# INNOVATIVE DIGITAL SOLUTION:
## Supporting catch documentation and traceability

## INTRODUCTION

The USAID Oceans and Fisheries Partnership (USAID Oceans) is working to strengthen regional cooperation to combat illegal, unreported, and unregulated (IUU) fishing, promote sustainable fisheries, and conserve marine biodiversity in the Asia-Pacific region. In line with these objectives, USAID Oceans has awarded an Ecosystem Approach to Fisheries Management (EAFM) grant to Masyarakat dan Perikanan Indonesia (MDPI) to **design an innovative digital solution (IDS) to use electronic catch documentation and traceability (eCDT) data to improve fisheries management in Indonesia** (GR005-MDPI).

Under the grant, MDPI is developing a web-based data analytics tool that will enable fisheries managers—specifically provincial-level managers in North Sulawesi, Indonesia—to easily use eCDT data to make data-driven decisions and is building stakeholder capacity to use the tool. Through better access to and understanding of eCDT data, management responses can better address IUU activities. For example, in addition to increasing comprehensive and consistent reporting, real-time catch data, including location, can help monitor when vessels are entering protected areas or using unsustainable fishing gear and inform corrective action. This work also supports the Indonesia One-by-One Tuna Alliance, which strives to identify ways to connect data source and engage stakeholders to compile and use CDT data.

## INNOVATIVE DIGITAL SOLUTION (IDS):

The IDS allows users to access information on active vessels in designated Fisheries Management Areas (FMAs) and to use this information to support FMA management. Under this grant, the IDS was tested using eCDT data from FMA 716 in North Sulawesi province in Indonesia.

The IDS architecture allows the application to source data from various databases and/or uploaded spreadsheets and connects the data via an application programming interface (API) (Figure 1).

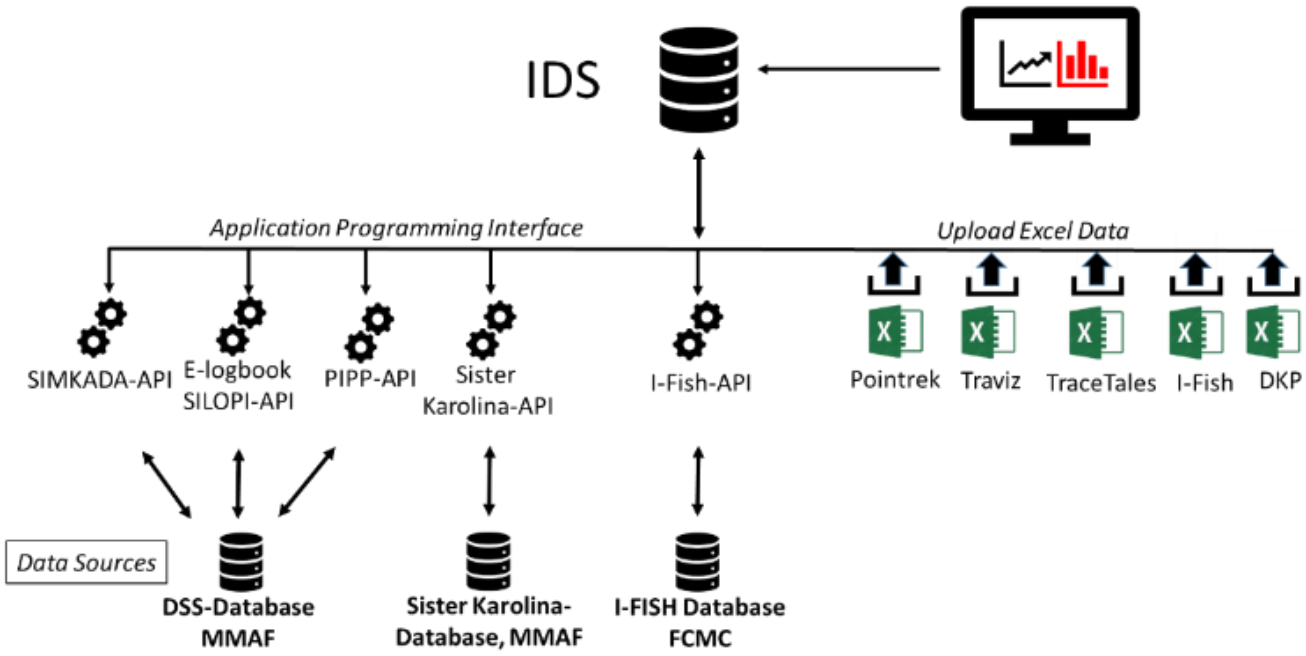


*Figure 2. IDS architecture*

## DATA ANALYTICS AND VISUALIZATION

The application's dashboard allows managers to visualize data such as catch location, total catch, gear used, and monthly summaries of active vessels and catch totals using maps, charts, and graphs (Figures 3-5)

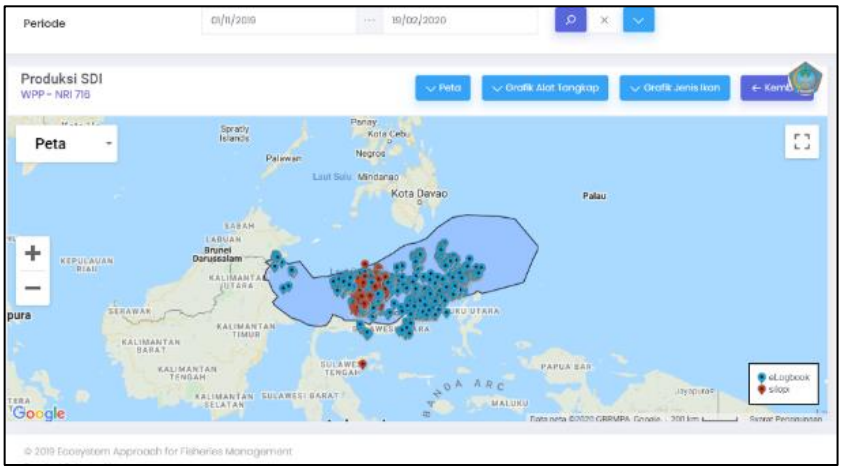


*Figure 3. Catch location and distribution*

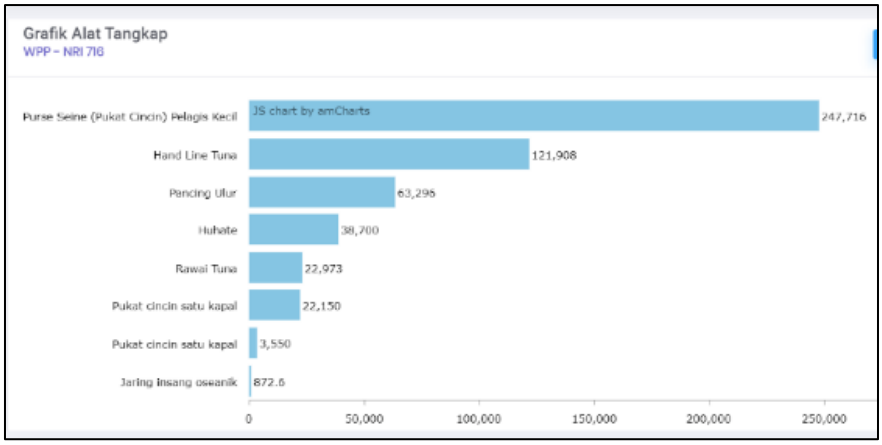


*Figure 4. Total catch based on fishing gear used*

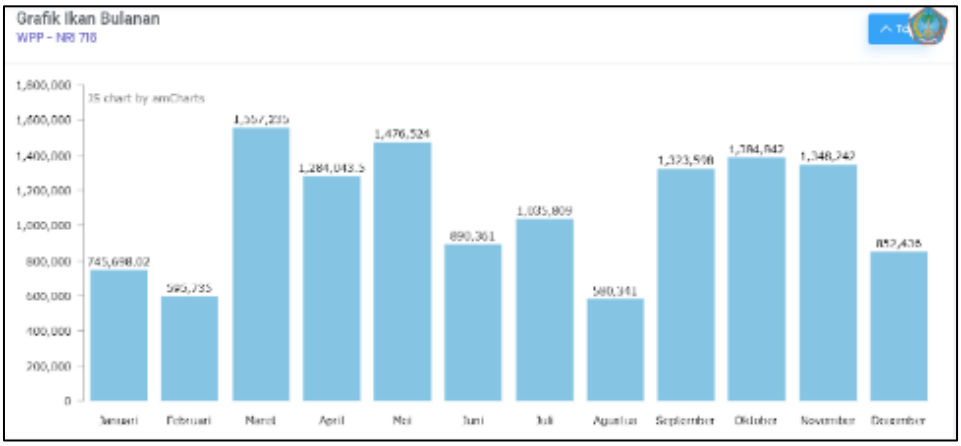


*Figure 5. Monthly summary of catch totals*

## USING DATA FOR SUSTAINABLE FISHERIES MANAGEMENT

It is envisioned that the IDS can use analytics and visualizations of eCDT data to inform development of management practices and policies. Fisheries management interventions such as closed seasons, harvest control rules, and other strategies can support EAFM plan implementation in FMAs. In addition, linking eCDT data with the National Stock Assessment Programs will provide more robust evidence-based guidance for managing FMAs, including considerations of other fisheries, fishing gears, and fish species.

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