IMPLEMENTATION COMPLETION AND RESULTS REPORT

THIRD TECHNICIAN EDUCATION PROJECT (CR 3413 – IN)

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NPIU

NATIONAL PROJECT IMPLEMENTATION UNIT

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PART – II : ANNEXURES

ABBREVIATIONS AND ACRONYMS

AICTE	- All India Council for Technical Education
A & N Islands	- Andaman and Nicobar Islands
CAIs	- Computer Aided Instructions
CE	- Continuing Education
DTE	- Directorate of Technical Education
FMS	- Financial Management System
GOI	- Government of India
ICIIC	- Industry/Community - Institute Interaction Cell
ICR	- Implementation Completion Report
IDA	- International Development Association
IRG	- Internal Revenue Generation
J & K	- Jammu & Kashmir
LRUC	- Learning Resource Utilization Center
LRs	- Learning Resources
LAN	- Local Area Network
MHRD	- Ministry of Human Resource Development
MPE&CS	- Multi Point Entry and Credit System
MOU	- Memorandum of Understanding
NCB	- National Competitive Bidding
NITTTR	- National Institute of Technical Teachers' Training and Research, Itanagar
NIFT	- National Institute of Fashion Technology
NPD	- National Project Directorate/National Project Director
NPIU	- National Project Implementation Unit
NTTF	- Nettur Technical Training Foundation, Bangalore
NERIST	- North Eastern Regional Institute of Science and Technology
OHP	- Over Head Projector
PAD	- Project Appraisal Document
PPIU	- Polytechnic Project Implementation Unit
SPIU	- State Project Implementation Unit
SDRs	- Special Drawing Rights
SC/ST	- Scheduled Caste/Scheduled Tribe
TNA	- Training Need Assessment
TVE&T	- Technical Vocational Education & Training
UT	- Union Territory

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EXECUTIVE SUMMARY

The Third Technician Education Project, conceived during 1999 became effective in January 2001. It was directed towards developing polytechnics in the States/Union Territory (UT) of Andaman and Nicobar Islands (A & N), Arunachal Pradesh, Jammu and Kashmir (J & K), Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. The Project provided a special focus in these States and UT towards capacity building of polytechnics, enabling them to enhance their roles, improve their performance, and produce competent technician manpower.

The Project objectives were broadly categorized into three components:

- ***Capacity Development/Expansion*** which related to establishing six new co-educational polytechnics and a skills development center, introducing courses in new and emerging technologies, strengthening twelve existing polytechnics and enhancing intake, introducing continuing education and non-formal training programs for industry and community, and improving student and faculty housing facilities.
- ***Quality Enhancement*** to be achieved by developing/revising curricula, modernizing existing and establishing new laboratories and workshops, improving staffing and imparting need based faculty and staff training, augmenting the variety and increasing utilization of learning resources and media, adopting better teaching/learning practices and promoting interaction with industry and community.
- ***Efficiency Improvement*** through establishing state and institutional units to manage the Project, conducting research studies, use of effective financial management practices, provision of autonomy to polytechnics, introducing training and placement services, networking with other Project Polytechnics and other leading institutions, and ensuring State policy support.

Indicators and benchmarks were used to monitor Project implementation progress and achievement.

The direct beneficiaries from the project were to be youth (both school pass outs, unemployed school dropouts from rural and tribal areas), potential entrepreneurs, and prospective investors, industrial and field workers, apart from the state administration. The empowerment of youth was expected to benefit young women also through improved gender equity and women employment in technical vocations. In a similar manner, other sections of the disadvantaged population were also expected to gain from the Project. Long term benefits were anticipated in terms of economic security for a significant proportion of the population.

Project States and UT have accomplished almost all targets, except in a few cases. The successful accomplishment can be attributed to the faculty and staff of the Project Polytechnics, State and UT administration, the facilitation provided by all the four NITTTRs and NTTF and other networked institutions, the SPIUs, the NPIU and most of all the World Bank Project team and the National Project Director who keenly followed the Project and ensured its success.

States have assured that the benefits from the Project will be sustained through continued interest and fund flow from the respective governments. Many lessons have been learnt from this Project. Among them must be mentioned the manner in which state and institutional leaders worked with a sense of ownership and perseverance, the model of inter-department collaboration exhibited in the Project territory, and the deliberate efforts to ensure benefit flow from the Project.

The original cost of the Project was Rs 3290 million, which was due to changes in exchange rate, revised to Rs 3750 million in December 2005 and further revised to Rs 3805 million in December 2006 which has been fully utilized.

PART – I

PROJECT IMPLEMENTATION ASSESSMENT

A. PROJECT OBJECTIVES AND CONCEPT

The Third Technician Education Project, conceived during 1999 became effective in January 2001. It was directed towards developing polytechnics in the States/Union Territory (UT) of Andaman and Nicobar Islands (A & N), Arunachal Pradesh, Jammu and Kashmir (J & K), Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. The Project provided a special focus in these States and UT towards capacity building of polytechnics, enabling them to enhance their roles, improve their performance, and produce competent technician manpower.

The targeted States and UT are remote and span the borders of the country. Most of these areas possess a hilly terrain, are of comparatively low population density, with a predominantly tribal populace. Access and communication channels with the country's mainland were weak in the pre-Project period, though they have improved of late. The targeted States were unable to fully utilize the opportunities and development scope emerging from the economic reforms undertaken by the Government of India during the last few years of the Twentieth Century. One major reason for this inability was the inadequate availability of relevant technical manpower, which could be productive and could utilize the rich natural resources that abound in the Project area. It was this reason that created a need for this Project.

The Technician education infrastructure that existed in the targeted States / UT in 1999 - 2000 is shown in the Table given below:

States / UT	No. of Polytechnics	Annual Intake
Andaman & Nicobar (A & N) Islands	2	155
Arunachal Pradesh	0	0
Jammu & Kashmir (J & K)	4	560
Meghalaya	1	150
Mizoram	2	150
Nagaland	2	75
Sikkim	0	0
Tripura	1	120
Total	**12**	**1210**

The average intake per Polytechnic in these States and UT was significantly lower than the national average of 174 students (Reference: Annexure – G ISTE Handbook 2001). Courses offered were conventional, the institutions were under-staffed, and their physical resources either obsolete or inadequate. In the context of the development of these pockets of the country, the polytechnics needed urgent and serious attention, which the conceived Project was designed to provide.

A significant number of benefits were expected from the Project to the targeted States and UT. Among them were :

- Provide proper educational engagement and specialized preparation for employment for secondary school leavers and ensure that their talents are directed towards productive activities,
- Augment the earning capacity of unemployed youth and school dropouts through non-formal technical training,
- With the availability of ample and competent technical manpower, generate a climate conducive for investments by industry and business and for the establishment of entrepreneurial ventures,
- Accelerate the advent of new technologies and consequent benefits in terms of industrial products and productivity, and
- Use the technician pass outs to improve public services, networking among Polytechnics within the Project States and UT, and, increase efficiency and accelerate workflow in State and local administration.

The direct beneficiaries from the Project were to be youth (both school pass outs, unemployed school dropouts from rural and tribal areas), potential entrepreneurs, and prospective investors, industrial and field workers, apart from the state administration. The empowerment of youth was expected to benefit young women through improved gender equity and women employment in technical vocations. In a similar manner, other sections of the disadvantaged population were also expected to gain from the Project. Long-term benefits were anticipated in terms of economic security for a significant proportion of the population.

The Project was broadly categorized in three components:

1. ***Capacity Development/Expansion*** to be achieved by:

- Establishing six new co-educational polytechnics and a skills development center with courses in new and emerging technologies,
- Strengthening twelve existing polytechnics and introducing new programs, and enhancing intake,
- Introducing continuing education and non-formal training programs for industry and community, and
- Improving student and faculty housing facilities.

2. ***Quality Enhancement*** to be achieved by:

- Developing/revising curricula to meet current and future labor market needs as well as imparting entrepreneurial skills,
- Modernizing existing laboratories and workshops,
- Improving staffing and imparting need based faculty and staff training,
- Augmenting the variety and increasing utilization of learning resources and media,
- Adopting better teaching and learning practices, and
- Promoting interaction with industry and community.

3. ***Efficiency Improvement*** to be achieved by:

- Establishing/strengthening state boards/councils/directorates and other support units dealing with technician education to provide better planning, monitoring and guidance,
- Conducting research studies for systemic reforms,
- Instituting computer-based Project and financial management systems,
- Providing substantial academic, financial, managerial and administrative autonomy with accountability to Project Polytechnics,
- Introducing Training & Placement services for students,
- Networking of polytechnics with other institutions/organizations, and
- Enhancing state-level policy support for technician education.

The Project design incorporated specific targets and indicators to profile the intentions mentioned above into a measurable and observable frame. The indicators were drawn from the experiences of two earlier Technician Education Projects. The indicators were used as 'achievement drivers' in Project implementation and as benchmarks in monitoring. The Annexure - 1 depicts the targets and status of their achievements.

B. ACHIEVEMENT OF PROJECT OBJECTIVES

Capacity Development/Expansion

Existing Polytechnics

The infrastructure in all the 12 existing polytechnics was strengthened in all aspects of component one i.e. Capacity Development/Expansion.

New Polytechnics

During Project initiation, 6 new polytechnics, (one each in Arunachal Pradesh and Nagaland and 2 each in Meghalaya and Sikkim) had been planned and approved. Subsequently, on request, 3 more new polytechnics (2 in Jammu & Kashmir and 1 in Tripura) were added. These 9 new polytechnics made access to technician education much easier to the local population and established centers for the diffusion of technologies to all inhabited but comparatively backward corners of the targeted States.

All these new polytechnics have become functional and are admitting students on a regular basis.

New Programs Introduced

The original target for starting new courses was 52, 45 diploma and 7 post diploma. During the Mid Term Review and subsequent period, due to poor response/necessity to meet demand of local aspirations the target of new courses were revised to 60, 57 diploma and 3 post diploma. The new post diploma courses started were Marine Engineering, Deck Cadet in the UT of Andaman & Nicobar Islands and Information Technology in Meghalaya. All the new courses were designed to cater to both current technical manpower inadequacies and future needs related to the proposed developments in the next two five-year Plans of the States and aligned to ongoing technological advancements in the rest of the country.

The new courses introduced included : Information Technology, Electronics & Hardware Maintenance, Computer Science & Engineering, Tool & Die Making, Manufacturing Technology, Automobile Engineering, Marine Engineering, Deck Cadet Course, Textile Design, Fashion Technology, Food Technology, Wood Technology, Leather Technology, Instrumentation & Control, Medical Electronics, Medical Laboratory Technology, Hotel Management & Catering Technology, Travel & Tourism, Herbal Remedies & Cosmetology, most of which were new technologies for the targeted area.

The selection of courses was aligned to the specific functional and economic needs of the States and UT. For example, Costume Design & Garment Technology and Textile Design courses would assist the Handloom and Knitwear industries in Jammu & Kashmir and Meghalaya. With the growth of tourism and the hospitality industry, many of the targeted States and UT needed courses to man these industries. In general, the more popular choices related to Information Technology, Electronics & Telecommunication Engineering and Computer Engineering, which were vital for internal and external connectivity. Course relevance was a feature in the Project.

Sanctioned Intake and Enrolment

A total of 5503 seats were created during the Project as compared to 3630 seats available in the pre-Project period making the total seats available to 9133. The increase in seats, the availability of emerging technology courses, the initiation of placement for employment activity, the enhanced interest of industry in the academic processes of the polytechnics, and the improved physical infrastructure resulted in an increase in public interest in Technician Education. The early indicators of this impact were the gradual increase in the annual enrollment in polytechnics. Enrolment in all States and UT has increased during the Project period to about 85% of the sanctioned intake capacity. The enrolment of students increased from 419 during pre-project stage to 3190 at the end of the Project in Jammu & Kashmir which is 98% of the sanctioned strength which represents a remarkable achievement in the State. It is expected that, within the next few years, as information about these developments gets diffused, student enrollment will further increase to fill all sanctioned intake in the Project States and UT, and, probably, put pressure on the state systems to enhance intake further.

Enrolment of students from socially disadvantaged groups also registered a fairly steep increase. The percentage of women enrolment rose steeply in all States, and in some cases even up to 60% of the coed polytechnic intake (Mizoram). Tripura, in the course of the Project, with due approval of target revisions, established an exclusive polytechnic for women. This constituted a significant impact factor for the Project. The enrolment of women increased from 31.5% (pre-project) to 38.4% at end of Project. In terms of numbers of women students, the enhancement was from 488 to 2988. The UT of Andaman & Nicobar Islands and Tripura have achieved their Project targets. The promising outlook Projected by the polytechnics and government policy initiatives acted as drivers for this achievement.

Enrolment of SC/ST students registered considerable increases in all Project areas, except in the UT of Andaman & Nicobar Islands, where the targets in any case was low, due to the incidence of a migrant population from the mainland and the scattered and abnormally backward nature of most of the islands. All other States provided positive indicators of student enrolment, even to the extent of exceeding Project targets. The States of Arunachal Pradesh, Meghalaya and Nagaland have exceeded their targets.

Wide publicity of courses through local newspapers, local news bulletin, Polytechnic websites and campaign in local schools including outside the State as in Sikkim, local cable network, brochures etc. were the contributing factors for increase in the enrolment including that of women.

The predominant rural and hilly locations of the Project territory supported access to rural students to the Project Institutions. Construction of hostels, providing sufficient seats for men and women, encouraged the enrolment of students as in the case of other categories of disadvantaged students. Achievement exceeded targets in the States/UT of Andaman & Nicobar Islands, Arunachal Pradesh, Jammu & Kashmir, Nagaland and Sikkim.

Continuing Education and Non-formal Training Programs for Industry and Community

New cells to promote Continuing Education, Industry Institute and Community Interaction were established in each Project Polytechnic. These cells were provided with adequate resources to fulfill role expectations and targets. The Project Polytechnics have offered 63 long term and 1257 short term programmes benefiting 5143 persons from industry and 18032 community members excluding beneficiaries from the Community Polytechnic scheme. All States/UT have exceeded the target for offering number of Continuing Education Programmes.

Improving student and faculty housing facilities

During the Project, residential facilities for about 1065 men students and 1252 women students were created in the targeted polytechnics. This acted as a feature of attraction for students from a poor background and from distant locations. This probably acted as a reason for the enhanced women enrollment. A total of 298 additional faculty and staff residences have been created in the polytechnics.

Quality Enhancement

Modernizing existing laboratories and workshops

143 existing laboratories & workshops were modernized and 221 new laboratories & workshops setup in Project Polytechnics. The Project target was exceeded on this issue. All the procured equipments were curriculum relevant. The States and UT setup maintenance cells in each of the 21 existing Polytechnics to ensure that most equipment received preventive and corrective maintenance care within the polytechnic itself.

20 new Computer Centers were established. Requisite software and peripherals were also acquired. The drive for making all students computer proficient was a key impact factor in this Project and this was achieved through modernized curricula and improved computing facilities. Improved computer facilities also motivated faculty members to use computers as an aid to media development and student instruction.

Internet facilities were introduced in all Project Polytechnics and helped enhance their connectivity with leading institutions in the country. Student access to technical information increased with easy access to the Internet.

Developing/revising curricula

Each State established mechanisms to revise and develop curricula. The four NITTTRs and NTTF associated with the polytechnics, and the network institutions provided guidance in curricula development and subsequent implementation.

The diploma courses in the existing 12 polytechnics in the Project States and UT at the start of the Project were of the conventional or core type and were more or less a duplication of courses existing in other States at the pre-Project stage. All existing curricula were revised and curricula for new courses designed with the assistance of consultants (the four NITTTRs and NTTF networked or partnership institutions). The UT of Andaman & Nicobar Islands, obtained strong support from Maritime Training Institute, Mumbai for 2 years and later from Indian Institute of Port Management, Kolkata for their Marine Engineering courses. In the revision and design of curricula, involvement of industry was ensured. Learning experiences to develop skills needed by technicians to perform in the shop floor or field were included in curricula. Soft and general skills like communication, entrepreneurship and managing people at work also found a place in curricula.

An important innovation in course reform was the introduction of course flexibility through Multi Point Entry and Credit System (MPE&CS). This reform promotes student learning at his/her own pace and the choice of a variety of specialization options. Further, the exam system becomes more valid and reliable since it would be credit based rather than marks based. Most of the polytechnic courses (80) were reframed to incorporate this reform, with the assistance of the associated four NITTTRs and NTTF.

Improving staffing and imparting need based faculty and staff training

The existing faculty vacancies during the pre-project stage was 348. Out of this, 322 (93%) were filled by the end of the Project. Against a target of 354 key additional faculty positions, 252 (71%) were filled. Steps have been taken by the Project States/UT to fill up the remaining posts. The faculty student ratio was 1:13.6 (Refer Annexure 5 - Fig. 2). 33% of the total faculty recruited (existing and new) were women.

Out of 652 staff sanctioned, 433 were filled (66%). Against a target of 408, key additional staff positions, 238 (58%) staff position were filled. 38% of the staff recruited for existing and new vacancies were women.

To help faculty development Training Need Assessment (TNA) workshops were conducted for all Project States and UT by the four NITTTRs and NTTF associated with them. The TNA provided a basis for the design and implementation of faculty and staff development. In addition, the NPIU with technical assistance from World Bank conducted a number of workshops for Project planning, budgeting, reporting, financial management, and other key procedures.

The Project was expected to support training of all (550) faculty during the Project period (at an average of 4 weeks per year) through local and foreign training/fellowships. Teacher training in the areas of curriculum development, education technology, instructional resources design and technological content updating of almost all teachers was to be carried out with the assistance of NITTTRs and NTTF and other agencies selected by the States. Some 90 teachers and officials were proposed to be trained abroad to increase their competence in planning, organizing and managing the system. About 250 teachers were expected to be trained in Indian industries in new technology areas for making instructional processes more relevant and increasing industry-institution interaction. The Project also supported the training of about 500 laboratory and workshop staff.

560 (new and existing) faculty members were trained for a total period of 1955 person months against a target of 573 and 2777 respectively. Faculty training was primarily meant to develop skills related to classroom and laboratory instruction, development of institutional and learning resources, management of institutions, practices to promote interaction with industry and community and on Project management and related elements. The development programs and workshops were either in-house or at State headquarters or in suitable locations out side the State.

In addition 4 local study tours were conducted within the country to expose the faculty to the best teaching practices and advance laboratories & workshops facilities. Study tour for 14 Senior Administrators was organized in April 2003 to Germany. A Fellowship program for 39 participants in Germany was also organized.

500 staff was trained for a period of 631 person months against a target of 596 persons and 1463 person months.

Augmenting the variety and increasing utilization of learning resources and media

The polytechnics increased their stock of the Learning Resources (LRs) through two initiatives. The first was to procure readymade LRs like multimedia/CAI packages, OHP transparencies, learning packages, models, laboratory manuals and video programs from the NITTTRs, NTTF, other leading institutions and private sources. The second and more challenging initiative was to develop them in-house after acquiring skills to do so. Teachers were motivated to use media extensively. 2430 learning packages, 826 models, 889 lab manuals, 1889 video programmes, 1606 multi media packages were procured and put to use. In library, books are adequate as per AICTE norms in all Project Polytechnics. The result was that the quality of instruction improved to a large extent in the Project Polytechnics, as reported in the Impact Study.

Adopting better teaching and learning practices

The faculty development programmes enabled Project institutions to utilize LRs effectively in the classroom and laboratory. In fact, the learning methods employed in the institutions became wide reaching. A practice requiring considerable student endeavor was Project work, which provided opportunities for students to develop practical and problem solving skills. One more interesting development was to motivate students to use the Internet as a multidimensional LR. This practice became fairly universal among students in the Project Polytechnics. The use of modern methods and learning resources like audio visual aids, manuals, models, video programmes etc. improved the teaching learning process substantially.

The net impact of these measures can be gauged by the enhancement in enrolment, the increase in pass rate and employability of the pass outs. Student learning did benefit in all respects through the adoption of better practices in teaching and learning.

Average pass rate in first attempt has improved for all States/UT and averages 88% towards the end of the Project period, while student drop out rate has declined in almost all States.

Promoting interaction with industry and community and networking with leading institutions in other States

In spite of the very few industries in the neighborhood of institutions, interaction with industry was promoted through innovative models. One major model involved using the network with other resource institutions to benefit academically from industry. To illustrate, the UT of Andaman & Nicobar Islands had networked with 3 institutions in Maharashtra including Maritime Training Institute in Mumbai. Arunachal Pradesh established strong links with similar discipline groups in North Eastern Regional Institute of Science and Technology (NERIST) at Itanagar. Mizoram networked with institutes in Maharashtra for developing Communication Technology programs. Meghalaya established links with Industrial Development Corporation, private horticulture and other industrial estates in the State. Nagaland and Tripura sought assistance from National Institute of Fashion Technology, Kolkata for the courses run by them. Nettur Technical Training Foundation (NTTF), Bangalore in addition to assisting Sikkim also contributed in running specific programmes and visits for other Project Polytechnics. MOUs with these partners enhanced industrial access in nearby regions for Project Polytechnics and also enabled useful faculty exchanges. Benefits to Project Polytechnics occurred in terms of student training and Projects, exposure to industrial practices, availability of industrial experts for teacher and faculty and staff development. Most Polytechnics have made industrial training compulsory for students for a period of 4 – 6 weeks. The enduring gain from this partnership approach was in the opportunities generated for student employment.

Project Polytechnics, in the course of the Project, trained more than 18000 youth from the community. This scale of achievement is remarkable and exceeds Project targets and expectations. The main approach was through 1257 short-term programs (and a few long term programs) and building strong and mutually supportive relationships with community. The intentions of the programs were transfer of utilitarian rural technologies and consequent income generation, entrepreneurial practices and measures to improve the availability of potable drinking water and sanitation.

In addition, the continuing education efforts resulted in relevant training of 5143 industrial workers. During Tsunami, the communication system in the UT of Andaman & Nicobar Islands depended entirely on the V-sat system of the UT of Andaman & Nicobar Islands Polytechnics. The Polytechnic students/faculty members/staff provided the following services:

- The extension centers provided the essential communication services for rescue operations etc.,
- The communication system of the Islands was restored by the officials in record time,
- Completed the task of preparing the list of affected personnel through modern systems of photo identification etc., and
- Provided food and other essentials for nearly a month to the affected persons.

Efficiency Improvement

Establishing/strengthening state boards/councils/directorates and other support units

Sikkim has established a State Board of Technical Education. Arunachal Pradesh created a Technical section in the Directorate of Higher and Technical Education. Jammu & Kashmir, Meghalaya, Mizoram and Nagaland have strengthened their State Directorate of Technical Education. The UT of Andaman & Nicobar Islands affiliated its Polytechnics first to Delhi Technical Education Board. The UT then got the affiliation to Maharashtra Technical Education Board to have academic autonomy. Subsequently, the UT has got de-affiliation from the Maharashtra Technical Education Board and set up an independent society for the Polytechnics. The Polytechnic in Tripura was affiliated to the West Bengal Technical Education Board. In order to have better academic autonomy, the affiliation has now been shifted to Tripura University.

Conducting research studies for systemic reforms

Research Studies were conducted during the course of the Project period on various issues related to strategy design, Project implementation and outcomes. Studies were conducted to promote women participation, resource generation through transfer and greater societal interaction, Continuing Education and Multi Point Entry and Credit System (MPE&CS). The findings of these research studies were used by four NITTTRs, NTTF, State Governments and NPIU to improve or introduce remedial measures and for new initiatives. A study on Utilization of Resources created under the Project was conducted. A Study on the Assessment of Impact of the Project was also conducted by the NITTTRs. A list of the Research Studies conducted is given in Annexure – 10.

Instituting computer-based Project and financial management systems

The managing of Project finances was computerized in all Project Polytechnics in the course of the Project. Networking of each SPIU with Project Polytechnics enabled the compilation of financial data to occur smoothly. SPIUs were strengthened with adequate computer facilities and necessary software. Financial reporting to NPIU occurred on a regular basis.

Providing substantial academic, financial, managerial and administrative autonomy with accountability to Project Polytechnics

All Project States/UT have granted autonomy to Project Polytechnics in varying degrees. Autonomy in all dimensions has been granted to newly established polytechnics in Arunachal Pradesh and Meghalaya. Full academic and managerial autonomy has been provided to polytechnics in Andaman and Nicobar, Mizoram, Sikkim and Tripura and limited autonomy has been provided to polytechnics of Jammu & Kashmir and Nagaland for financial and administrative purposes. However, considering the novelty of this Project for the benefiting States and UT, the grant of autonomy has to be acknowledged as a bold measure, since even developed States were hesitant to take this step in the earlier Technician Education Projects.

Introducing Training & Placement services for students

Student training in industry registered an increase during the Project due to additional opportunities created by the networked / partner institutions of Project Polytechnics.

Training and Placement services were managed through cells created in each Project Polytechnic. Campus interviews were organized periodically and resulted in the selection of about 1430 students in the year 2006-07. The training in entrepreneurship introduced in Project Polytechnics acted as a stimulus for entrepreneurial ventures by pass outs.

Employers have rated the knowledge, skills and attitudes possessed by the Project Polytechnic graduates from very good to excellent. They desired that more field practice be incorporated in courses to increase pass out quality to still higher levels.

The average unit training cost at the end of the Project amounted to Rs 27,400/- (Annexure – 8).

The monthly income of placed students varied from a stipend of Rs. 2500 to a salary of Rs. 15000. This factor, along with the enhancement in placement was a significant impact factor.

The percentage of pass outs pursuing higher studies has also improved in all States/UT.

Enhancing state-level policy support for technician education

State policies for academic reforms, Project procurement and the appointment of consultants, the strengthening of state units, creation of posts and recruitment of faculty and staff, the new procedures and practices in financial management, and networking with other institutions had to be either altered or formulated. Each state responded to this requirement readily in an effort to support Project implementation.

IRG and Cost Recovery

The Project Polytechnics generated internal revenue to the tune of Rs. 105.92 million during the Project period through a large number of activities such as consultancy to industry, continuing education, testing of materials, production-cum-training centers, LAN work, vehicle maintenance, lending of institute resources, testing and calibration services, fee from students etc. UT of Andaman & Nicobar Islands, Arunachal Pradesh, Jammu & Kashmir, Mizoram, Nagaland and Sikkim have exceeded their Project targets. Other States achieved close to targets.

Other Achievements

Space Availability and Utilization – Civil Works

The civil works encompassed extensions to 12 existing polytechnics and construction of 9 new polytechnics, 147 staff quarters, 151 faculty houses, and hostels to create 1065 seats for men and 1252 seats for women students. In addition, renovations and alterations were carried out in several existing buildings. The estimation of space requirements was done as per AICTE norms.

The approximate unit construction cost in most States was estimated at Rs. 8000-10000 per square meter (about 20% higher than that in most States of India). In the UT of Andaman & Nicobar Islands, the construction cost was expected to be still higher by about 20%. Construction costs are high due to remote locations and difficult terrain of the States; need to transport most construction materials from distant places and the limited number of fair weather days for construction. All civil works were undertaken under NCB, with a procurement specialist agency specially selected to design structures and oversee construction progress.

Almost all the construction work was completed during the Project period with minor delays. The delays can be attributed to inadequate availability of manpower for construction in some locations, late arrival of materials and normal problems arising in the acquisition of land. The clearance mechanism in some States also took its own time. The only partially completed works are in the two new polytechnics in Jammu & Kashmir, and an auditorium in the UT of Andaman & Nicobar Islands. These works were proposed and approved at very late stages during the Project and were expected to spillover into the post Project period, as has happened. The construction in these three cases is likely to be completed soon with the State funding. In any case, the governments of the state and UT sought and obtained reimbursement only to the extent of work done during the Project period.

The average utilization factor at State level for classrooms was found to be around 0.5 for different Project Polytechnics towards the end of the Project in a resource utilization study. This by no means can be considered poor, since the actual students intake has yet to equal sanctioned intake. The utilization factor is likely to rise to 0.7 – 0.75 within the next two or three years, which is equal to the national norm (AICTE).

ISO 9001-2000 Certification

Through the efforts of NPIU, an initiative to obtain ISO9001-2000 certification commenced in most States in 2006. BR Ambedkar Polytechnic in Andaman & Nicobar Islands was already ISO9001-2000 certified. NPIU arranged training at Andaman & Nicobar Islands for other Project States and guidance was provided by the UT Polytechnics as well as NPIU. As a result of the above efforts, 9 Polytechnics viz. Arunachal Pradesh (1), Mizoram (2), Sikkim (2), Meghalaya (3), Nagaland (1) have obtained ISO 9001 : 2000 Certification. The Polytechnics in Jammu & Kashmir are in the final stages of obtaining ISO 9001: 2000 Certification and Tripura has been requested to take up this activity. The passouts of the Polytechnics having ISO 9001 : 2000 Certification have much to gain by way of recognition of the diploma nationally as well as internationally.

Technical Vocational Education & Training (TVE&T)

Though not initially envisaged, Vocational Education programmes were introduced as pilot programmes of Government of India in the Project Polytechnics, which met with huge success and found more takers than the Polytechnics could handle. The Vocational programmes were offered during off hours using the Polytechnics facilities and resources and only limited out-sourcing was done wherever it was found to be absolutely necessary. Most programmes offered were within the expertise and structures available with the Polytechnics. The programmes were modular and competency based and provided certificate at the end of each module. This activity enhanced utilization of resources and provided much needed publicity to the Polytechnics. The list of vocational courses which were conducted in Project Polytechnics is given in Annexure – 13. The total number of persons trained under TVE&T programmes were 3047 through 58 courses conducted during the Project period.

Full utilization of Project allocation

Project allocation of 48.900 million SDRs have been fully utilized. Out of expenditure of Rs 3830.40 million, World Bank has reimbursed Rs 3198.404 million, as per Project Agreement.

C. IMPLEMENTATION MECHANISM

The implementation mechanisms for the Project included a Polytechnic Project Implementation Unit (PPIU) in each Project institution, a State Project Implementation Unit (SPIU) for each of the beneficiary States and Union Territory, a national coordinating agency or National Project Implementation Unit (NPIU) at New Delhi, and National Project Directorate headed by Joint Secretary (T), in the Department of Higher Education, MHRD, Government of India for making Project related decisions.

The monitoring and evaluation mechanism were based on the successful models developed during the two preceding Technician Education Projects. These included periodic reviews by State Secretaries, the NPIU and the NPD. The bi-annual joint reviews with State Secretaries, NPIU and SPIU officials, Polytechnic Principals, Government of India and World Bank, covered all aspects of the Project with special focus on achievements in quality components. The targets or benchmarks offered a platform for monitoring Project progress. These reviews included visits to Project Polytechnics and interaction with the students, teachers, employees and community representatives. Problems or bottlenecks identified during monitoring and review were resolved at the polytechnic or state levels or through joint consultation with the NPIU. Occasionally, the advice of the World Bank mission leaders and members were sought. The mid – term review provided an opportunity for mid course evaluation and corrections as needed. The Project also supported relevant research studies on various Project components. A Utilization of Resources Analysis and Impact Study were also conducted in the closing stages of the Project.

D. PROJECT SUSTAINABILITY

All participating States/UT are keen to sustain the gains that have resulted from the Project. All State Governments/UT have formulated plans assuring budget provisions for recurring expenditure for the next five years. State Governments/UT will also have to consider long term visioning and perspective planning to build on the strengths and opportunities created by this Project. Units, cells and mechanisms created during the Project will continue to function in the future. With state and UT industrial and infrastructural development planned for the future through special Government of India funding, the manpower generated by the Project Polytechnics will prove to be a constructive resource. This would be the major driver for sustainability.

Possible Risks and Remedies

- The Internal Revenue Generated may not match the total financial requirements to sustain institutional operation and development and will only act as a supplement to continued state/UT funding for institutions,
- The Technical Vocational Education & Training scheme for benefiting school dropouts and other youth sections may have to be supported from funds available for other schemes and other government departments in the Project States/UT,
- Faculty/Staff development may not receive adequate impetus as was available during the Project period. The state will have to ensure continuing development through specific policy initiatives,
- Filling up of Faculty vacancies have to be pursued vigorously by States/UT, since faculty turnover (a national phenomenon) is likely,
- Networking among the Polytechnics across the States/UT and with institutions outside the targeted area will have to be strengthened to promote sharing of expertise and resources, and
- The adoption of new technologies suited to the requirements of the Project will be a pressure and opportunity to be anticipated by the Project States and UT. The experience from the Project will serve as an effective preparation for such reforms.

E. BANK PERFORMANCE

The Bank task team's contributions during Project conception, design, planning and implementation and their visits to various sites and frequent interaction with central and state government officials have significantly helped in making the Project implementation a success.

Familiarity with the Indian psyche and the working conditions enabled the World Bank Project team to handle implementation and progress impediments with great understanding and adopt a supportive role. This accelerated clearance of various proposals and Project progress and ensured target accomplishment. Training of Project functionaries by Bank officials in conjunction with the NPIU at critical junctures facilitated the States to follow Bank procedures. In all, the excellent support provided by the Bank, its mission members, the architect and other officials must be acknowledged.

F. BORROWER PERFORMANCE

While some implementation difficulties were encountered in the initial stage, borrowers learnt from experience during the Project and ensured outcomes and achievements. Governmental support was much more forthcoming as the Project progressed. State level implementation mechanism closely monitored the Project and worked for achieving targets. The NITTTRs, NTTF and other partner organizations extended wide ranging support to academic components and assisted Polytechnics in ensuring learning gains to students and institutional quality improvement. They were also instrumental in enhancing faculty and staff capabilities. The National Project Directorate guided and facilitated Project implementation of all components at all stages and monitored Project events closely with NPIU. It enabled the Project States in overcoming obstacles which impeded developments. One major outcome in the Project was the teamwork exhibited by borrowers at different levels and locations. Consensus about the strategies and measures was visible right through the Project in all activities. Most of all, the commitment of Polytechnic teachers towards ensuring Project success must be commended.

G. ASSESSMENT OF OUTCOMES

Target achievement exceeded all expectations in the Project, considering the Project scale and complexity. The benefit or impact achieved through the cluster of strategies, designed for the Project were:

- Enhanced access to technician education through increased intakes, new courses and the establishment of new polytechnics,
- Enhanced quality and relevance in educational offerings,
- Computer proficiency development and regular use of the Internet by a majority of the students,
- Strengthened academically beneficial linkages with industries and field agencies,
- Need based and planned training to institutional faculty, staff and management to enlarge their competence and capabilities and enable them to perform new and innovative roles,
- Added academic and administrative space, faculty and staff residences, and improved student facilities like hostels, canteen, play grounds,
- Introduction of a system of institutional resource and facility maintenance,
- Decentralized decision making for the targeted polytechnics through the provision of enhanced autonomy in academic, administrative, financial and managerial areas, and the adoption of corresponding institutional accountability patterns,
- The early advent of institutional sustainability and increased internal efficiency by adopting various measures like continuing education for both unemployed and employed youth and industrial workers, consultancies, and joint development initiatives with government and the public and private agencies,
- Some steps adopted to increase cost recovery and external efficiency, and
- The introduction of systemic reforms and policy initiatives to support Project strategies.

H. FUTURE OPERATIONS

- Jammu & Kashmir and UT of Andaman & Nicobar Islands would complete the incomplete construction works in 3 locations soon,
- All States will undertake efforts to augment student enrollment further and bring it closed to the sanctioned values,
- Faculty and staff recruitment to fill the remnant vacancies would be accelerated,
- Faculty and staff development will be continued on a planned basis,
- The innovations in academic services offered by the polytechnics would be sustained and enhanced with the addition of new practices,
- Student employment would be promoted further as would be entrepreneurial ventures, and
- The initial mode and key lessons learnt will serve future reforms in the Project States.

Some more details have been provided in Annexure - 16.

I. KEY LESSONS LEARNT

Given the comparative backwardness and inexperience of the Project States and UT, it was anticipated during conception that the Project implementation will run into problems soon after initiation. But the achievements in the Projects indicate a totally different picture, one of perseverance and missionary zeal with which the Project objectives were pursued. What could be the discernable reasons for the remarkable outcomes and impact?

One factor that comes to mind is the focus and application with which key stakeholders addressed Project implementation. These stakeholders were either Project Directors or senior officers of the state bureaucracy. It is this form of dedication that carried the Project through to its successful end. It must be mentioned that Project leadership followed Project events to the point of impact. This holds a lesson for any Project, which has diverse objectives and is implemented by relatively less experienced people.

Another factor that needs to be highlighted is the unexpected collaborative endeavor that was observed between government departments in the implementation process. Viewed as a consistent problem in most States and development Projects in the country, collaboration between government departments is rarely successful in practice. Many models of collaboration have been attempted at top, middle and ground levels. What probably worked in this Project was the effective and highly influencing leadership at all levels and, specifically, the ground level. More detailed studies need to be carried out about the actual model/s that were determinants of inter-department collaboration. These studies are likely to add to learning.

Not much of organizational analysis was performed in the early stages of the Project. In fact, expect for the local implementers, the NPIU or even state level officials could not predict the influence, which various stakeholders would have on the Project progress. Later on, it became clear, that resistance to the Project, if any, was overcome through polytechnic or the SPIU interventions. In reality there appears to be only meager resistance in a few cases. Not much of resistance finds a place in the reports of the Projects, nor are the interventions recorded. The crucial lesson from this experience is that the capacity of the less developed States for managing Projects should not be under rated.

As is observed in most education and other social development reforms, Project progress follows what is well known as the S – curve. The implications are that such developments will move very slowly in the early stages, then gather steam and move forward at a fast pace in the middle stages and slow down for finishing touches towards the end. The S – curve was in evidence in this Project and should be anticipated in Project planning in other reforms that will occur in the future.

The NITTTRs and NTTF provided excellent support in preparation of Detailed Project Reports (DPRs), designing new curricula, revision of curricula, identifying equipment to be purchased, vision - mission statements, strategic planning and execution best practices, attachment to industry, job placement, tracer study and organizing & conducting training programmes for faculty and staff.

The four NITTTRs and NTTF played a significant role in assisting the advent of academic reforms and the improvement of quality in academic services offered by the Project Polytechnics. While credit is due to them, the part played by numerous polytechnic teachers in understanding and adopting a new academic role was highly appreciable. Transferring learning to students in live classroom and laboratory sessions has never been simple. While using an innovative teaching method mix it becomes all the more complicated. That the polytechnic teachers accomplished to the extent reported shows the struggle the teachers must have waged in the course of the Project. Occasional hand holding by four NITTTRs and NTTF faculty, suggestions from the SPIU and NPIU, and most of all the feed back and discussion that World Bank mission visits provided were assisting factors in the change process.

Each World Bank mission visit provides an opportunity for all involved agencies to clarify their concepts and strategies. In fact each visit was a learning event. There is nothing strange if all agencies involved in Project implementation learnt from the discussions in each visit and fine-tuned their strategies. The World Bank guidance and assistance are to be acknowledged for the positive role each team member played during the missions. Without their periodic interventions, the extent of Project success could have been less. A similar recognition is to be given to NPIU, State bureaucracy, SPIUs and the associated four NITTTRs and NTTF.

The Project has made a positive impact. It fulfilled most of the impact objectives. The lesson from this is that if planning is consensual, then all agencies involved in the consensus, will reach beyond outcomes to impact. The initial understanding of impacting indicators is imperative.

ANNEXURE - 1

SIGNIFICANT PERFORMANCE INDICATORS & ACHIEVEMENTS

Sr. No.	Components	Andaman & Nicobar Islands				Arunachal Pradesh				Jammu & Kashmir				Meghalaya			
		PP	T	RT	A	PP	T	RT	A	PP	T	RT	A	PP	T	RT	A
A.	**Capacity Expansion**																
1	No of Polytechnics	2	2	2	2	NA	1	1	1	4	4	6	6	1	3	3	3
2	New Polytechnics co-ed(c), women (w)	NA	NA	NA	NA	NA	1 (C)	1 (C)	1 (C)	NA	0	2 (C)	2 (C)	NA	2 (C)	2 (C)	2 (C)
3	No. of Diploma Courses	6	10	8	8	NA	6	6	6	19	27	33	33	4	11	11	11
4	No. of Post Diploma Courses	1	1	3	3	NA	NA	NA	NA	0	NA	NA	NA	0	1	1	1
5	Total Student Seats Created (No.)	465	705	665	803	NA	420	420	450	1680	2670	2940	3240	450	1120	1120	1120
	Actual seats Filled	291	NA	NA	624	NA	NA	NA	364	419	NA	NA	3190	298	NA	NA	993
6	Skill Development Center (if any) (No.)	0	0	2	2	0	1	1	1	0	0	4	4	0	0	3	3
7	PPIU (No.)	0	1	1	1	0	1	1	1	0	1	1	1	0	1	1	1
8	CE Department (No.)	0	1	1	1	0	1	1	1	0	4	6	6	0	3	3	3
9	Industry Institute Community Cell (No.)	0	1	1	1	0	1	1	1	0	4	6	6	0	3	3	3
10	LRUC (No.)	0	2	2	2	0	1	1	1	0	4	6	6	0	3	3	3
11	Computer Center (No.)	0	1	1	1	0	1	1	1	0	4	6	6	0	3	3	3
12	Maintenance Cells (No.)	0	2	2	2	0	1	1	1	0	0	0	1	0	1	1	1
13	Hostel places for men students (No.)	80	122	122	122	0	100	100	87	240	321	321	321	200	500	500	440
14	Hostel places for women students (No.)	40	64	64	64	0	60	60	63	0	448	520	520	80	200	200	200
15	Faculty Residence (No.)	5	13	22	17	0	17	17	17	12	45	47	37	3	34	41	26
16	Staff Residence (No.)	27	31	39	42	0	10	10	8	2	20	20	18	0	45	32	32

PP - Pre Project, T – Target, RT – Revised Target, A – Achievement, NA – Not Applicable

Sr. No.	Components	Andaman & Nicobar Islands				Arunachal Pradesh				Jammu & Kashmir				Meghalaya			
		PP	T	RT	A	PP	T	RT	A	PP	T	RT	A	PP	T	RT	A
B	**Quality Improvement**																
1	No. of Existing Labs to be Modernized	13	13	13	24	NA	NA	NA	NA	55	55	55	60	13	13	13	13
2	No. of New Labs to be Set-up	NA	9	9	9	NA	16	16	31	NA	59	93	93	NA	14	14	14
3	Curriculum Revised (No.)	7	7	7	7	NA	NA	NA	6	19	19	19	19	4	4	4	4
4	New Curricula Developed (No.)	NA	4	4	4	NA	6	6	6	NA	8	14	14	NA	7	7	7
5	Faculty Training																
	- No. trained / to be trained	NA	45	46	42	NA	30	30	31	NA	190	212	233	NA	74	61	71
	- Person months	NA	230	230	128	NA	150	150	106	NA	972	972	763	NA	305	305	339
6.	Technical Support Staff Training																
	- No. trained / to be trained	NA	61	57	72	NA	21	20	20	NA	265	297	203	NA	45	37	55
	- Person months	NA	142.5	142.5	149	NA	50	50	47	NA	715.5	715.5	139	NA	92.5	92.5	89
7.	Courses to be offered with MPECS (No.)	NA	6	10	6	NA	6	6	6	NA	28	28	24	NA	12	12	11
8.	Granting Autonomy (Yes / No)	NA	YES	YES	YES	NA	YES	YES	YES	NA	YES	YES	YES	NA	YES	YES	PARTIAL
9.	% of SC / ST Students	3	11	11	2	NA	70	70	74	NA	7	14	14	95	95	95	99
10.	% of Women Students	38.5	45	45	45.5	NA	45	45	37	29	56	40	41	15	29	40	23

PP - Pre Project, T – Target, RT – Revised Target, A – Achievement, NA – Not Applicable

Sr. No.	Components	Andaman & Nicobar Islands				Arunachal Pradesh				Jammu & Kashmir				Meghalaya			
		PP	T	RT	A	PP	T	RT	A	PP	T	RT	A	PP	T	RT	A
C.	**Efficiency Improvement**																
1	Average student dropout rate (%)	6	3	3	2.5	NA	5	5	6	10	5	8	8	10	3	5	4
2	Average student pass rate in first attempt (%)	78	90	90	80	NA	80	80	81	INS	95	95	91	70	95	95	92
3	Average pass out employment/ self employment rate (%) within one year of graduation	8	65	65	78	NA	65	65	46	30	65	65	70	40	65	65	64
4	Average pass outs pursuing higher studies (%)	3	7	7	20	NA	10	10	40	10	25	25	30	3	5	5	10
5	Counseling cells for students (No.)	0	1	1	1	0	1	1	1	0	4	6	6	1	3	3	3
6	Placement Cells for Students (No.)	0	1	1	1	0	1	1	1	0	4	6	6	1	3	3	3
7	Average Contact days per year (No.)	130	180	180	206	NA	180	180	180	150	180	180	180	183	183	183	183
8	Average training cost/student, Rs. (Student/Year)	30000	31000	31000	30500	NA	28000	28000	29600	65000	20000	20000	20000	26206	34000	34000	30000
9	Internal Revenue Generated (Rs. in m)	NA	2.81	2.81	17.41	NA	1.68	1.86	18.26	NA	14.98	14.98	23.86	NA	2.84	5.61	1.8
PP - Pre Project, T – Target, RT – Revised Target, A – Achievement, NA – Not Applicable																	

Sr. No.	Components	Mizoram				Nagaland				Sikkim				Tripura			
		PP	T	RT	A	PP	T	RT	A	PP	T	RT	A	PP	T	RT	A
A.	**Capacity Expansion**																
1	No of Polytechnics	2	2	2	2	2	3	3	3	NA	2	2	2	1	1	2	2
2	New Polytechnics co-ed(c), women (w)	NA	NA	NA	NA	NA	1 (C)	1 (C)	1 (C)	NA	2 (C)	2 (C)	2 (C)	NA	0	1 (W)	1 (W)
3	No. of Diploma Courses	5	8	8	8	4	10	10	10	NA	6	10	10	4	9	12	12
4	No. of Post Diploma Courses	NA	NA	NA	NA	0	NA	NA	NA	NA	6	0	0	1	1	1	1
5	Total Student Seats Created (No.)	450	720	720	610	225	810	810	810	NA	1050	660	1170	360	640	910	930
	Actual seats Filled	120	NA	NA	480	165	NA	NA	620	NA	NA	NA	615	330	NA	NA	910
6	Skill Development Center (if any) (No.)	0	0	2	2	0	0	3	3	0	0	2	2	0	1	1	1
7	PPIU (No.)	0	1	1	1	0	1	1	1	0	1	1	1	0	1	1	1
8	CE Department (No.)	0	2	2	2	0	3	3	3	0	2	2	2	0	1	2	2
9	Industry Institute Community Cell (No.)	0	2	2	2	0	3	3	3	0	2	2	2	0	1	2	2
10	LRUC (No.)	0	2	2	2	0	3	3	3	0	2	2	2	0	1	2	2
11	Computer Center (No.)	0	2	2	2	0	3	3	3	0	2	2	2	0	1	2	2
12	Maintenance Cells (No.)	0	2	2	2	0	3	3	3	0	2	2	2	0	1	2	2
13	Hostel places for men students (No.)	0	120	120	120	180	270	270	270	0	540	540	405	200	200	200	200
14	Hostel places for women students (No.)	0	150	150	150	0	195	195	180	0	260	260	195	0	NA	NA	NA
15	Faculty Residence (No.)	0	25	25	24	18	44	44	28	0	38	38	40	12	12	12	12
16	Staff Residence (No.)	0	24	24	24	13	31	31	33	0	32	32	32	12	12	12	12
PP - Pre Project, T – Target, RT – Revised Target, A – Achievement, NA – Not Applicable																	

Sr. No.	Components	Mizoram				Nagaland				Sikkim				Tripura			
		PP	T	RT	A	PP	T	RT	A	PP	T	RT	A	PP	T	RT	A
B	**Quality Improvement**																
1	No. of Existing Labs to be Modernized	18	18	18	16	19	19	19	19	NA	NA	NA	NA	9	9	9	11
2	No. of New Labs to be Set-up	NA	19	19	19	NA	12	12	14	NA	10	18	21	NA	30	25	20
3	Curriculum Revised (No.)	5	5	5	5	4	4	4	4	NA	NA	6	6	4	4	4	4
4	New Curricula Developed (No.)	NA	3	3	3	NA	6	6	6	NA	12	10	10	NA	5	8	8
5	Faculty Training																
	- No. trained / to be trained	NA	48	49	42	NA	53	53	53	NA	61	61	41	NA	48	61	47
	- Person months	NA	245	245	203	NA	265	265	180	NA	305	305	121	NA	305	305	115
6.	Technical Support Staff Training																
	- No. trained / to be trained	NA	25	39	37	NA	38	42	40	NA	37	35	35	NA	31	69	38
	- Person months	NA	97.5	97.5	60	NA	105	105	50	NA	87.5	87.5	56	NA	172.5	172.5	41
7.	Courses to be offered with MPECS (No.)	NA	8	8	8	NA	10	10	10	NA	12	10	10	NA	6	8	5
8.	Granting Autonomy (Yes / No)	NA	YES	YES	PARTIAL	NA	YES	YES	PARTIAL	NA	YES	YES	YES	NA	YES	YES	YES
9.	% of SC / ST Students	95	95	95	92	98	98	98	100	NA	50	50	43	47	47	47	47
10.	% of Women Students	50	68	68	60	40	47	47	37	NA	40	33	14.3	25	40	50	47
PP - Pre Project, T – Target, RT – Revised Target, A – Achievement, NA – Not Applicable																	

Sr. No.	Components	Mizoram				Nagaland				Sikkim				Tripura			
		PP	T	RT	A	PP	T	RT	A	PP	T	RT	A	PP	T	RT	A
C.	**Efficiency Improvement**																
1	Average student dropout rate (%)	5	1	1	3	5	5	5	5	NA	5	5	5	2	2	2	1
2	Average student pass rate in first attempt (%)	70	75	75	85	70	95	95	95	NA	85	85	90	70	90	90	86
3	Average pass out employment/ self employment rate (%) within one year of graduation	NA	65	65	78	50	65	65	70	NA	65	65	88	60	65	65	70
4	Average pass outs pursuing higher studies (%)	2	5	5	8	5	12	12	4	NA	5	5	10	7	10	10	25
5	Counseling cells for students (No.)	0	2	2	2	0	3	3	3	0	2	2	2	0	1	2	2
6	Placement Cells for Students (No.)	0	2	2	2	0	3	3	3	0	2	2	2	0	1	2	2
7	Average Contact days per year (No.)	180	180	180	180	180	180	180	180	NA	180	180	206	180	180	180	180
8	Average training cost/student, Rs. (Student/Year)	15000	12000	12000	20000	33500	19500	19500	27000	NA	24000	24000	38000	23000	23000	23000	24000
9	Internal Revenue Generated (Rs. in m)	NA	3.13	3.13	3.5	NA	3.95	3.95	5.32	NA	16.38	16.38	35.46	NA	1.81	2	0.31

PP - Pre Project, T – Target, RT – Revised Target, A – Achievement, NA – Not Applicable

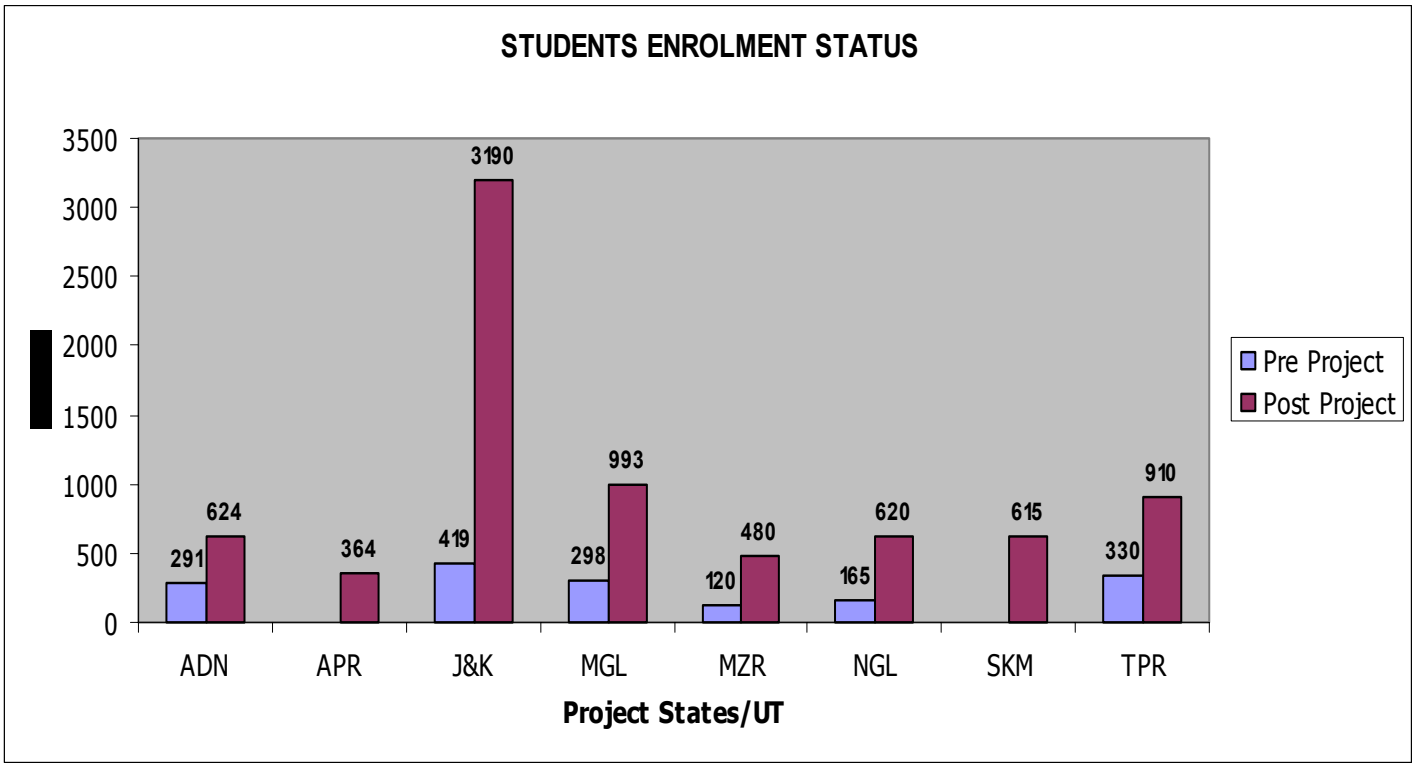
ANNEXURE – 2

LIST OF NEW COURSES INTRODUCED

Sr. NO.	STATE/UT	Name of New Course Offered
1.	ANDAMAN & NICOBAR ISLANDS	Hotel Management & Catering Technology (D)
		Information Technology (D)
		Marine Engineering (PD)
		Deck Cadet (PD)
2.	ARUNACHAL PRADESH	Electrical & Electronic Engineering (D)
		Automobile Engineering (D)
		Information Technology (D)
		Costume Design & Garment Technology (D)
		Travel, Tourism & Hotel Management (D)
		Herbal Remedies & Cosmetology (D)
3.	JAMMU & KASHMIR	Textile Design (D) (2 places)
		Medical Laboratory Technology (D) (2 places)
		Food Technology (D)
		Travel & Tourism (D)
		Instrumentation & Control (D)
		Wood Technology (D)
		Leather Technology (D)
	New Polytechnic at Kargil	Computer Engineering (D)
		Electrical Engineering (D)
		Information Technology (D)
	New Polytechnic at Leh	Computer Engineering (D)
		Civil Engineering (D)
		Travel & Tourism (D)
4.	MEGHALAYA	Computer Science & Engineering (D)
		Information Technology (PD)
		Architectural Assistantship (D)
		Automobile Engineering (D)
		Costume Design & Garment Technology (D)
		Computer Applications (D)
		Medical Electronics (D)
		Food Processing & Preservation (D)
5.	MIZORAM	Computer Science & Engineering (D)
		Garment Technology (D)
		Beauty Culture & Cosmetology (D)
6.	NAGALAND	Electronics & Telecommunication Engineering (D)
		Computer Engineering (D)
		Information Technology (D)
		Automobile Engineering (D)
		Computer Applications (D)
		Fashion Technology (D)
7.	SIKKIM	Electronics & Hardware Maintenance (D)
		Computer Science & Technology (D)
		Telecommunications Technology (D)
		Electrical & Electronics Engineering (D)
		Computer Applications (D) (2 places)
		Mechanical Engineering (D)
		Mechatronics (D)
		Tool & Die Making (D)
		Manufacturing Technology (D)
8.	TRIPURA	Modern Office Management & Practice (D)
		Computer Science (D)
		Food Processing Technology (D)
		Automobile Engineering (D)
		Interior Decoration, Handicrafts & Furniture Design (D)
		Information Technology (D)
		Fashion Technology (D)
		Medical Laboratory Technology (D)

D : Diploma
PD : Post Diploma

ANNEXURE – 3



ANNEXURE – 4

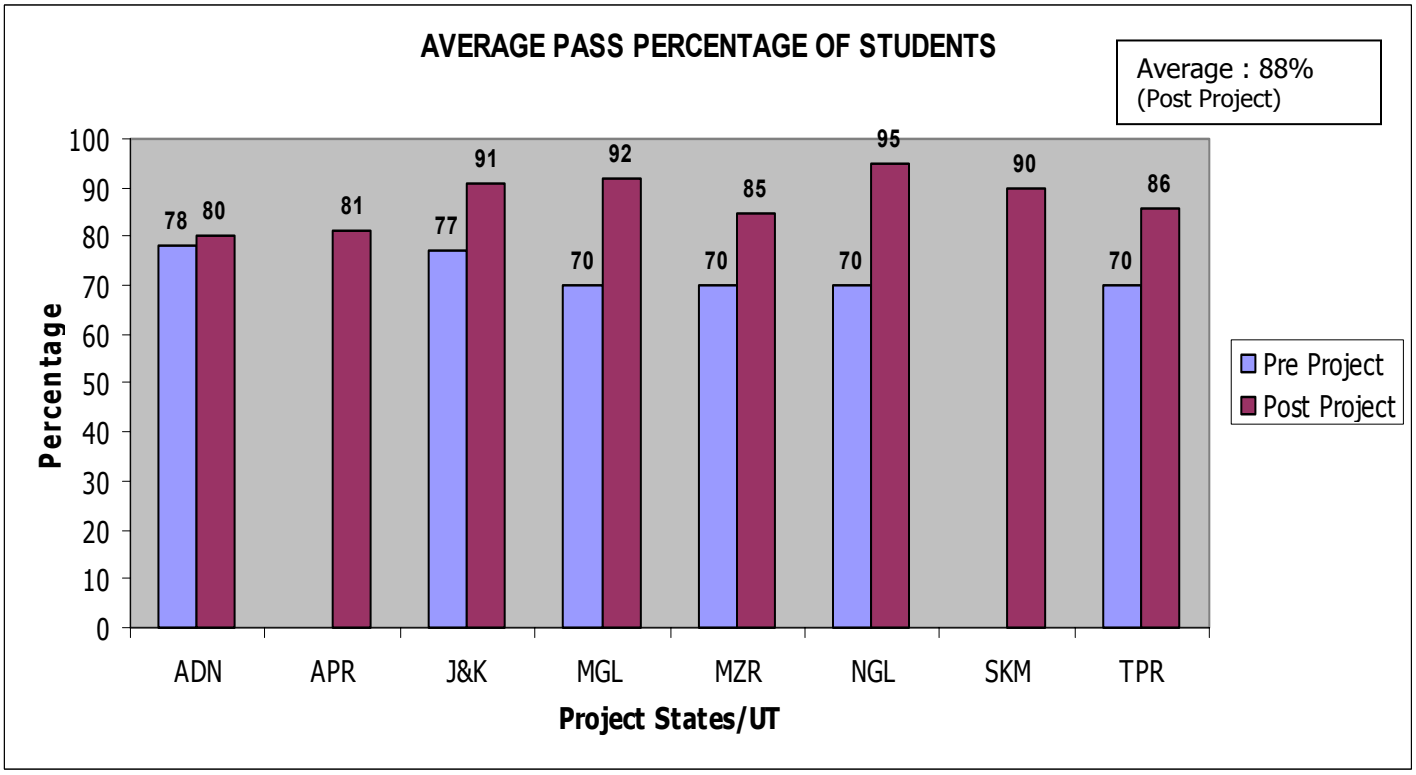


Fig. 1 - STUDENTS EMPLOYED/PURSUING HIGHER STUDIES (PRE PROJECT)

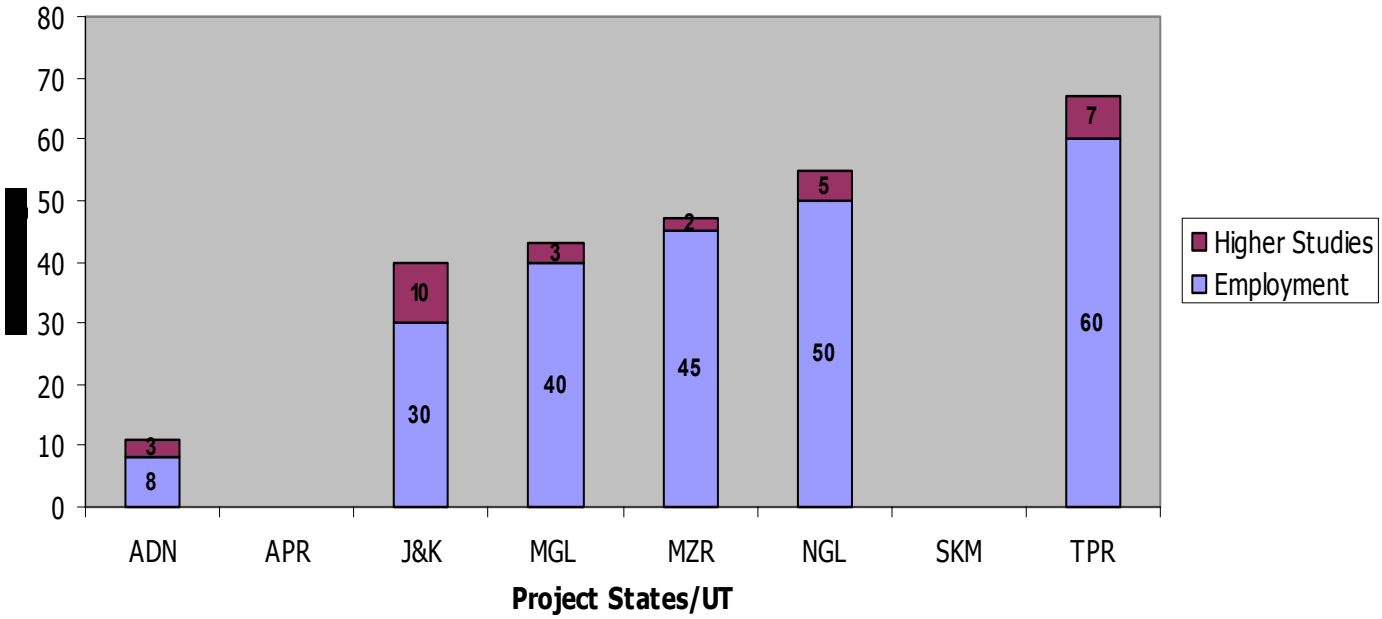
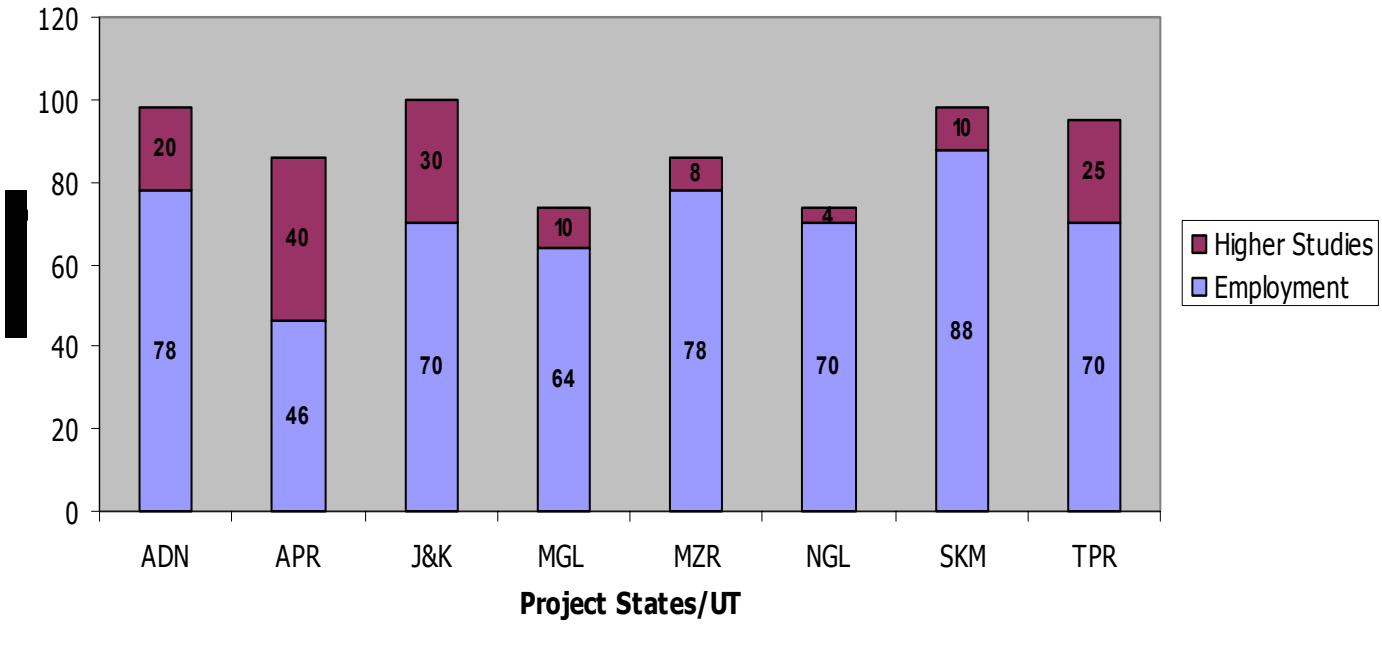
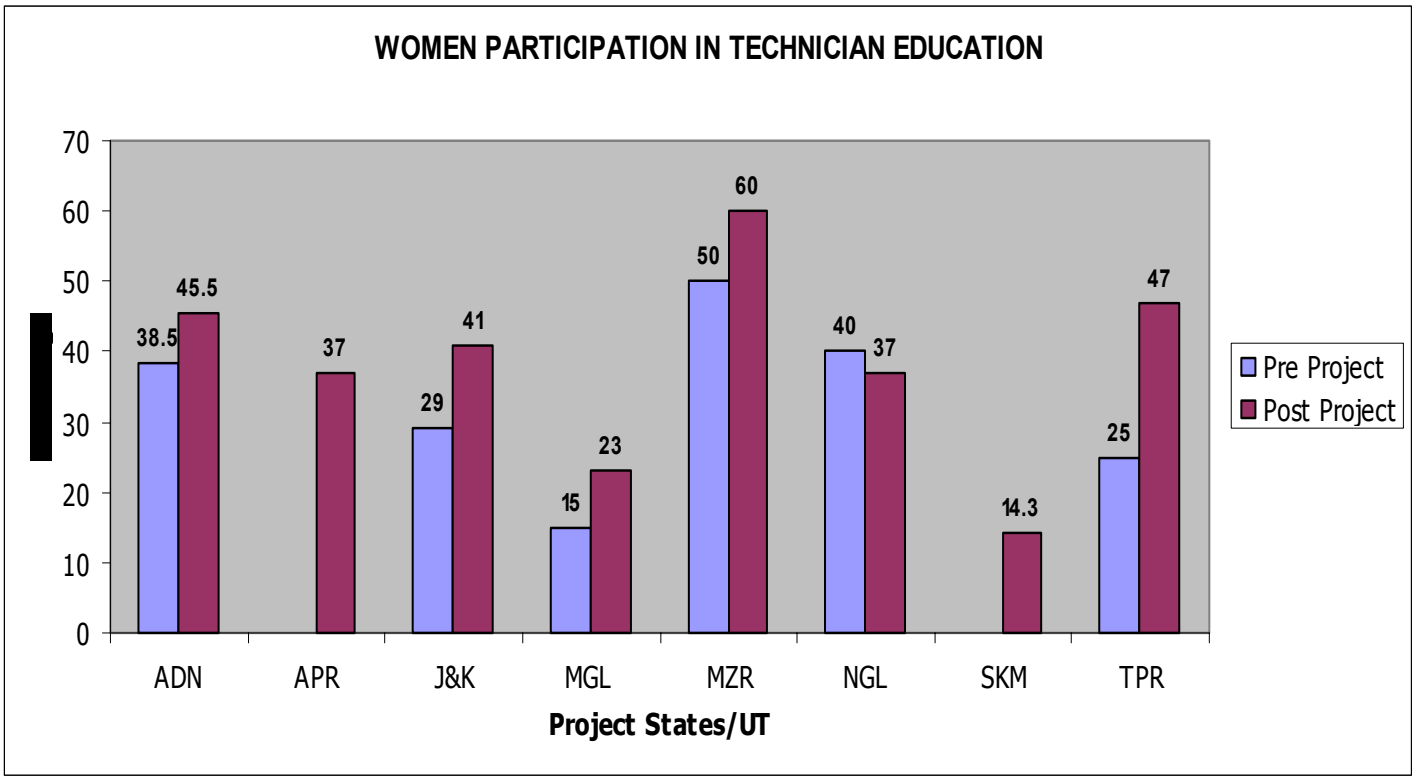


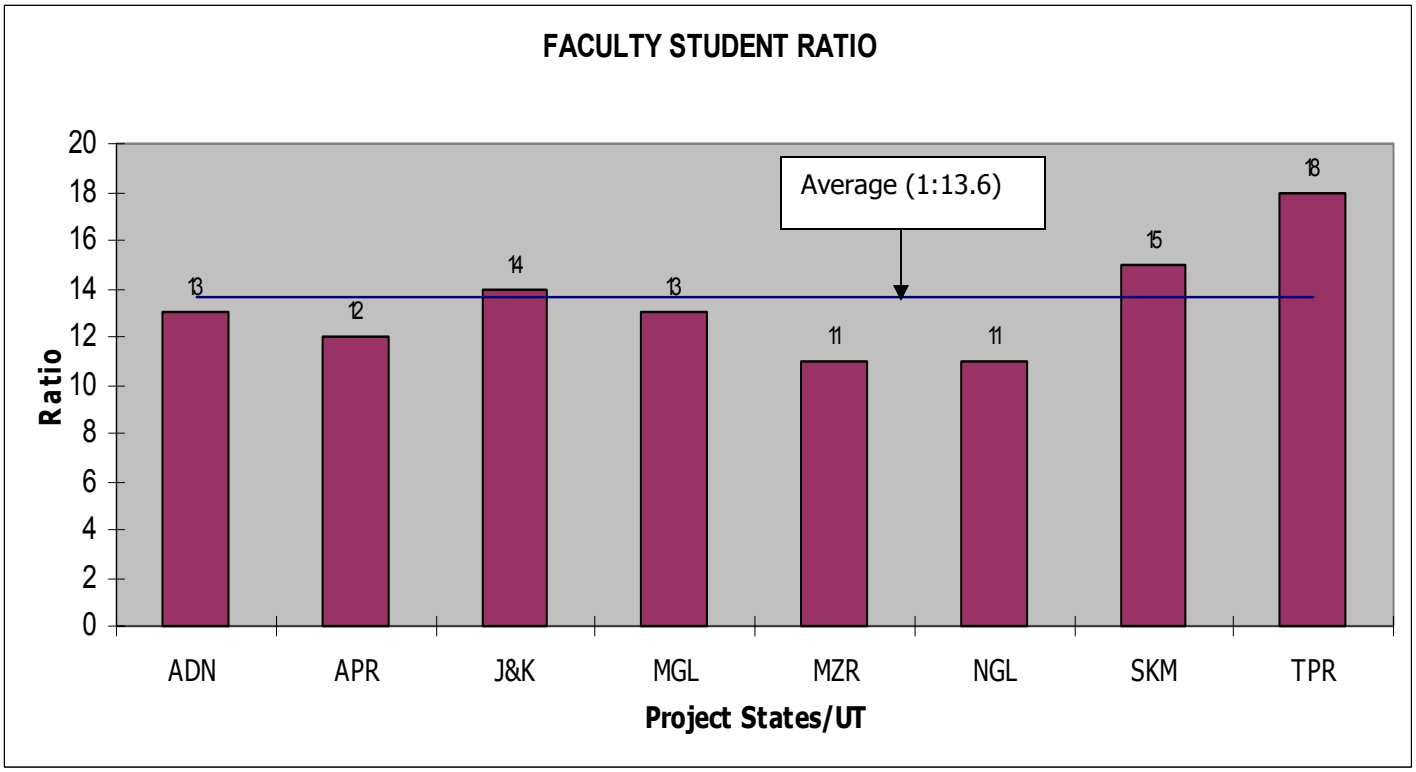
Fig. 2 - STUDENTS EMPLOYED/PURSUING HIGHER STUDIES (POST PROJECT)



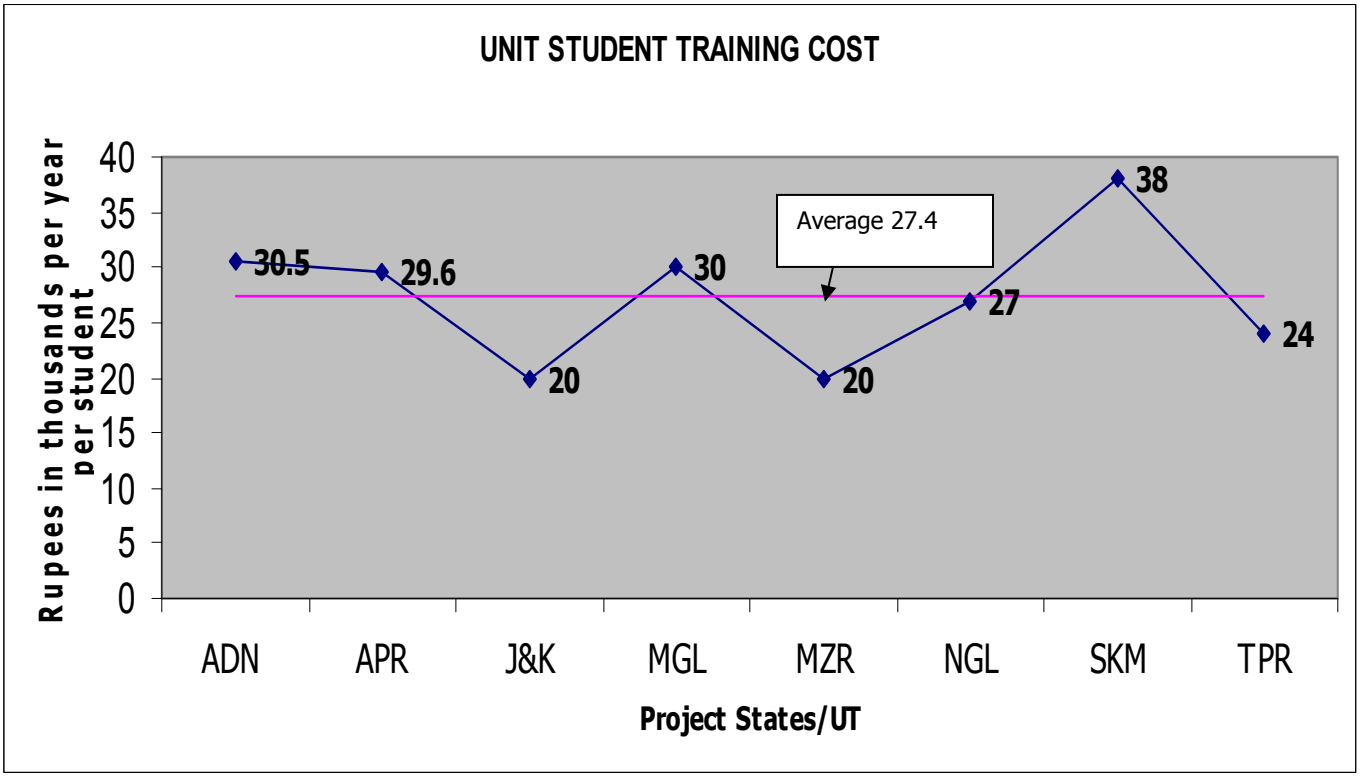
ANNEXURE – 6



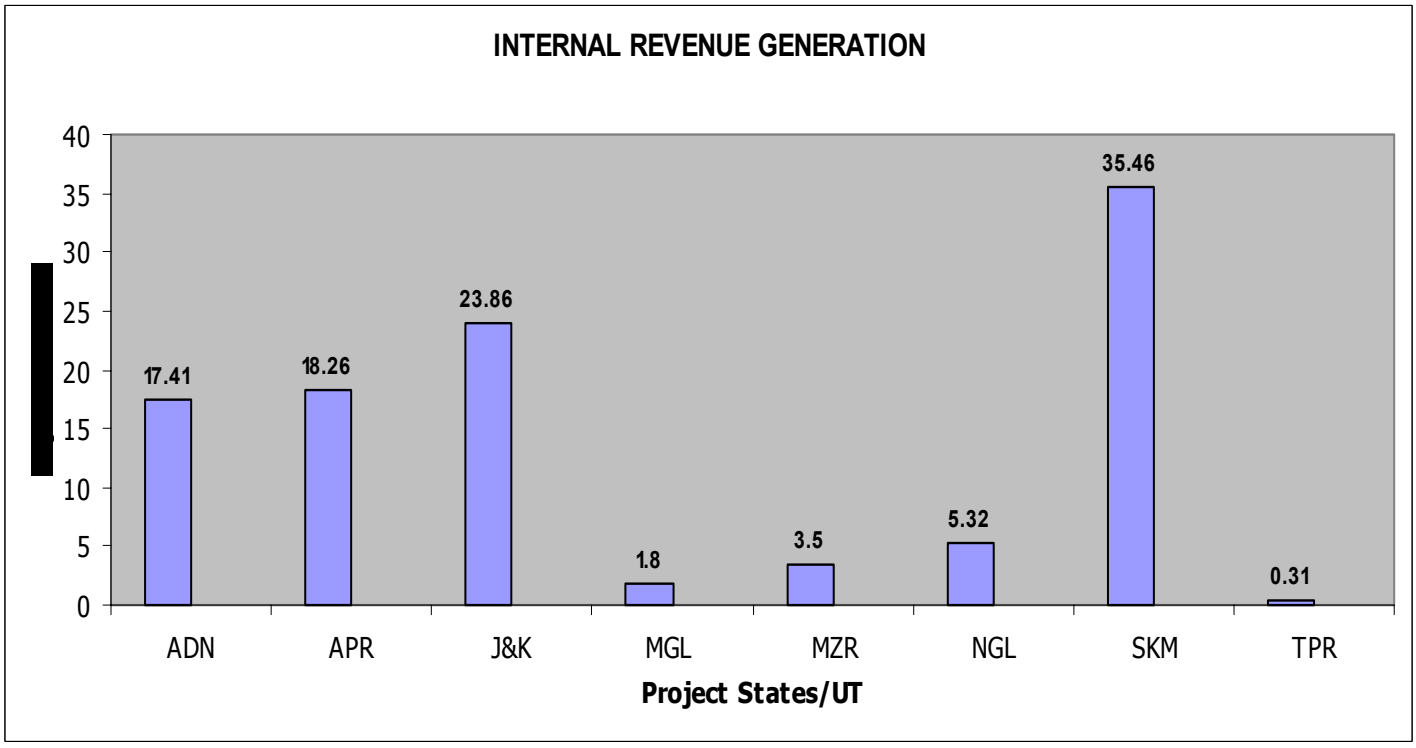
ANNEXURE – 7



ANNEXURE - 8



ANNEXURE – 9



ANNEXURE – 10

LIST OF RESEARCH STUDIES CONDUCTED

S. NO.	NAME OF STUDY	PURPOSE OF THE STUDY	STATUS OF THE STUDY
1	Strategic preferences of polytechnic faculty and administrators for enhancing participation of women in technician education	Strategy planning for enhancing participation of women in technician education	Completed
2	A study on current status of enrollment of women, rural and scheduled category of students in polytechnics and current status of enrollment of women, rural and scheduled category of technical staff in polytechnics	To assess the status of enrollment of women students and staff in polytechnics	Completed
3	A strategic plan for resource generation through transfer and greater societal interaction	Strategy planning for resource generation through transfer and greater societal interaction	Completed
4	A study on continuous improvement in efficiency and effectiveness of teaching - learning process in the project polytechnics	To assess the improvement in efficiency and effectiveness of teaching - learning process in the project polytechnics	Completed
5	A strategic plan for resource generation through transfer and greater societal interaction	Strategy planning for resource generation through transfer and greater societal interaction	Completed
6	Assessment of continuing education needs of technicians and skilled workers of nearby institutions and other organizations	To assess need of continuing education for technicians and skilled workers	Completed
7	A study on modernization of laboratories	To document the progress in modernization of laboratories	Completed
8	A snap study on the implementation of multi-point entry and credit system in project polytechnics	To develop strategy for introduction of multi-point entry and credit system in polytechnics	Completed
9	A snap study on the analysis of declining participation of women, SC/ST and OBC in project polytechnics	To identify the factors behind declining participation of women, SC/ST and OBC in polytechnics and formulation of an action plan for enhancing participation of these sections in technician education	Completed
10	A study on Utilization of Resources Created under the Tech Ed - III Project	To review the status of utilization of resources created under the Project	Completed
11	A study on the Assessment of the Impact of Tech Ed - III Project	To assess the overall impact of Tech Ed-III that the Project has brought in development of the States/UT	Completed

TECHNICIAN EDUCATION PROJECT - III (IDA CR. 3413-IN)

STATE-WISE PROJECT EXPENDITURE

Rs in million

Cat	Expenditure Category	Andaman & Nicobar Islands		Arunachal Pradesh		Jammu & Kashmir		Meghalaya		Mizoram	
		Total Project Allocation	Cumulative Expenditure	Total Project Allocation	Cumulative Expenditure	Total Project Allocation	Cumulative Expenditure	Total Project Allocation	Cumulative Expenditure	Total Project Allocation	Cumulative Expenditure
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
I	**Civil Works (A)**	**130.000**	**133.843**	**135.000**	**138.481**	**288.980**	**288.874**	**211.740**	**210.457**	**210.000**	**209.774**
II	Furniture	8.605	8.605	13.040	12.714	39.073	42.129	22.473	22.312	16.000	14.187
	Equipment	73.463	75.963	77.017	84.331	226.000	244.935	114.000	108.413	112.823	115.302
	Vehicle	1.858	1.858	3.011	3.011	6.707	6.283	6.312	6.312	3.723	3.723
	Total (B)	**83.926**	**86.426**	**93.068**	**100.056**	**271.780**	**293.347**	**142.785**	**137.037**	**132.546**	**133.212**
III	**Books and Learning Resources (C)**	**18.079**	**18.079**	**29.000**	**27.518**	**69.200**	**75.128**	**65.000**	**64.840**	**30.000**	**31.082**
IV	Local Training/Fellowships	20.681	19.548	8.250	5.817	17.075	16.971	21.250	21.250	20.400	17.196
	Foreign Training/Fellowships	5.090	5.090	3.783	2.607	13.725	12.171	3.995	3.995	4.851	3.675
	Local Consultancies	24.324	24.341	21.000	21.072	20.100	19.175	23.000	22.370	11.000	10.657
	Total (D)	**50.095**	**48.979**	**33.033**	**29.496**	**50.900**	**48.317**	**48.245**	**47.615**	**36.251**	**31.528**
V	Salary of Key Additional Faculty/Staff	7.656	7.652	52.728	52.652	33.000	33.911	31.440	31.340	16.650	15.285
	Scholarships and Stipends	0.000	0.000	0.000	0.000	0.100	0.149	0.000	0.000	0.000	0.000
	Consumables	3.525	3.525	14.626	15.217	30.460	30.629	6.176	6.143	11.053	12.946
	Operation and Maintenance	23.915	23.857	25.496	26.244	52.758	56.721	18.586	17.669	26.071	29.811
	Total (E)	**35.096**	**35.034**	**92.850**	**94.113**	**116.318**	**121.410**	**56.202**	**55.152**	**53.774**	**58.042**
Grand Total (A+B+C+D+E)		**317.196**	**322.361**	**382.951**	**389.664**	**797.178**	**827.076**	**523.972**	**515.101**	**462.571**	**463.638**
	% Utilisation		102		102		104		98		100

TECHNICIAN EDUCATION PROJECT - III (IDA CR. 3413-IN)

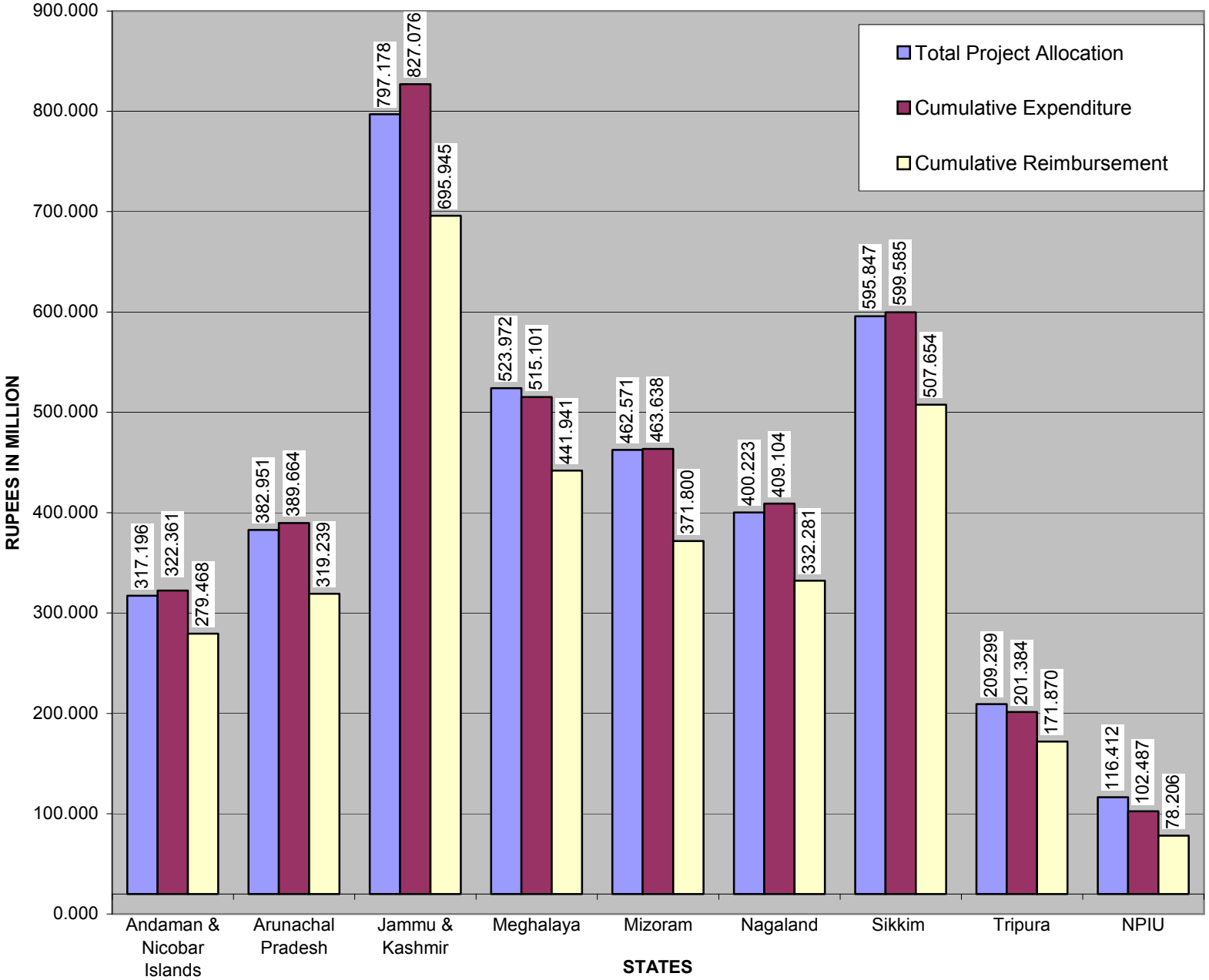
STATE-WISE PROJECT EXPENDITURE

Rs in million

Cat	Expenditure Category	Nagaland		Sikkim		Tripura		NPIU		TOTAL	
		Total Project Allocation	Cumulative Expenditure	Total Project Allocation	Cumulative Expenditure	Total Project Allocation	Cumulative Expenditure	Total Project Allocation	Cumulative Expenditure	Total Project Allocation	Cumulative Expenditure
(1)	(2)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
I	**Civil Works (A)**	**161.429**	**169.739**	**262.131**	**262.206**	**88.000**	**84.872**	**0.000**	**0.000**	**1487.280**	**1498.246**
II	Furniture	30.000	31.425	20.147	20.346	8.000	7.516	0.500	0.424	157.838	159.658
	Equipment	69.509	72.886	132.503	131.833	47.608	47.736	3.000	2.811	855.923	884.210
	Vehicle	7.250	7.998	4.509	4.509	1.062	1.061	0.250	0.235	34.682	34.990
	Total (B)	**106.759**	**112.309**	**157.159**	**156.688**	**56.670**	**56.313**	**3.750**	**3.470**	**1048.443**	**1078.858**
III	**Books and Learning Resources (C)**	**46.000**	**46.356**	**40.094**	**40.013**	**12.000**	**11.786**	**0.200**	**0.037**	**309.573**	**314.839**
IV	Local Training/Fellowships	16.000	12.241	7.784	8.289	9.315	8.145	2.000	0.905	122.755	110.362
	Foreign Training/Fellowships	3.789	2.613	2.219	2.219	6.149	4.973	5.862	3.107	49.463	40.450
	Local Consultancies	24.557	22.964	30.754	30.754	7.865	7.043	14.600	15.108	177.200	173.484
	Total (D)	**44.346**	**37.818**	**40.757**	**41.262**	**23.329**	**20.161**	**22.462**	**19.120**	**349.418**	**324.296**
V	Salary of Key Additional Faculty/Staff	17.490	19.490	56.850	56.892	12.000	9.631	40.000	33.324	267.814	260.177
	Scholarships and Stipends	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.149
	Consumables	6.699	4.314	7.127	7.761	5.300	6.452	5.000	4.096	89.966	91.083
	Operation and Maintenance	17.500	19.078	31.729	34.763	12.000	12.169	45.000	42.440	253.055	262.752
	Total (E)	**41.689**	**42.882**	**95.706**	**99.416**	**29.300**	**28.252**	**90.000**	**79.860**	**610.935**	**614.161**
Grand Total (A+B+C+D+E)		**400.223**	**409.104**	**595.847**	**599.585**	**209.299**	**201.384**	**116.412**	**102.487**	**3805.649**	**3830.400**
	% Utilisation		102.22		100.63		96.22		88.04		100.65

Annexure 12

CONSOLIDATED FINANCIAL PROFILE OF THE PROJECT (CR- 3413)



ANNEXURE– 13

LIST OF TECHNICAL VOCATIONAL EDUCATION & TRAINING (TVE&T) COURSES

S. NO.	NAME OF THE COURSES	LEVEL	NAME OF THE POLYTECHNIC & STATES / UT
1	Automotive	I	BR Ambedkar Govt Polytechnic & Second Polytechnic, Andaman & Nicobar Islands
2	MS Windows Level	Stand alone	
3	Advance MS Windows	Stand alone	Rangat, Hutbay, Compbell Bay Extension centers at BR Ambedkar Govt. Polytechnic, Andaman & Nicobar Islands
4	MS Windows	Stand alone	Rajiv Gandhi Polytechnic, Arunachal Pradesh
5	Engineering (Basic)	I	
6	Clothing Production	I	
7	Automotive	I	
8	Domestic Electrician	Stand alone	Kashmir Govt. Polytechnic, Srinagar, Jammu & Kashmir
9	Printing and Graphics Arts/ Desk Top Publishing	II	
10	Printing and Graphics Arts / DTP	II	Govt. Polytechnic for Women Bemina, Srinagar, Jammu & Kashmir
11	Clothing Production	I	
12	Construction (General)	I	Govt. Polytechnic Jammu, Jammu & Kashmir
13	Personal Computer Operator	Stand alone	
14	Domestic Electrician	Stand alone	
15	Domestic Electrician	Stand alone	Govt. Polytechnic for Women, Jammu, Jammu & Kashmir
16	Printing and Graphics Arts / DTP	II	
17	Wireman	Stand alone	Shillong Polytechnic, Meghalaya
18	Personal Computer Operator, MS Windows	Stand alone	
19	Automotive	I	Jowai Polytechnic, Meghalaya
20	Construction (General)	I	
21	Clothing Production	I	
22	Personal Computer Operator, MS Windows	Stand alone	Tura Polytechnic, Meghalaya
23	Printing and Graphics Arts / DTP	II	
24	Wireman	Stand alone	
25	Personal Computer Operator, MS Windows	Stand alone	Women Polytechnic Aizawl, Mizoram
26	T V Technician	Stand alone	
27	Automotive	I	Mizoram Polytechnic, Lunglei, Mizoram
28	Printing and Graphics Arts / DTP	II	
29	Law Clerk (Administration)	I	Government Polytechnic, Kohima, Nagaland
30	Personal Computer Operator, MS Windows	Stand alone	ICIT, Nagaland
31	T V Technician	Stand alone	
32	Wireman	Stand alone	Khelhoshe Polytechnic, Atoizu, Nagaland
33	Construction (General)	I	
34	Personal Computer Operator, MS Windows	Stand alone	Centre for Computers and Communication Technology (CCCT) Sikkim
35	Personal Computer Operator, MS Windows	Stand alone	Advanced Technical Training Centre (ATTC) Sikkim
36	Construction (General)	I	Polytechnic Institute, Narsingarh, Tripura
37	Automotive	I	
38	Wireman	Stand alone	
39	Basic Engineering	I	
40	Office Automation	I	Womens' Polytechnic, Agartala, Tripura

ANNEXURE - 14

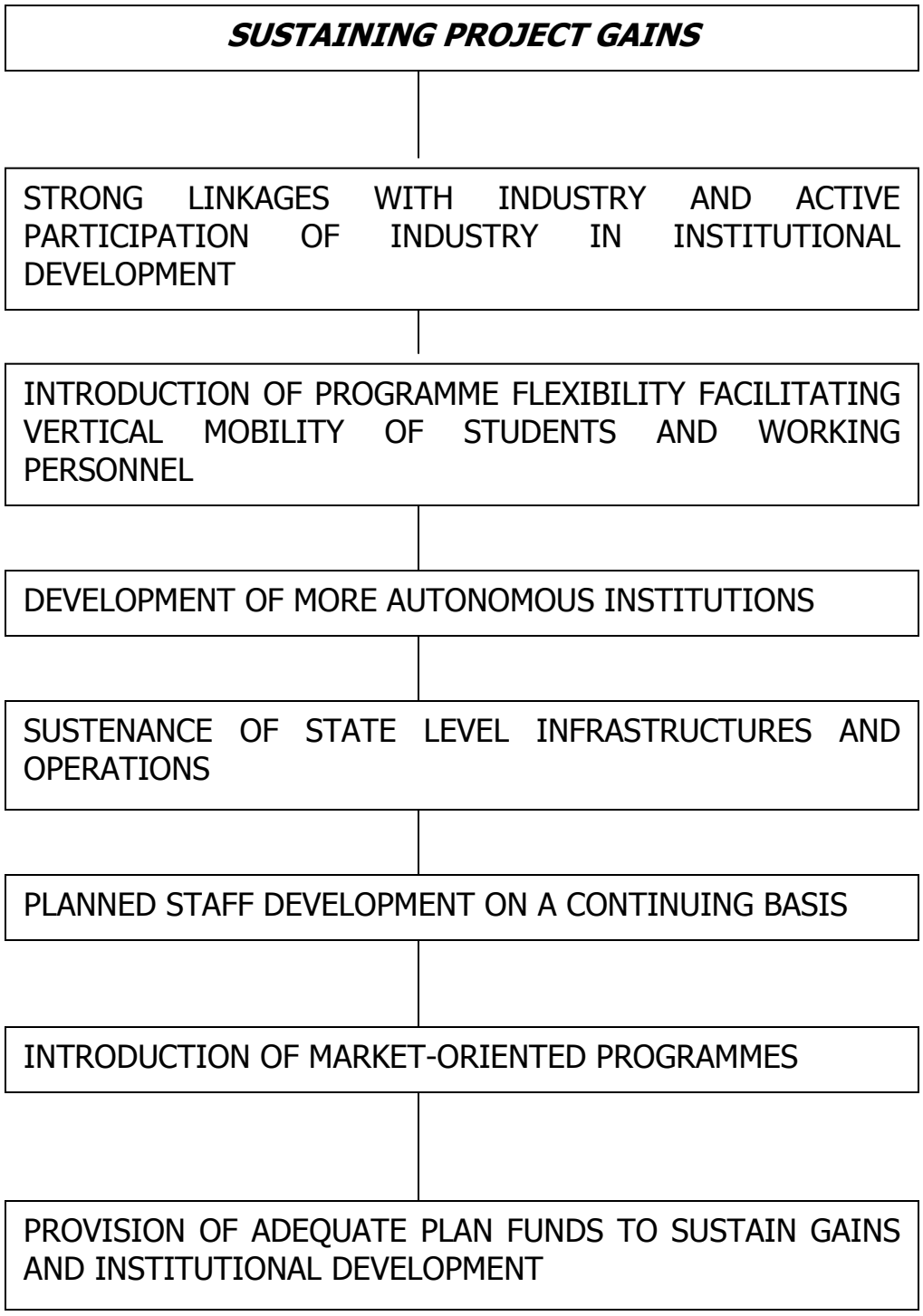
IMPORTANT NETWORK ACTIVITIES AMONG PROJECT POLYTECHNICS AND RESOURCE INSTITUTIONS

Broad Area	Activity
I. Research Collaboration	Rajiv Gandhi Polytechnic, Itanagar, Arunachal Pradesh collaborated with St Xavier Technical Institute, Mumbai for research in mobile communication. Faculty member undergoing PhD program on authentication of mobile communication.
II. Faculty Exchange	Faculty members from SBM Polytechnic, Mumbai supported CCCT Bardang, Sikkim in teaching activity.
	Faculty member from VJTI Mumbai visited Shillong Polytechnic, Meghalaya to identify the areas of assistance and provided support for network activities.
III. Training of Faculty	Faculty members from Rajiv Gandhi Polytechnic, Itanagar, Arunachal Pradesh, attended 15 days program on hotel legislation, hotel service management, travel agency, tour operation management and advanced culinary practice, at MSIHMCT Pune.
	Faculty members from Shillong Polytechnic, Meghalaya trained in setting-up of new laboratories and conducting lab experiments by VJTI Mumbai.
	5 Days trainings on lab experiments and preparation of lab manuals in the areas of electrical circuits, digital electronics and microprocessor, hydraulics, materials, imparted to the faculty of Shillong Polytechnic, Meghalaya by VJTI Mumbai.
	Training on computer hardware and peripherals imparted to the faculty of Lunglei Polytechnic and Aizawl Polytechnic Mizoram by St Xavier Technical Institute Mumbai.
	Training on mixed platform LAN management on Linux, WIN-NT and Novell organized for faculty of Lunglei Polytechnic and Aizawl Polytechnic Mizoram by St Xavier Technical Institute Mumbai.
	Faculty of Ambedkar Polytechnic Andaman & Nicobar Islands trained in embedded system, oracle 9i, fibre optics and vehicle servicing by SBM Polytechnic Mumbai.

Broad Area	Activity
IV. Staff Training	Staff of Ambedkar Polytechnic Andaman & Nicobar Islands trained in automobile repair and maintenance at SBM Polytechnic Mumbai.
	Staff of APPC Itanagar trained in set-up and management of mixed platform LAN (Linux, Win-NT and Novell and LAN planning by St Xavier Technical Institute Mumbai.
	Staff of APPC Itanagar imparted industrial training in IT organized by St Xavier Technical Institute Mumbai.
	Staff of Aizawl Polytechnic Mizoram trained in setting-up LAN by St Xavier Technical Institute Mumbai.
V. Industrial Training of Students	SBM Polytechnic Mumbai arranged industrial attachment of students for 30 days for Ambedkar Polytechnic Andaman & Nicobar Islands.
	MSIHMCT Pune arranged industrial attachment of students for 120 days for Second Polytechnic Andaman & Nicobar Islands.
	MSIHMCT Pune arranged on job training for students of APPC Itanagar Arunachal Pradesh in hotels and restaurants and modern management system.
VI. Job Placement	SBM Polytechnic Mumbai arranged job placement for CCCT Bardang Sikkim.
	Crosow Wadia Institute of Technology Pune arranged campus interviews for ATTC Bardang Sikkim and some students got placed in industries.
VII. Curriculum Improvement	SBM Polytechnic took-up improvement of curricula of Ambedkar Polytechnic Andaman & Nicobar Islands in 6 programs.
	MSIHMCT Pune assisted Second Polytechnic Andaman & Nicobar Islands in improvement of curriculum in cookery and hotel management.

ANNEXURE – 15

NETWORK PARTNERS AMONG PROJECT POLYTECHNICS

S.No.	Institution	Network Partner
1	Dr B R Ambedkar Polytechnic, Port Blair, Andaman & Nicobar Islands	Womens' Polytechnic, Aizwal, Mizoram
2	Second Polytechnic, Port Blair, Andaman & Nicobar Islands	Govt. Polytechnic, Shillong, Meghalaya
3	Arunachal Pradesh Polytechnic, Arunachal Pradesh	Govt. Polytechnic, Jowai, Meghalaya
		Womens' Polytechnic, Kohima
4	Govt. Polytechnic for Women, Srinagar, Jammu & Kashmir	Arunachal Pradesh Polytechnic, Arunachal Pradesh
5	Govt. Polytechnic, Srinagar, Jammu & Kashmir	Second Polytechnic, Port Blair, Andaman & Nicobar Islands
		Womens' Polytechnic, Aizwal, Mizoram
6	Govt. Polytechnic Jammu, Jammu & Kashmir	Second Polytechnic, Port Blair, Andaman & Nicobar Islands
		Dr B.R. Ambedkar Polytechnic, Port Blair, Andaman & Nicobar Islands
		Womens' Polytechnic, Aizwal, Mizoram
7	Govt. Polytechnic for Women Jammu, Jammu & Kashmir	Dr B.R. Ambedkar Polytechnic, Port Blair, Andaman & Nicobar Islands
8	Govt. Polytechnic, Shillong	Govt. Poly Jammu, Jammu & Srinagar
		Dr B.R. Ambedkar Polytechnic, Port Blair, Andaman & Nicobar Islands
9	Govt. Polytechnic, Tura, Meghalaya	Govt. Polytechnic Kohima, Nagaland
		Arunachal Pradesh Polytechnic, Arunachal Pradesh
10	Govt. Polytechnic, Jowai	Govt. Polytechnic Jammu, Jammu & Kashmir
11	Mizoram Polytechnic, Lunglei, Mizoram	Dr B.R. Ambedkar Polytechnic, Port Blair, Andaman & Nicobar Islands
		Govt. Polytechnic, Shillong, Meghalaya
12	Womens' Polytechnic, Aizwal, Mizoram	Govt. Polytechnic, Kohima, Nagaland
13	Inst of Comm. & Info. Tech. Mokokchung, Nagaland	Arunachal Pradesh Polytechnic, Arunachal Pradesh
14	Govt. Polytechnic, Kohima, Nagaland	Govt. Polytechnic, Tura, Meghalaya
15	ATTC, Sikkim	Arunachal Pradesh Polytechnic, Arunachal Pradesh
		Govt. Polytechnic Jammu, Jammu & Kashmir
		Govt. Polytechnic, Khelhoshe, Atoziu, Nagaland
16	CCCT Sikkim	Inst. of Comm. & Info. Tech. Mokokchung, Nagaland
		Womens' Polytechnic, Aizwal, Mizoram
		Mizoram Polytechnic. Lunglei, Mizoram
17	Polytechnic Inst Narisingarh, Agartala Tripura	Govt Polytechnic, Tura, Shillong
		Dr B.R. Ambedkar Polytechnic, Port Blair, Andaman & Nicobar Islands

FUTURE PERSPECTIVES