Food model

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Landings

Landings come either from industrial, which includes fabric vessels (l_i), or artisanal vessels (l_a). Here, we assume that all l_i are send to processing facilities while l_a can either go to processing facilities or be sold as non-processed products, which we assume, are used for HC (NP_{HC}).

Aquaculture

Aquaculture (Aq) reffers to the harvest of different species being farmed at the sea or freshwater centers. We assume all the volumes coming from aquaculture center enter processing facilities.

Lines of prduction

Landings can either be sold as non-processed products (NP_{HC}) or go to processing facilities where they will be transformed in products for human consumption (P_{HC}) or products for other uses (P_{NHC}). In our analisys we are considering the following types of products to be use for human consumption: fresh, frozen, salty dry, salty wet, smoked, canned, dehydrate. While fish meal, oil, dehydrate, dried algae, and other algae derivatives are use for non human consumption.

In the processesing of both products for HC and for NHC there are discards (D_{HC}, D_{NHC}) that can be represented as the differences between what entered the processing facility as raw material and what left it as processed product ($D_{HC} = R_{HC} - P_{HC}$, $D_{NHC} = R_{NHC} - P_{NHC}$).

What species contribute the most to HC and NHC products?

We use the volume of each species that goes into processing facilities to estimate their contribution to human consumption and non human consumption products. We then explore how this changes if we remove aquaculture inputs to see the species from fisheries that contribute the most.

Regression for oil data 2015

There is no data on how many tons did each species contributed to oil production in 2015, yet we know from other sources, that oil was produced in this year. We use the average volume of each species use in oil production over the years to get an estimate for 2015 and fill this data gap.

Estimating volume of non-processed products for human consumption

In Chile, almost all L_i and Aq are send to processing facilities while only some of the L_a is processed. We assume that the rest of the artisanals' catch that is not sent to processing facilities is sold as non-processed products for human consumption (NP_{HC}). To get an estimate of NP_{HC} we substracted Aq and L_i to all the raw material entering processing facilities and use the residual as the volume of L_a that is processed. We then, substracted this volume from L_i to get NP_{HC}, which is the rest of the artisanals' catch that is not being processed. The assumptions behind this method are (i) that all the raw material in processing facilities

that is not being supplied by industrial fishing or aquaculture is supplied by artisanals, and (ii) all the catch that artisanals do not sell to processing facilities is used for human consumption.