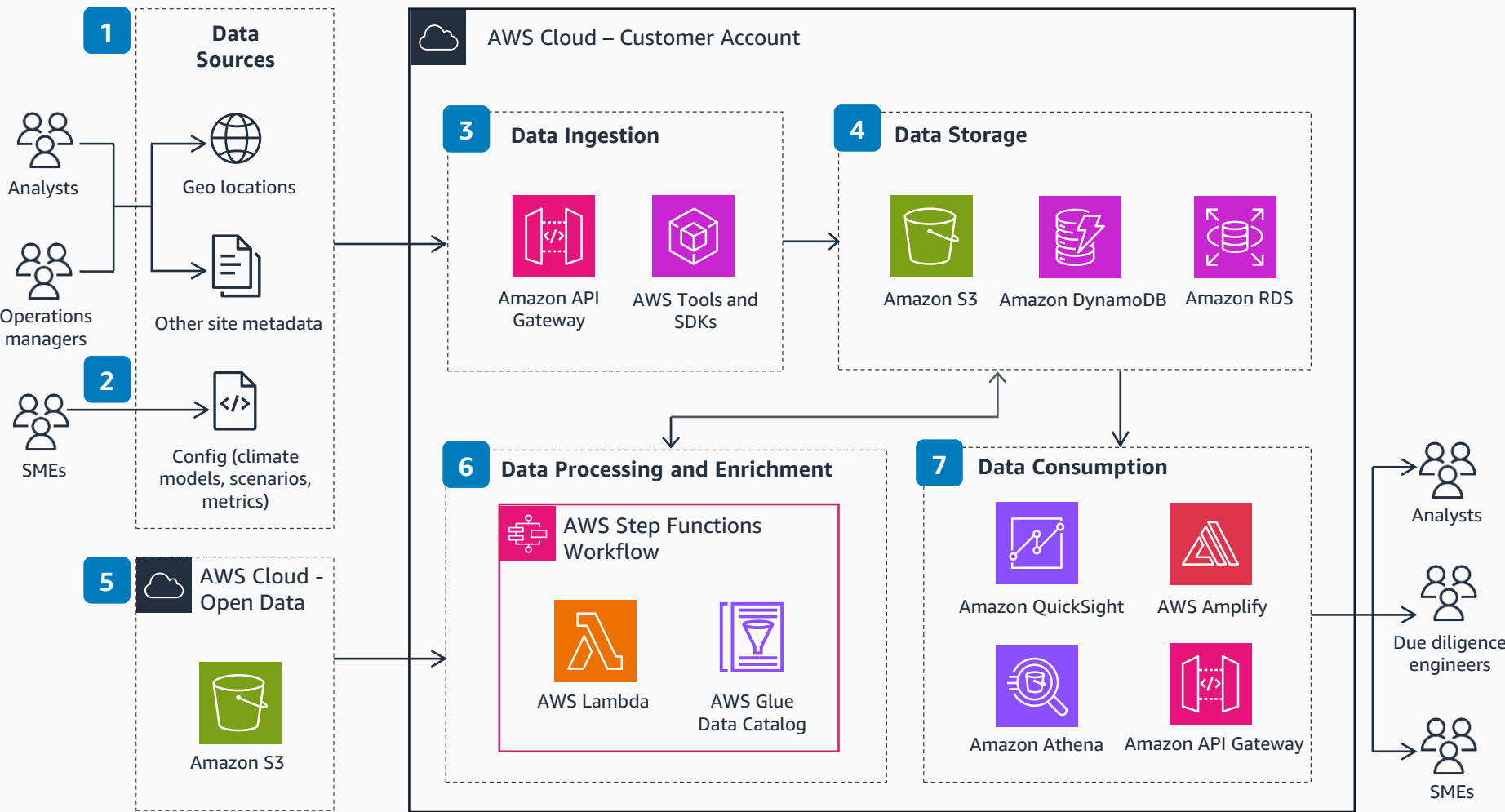


Guidance for Physical Climate Risk Assessment on AWS

This architecture diagram provides guidance on visualizing, monitoring, and reporting physical climate risks. It highlights how to enrich location data using large-scale high-quality climate datasets made available through the Amazon Sustainability Data Initiative (ASDI).



- Analysts and operations managers collect geo locations, such as latitudes and longitudes, of interested sites, in addition to site metadata, such as site type, square footage, and occupancy rate.
- Sustainability subject matter experts (SMEs) generate a config file, specifying climate models, scenarios, and metrics for physical climate risk assessment.
- Ingest data into the AWS Cloud using **Amazon API Gateway** or **AWS Tools and SDKs**.
- Store static files in a data lake using **Amazon Simple Storage Service (Amazon S3)**. Use **Amazon DynamoDB** or **Amazon Relational Database Service (Amazon RDS)** to store site data and geo locations, depending on data consumption patterns. Use **DynamoDB** to track the state as data moves through the pipeline.
- AWS hosts a broad variety of high-quality climate datasets through the **Amazon Sustainability Data Initiative (ASDI)** to reduce barriers to data access and store large-scale sustainability datasets. These datasets are optimized for the cloud and accessible through public S3 buckets.
- Enrich site data with downscaled climate models from **ASDI**. Perform geospatial joins to extract metric statistics from raster climate data files using **AWS Lambda**. Export processed data to **Amazon S3**, and use **AWS Glue Data Catalog** to store the metadata of your datasets. Use **AWS Step Functions** to orchestrate data processing pipelines.
- Build a dashboard using **Amazon QuickSight** or custom web application using **AWS Amplify** to visualize physical climate risks related to your operations. Analysts can also directly query from **Amazon Athena** to gain insights on custom metrics.