

BRIEF ON MONITORING TOOLS

I. Results framework :

Monitoring and evaluation (M&E) provide information to stakeholders that lead to project improvements, funding decisions, accountability and learning. A strong results-based M&E component allows decision-makers to assess to what extent expected outcomes are being achieved, how achievements relate to key inputs (physical and human resources and operational processes), and whether corrective measures are necessary.

The results framework under TEQIP-II has more systematic monitoring mechanisms (for example a web-based MIS) that are reviewed periodically at National, State and Institutional level and are verified by third parties (i.e. mentors and consultant firms).

Results Framework in the form of Outcomes & Outputs is given in the following table:

Expected outcomes	Expected Outputs	Indicators
Strengthened Institutions with improved learning outcomes and employability of Graduates	Autonomy for institutions	No. of institutions with autonomy
	Accredited programmes	No. of UG and PG programmes accredited
	Higher and quality placement for students	<ul style="list-style-type: none"> • Rate of campus placement of graduates • Annual salary package offers to graduates • Rate of high quality graduates (those having 75% or more aggregate score/grade)
	Enhancement of PG recruitment	No. of new PG programmes introduced
	Enhanced learning facilities	<ul style="list-style-type: none"> • No. of laboratories taken up for modernization and strengthening of laboratories • No. of classrooms modernized • No. of libraries strengthened and modernized with increased access to knowledge resources • No. of centralised and Departmental Computer facilities
	Pedagogical training to faculty	<ul style="list-style-type: none"> • Number of faculty trained. • Student's feed back on teacher competence improvement by Performance Audits
Scaled-up Post Graduate education and demand-driven Research & Development and Innovation	<p>Enrolment of additional M Techs with teaching assistantships for non-Gate scholars</p> <p>Enrolment of additional PhDs with teaching assistantships for Gate scholars</p>	<ul style="list-style-type: none"> • Number of new M Tech/PhD students and post doctoral fellows. • Number of externally funded R&D projects. • Revenue generated through consultancies. • Number of publications in refereed journals, citations and patents obtained/filed. • Number of collaborations with other institutions

Expected outcomes	Expected Outputs	Indicators
Focused attention to weaker students	Finishing school in each institution	No. of placements of weaker students in reputed industries
Multi-disciplinary applicable research in specific thematic areas in close collaboration with industries.	Establishment of centers of excellence	<ul style="list-style-type: none"> • No. of exchange programmes of research students and faculty with foreign collaborating institutions. • No of Conferences/Seminars/Symposia and Workshops organized at National and International level. • No. of Publications in peer-reviewed journals. • No. of Patents obtained and filed. • Number of Industry Chairs secured. • No. of MOUs with industry and academia, both within India and abroad. • No. of Innovations commercialized.

II. Web-Based Management Information System (MIS):

In TEQIP-I reporting & monitoring was periodic and paper-based which was resulting in excessive paper work, delayed, inconsistent and erratic information flow to National and State implementation agencies. Drawing upon the lesson from TEQIP-I, the monitoring system in TEQIP-II was planned to be more effective, systematic and user-friendly i.e. in the form of a web-based management information system (MIS) at National, State and institution levels.

Through web-based MIS a good amount of information on academic processes, practices and project implementation can be collected easily from each institution for effective monitoring of the project implementation.

MIS helps in:

- Effective monitoring of large number of institutions,
- Informs stakeholders on the extent to which the project is meeting the desired objectives,
- Provides quick, correct and reliable information on all project functions,
- Provides bases for decision making, and
- Suggest pointers for improvement in implementation.

Sets of indicators:

MIS seeks basically the information in three main domains to help policy makers monitor the academic performance (growth over & above baseline) of the institutions.

(a) Institutional Profile

- Basic information
- Schools/Departments
- Faculty and staff: profile
- Programmes offered: UG, PG, PhD
- Students enrolment: UG, PG, PhD
- Infrastructure

(b) Academic Excellence:

- Accreditation (NBA) of programmes
- Training & development of faculty and staff
- Updating curricula with involving industry
- Students performance, training, and placement
- National/International publications
- Technology development, innovations
- Partnership with industry for academic processes
- Continuing education programmes

(c) Systemic Excellence:

- Effective governance with participation of stakeholders (4 meetings of BoG each year)
- Obtain and implement autonomies
- Delegation of powers to senior officials
- Early diagnosis of academic weaknesses in students and supporting such students
- Incentives to meritorious teachers
- Innovation in teaching-learning processes
- Reducing faculty/staff vacancies
- Enhancing revenue generation
- Appraisal of overall quality of education by students.

III. External Assessment of Performance:

Performance assessment is carried out through (i) Surveys (ii) Audits and (iii) Conduct of Studies.

(i) Surveys :

- Assessment Surveys: The Assessment Surveys, will measure changes in the quality of education in the project institutions through formative and summative assessments of performance. Assessment Surveys to be undertaken are:
 - Student Satisfaction Surveys: To measure the quality of education being provided by project institutions, annual Student Satisfaction Surveys will be conducted. The Surveys will measure students' satisfaction with methods and quality of teaching and learning, quality of faculty, adequacy and quality of infrastructure and facilities available for academic and other co-curricular activities, etc.
 - Faculty Satisfaction Surveys: Annual Faculty Satisfaction Survey will also be conducted. The Surveys will measure faculty's satisfaction with the quality of students, opportunities available for career advancement, up-gradation of skills viz. educational qualification, modern pedagogical training, etc.
 - Implementation Surveys: The Implementation Survey will get feedback from officials of nodal implementing agencies [MHRD, NPIU, and SPFU] and personnel from Institutions involved in Project implementation about Project design, implementation, impact and performance.
 - Employer Satisfaction Surveys: The Employer Satisfaction Surveys will assess the acceptability level of graduates from project institutions. The change in Employer Satisfaction will be a measure of the quality of education provided by project institutions. These Surveys will be undertaken at the mid-term and at the end of the project.

(ii) Audits :

- Institutional Audits: Audits will be conducted to ascertain the validity and reliability of information and to also provide an assessment of Project's internal control. Auditors will assess progress made under the Project and processes related to technical and fiduciary aspects of the Project.
 - Performance and Data Audits: Performance and Data audits will be carried out annually to assess progress made by all project institutions to achieve set goals as per their plans given in IDPs like implementation of agreed reforms, accuracy, and validity of data, progress in faculty development, utilization of resources and achievement of targets set by the Institution to achieve academic excellence.
 - Fiduciary Audits: The Fiduciary Audits, conducted by the World Bank, will cover Post-Procurement Reviews and Financial Management Reviews.

(iii) Conduct of Studies:

- Resources Utilization Study: The objective of the Resources Utilization Study, to be conducted by the NPIU, is to assess the extent of availability and utilization with respect to equipment, books and learning resources and suggest strategies for their optimum utilization and sustenance. It will be conducted twice, firstly before the Mid-Term Review (after two years from the implementation of the Project) and secondly at the end of the Project.
- Bibliometric Study: It will quantitatively assess research output and publication performance in Engineering Institutions.
- Impact Assessment Study: The objective of the Impact Assessment Study will be to assess the impact that can be attributed to the Project in up-grading the quality of Engineering Education offered by project institutions and in producing better skilled and more employable graduates.