

National Quality Assurance Framework (NQAF)

NQAF is the UN adopted quality standard for official statistics

The framework is a template consists of **19 statements of quality with 250 quality elements** and its supporting documents

The template covers all aspects related to (A) Managing the **statistical system**, (B) Managing the **institutional environment**, (C) Managing **statistical processes** and (D) Managing **statistical outputs**.

The template will come in handy while formulating /operationalizing national quality frameworks.

The implementation guidelines explains how the elements of quality to be devised as per national situations can pertain to national level, agency level, and at programme design and implementation stage and at evaluation stage post collection from the perspective of data users, data providers, funding agency, media and other stakeholders.

Supporting documents to the NQAF template

- Checklist to review lines of the NQAF: Checklist to assess the system/ product by marking 'yes', 'no', 'partially true' or 'not applicable'
- UN guidelines for the template: Guidelines on each of 19 statements of quality to put the right kind of questions so that quality is assured.
- Glossary of terms as in checklist/ guidelines following SDMX's Metadata Common Vocabulary
- Mapping of NQAF with other frameworks like European Statistics Code of Practice (CoP), International Monetary Fund's Data Quality Assessment Framework (DQAF), Latin America and the Caribbean Regional Code of Good Statistical Practice (LAC) and Statistics Canada Quality Assurance Framework (StatCan)
- Nationally and internationally developed data quality reference

Benefits

- It is envisaged that on contextualising these 19 quality aspects of the generic framework by the official statistical agencies, the quality standards will be set.
- On implementation and continuous monitoring of the framework, quality of the statistical production will improve.
- Even the quality standards can be re-worked after regular review.
- Since the effort will also improve transparency in procedures being applied in the statistical production, the data users will be able to assess the product before using it.

Assessment of the Indian Statistical System w.r.t the NQAF checklist

NQAF Statements		Number of elements falling under the category				Total no. of elements
		Yes	No	Partially True	Not applicable	
A	Managing the statistical system	33	3	18	0	54
NQAF1	Coordinating the national statistical system	9	1	6	0	16
NQAF2	Managing relationships with data users and data providers	11	1	7	0	19
NQAF3	Managing statistical standards	13	1	5	0	19
B	Managing the institutional environment	27	7	29	0	63
NQAF4	Assuring professional independence	5	0	5	0	10
NQAF5	Assuring impartiality and objectivity	5	0	2	0	7
NQAF6	Assuring transparency	2	0	4	0	6
NQAF7	Assuring statistical confidentiality and security	8	0	4	0	12
NQAF8	Assuring the quality commitment	7	5	9	0	21
NQAF9	Assuring adequacy of resources	0	2	5	0	7

Assessment of the Indian Statistical System w.r.t the NQAF checklist

NQAF Statements		Number of elements falling under the category				Total no. of elements
		Yes	No	Partially True	Not applicable	
C	Managing statistical processes	25	2	26	1	54
NQAF10	Assuring methodological soundness	7	1	9	1	18
NQAF11	Assuring cost-effectiveness	5	0	7	0	12
NQAF12	Assuring soundness of implementation	9	0	5	0	14
NQAF13	Managing the respondent burden	4	1	5	0	10
D	Managing statistical outputs	23	6	50	0	79
NQAF14	Assuring relevance	3	2	4	0	9
NQAF15	Assuring accuracy and reliability	2	1	15	0	18
NQAF16	Assuring timeliness and punctuality	4	0	9	0	13
NQAF17	Assuring accessibility and clarity	13	1	6	0	20
NQAF18	Assuring coherence and comparability	1	0	12	0	13
NQAF19	Managing metadata	0	2	4	0	6
Overall Assessment		108	18	123	1	250
Overall Assessment in %		43.4	7.2	49.4	-	68.1*
* sum of 'yes' and 0.5 x 'partially true'						

Assessment of the Indian Statistical System w.r.t the NQAF checklist

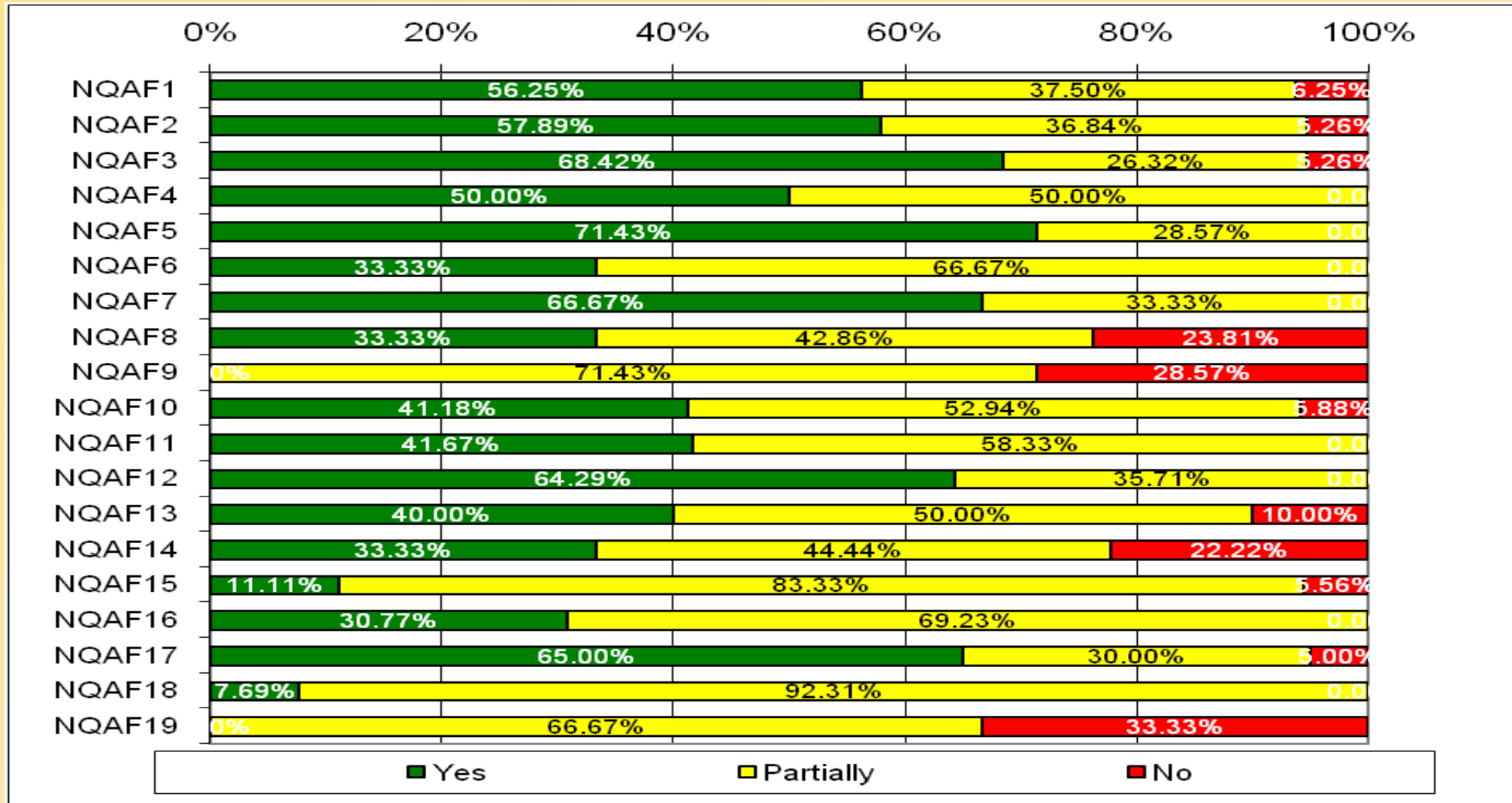
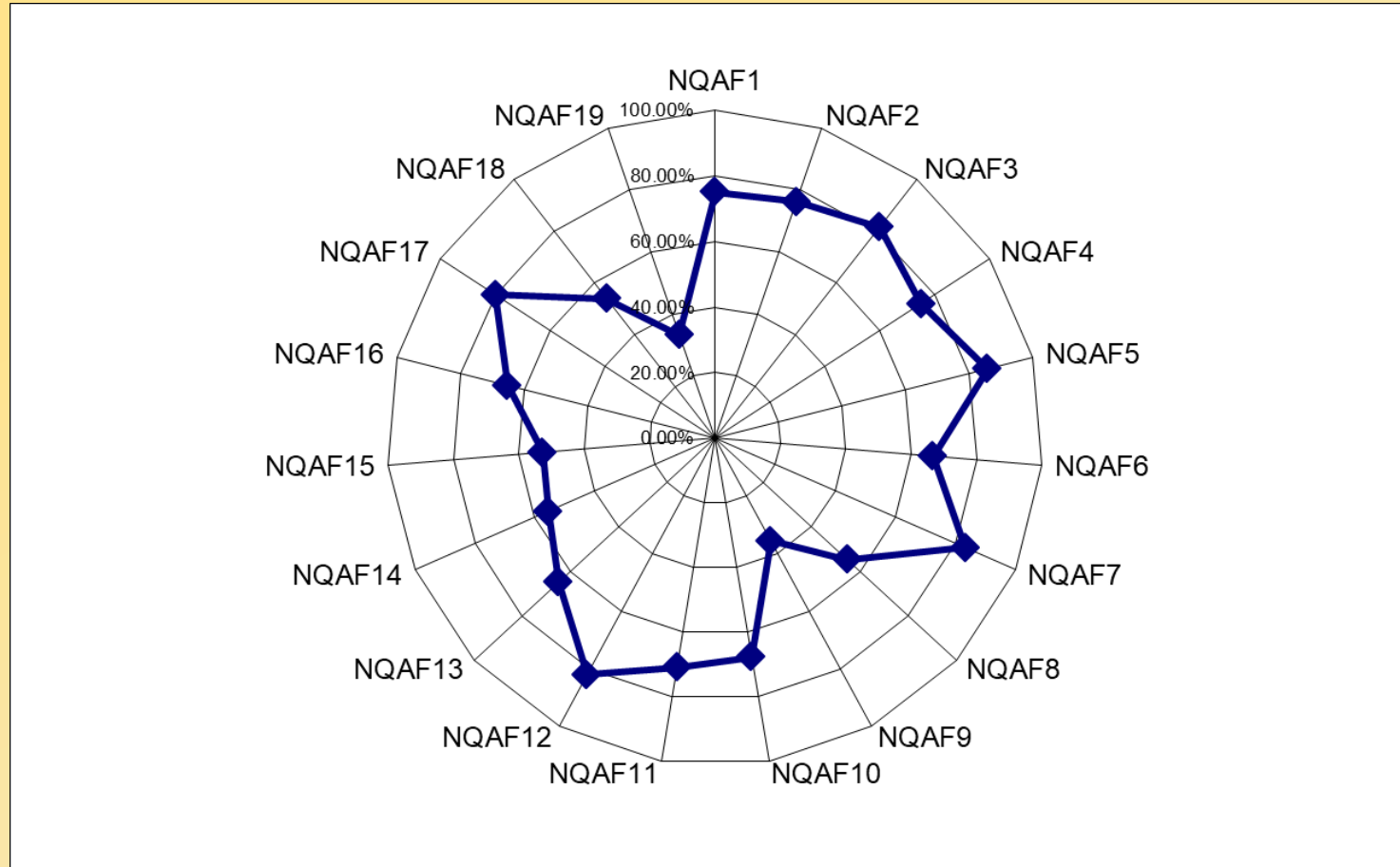


Chart showing the over all assessment



Weighted average of 'Yes' and 'Partially true' eliminating 'Not applicable'

Details on the gap in comparison with the NQAF

- legislative framework for establishment of NSO
 - conducting training courses for users on interpreting statistics
 - involvement of users and data providers in the process for originating, developing and approving statistical standards
 - documentation for each stage of production
 - identifying indicators (quality measures) for evaluating the quality of the main stages of production
 - training to staff on quality policy and auditing techniques
 - prescribing quality assurance plans, quality reviews by external experts, having adequate financial and human resources to implement the statistical work programs
 - having Management information systems
- etc.

Quality indicators

- As per NQAF, procedures and or guidelines need to be in place for implementing quality management. The guidelines should include documentation on the entire statistical process , method of monitoring and identifying quality indicators for evaluating the quality of the main stages of production
- Quality indicators for a statistical product can describe a product in terms of relevance, accuracy and reliability, timeliness and punctuality, coherence and comparability, accessibility, clarity etc .
 - error estimate or response rate
 - data annotation: that enables a file to be maintained with descriptors which describe the quality attributes of data of a file/ the quality of a record and were used to decide to include in further computation (RAND corporation used data annotation as early as 1980)

Non-response errors

- NQAF-15 provides *inter alia* for measuring, evaluating and systematically documenting sampling and non-sampling errors
- Generally agencies take measures to reduce non-response errors but not to measure
- measuring enumerator bias using interpenetrating sub-sampling, followed in NSSO surveys is useful. However, re-interviewing is not done due to constraints.
- References of measuring Non- sampling errors:
 - A study was designed to evaluate the relative importance of the type of errors (non-response and measurement errors in household panel surveys) using a model in 2015. Measures were taken based on the output of the study.
 - Studies to test various means to improve response or accuracy of reporting
 - UN report of 2005 explains various aspects of non-sampling error measurement, their evaluation and control.
 - Interestingly, studies were also held to quantify the non-sampling error in large data sets of administrative origin in US Census Bureau out of a total of 150 error types identified by the experts

Data Quality and Statistical Disclosure Control

- As per NQAF, access to microdata is allowed for research purposes, subject to specific rules and protocols on statistical confidentiality that are made known publicly and posted on the agency's website.
- We follow Dissemination of unit level data by deleting / suppressing identification particulars of respondents to protect their privacy and confidentiality. Indirect identification of the respondents may still be possible
- **To overcome the problem of inadvertent disclosure of identity,** restricted data procedures are followed by agencies and may even transform data by various methods so that release of the transformed data adequately limits disclosure risk. In this context, **Data Quality Rests on balancing the usefulness of micro-data and requirement of confidentiality protection. A documentation in this respect will ensure transparency and will facilitate users.**

Thank You