

## Overview

Through this web application the user can implement two fisheries stock assessment models/approaches:

- the stochastic surplus production model in continuous time (SPiCT) [1] and
- the statistical catch-at-age stock assessment model developed as part of the assessment for all (a4a) [2].

The SPiCT application includes the two time-variant productivity extensions, allowing for gradually varying productivity or regimes of productivity [3]. The a4a assessment is modified to include environmental variability on recruitment through an external environmental index provided by the user.

The application was developed in Shiny under the R language programming environment [4, 5] and is accessible at: <http://shiny.her.hcmr.gr:50500/>.

## Documentation

a4a manual:

<https://fishreg.jrc.ec.europa.eu/documents/75108/0/Stock+assessment+and+management+advice+methods/af5931b5-b59b-46f5-8997-66ea0b261ca3?version=1.1>

SPiCT manual: [https://github.com/DTUAqua/spict/raw/master/spict/inst/doc/spict\\_handbook.pdf](https://github.com/DTUAqua/spict/raw/master/spict/inst/doc/spict_handbook.pdf)

## Help files

Test files, source code and official manuals for both approaches can be found <https://cloudfs.hcmr.gr/index.php/s/yRqWk0zTTOCWbZT>

## Acknowledgments

This application is part of the PANDORA's toolbox developed as part of the PANDORA project <https://www.pandora-fisheries-project.eu/>

## How to cite

To be decided by Project leader

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## References

[1] Pedersen, M.W., Berg, C.W. (2017). A stochastic surplus production model in continuous time. *Fish and Fisheries*, 18: 226-243.

[2] Jardim, E., Millar, C.P., Mosqueira, I., Scott, F., Osio, G.C., Ferretti, M., Alzorriz, N., Orio, A. (2015). What if stock assessment is as simple as a linear model? The a4a initiative. *ICES Journal of Marine Science*, 72: 232-236.

[3] Mildenerger, T.K., Berg, C.W., Pedersen, M.W., Kokkalis, A., Nielsen, J.R. (2020). Time-variant productivity in biomass dynamic models on seasonal and long-term scales, *ICES Journal of Marine Science*, 77(1): 174-187.

[4] R Core Team (2020). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL <https://www.R-project.org/>.

[5] Chang, W., Cheng, J., Allaire, J.J., Xie, Y., McPherson, J. (2020). shiny: Web Application Framework for R. R package version 1.5.0. <https://CRAN.R-project.org/package=shiny>

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