

# **SKILLING FOR THE FUTURE**

## **New Approaches To Skilling : Creating Institutional Structure For Modern Skills**

A Paper By

Madhu Krishana Garg IAS

Secretary Skill Development & Entrepreneurship

Govt of Arunachal Pradesh

### **Preamble:**

While the developed world is getting older India is getting younger and this trend shall persist till 2030. It is reported, 65% of Indian population currently is under 35 years and this translates into an unprecedented opportunity for reaping the demographic dividend by empowering our youth with enabling skill sets. Students would have to be motivated to acquire skill sets of their preference rather than acquiring non functional theoretical formal education in case of not getting admission of choice in technical/ humanities fields of higher education. India's economic growth being high on priority we need to ensure that required skilled talent pool is available for holistic and inclusive economic growth in India. While talent will be available for the industry/ service sector there shall be life of dignity for the skilled personnel/ citizens. SKILL INDIA is the flagship program of the Government of India that shall converge with MAKE IN INDIA and under these two converging schemes it is envisaged that we shall be able to ensure inclusive and holistic economic growth. Skill Development now should not be a onetime exercise but it should be a continuous process to keep pace with the dynamic requirement of manufacturing and service sectors. The latter part has to be essentially self directed. To facilitate the development of skills through self-directed learning, the skilled personnel would require to be enabled to review their skill sets and identify/ understand developments required for further career growth, higher wages and enhancing employability. India must invest wisely and also on priority in infrastructure required for developing highly skilled workforce and Intellectual Property, as opposed to low-wage, low-value-added manufacturing. Recognizing that India's future economic growth is intricately connected with availability of skilled manpower, the Govt of India has adopted

National Policy for Skill Development that aims at creating a skilled workforce of 500 million by the year 2022. Arunachal Pradesh has the lowest average population density in India. About 80 % of the population is rural and close to 64 % is tribal population. With data indicating availability of 55 % of the population in the working age group, it is an important inference that workforce availability is abundant. The State of Arunachal Pradesh could reap significant demographic dividend due to high share of working age population (55 %) and young population (0 to 14 years-40 %), joining the working age population in next few years. Skill Development is therefore a State priority subject and its alignment with the National Policy on Skill Development would ensure greater public welfare.

### **Understanding Ecosystem of Skilling and Contemporary Skilling:**

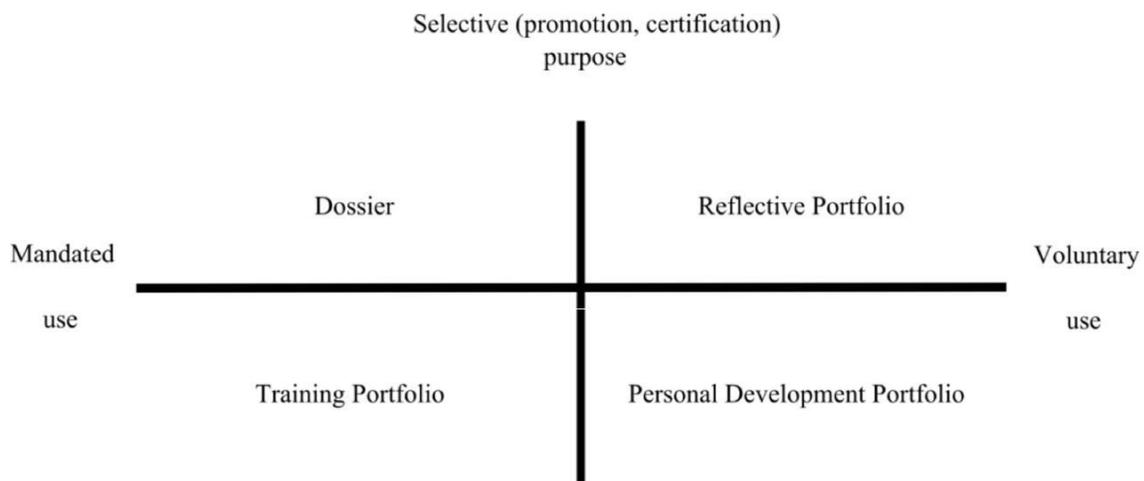
Paradoxically, although India has the one of the greatest labor surpluses in the world, Indian employers are experiencing difficulty in hiring due to untrained manpower being more available than skilled. Indian employers often state that the envisaged business growth rate is not achieved since there is a shortage of competent and sufficiently trained workers. A large percentage of available Indian workers are either unskilled or inadequately skilled. Currently, India is surplus with semi-literate workforce without requisite marketable skills. According to a report of National Council on Skill Development, among those in 15 to 29 years age group, only 2% have received formal and 8% have received non-formal vocational training. Also 80% of workforce in rural and urban areas does not possess any identifiable skill. Against 12.8 million annual new entrants to the workforce, vocational skill training facilities for only 3.1 million are available. The real challenge is not to find low-paying jobs for unemployed, but to equip those entering the workforce with necessary skills for a life of dignity in a globally competitive environment.

Our vocational education system is in urgent need of a continuous review process to bring it in harmony with and relevant to current industrial requirements. Vocational qualification standards vary widely across institutions and schools and these are often disconnected with the industry needs. Passing out students are generally equipped with outdated or irrelevant skills. This lack of skills in Indian workers adversely impacts the Indian economy and its transition from agriculture to manufacturing/ service sectors.

As per studies from FICCI and Ernst & Young, more than 75% of future job opportunities shall be “skill-based”. Besides one time formal vocational education an essential requirement shall be

continuous Self-Directed Learning. A pioneer in identifying this requirement, defines Self-Directed Learning as a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes on their own.

Some of the identified key challenges in the Vocational and Technical Education System in India are absence of standardized Industry practices, qualified faculty, vocational training, industry relevant curriculum and on the job training. The passing out candidates are trained but are not employment ready. Their portfolios are inadequate to secure them gainful employment. Companies therefore spend massively in terms of time, effort and resources to train the recruits on necessary skills for them to become productive for the company. A diagram of portfolio classification by purpose and volition of use (adapted from Smith & Tillema, 2003) depicts the four different kinds of portfolios. The purpose of the portfolio is placed on the vertical axis. Volition of use is placed on the horizontal axis.



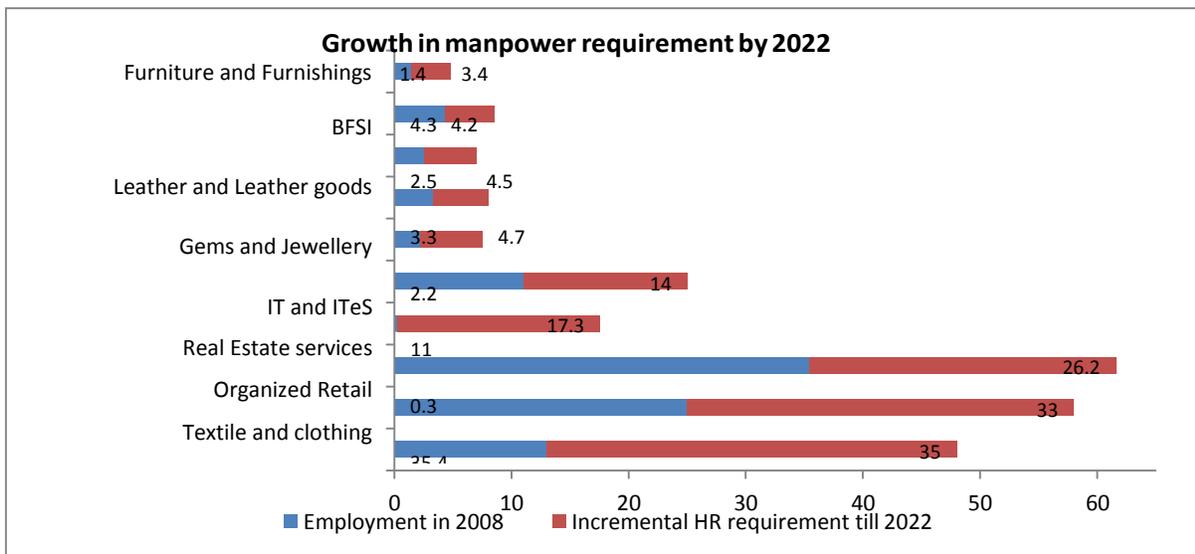
Trained manpower equipped with a portfolio of Personal Development is likely to secure employment that would realize all the needs as described by Abraham Maslow in 1943.



**Demand Supply Gap:**

India is faced with a significant gap challenge between the supply of trained workforce and anticipated demand of economy in its major sectors. India is expected to grow at an average rate of 8% in the next 10 years. By 2022, more than 700 million Indians shall be of working age, 500 million of them will require vocational or skill development training and thus the infrastructure facility requirement cannot be over emphasized.

Government has identified 20 high-growth sectors of industry and service sector of which 10 high-growth sectors are in manufacturing and equal number in services that shall provide expanded employment. Estimated requirements are illustrated hereunder:



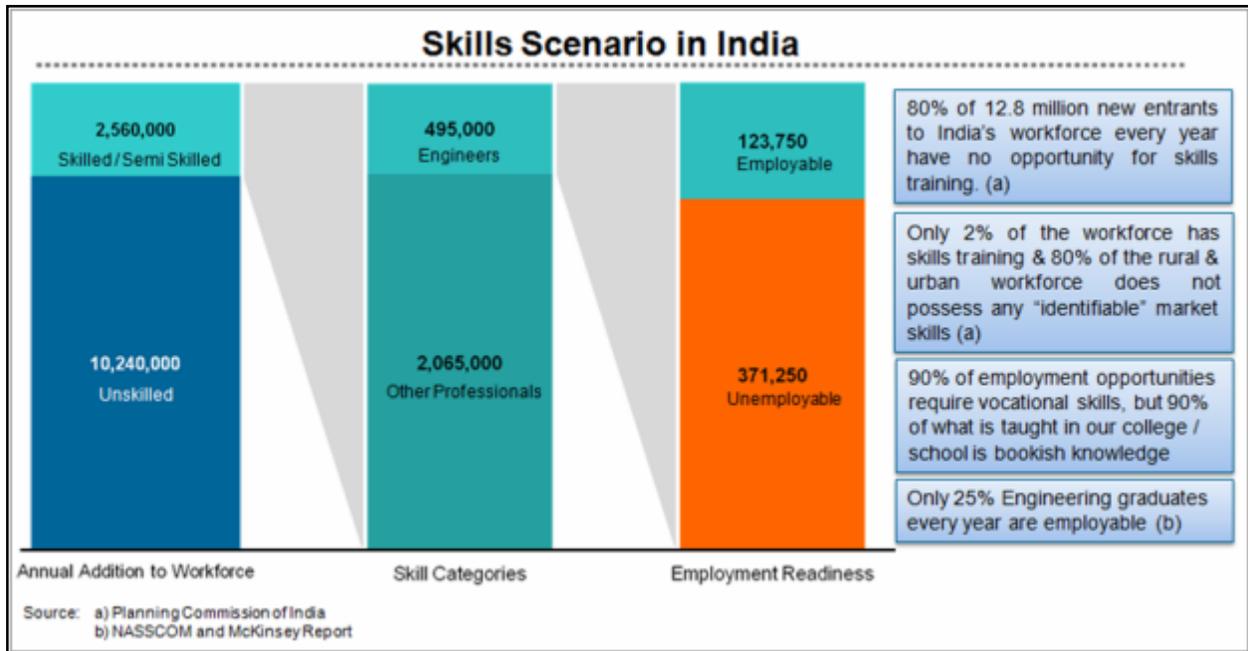
Given that 50–70 million jobs would have been created in the 5 year period from 2011-12 to

2016-17; about 75%–90% of these would have been in the skilled ecosystem. The table below reflects the employment scenario upto 2017 (Source NSDC).

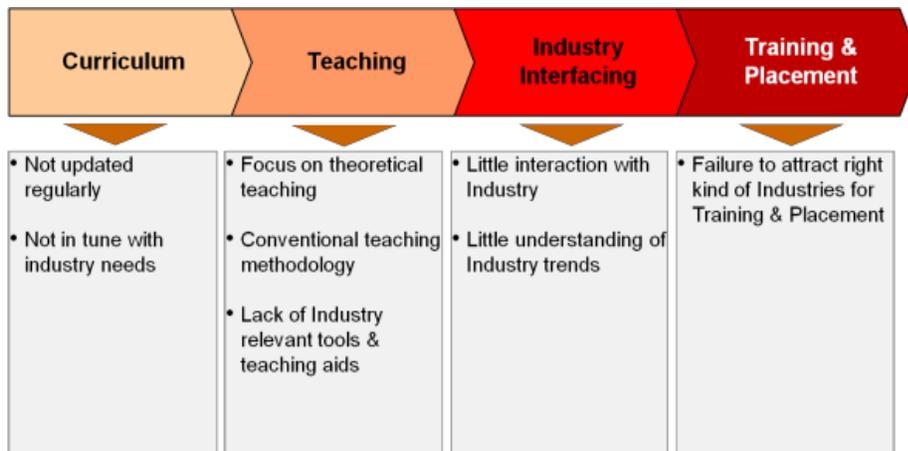
Year	GDP growth	Projected employment (in millions)			
		Agriculture	Industry	Services	Total
2011-12	9%	229.2	105	153.5	487.7
	7%	225.4	102	149	476.4
	5%	221.5	99.1	144.6	465.2
2016-17	9%	240.2	126.2	189.5	555.9
	7%	232	116.8	174.8	523.5
	5%	224	108.1	161.2	493.3

Demand shall primarily be in the manufacturing sector to employ 100 million additional people by the year 2020. The present education system is insufficient to meet the need for skill development. Even among the skilled persons currently employed by manufacturing sector only a small % have technical skills acquired from ITIs, Engineering/ professional Colleges and other skill development initiatives of the State Govts and Central Govt. Thus Skill Development is the key to economic and social development. India could easily become the global sourcing hub for skilled workforce provided we could adequately skill our million plus workforce ready population. There is an ever-increasing migration of labor from agriculture to manufacturing and services. The workforce needs to be adequately trained, made industry-ready and globally employable.

Pan India Gap between Technical Education and Industry needs in India is depicted below:



Major challenges to be combated in skill development space are aptly reflected in this diagram borrowed from a study published in an international Journal:



Skill Development has to encourage innovative 'THINKINGS' in the trainees. In a recent study presented in the World Skills Meet, these THINKINGS are reflections on key issues surrounding both the future of skills and current global challenges:

1. Think(Innovation)
2. Think(Happiness & Tolerance)
3. Think(Green)

4. Think(Global Citizenship)
5. Think(Industry)
6. Think(Entrepreneurship)

**Thinking Innovation** requires that skills education and knowledge fuel the growth of smart society. Skills and technology need to evolve simultaneously with human and social interaction. The creative use of skills support the development, building and maintenance of sustainable smart cities. Governments have a major role in supporting the development of new skills. Education must be adaptable and applicable to the relevant industry. There should be a balance between job readiness and adaptability. Experience is essential to strike a balance between practical skills and academic education. Seeking opportunities and practical experience builds confidence and self-awareness in students. Encouraging on-the-job training will ensure that real-world skills are acquired. Basic skills such as adaptability, creativity and flexibility will foster tomorrow's innovation. Flexibility in education is strongly recommended to create a balance between soft and academic skills. Encouragement of industry to work in partnership with educational institutes for mutual benefit shall also be an essential requirement.

While **THINKING HAPPINESS AND TOLERANCE** it is imperative that diverse and inclusive educational systems are developed to build happy and tolerant society. More gender equality and inclusion through equal access to education needs to be promoted. Reviewing curricula and teachers'-training are essential to mainstream cultural diversity. Investing in research is prerequisite to catering to the needs of diverse groups. Building awareness on vocational education is not avoidable. It is necessary to create an environment of skills-based optional classes for students across all educational levels. Social media could be a powerful tool for promoting the importance and value of skill trainings. Raising awareness is required on a continuous basis through government advocacy and educational reforms. Incorporating information on skills in school curricula could help uncover hidden talents among students. It is crucial to initiate Skill Trainings that provide financial incentive and funding for students to pursue these opportunities. Through campaigning and counseling, the youth should be encouraged to build careers based on their preferences and acumen.

**THINKING GREEN** is another important ingredient for inclusive skill development initiatives. Skill curriculum should incorporate environmentally sustainable approach and be aligned to international standards and regulations. Government is mandated to put in place regulatory

frameworks and promote green thinking at all levels. Climate competitions could help create innovative and affordable solutions while encouraging the youth become environment conscious, Curricula in schools should cover Regulatory and legal framework. Investing in sustainable skills shall work towards global environmental sustainability. The concept of green innovation should be in economic, social and environmental fields.

In skill development space, importance of **THINKING GLOBAL CITIZENSHIP** cannot be undermined. Awareness about global citizenship can be promoted through interactive platform. It is crucial to adopt an innovative educational system through informal education. Government collaboration can build programs that promote youth mobility within our country and even internationally. Replicable success stories should be shared for motivation. Accessibility and efficiency of content can be achieved through collaboration with global partners. Such network can create a medium between education systems and successful professionals. Aligning global skill requirements with local education practices can help achieve social equity, sustainability and prosperity. It is essential to incorporate technological advancements in skilling. Frequent dialogue between students and employers backed up with strong educational systems supported by labor markets' feedback is essential. Dual education systems that call upon the independent skills of critical thinking, adaptability and technological skills (theory and practice) are the need of hour.

**THINKING INDUSTRY** shall be equally important in the years to come. In a globalized world, data revolution will increase the need for dynamic skills for future jobs. Today's industrial development phase has a crucial connection with data revolution that would result in increased efficiency to provide more goods at a cheaper price. Educational institution and systems should adopt data analysis, problem solving, creative art, IT, decision-making and also soft skills in their curriculum. Educational transformation through IT and soft skills shall empower individuals to navigate tomorrow's smart industry. It is crucial to integrate both private sector and government-led initiatives to interconnect students with the smart industry. Lifelong learning is a fundamental mindset for skilled youths for the complex future. Schools must ignite students' curiosity and motivate students continuously.

Government should provide a policy framework for companies and the educational sector to cooperate to ensure synergy.

Skill development mandates us to **THINK ENTREPRENEURSHIP**. Sharing economy can be a catalyst for evolving the way of learning and developing careers. The collaborative economy has redefined roles and created new types of workplaces. We can benefit from the sharing economy by leveraging crucial IT skills driven by digital platforms and global networking. It is recommended that facilitating access to information that can enhance our education and professional growth. We need to build an environment that encourages Entrepreneurial mindset at all levels of society. Entrepreneurship should systematically be embedded within skill educational institutions.

### **SKILLING PERSPECTIVE IN ARUNACHAL PRADESH:**

The State has declared its Industrial Policy that aims to facilitate and promote the growth of industry, employment and investment in Arunachal Pradesh through the stated initiatives which include:

1. To create an investment-friendly environment in the state for industrial growth in the private, joint and cooperative sectors for sustainable economic development of Arunachal Pradesh.
2. To generate employment opportunities in the State.
3. To make Arunachal Pradesh a preferred destination for outside investors.
4. To encourage local entrepreneurs to set up enterprises based on locally available raw-materials.
5. To promote export-oriented industrial units.
6. To take steps to promote the handloom and handicrafts industry.
7. To promote local investors through joint ventures with outside investors.
8. To encourage industrial units producing high value products.

(Source: Industrial Policy of Arunachal Pradesh 2008)

The North Eastern Council (NEC) and the Ministry of Development of North Eastern Region (DoNER) has prepared Vision 2020 for the North Eastern Region. The Vision 2020 envisages the following targets by 2020:

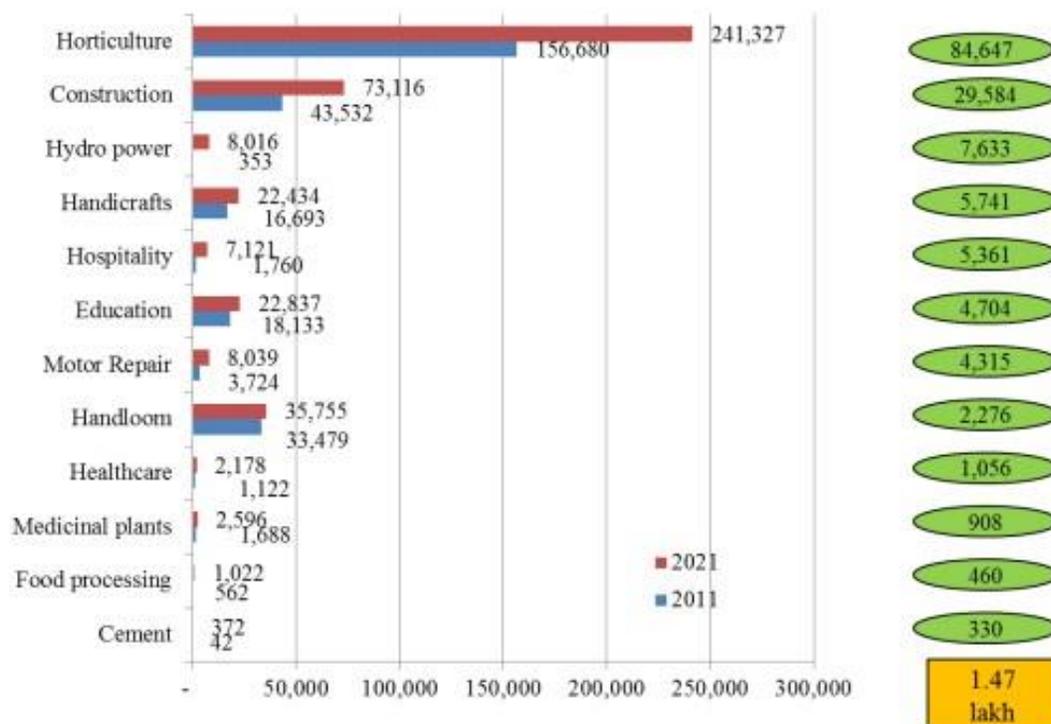
1. Overall GSDP growth at a CAGR of 11.64 % between 2007-09 and 2019-20.
2. Overall per capita income growth of 12.95 % between 2007-09 and 2019-20.

To support this vision, the Ministry of Development of North Eastern Region has formulated a strategic plan focusing on three broad dimensions including preparation of a Plan of Action for building capacities and competencies in critical sectors in the North Eastern States by:

1. Identifying institutes and organizations for imparting training and building capacities in the North Eastern Region.
2. Setting up of Training Institutes in the Region in important fields through line Ministries, NEC or States.
3. Augmenting the capacity of the existing training institutes in the North Eastern States.
4. Use of IT as a tool to upgrade skills.

Projected requirement of skilled work force is estimated as under:

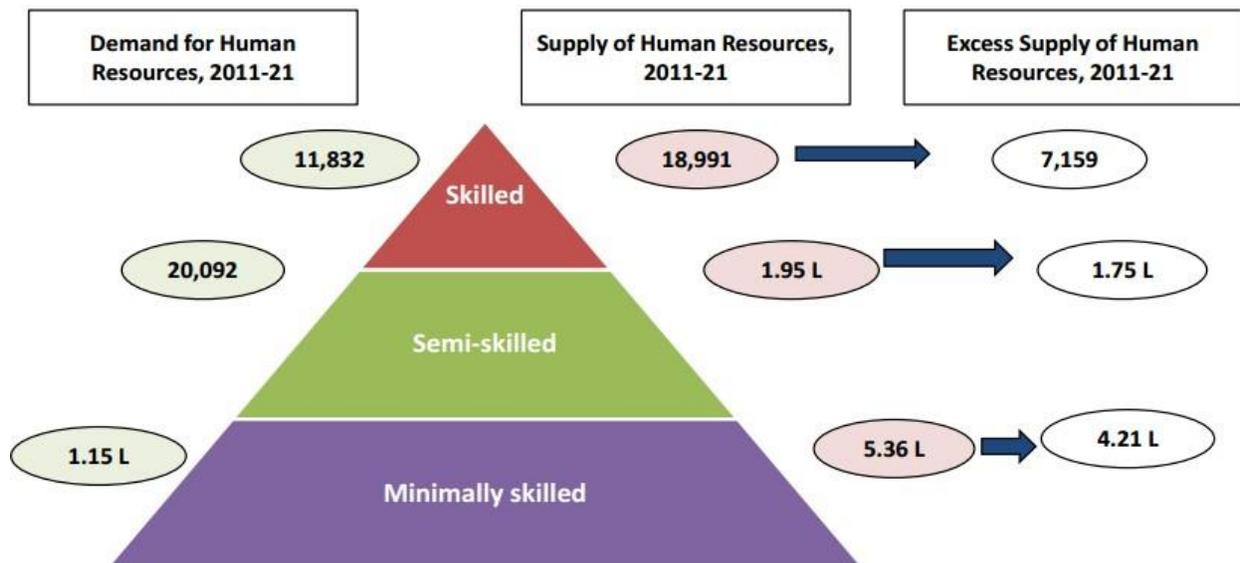
**Human Resource Requirement in Arunachal Pradesh, Nos.**      **Incremental demand, 2011-21, Nos.**



Source: IMAcS Analysis, NSDC Report

Total incremental supply of human resources in Arunachal Pradesh during 2011-21 is estimated to be 0.75 million. Since domestic demand is estimated to be 0.147 million it

indicates that domestic growth in the State may not be able to utilize the supply of human resource and the excess shall be 0.603 million. The excess human resources has to be adequately and appropriately skilled for migration so as to find gainful employment outside the State or even globally.



### **Incremental Manpower Gap – 2011-21**

*Source: IMaCS Analysis, NSDC Report*

The Government of India has launched the "Look East Policy" for development of infrastructure for industries and trade. This would mandate availability of skilled and job ready personnel in adequate numbers that could encourage investors/ business persons for coming to Arunachal Pradesh.

Holistic skill development initiative shall require a 360 degree approach and no less. The training infrastructure and the trainees have to ensure inclusive skill development. The inclusion criteria would require remodeling and continuous review of Institutional factors, curriculum factors, learning process factors, personal factors and thereafter employment/ self employment factors. Convergence of all the factors cannot be overlooked. Stronger the convergence stronger shall be the skill development for the State.

The State of Arunachal Pradesh at present has skilling infrastructure that teaches core skills but without the soft skills and comprehensive knowledge the trainees are not professionally trained and job-ready. This results in the skilled workforce being poorly employed or

unemployed. On the job trainings/ practical trainings are yet to be organized formally and the factor of nonexistent industrial sector in Arunachal Pradesh makes the proposition difficult.

The industry-academia engagement has to be strong so as to develop a state-of-art evidence based trainings and interactive student learning experiences. This engagement would define what and how students need to learn, design curriculum that meets the marketplace needs and also facilitate employment.

Academic and youth development programs to promote engineering discipline with real-world experience and skills are need of the hour. Skill Training Programs aiming to develop innovative thinking workforce, knowledgeable and efficient in engineering and manufacturing practices, that meet the requirements of proficient advanced-technology have to be set up urgently.

Arunachal Pradesh is a north-eastern state of India with a huge hydropower potential. Specific trainings in hydropower sector would result in high local placements. Border Areas need focus so that the inhabitants are retained in the border areas to maintain security for the country. First reports of trespass/ invasions and insurgency are reported by the local people. They have to be empowered with skills and business is required to be developed so that they are gainfully employed locally.

The ideal outcomes of a good vocational education essential for development of employable youth are empowerment of youth with – skills, sensibilities, working knowledge, care and understanding of tools and resources, wider skills/dispositions for lifelong learning and orientation for excellence. All vocational education, whether short term or long term, ought to aim for this. Vocational subjects are distinct from academic subjects in a number of ways, each of which raises its own concern for the organization, teaching, and assessment of such subjects. The balance between subject content knowledge and workplace procedural knowledge is more critical for vocational education.

### **PROPOSED WAY-FORWARD:**

Vision of skill development for Arunachal Pradesh is to equip the youth of Arunachal Pradesh, who have not had the opportunity for formal higher education, with employable skills that could provide sustainable livelihood as well as prospects for future growth in career. Simultaneously increase the capacity and capability of the system to deliver quality skill training

and professional trainings to the youth to enhance their employability and bridge the skill deficit between market demand and available manpower.

The technical/ vocational education works with three media:

**PHYSICAL MATERIALS:** Imitating, practicing, trial and error as part of real-world problem- solving. Improvements in Labs infrastructure is unavoidable through adoption of latest open technologies in engineering design, manufacturing, analysis and management to serve needs of industries.

**PEOPLE:** Feedback, conversation, simulation, role play with students is required for stepping up the trainings qualitatively as well as quantitatively. Continuous upgrading the faculty competencies of Technical Institutions through intensive ‘Training of Trainers’ is essential both for knowledge content as well as pedagogy. In the interest of high value skill education and marketability of skills, this issue assumes high priority.

**SYMBOLS (WORDS, NUMBERS AND IMAGES):** Learning through virtual environments and modern subjects and topics in Technical Education curriculum, in alignment with the Industry needs is becoming essential.

To bridge this gap between demand and supply of skilled workforce, Arunachal Pradesh should create and modernize its technical institutions with industry-relevant skill education preferably in active partnership with the Industrial Sector.

Achieving the aforesaid goal is possible through the following initiatives/ actions:

1. Implementation of PMKVY.02 and other Skill development Programs on Mission Mode.
2. Association with reputed PMKKs, PMKVY accredited agencies and other Skill Development agencies in Arunachal Pradesh and even pan India to bring training infrastructure and opportunities to Arunachal Pradesh. Facilitation of training facilities at District Level at affordable cost to the youth of Arunachal Pradesh is mandated.
3. Forward integration with attractive employment opportunities in rural/urban, organized/unorganized sectors in traditional/contemporary employments through a modern and online Employment Portal by the Labour and Employment Department. Exploring the

possibility of PPP set up may be a better alternative considering that experienced companies could be available right away while capacity building for Department may be a challenge.

4. Promotion of entrepreneurship by the Industries Department on soft financial lending terms would go a long way in promoting skill development.
5. Provision of training facilities to enable the trained workforce to upgrade skills to advance in the dynamic demands of employment and developing technologies has to be ensured.
6. Facilitating investment in skill development through high quality training institutes in the private sector cannot be postponed.
7. Mobilization and Registration of Candidates through an intensive awareness/ communication and mobilization campaigns is felt need to ensure high % registration of target candidates in the State.
8. Implementation of Recognition of Prior Learning under PMKVY.02. shall play a crucial role in skill development.

Engagement of other Departments of the State Govt and mapping of Skill Development facilities available in other Departments is required so as to ensure optimum utilization of their existing education and training infrastructure. Decentralization of preparation, implementation and monitoring of District level annual skill training action plans, within the framework of State plan be implemented to incorporate local needs.

Creation of robust training infrastructure based on credible system of Accreditation, Assessment & Certification is crucial for better utilization of existing infrastructure both in public and private sectors.

Availability of Trainers is absolutely essential both in adequate number and in contemporary competencies in both public and private sector has to be ensured.

A dynamic State web portal has to be established in line with the recommendations of the Sub-Committee of National Skill Development Co-ordination Board on "Establishing Institutional Mechanism for providing access to information of Skill Inventory and Skill Maps on real-time basis".

Directorate of Employment needs to proactively work on:

1. Creating and Maintaining a dynamic Labor Market Information System;

2. Modernizing Employment Exchanges and developing a State Web portal housing data on skill needs of the industry and supply of skills on real time basis.
3. Restructuring of the traditional employment exchanges into the career counseling & guidance centers for the students. These shall also act as information hub for the dissemination of vital information related to the Skill Development Initiative within the State.

Strong Industry Participation needs to be encouraged to participate in planning, preparation and implementation of skill development plans and schemes, enhancing and strengthening the training infrastructure and making training more demand responsive.

Bringing information about various skill training schemes implemented by various State Departments under one single nodal agency to ensure adherence to high quality of training is unavoidable. Further it is a felt need to formulate a mechanism to impart certification through single body within the State.

Formulation of new courses & training modules to cater to the dynamic industry needs at the District level, in consultation and with expert advice from the reputed industry players, is again important. Co-ordination with industry partners is to be firmly institutionalized to provide placement avenues for the trainees in terms of on-job-training to create job ready skilled workforce.

Allocation of the unoccupied space within the Govt. education institutes (schools & colleges) for utilization after their functional hours to the private training institutes for imparting skill development trainings can also be considered actively to augment training infrastructure.

Execution of the concept of 'finishing schools' to impart soft skills to students in each and every skill training institute and industrial training institutes (ITIs) is necessary to make skilled youth job ready. This shall lead to higher employment opportunities and higher salaries being available.

Establishment of necessary legislative framework for employment of youth trained within the State in Govt/ PSU jobs should also be considered since it shall promote skilling among youth of the State.

Support counseling activities, awareness & guidance programs for the trainees, prospective trainees and Vocational Training Providers need to be organized by Skill Development Deptt to encourage participation.

Arranging workshops and brainstorming session for the key stakeholders are required.

Implementation Mechanism needs strengthening too. The Deptt of Skill is functioning with skeletal staff and we need competencies in the Department for implementation of skilling activities as well as for Implementation of PFMS and Web Portals. Communication competencies are essential within the Deptt for organizing skill trainings by private players and also to take up mobilization of candidates in a big way. The Department would need Financial Management competencies for identification of source of funds from:

- (i) State Govt.
- (ii) Govt of India
- (iii) Private Industrial Groups / Industry Associations
- (iv) PPP mechanism to supplement States efforts for setting up and managing the State skill development program.

Work well begun is half done therefore it is the endeavor of the Skill Development Department to take skilling forward on a significant scale.

---

---

