FarFish SPiCTGui user guide: Data input

This component of the tool was developed to implement a SPiCT model (Stochastic surplus model in continuous time), which is based on a continuous-time state-space model described in Pedersen et al, 2014 and the SPiCT R package. The version used here has one of the latest advances in this model, which is to allow productivity and growth varying over time (Mildenberger et al., 2019). It was selected because of its ability for dealing with data limited stocks, grasping stock and fishery dynamics with only catches and abundance indexes as inputs, and because of the possibility to have smaller data time scales (quarterly or bi-annual data). You can access it at **ffdb.farfish.eu/shiny/spictgui/**. If you are curious to know more about the source code of this tool, go to **github.com/farfish/spictgui**.

Data input

To input your data, you can do it two ways via the **Edit data** tab:

1.- You can enter the data manually. Once the cells are filled, give a name to your file in the "Filename to save as" box, and click on the "Save data to .xslx" button next to it. Please keep in mind that you don´t need to have the information for all fields. If some info is missing, you can either write "NA" or leave it blank.

2.- Upload a .xslx file with your data on it. Click "browse" and select the file of interest from your computer. To see an example of a valid .xslx file: by clicking on "load demo data" and then "Save data to .xlsx" you can see an example of what the .xlsx data should look like. This demo file could be used to play with the tool and see how it works.

- **Model configuration:** the user can decide a seasonal productivity or time varying growth SPiCT implementation by clicking the corresponding checkbox. For the demo data none of the checkboxes are ticked, this corresponds to the usual SPiCT implementation described in Pedersen *et al*.(2019).

Catch data time series: The first and last year of the time series can be modified by clicking the up and down arrows in the two boxes next to Years:. The time scale of the data should be modified using the options of the dropdown menu next to the last year box (Yearly, Monthly,...). In a similar way you can fill the **Abundance index** information, but in this case you can specify the exact month of the year when the index was collected. A maximum of four indices can be incorporated for the implementation. Please take into account that the indices should account only for the *exploitable biomass*. A link for the SPiCT manual, as well as useful references can be found at the end of all the tabs.

The data to fill these tables could be copied from an Excel file.

The FarFish SPiCTGui is part of the Farfish data limited tool (https://ffdb.farfish.eu/) and it has been designed by Margarita María Rincón from the Spanish Institute of Oceanography, Cadiz Oceanographic center (IEO-CSIC) and Jamie Lentin from Shuttlethread in the framework of the European Union's Horizon 2020 research and innovation project under grant agreement No. 727891/FarFish project. This work does not necessarily reflect European Commission views and in no way anticipates the Commission's future policy in the area.

References

Mildenberger, Tobias K, Casper W Berg, Martin W Pedersen, Alexandros Kokkalis, and J Rasmus Nielsen. 2019. "Time-variant productivity in biomass dynamic models on seasonal and long-term scales." ICES Journal of Marine Science, September. https://doi.org/10.1093/icesjms/fsz154

Pedersen, Martin W., and Casper W. Berg. 2017. "A stochastic surplus production model in continuous time." Fish and Fisheries 18 (2): 226–43. https://doi.org/10.1111/faf.12174