The Capacity Building Initiative for Transparency – Global Support Programme

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Addressing Data Gaps and Uncertainties in BTRs: Methodologies and Approaches

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Addressing Data Gaps and Uncertainties in BTRs: Methodologies and Approaches

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- **What are Data Gaps?** Data gaps refer to missing or unavailable data points required for comprehensive reporting in BTRs. This can include anything from incomplete historical datasets to a lack of disaggregated data for specific sectors or themes.

- **What are Data Uncertainties?** Data uncertainties relate to the reliability, accuracy, and precision of the collected data. These can arise from measurement errors, estimation methodologies, or inconsistencies in data collection practices over time.

- **Why are they critical in BTRs?** The foundational principles of Transparency, Accuracy, Consistency, Comparability, and Completeness (TACCC) are paramount for all reported data in BTRs. Data gaps and uncertainties directly undermine these principles, affecting the credibility of reports and hindering effective technical review processes.

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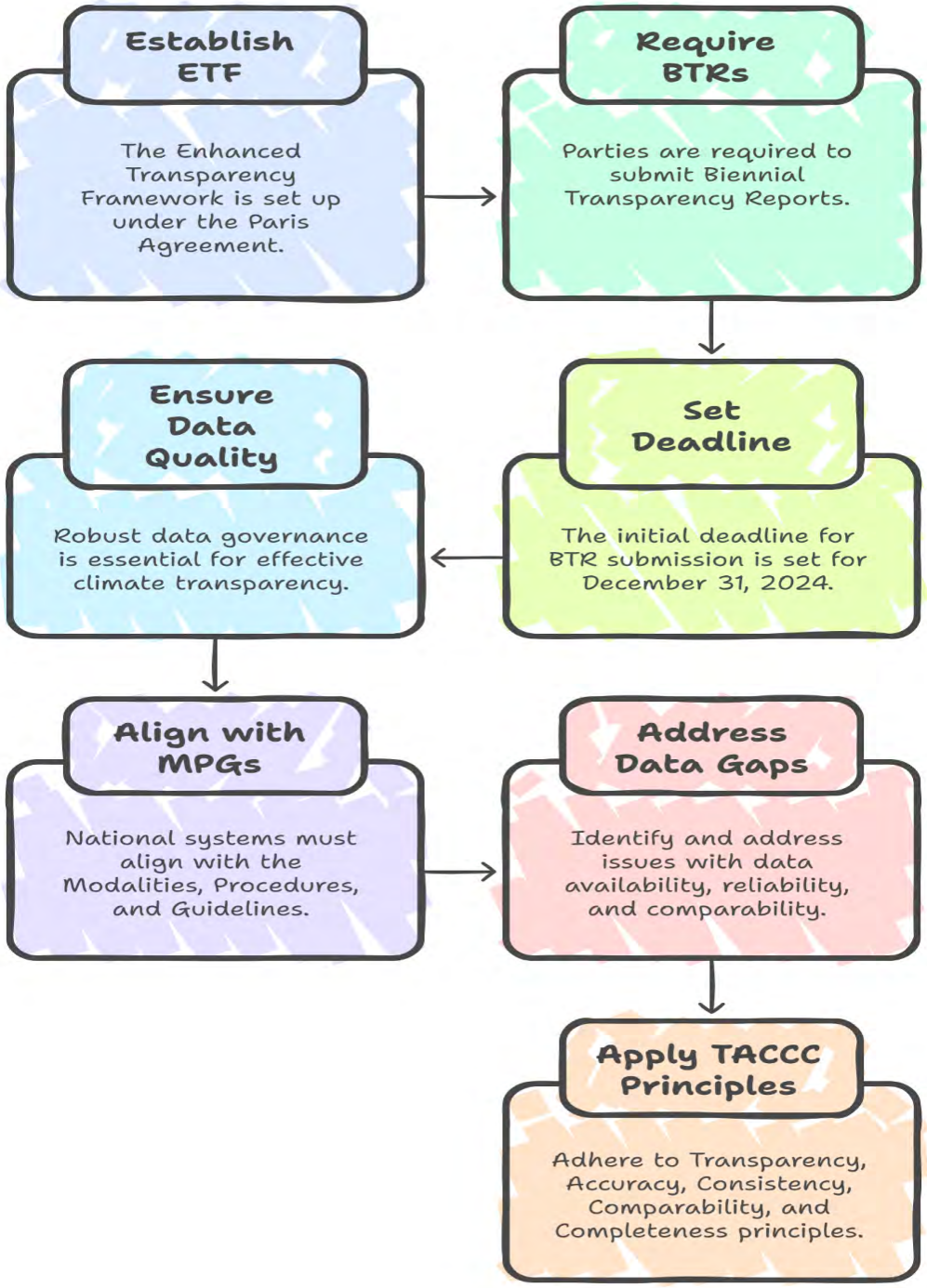
Data gaps in climate-related reporting encompass several dimensions:

- **Availability:** Issues with coverage, granularity, and accessibility of data
- **Reliability:** Concerns about quality, auditability, and transparency
- **Comparability:** Challenges in comparing or ensuring consistency between available data sources



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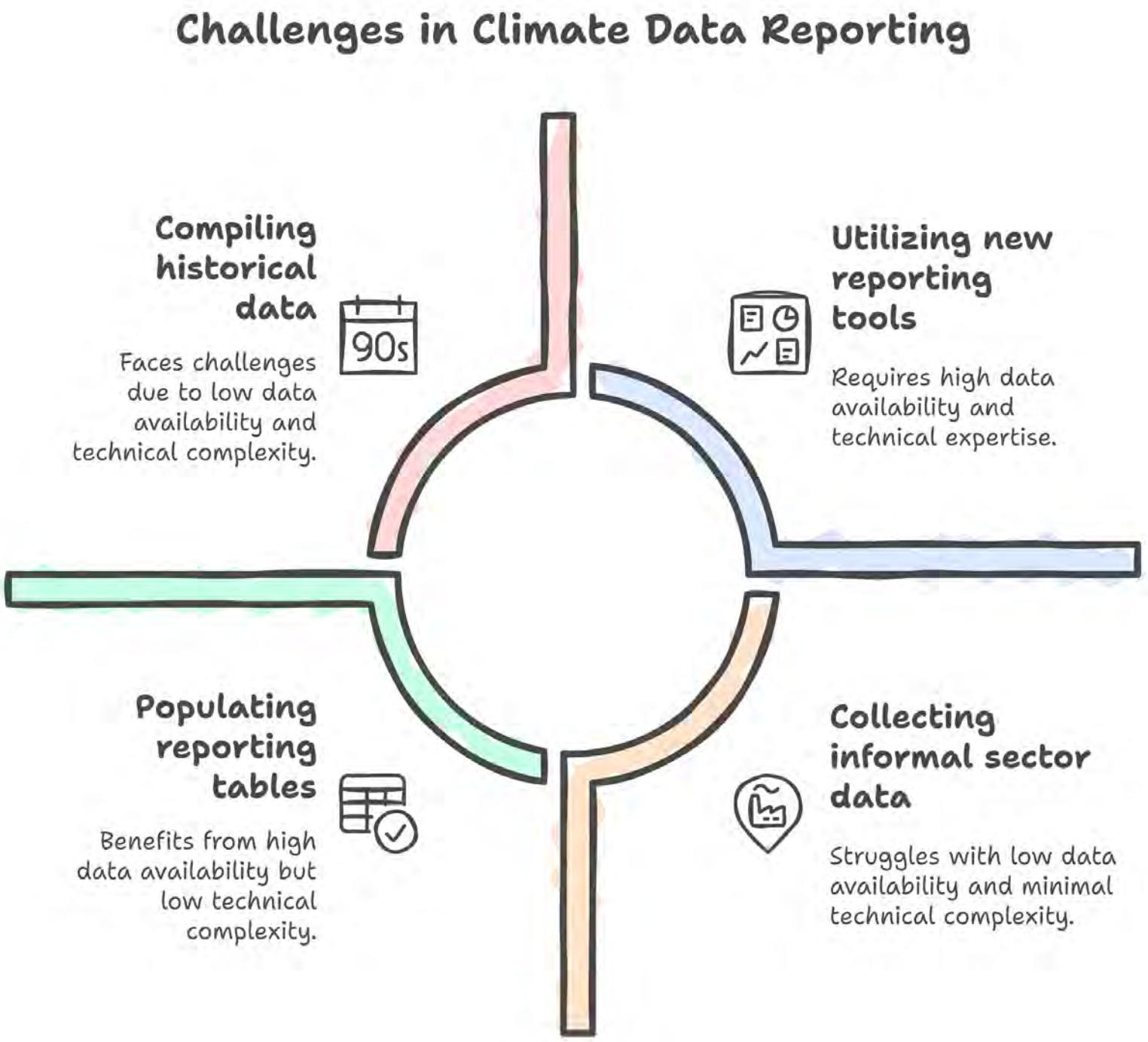
Data Availability and Collection Challenges



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Methodological and Technical Complexities

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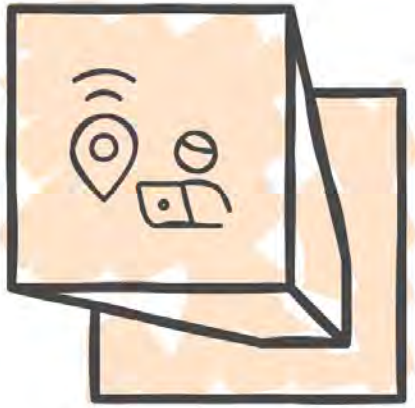
Proxy Data Usage

Proxy data usage conserves resources but increases data uncertainty.



Advanced Methodologies

Advanced methodologies require significant resources but face high data uncertainty.

Basic Methodologies

Basic methodologies are resource-efficient with low data uncertainty.

Comprehensive Data Collection

Comprehensive data collection demands high resources but reduces data uncertainty.

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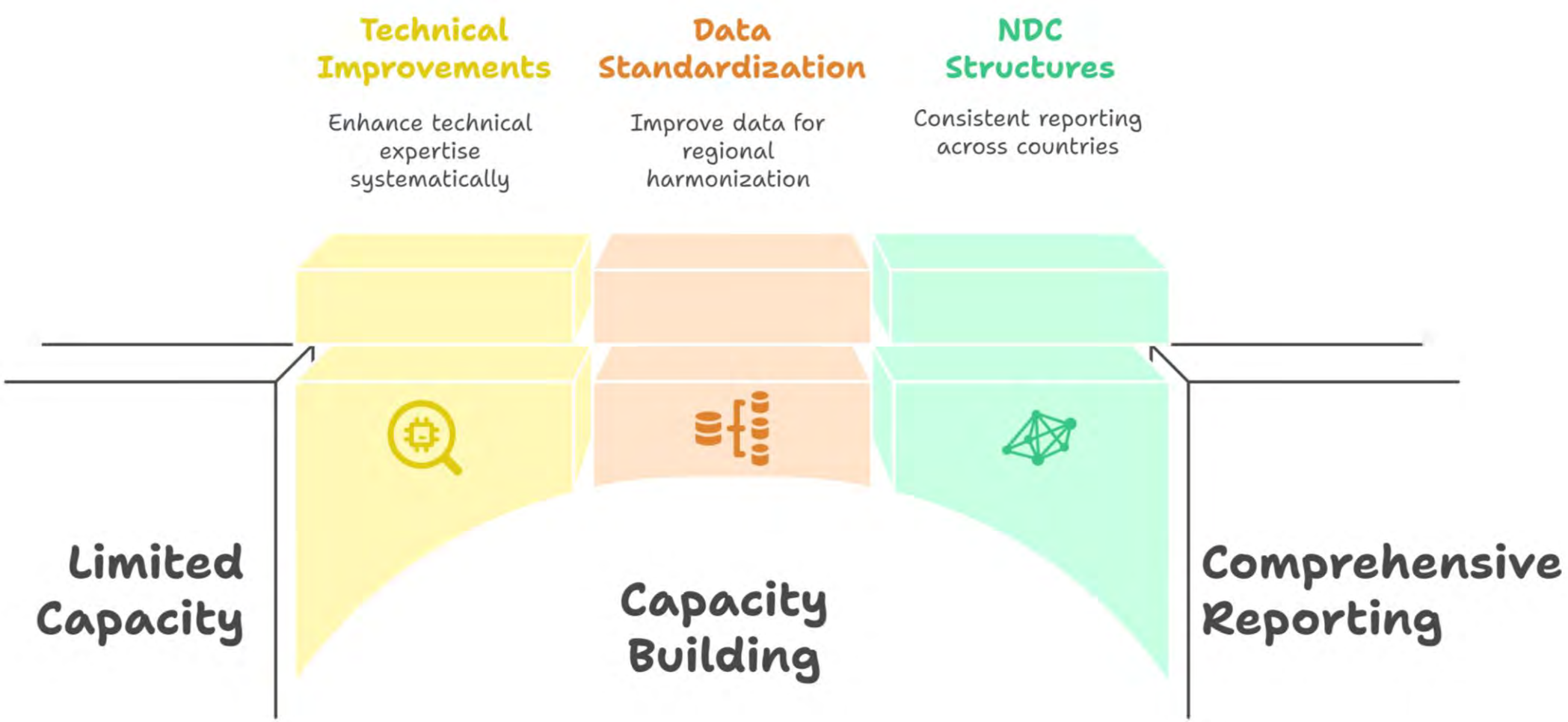
Institutional and Capacity Constraints



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Methodologies for Bridging Gaps

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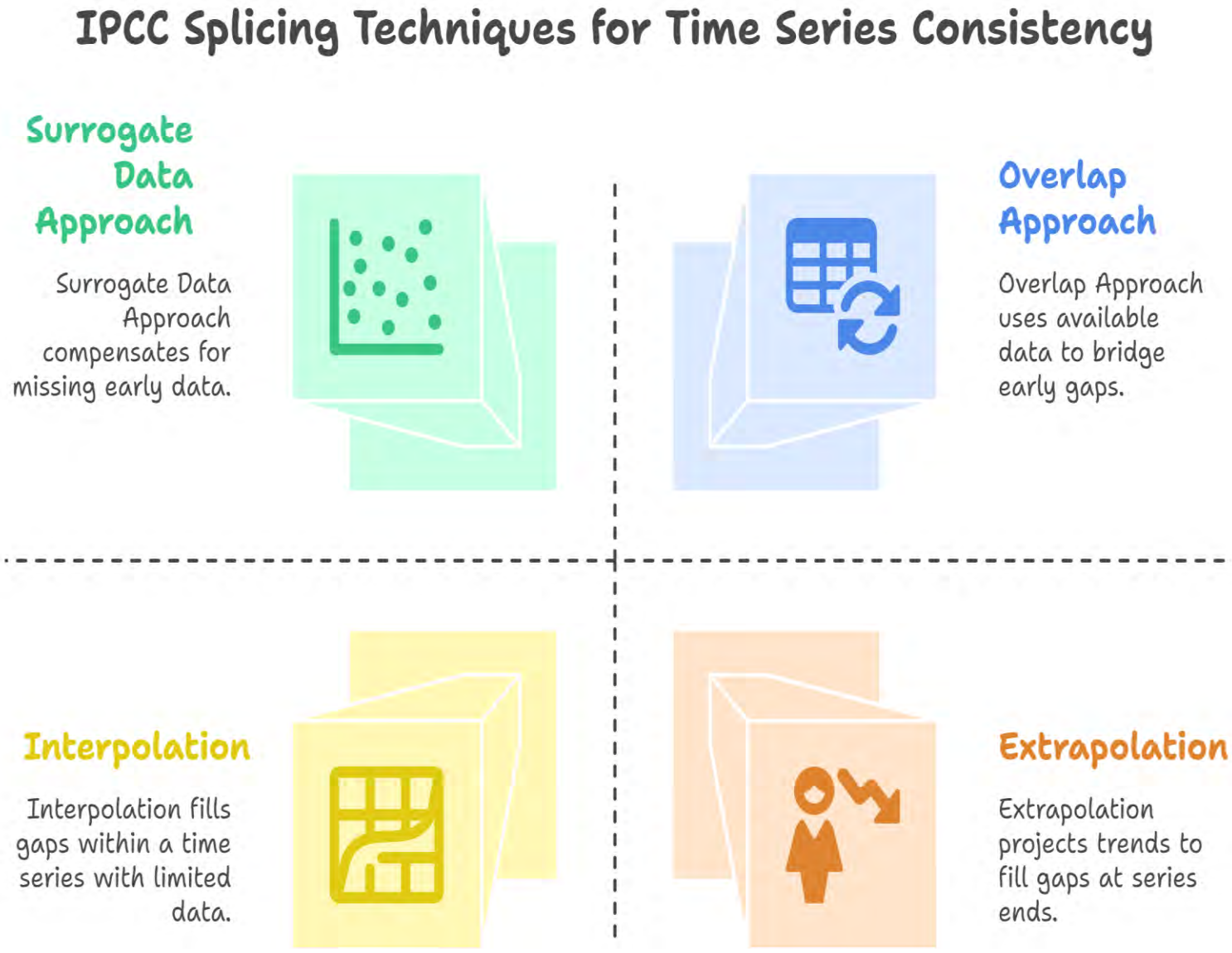
Expert Judgment and Proxy Data:

- **Expert Elicitation:** Consulting with national experts to provide informed estimates based on their knowledge and experience when direct data is unavailable.

- **Proxy Indicators:** Utilizing readily available data that can serve as a reasonable substitute for missing direct measurements (e.g., population growth as a proxy for certain energy consumption trends if specific data is absent).



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Data Harmonization Process Framework

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Establish Objectives

Define business goals and requirements

Create Single Schema

Develop a unified data structure

Data Capturing

Inventory regulatory requirements

Analyzing

Gather and understand similar data elements

Acquire Data Sources

Gather relevant data from various sources

Ingest and Clean Data

Process and refine the data

Defining

Establish clear data element definitions

Reconciling

Agree on common data standards

Uncertainty Assessment and Quantification Methods

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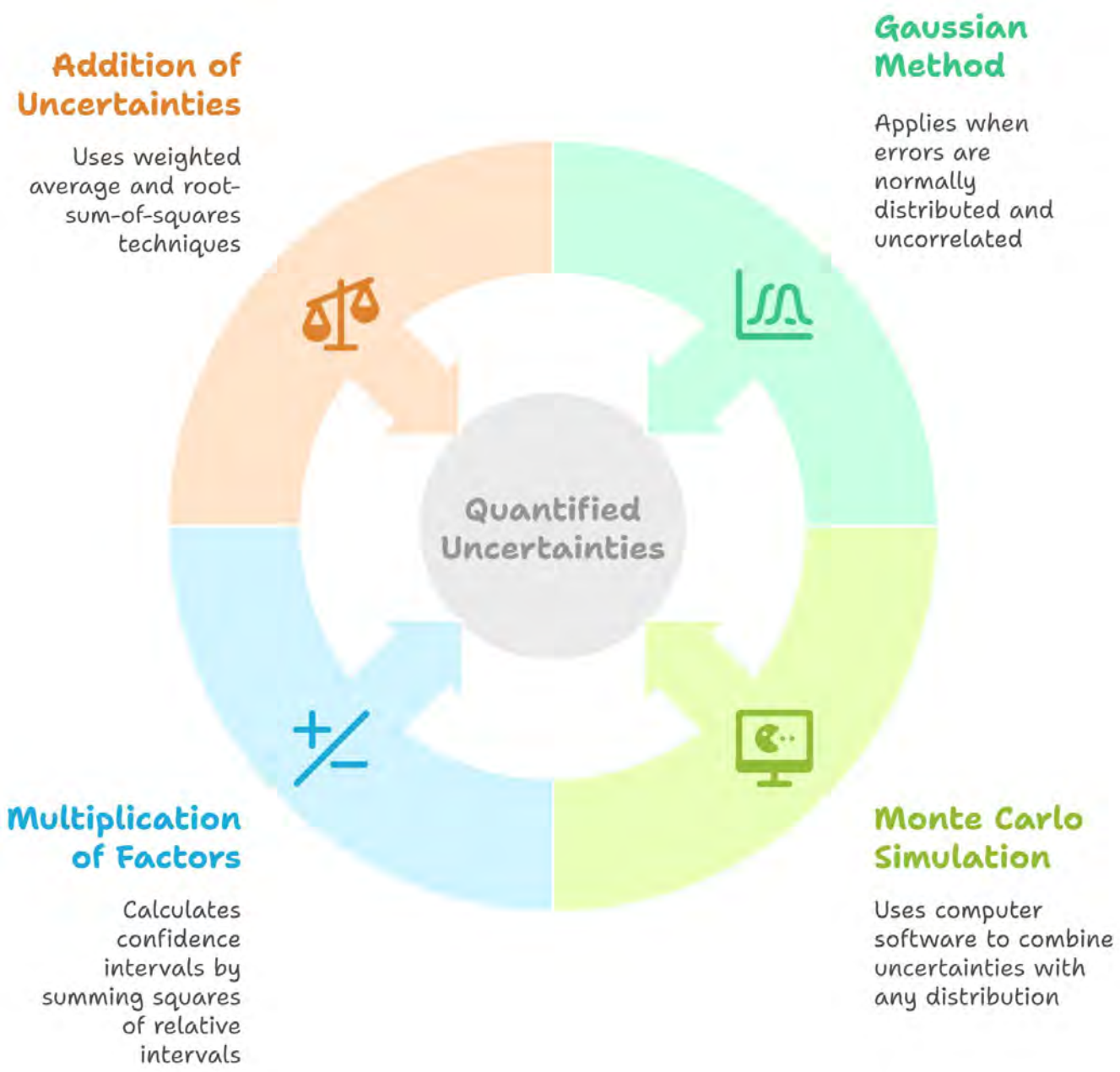
Two main approaches exist for quantifying and combining uncertainties in GHG inventories:

1.First Order Error Propagation Method (Gaussian Method): This approach should only be applied if:

1. Errors in each parameter are normally distributed
2. There are no biases in the estimator function
3. Estimated parameters are uncorrelated
4. Individual uncertainties in each parameter are less than 60% of the mean

2.Monte Carlo Simulation: This technique allows uncertainties with any probability distribution, range, and correlation structure to be combined, provided they have been suitably quantified. While enormously flexible, computer software is required for its use.



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Quality Assurance and Control Systems

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Case Studies

Case Study 1: Bridging Historical Data Gaps in GHG Inventories

- *Challenge:* A country struggled to compile consistent GHG inventory data back to 1990 due to data unavailability and changes in statistical methodologies over time.
- *Solution:* Implementation of a combination of expert judgment, proxy data (e.g., energy consumption statistics from international sources in early years), and interpolation techniques. Collaboration with academic institutions for historical data reconstruction.
- *Outcome:* Achieved a more complete and consistent time series for GHG emissions, improving the accuracy of trend analysis.

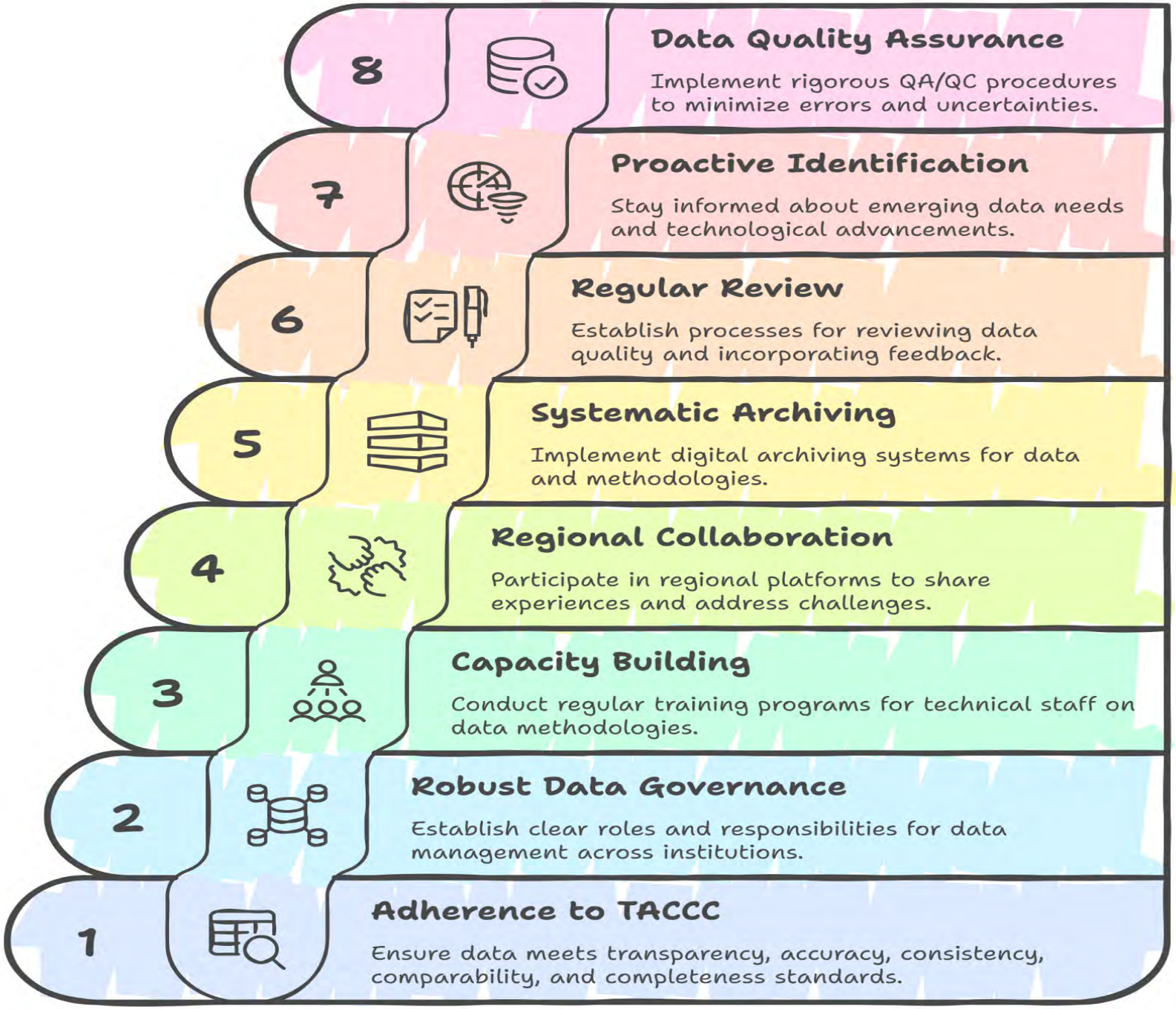
Case Study 2: Improving Data for NDC Tracking

- *Challenge:* Inconsistencies in sectoral data for tracking progress towards specific NDC targets, particularly in the agriculture sector.
- *Solution:* Development of a national working group involving agricultural ministries and statistical offices to standardize data collection methodologies and establish regular data sharing protocols. Implementation of disaggregated data collection pilots.
- *Outcome:* Enhanced granularity and comparability of data for NDC progress reporting in the agriculture sector.

Case Study 3: Addressing Data Deficiencies in Cross-Cutting Themes

- *Challenge:* Limited and aggregated data for reporting on gender inclusion in climate action.
- *Solution:* Introduction of gender-disaggregated indicators in relevant national surveys and project monitoring frameworks. Training for data collectors on gender-sensitive data collection.
- *Outcome:* Improved ability to report on the gender dimensions of climate actions, leading to more inclusive policy development.

Best Practices for Continuous Improvement



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Thank you for your attention !

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Please reach out to us for any question, comments or suggestions!

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