



Wednesday, 4 April 2018

Beef, lamb, lobster or fish? Fisheries study shows impact on carbon emissions

A new study by a team of Institute for Marine and Antarctic Studies (IMAS) and Canadian scientists has found that catching most types of fish produces far less carbon per kilo of protein than land-based alternatives such as beef or lamb.

The researchers undertaking the study found that fisheries for small pelagic species such as anchovies and sardines emit a fraction of the carbon generated by red meat production.

On average, global fisheries have a low-carbon footprint similar to that of poultry.

The research [published in the journal Nature Climate Change](#) provides the first global breakdown of wild fishery emissions by country, and compares the carbon impact of each nation's fishing industry with agriculture and livestock production.

Lead author Dr Robert Parker, formerly from IMAS and now at the University of British Columbia in Vancouver, said producing, distributing and consuming food accounts for a quarter of the world's greenhouse gas emissions, most of which is from animal production.

"Animal protein is an important source of nutrition but it is also one of the world's largest contributors to global climate change, responsible for roughly half of all food production-related emissions," Dr Parker said.

"But limited data has meant that official estimates have previously either overlooked the fishing industry's carbon emissions or made generalisations based on small samples.

"By filling that information gap our study will inform food and climate policy and shed light on the role that fisheries play in the environmental cost of food production," Dr Parker said.

IMAS co-author Professor Caleb Gardner said Australia's fishing industry catches comparatively low volumes and contributes just 0.5 percent of overall global emissions from fishing.

“However, Australian fishers target proportionately more high-value crustaceans such as rock lobsters and prawns, which are among the world’s most carbon-intensive fisheries on a per kilo basis,” Professor Gardner said.

“As a result, on average the Australian fishing industry emits 5.2 kilos of carbon for each kilo of fish caught.

“This contrasts with the US, where each kilo of fish landed cost 1.6 kilos of carbon, and South America, where just one kilo of carbon is emitted for each kilo of fish due to high volumes of anchovies trawled off Peru.

“Globally, carbon emissions from marine fisheries are comparatively low compared with the environmental cost of red meat such as beef and lamb, which is estimated to range from 50 kilos to as much as 750 kilos of carbon per kilo of meat.

“The carbon cost of our food needs would be reduced if people consumed less red meat and more low-carbon alternatives such as fish, especially underutilised small pelagic species such as mackerel and sardines, which currently have low demand and are often used for animal feed instead of human consumption,” Professor Gardner said.

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