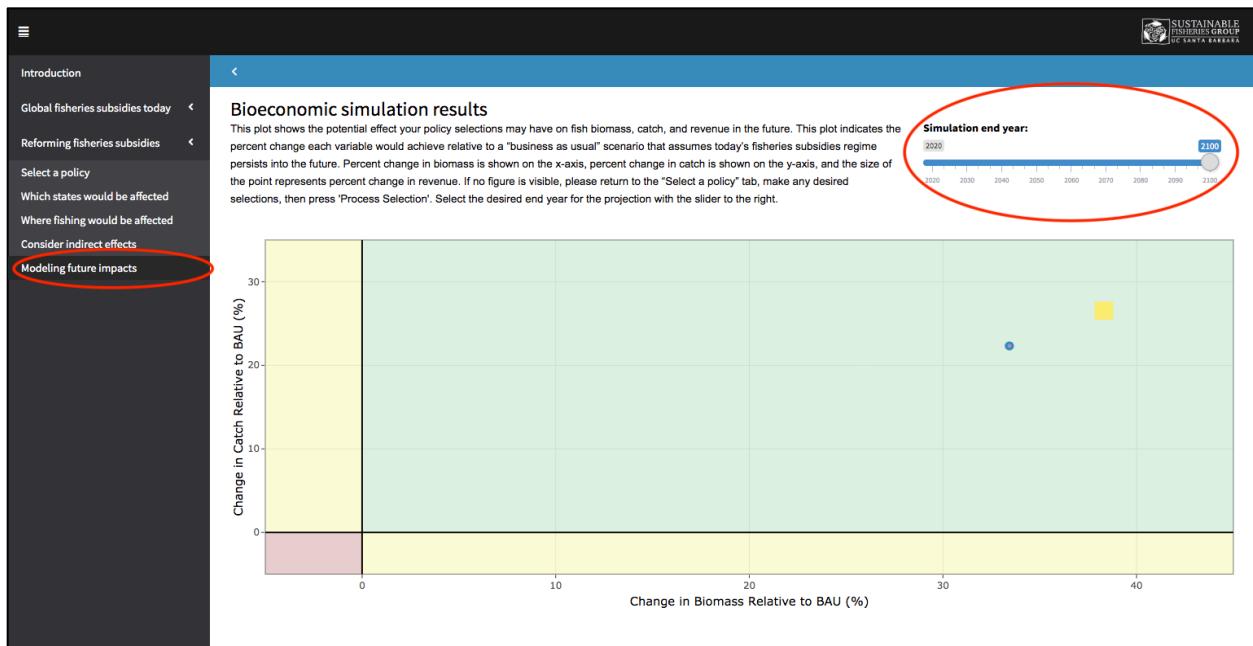


The blue bar at the top of the tab has two arrows allowing you to move back to the previous tab (Where fishing would be affected) or to the next tab (Modeling future impacts). Alternatively, you can navigate to any of the tabs using the sidebar menu on the left.

Tab 2.5 – Modeling future impacts

On this tab, you can explore the results of a bioeconomic simulation of how the disciplines selected on the “Select a policy” tab may drive changes in fish catch, biomass, and fishery revenues in the future relative to a scenario in which subsidy provision continues as it is today (“business as usual”). By default, the ending year for this simulation is 2100, but you can use the slider at the top to change this (Figure 23).

Figure 23



Below the plot, a summary table of results for the disciplines selected on the “Select a policy” tab can be viewed. This table can be downloaded by clicking on the “Download results (CSV)” button on the bottom right (Figure 24).

Figure 24

Results by simulation							Description
ID	Year	Change in biomass (%)	Change in catch (%)	Change in revenue (%)	Consider indirect effects?	Policy summary	
A	2100	38.31	26.54	2.72	No	IUU disciplines: None selected. Overfished and unassessed stock disciplines: None selected. Disciplines for subsidies contributing to overcapacity and overfishing: The following types of subsidies are considered to contribute to overcapacity and overfishing and are therefore prohibited: Boat construction, renewal and modernization programs; Fishery development projects and support services; Fishing port construction and renovation programs; Price and marketing support, processing and storage infrastructure programs; Non-fuel tax exemptions; Foreign access agreements; Fuel subsidies. Selected disciplines apply to all Members. S&DT is not allowed. Cap and tier system : No.	For comparison - complete removal of all capacity-enhancing subsidies
B	2100	33.43	22.32	2.66	No	IUU disciplines: Subsidies shall be prohibited to any Member-flagged vessel... Currently listed as having engaged in IUU fishing activities by an RFMO or international agreement; Currently listed as having engaged in IUU fishing activities by the flag state. 80% of global fishing effort is assumed to have been identified as IUU by coastal, flag, or subsidizing member states. Selected disciplines apply to all Members. S&DT is allowed. The following S&DT applies to LDCs only: All Member-flagged vessels are exempted. Overfished and unassessed stock disciplines: None selected. Disciplines for subsidies contributing to overcapacity and overfishing: The following types of subsidies are considered to contribute to overcapacity and overfishing and are therefore prohibited: Fuel subsidies. Selected disciplines apply to all Members. S&DT is allowed. The following S&DT applies to LDCs only: All Member-flagged vessels are exempted. Cap and tier system : No.	
C	2100	33.43	22.32	2.66	No	IUU disciplines: Subsidies shall be prohibited to any Member-flagged vessel... Currently listed as having engaged in IUU fishing activities by an RFMO or international agreement; Currently listed as having engaged in IUU fishing activities by the flag state. 80% of global fishing effort is assumed to have been identified as IUU by coastal, flag, or subsidizing member states. Selected disciplines apply to all Members. S&DT is allowed. The following S&DT applies to LDCs only: All Member-flagged vessels are exempted. Overfished and unassessed stock disciplines: None selected. Disciplines for subsidies contributing to overcapacity and overfishing: The following types of subsidies are considered to contribute to overcapacity and overfishing and are therefore prohibited: Fuel subsidies. Selected disciplines apply to all Members. S&DT is allowed. The following S&DT applies to LDCs only: All Member-flagged vessels are exempted. Cap and tier system : No.	

Showing 1 to 3 of 3 entries

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[Download results \(CSV\)](#)