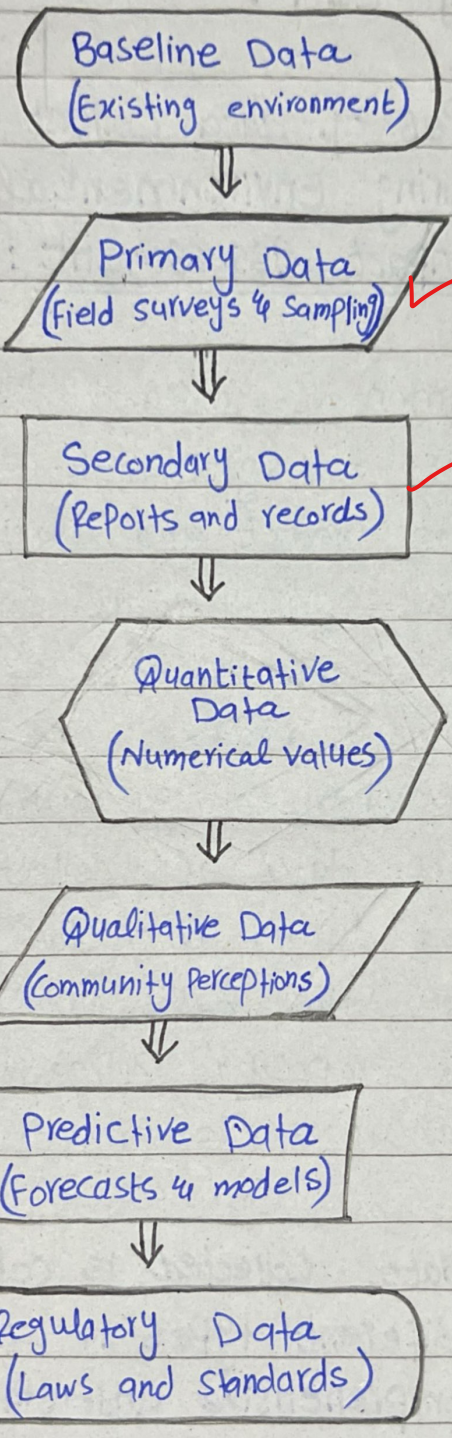
Question:
What type of data is collected during EIA?

## Types of data collected during Environmental Impact Assessment:

Environmental Impact Assessment (EIA) is a systematic process used to predict and evaluate the potential environmental, social, and economic effects of proposed development projects are sustainable and environmentally sound, different types of data are collected and analyzed during EIA. This data provides the basis for assessing risks, proposing mitigation measure and ensuring compliance with laws and policies.

The data collected is categorized into diferent types to ensure a comprehensive understanding

of environmental conditions.



1. **Baseline Environmental Data:**

Baseline environmental date refers to the information about the existing condition of the environment before the project begins. This data includes the physical environment that is air and water quality, soil fertility, climate patterns, hydrology, topography and noise levels, the biological environment which includes flora, fauna, biodiversity hotspots, and the socio-economic environment including population structure, health conditions, education level, cultural sities, livelihood sources and land use. For example, in Pakistan's CPEC road projects, baseline studies includes measuring air quality in Gilgit-Baltistan, recording biodiversity along the Karakoram corridor, and accessing the livelihood of local communities.

2. **Primary Data:**

Primary data is collected directly from the field through surveys, sampling, interviews, and observations. It provides First-hand, project-specific information. Examples include air and water samples collected to test for pollutants, wildlife surveys to record species distribution, and community surveys to assess local perceptions. for instance, during the Dasu Hydropower EIA (2022), primary data was gathered on water quality, sediment levels of the indus River, and household livelihood surveys to determine the impact of dam construction.

3. **Secondary Data:**

Secondary data refers to information obtain from existing sources such as government records, academic research, published reports, satellite images, and census data. This data supports and complements primary

findings. for example, meteorological records from the Pakistan Meteorological Department are used for climate analysis, while census data from the Pakistan Bureau of statistics (PBS, 2017 census) helps in understanding demographic impacts. Similarly, the world Bank environmental reports and UNEP assessments are often used as secondary references in Pakistani EIA studies.

4. **Quantitative Data:**

Quantitative data includes all measurable and numerical information that can be statistically analyzed. This may include pollutants concentrations example, particulate matter, carbon dioxide, nitrogen oxides, noise levels in decibels, traffic counts, and population figures. For example, the Lahore orange Line Metro Train project (2019 EIA) measured PM 2.5 and $NO_2$ levels

in the city to assess potential air pollution impacts during construction and operation phases.

5. **Qualitative Data:**

Qualitative data is descriptive and perception-based, often collected through interviews, group discussions and observations. It highlights community concerns, cultural values, and local knowledge. For example, in The coal project EIA (Sindh 2021), qualitative data included local communities concerns about water scarcity, loss of grazing land, and cultural dislocation, which were not measurable in numeric terms but critical for decision-making.

6. **Predictive / Modeling Data.**

Predictive data is used to

forecast future impacts using models and simulations. It estimates how projects will affect air quality, water flow, trafic or biodiversity over time. For instance air dispersion models are used to predict the spread of pollutants from industrial zones, while climate models project long-term impacts of projects on rainfall and temperature. In pakistan, predictive modeling was applied in the Karachi BRT EIA (2020) to forecast traffic congestion reduction and carbon emission savings.

7. **Regulatory | Legal Data:**

Regulatory data includes all relevant laws, policies, and environmental standards that projects must comply with. This ensures that development remains within legal frameworks. In Pakistan this includes National Environmental

Quality Standards (NEQS), Pakistan Environmental Protection Act (1997), provincial EIA regulations, and international commitments like the Paris climate Agreement (2015). for example, during the Karat Hydropower project (CPEC), compliance with NEQS for effluent discharge and World Bank Safeguard policies was mandatory before project approval.

In conclusion, EIA data is collected in multiple categories: baseline, primary, secondary, quantitative, qualitative, predictive, and regulatory. Each type has a distinct purpose - baseline provides current conditions, primary and secondary offer evidence, quatitative and qualitative capture measurable and descriptive aspects, predictive shows future impacts, and regulatory ensures compliance. Together, they create a holistic framework for environmentally responsible decision-making in projects.

GIVE A FORMAL INTRO AND CONCLUSION
OVER ALL ANSWER IS FINE
10-/20