AQUACULTURE ECONOMICS &
MANAGEMENT WORKSHOP

From research questions to marine data

Discover relevant datasets. Download them with context.

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Reimagining research papers as interactive and reliable AI agents

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Abstract

Here we introduce Paper2Agent, an automated framework that converts research papers into artificial intelligence (AI) agents. Paper2Agent transforms research output from passive artefacts into active systems that accelerate use and discovery. Conventional research papers require readers to understand and adapt the paper's code, data and methods to their work, creating barriers to dissemination and reuse. Paper2Agent addresses this challenge by converting a paper into an AI agent that functions as a virtual corresponding author, exposing its manuscript, supplementary materials, datasets, code and workflows as active, agent-native knowledge rather than static text. It analyses the paper and codebase using multiple agents to construct a model

Many data sources. Different ways in.

A research question can span countries, sectors and environmental conditions.

UN Comtrade

API / product codes

International trade by product and trading partner.

FAO FishStat

Collections / ZIP / CSV

Aquatic production quantities and aquaculture values.

BarentsWatch

API / authentication

Norwegian aquaculture health, including sea lice.

Copernicus Marine

Catalogue / Toolbox

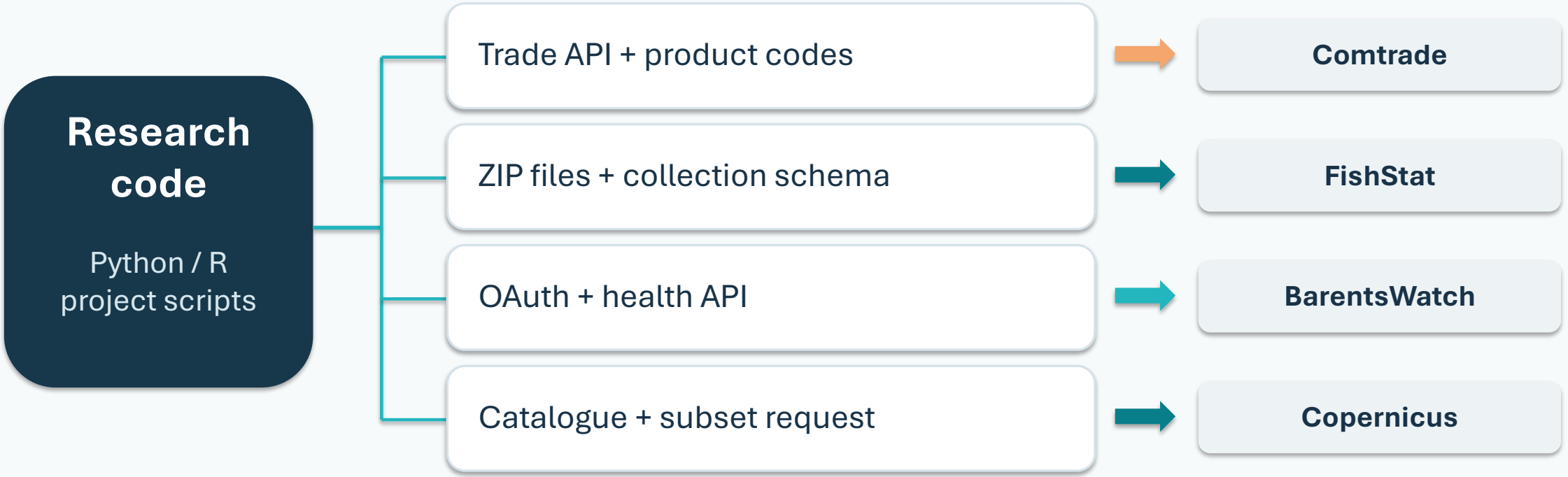
Ocean observations, reanalyses and forecasts.

+ national statistics, surveys, biodiversity records and many more

Examples of data services. Connection status is shown later; Comtrade is not yet connected to our server.

Each source adds integration work

Our code must handle each provider's requests, credentials, codes and response format.



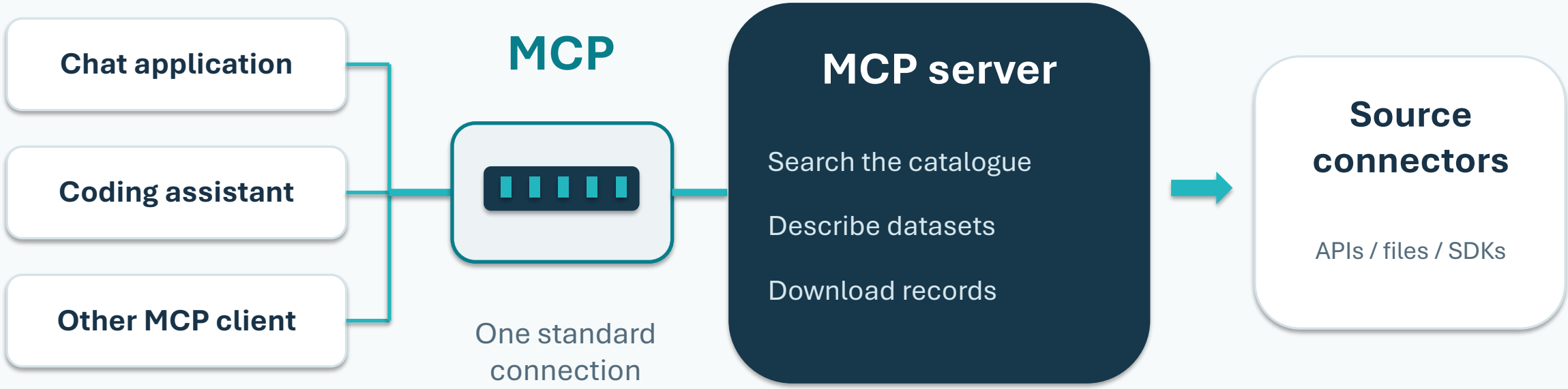
When an API or data schema changes, the affected integration must be updated.

API = the interface a service exposes to software. Some sources distribute files instead.

THINK OF A USB-C CONNECTION

MCP: a shared connection for AI tools

Model Context Protocol standardizes how an AI application discovers and calls a server's tools.



Reuse the server across compatible AI clients. Maintain each source connector in one place.

MCP documentation: the USB-C analogy describes a common interface. Upstream API changes still need connector updates.

AN EXAMPLE CONVERSATION

Start with the research question

The chatbot checks the MCP catalogue and proposes relevant datasets.

“I want to study growth in salmon production and value in Norway, and sea lice by year.”

Suggested data available through this MCP

DATA NEEDED	SOURCE	WHAT THE SOURCE PROVIDES
Production quantity	FAO FishStat	Annual tonnes; select country and species
Production value	FAO FishStat	Annual value in thousands of nominal USD
Sea lice	BarentsWatch	Weekly reports for a specified locality

Clarify species and years. A national annual lice indicator requires a later aggregation decision.

Current tools: FishStat aquaculture quantities and values; BarentsWatch weekly adult female lice per fish.

Every recommendation must state its access

Separate datasets the server can retrieve from suggestions that need another route.

AVAILABLE THROUGH THIS MCP

Describe → select → download

FishStat production quantities and aquaculture values
BarentsWatch weekly lice
Copernicus Marine datasets

EXTERNAL SUGGESTION · NOT CONNECTED

UN Comtrade — planned

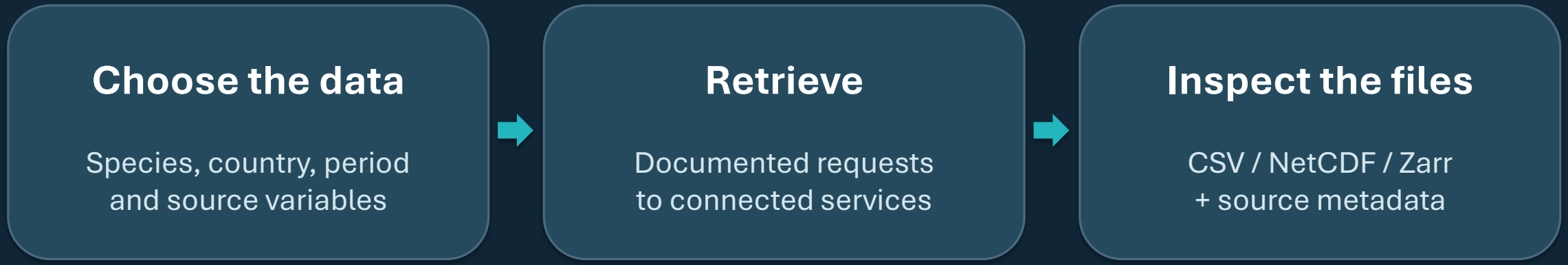
“Trade data may be relevant if you also study exports. This MCP cannot download Comtrade data yet.”

A relevant source is a candidate. Its variables, coverage and access still need to match the question.

Current connection status: Fisheries Data MCP repository. Production value and export value are different measures.

Download the data with its context

The chatbot calls a defined tool; the server saves data and reports what it retrieved.



The MCP supplies research inputs. Analysis follows in your research workflow.

Local installation and setup: github.com/adamsconchallos/fisheries-data-mcp

Reliable retrieval depends on maintained tools, validation and traceable outputs. MCP alone does not guarantee data quality.