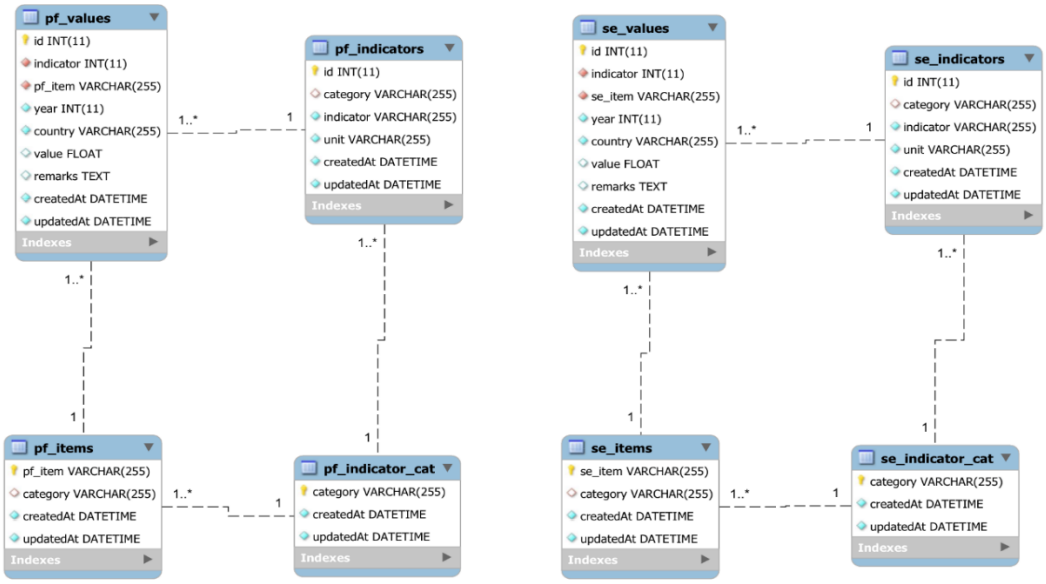
Best Practice 3: Database Design

The SADC AIMS is a web-based application that was developed to store data related to 12 different thematic areas namely Crops, Livestock, Aquaculture, Forestry, Agricultural Input, Animal/Plant Health, Socio-economics, Land Cover, Public Finances, Trade Quantity, and Production Value. The data collected under each of these areas are stored on the regional database that is part of the AIMS platform.

Before deciding on the different data points that are part of the overall system, it was critical to understand what data was available, what kind of reports were to be generated, what indicators were being monitored and how they were aligned with the Regional Indicative Strategic Development Plan (RISDP). This helped identify variables that would be most informative, thus setting the framework for the harmonized data collection questionnaire.

By gaining a good understanding of the data needed, the process of formulating the business requirements to develop the capabilities of the system was simplified through the design of the logical model of the business requirements and benefits. The logical model focused on all the tasks the database would perform.

It was critical to have a clear understanding of how the AIMS platform was going to operate, the type of data that it would generate, and the rules that would govern the validity of data. This analysis produced an Entity Relationship Diagram (ERD) that described all the data that is collected, and how they relate to each other.



A sample AIMS Entity Relations Diagram (ERD)

Having a fully detailed Entity Relations Diagram for developing any system, not only AIMS is a best practice recommendation for building dynamic web applications. Once the ERD is completed, you can begin constructing your database which will form part of the overall web-based application.