



# Skill Gap Analysis Report – **Paving the way for Development of Safety Skills**

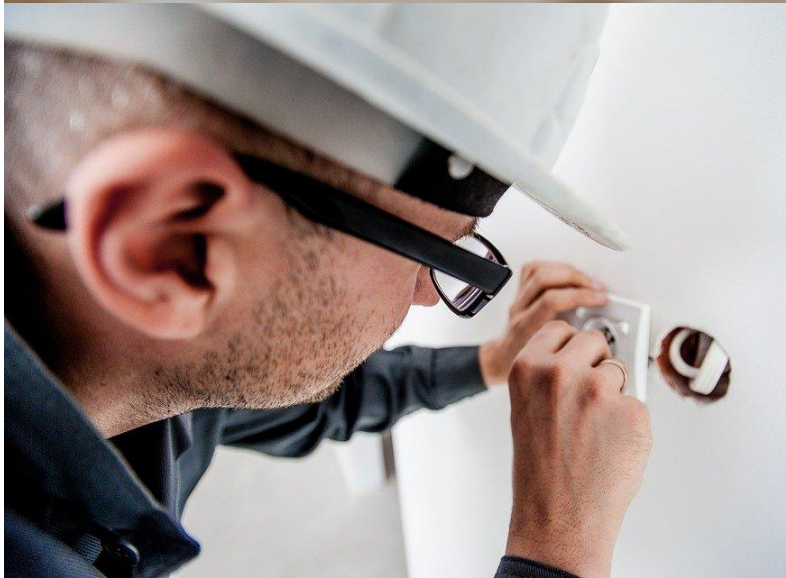


**SAFETY SKILL DEVELOPMENT FOUNDATION**

217, Luxuria Business Hub, Dumas Road, Surat-395007 (Gujarat) INDIA.

+91 261 27 249 94 | [info:ssdfindia.org](mailto:info:ssdfindia.org) | [www:ssdfindia.org](http://www:ssdfindia.org)

# Paving the way for development of Skills for National Growth





This report is prepared by ASK-EHS Engineering & Consultants Pvt. Ltd. (ASK-EHS), the parent organization for the benefit of Safety Skills Development Foundation (SSDF), which has been created under Section 8 of the Company Act 1923, focused on **empowering the environment, health and safety (EHS) efforts of organizations around the world.**

SSDF is a “not-for-profit” body, created by ASK-EHS for the purpose of the **generating employment through development of skills, competencies, and proficiencies in the field of Safety, Environment and Health.** SSDF works towards building competencies that shall allow safety skills training to take a quantum leap and contribute to the growth of India. **ASK-EHS shall be referred as the parent body to SSDF.**

Mr. J. K. Anand  
(Chairman)  
(Founder and Director)  
SSDF  
jkanand@ssdfindia.com

Col. Anand Kumar Singh  
(Chief Executive Officer)  
SSDF  
aksingh@ssdfindia.com

#### Compilation Team

Mr. Devendra Bathija  
Mr. Dipale Ejardar  
Mr. Mahesh Lanjekar  
Mrs. Susmita Nanda Dash  
Mr. Mukesh Patel

## Executive Summary

The global Environment, Health and Safety (EHS) market size are expected to grow from USD 5.3 billion in 2019 to USD 8.6 billion by 2024, at a Compound Annual Growth Rate (CAGR) of 10.2% during the forecast period. In India also we have got tremendous potential in the EHS market. India, despite its promising economic growth rate, the percentage of worker involved within the informal economy has stayed relatively stable at 92%. The latest unemployment figures (2020-2021) have also hovered around 7.4% (as it currently stands).

This working report aims to identify such gaps in skills (especially in safety, environment & health) that directly affect the potential of Indian workforce based mainly within the industrial domain – ranging from **unskilled, semi-skilled and skilled workers** as per **National Skill Qualification Framework (NSQF)**. SSDF is a “not-for-profit” body, created by ASK-EHS for the purpose of the **identification of skill gap and competencies, creation of qualification as per industry needs and generating employment through development of skills, competencies, and proficiencies in the field of Safety, Environment and Health and others.**

SSDF plans to work towards building competencies that shall allow skill training to take a quantum leap and contribute towards the growth of India.

India is still importing most of the Education and Certification program for Safety, Environment, Health, and some key skill trades of industries such as Scaffolding, Rigging, Equipment's operators, etc., from overseas-UK, US, Australia and Europe. ASK-EHS has formed SSDF to operate and run these QPs based skill development, both at national and international front, and to create employment opportunities in India and Overseas. At the same time, it also wishes to export of certification and competency program as well as skilled manpower to become the part of creating opportunities for Indian youth & bringing more foreign currency for our country via this education system.

**The Indian economy is growing at a faster pace & easy labour supply is one of the important catalysts for it.** Thus, effective utilization of this **skilled workforce** is possible only through sustained efforts at both rural and urban areas. A vast number of young people in India lack the **key skills and up-skilling & re-skilling** of their skills is needed to remain employable. It can be done through more productive investments by government in training and skill development for the Indian youth and facilitate migration which will help in gaining employment overseas and in retaining the distressed migrants. A further push towards technology, innovation and self-sustainability will lead the country to discover new avenues. Among all this, for the first time, ‘**Safety, Environment and Health**’ as a trait has taken precedence as never seen before.

Based on extensive research and establishing and analyzing case studies/data, SSDF plans to develop 400+ Skills & competencies **Qualifications Packs** as per **National Skill Qualification Framework (NSQF)** for which it is seeking authorization to award Qualifications or, Certifications.

# Table of Contents

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| Paving the way for development of Skills for National Growth ..... | 1   |
| Executive Summary .....                                            | 3   |
| Table of Contents.....                                             | 4   |
| Abbreviations.....                                                 | 5   |
| Preface.....                                                       | 7   |
| Context and Approach .....                                         | 9   |
| Introduction .....                                                 | 12  |
| Employment Status in India .....                                   | 14  |
| Human Resource Requirement in 2022 .....                           | 15  |
| The Opportunity.....                                               | 19  |
| Industry Overview .....                                            | 21  |
| Labour Migration .....                                             | 25  |
| Defining Human Capital in Industrial domain.....                   | 28  |
| The Employment Void and Potential Growth .....                     | 30  |
| Future Trends in Employment .....                                  | 31  |
| Sectors at Risk and Diverging Trends .....                         | 33  |
| Lack of Accreditations or Qualifications Mechanism .....           | 35  |
| List of Identified QPs for bridging Skill Gaps in EHS works .....  | 38  |
| Purpose of establishing these Qualifications .....                 | 71  |
| Skill Gap Analysis.....                                            | 77  |
| Some of the Key Trade specific Skill Gap Analysis.....             | 80  |
| How SSDF is fulfilling these gaps? .....                           | 95  |
| What are the Benefits of these Qualification Packs (QPs)? .....    | 99  |
| SSDF Proposition.....                                              | 103 |
| Future Scenarios .....                                             | 107 |
| Synopsis.....                                                      | 114 |
| Some Brief and Strength of the Parent Organization .....           | 117 |
| References List .....                                              | 126 |

## Abbreviations

| ABBREVIATIONS |                                                                       |
|---------------|-----------------------------------------------------------------------|
| SSDF          | Safety Skill Development Foundation                                   |
| QP            | Qualification Pack                                                    |
| NSQF          | National Skill Qualification Framework                                |
| EHS           | Environment, Health and Safety                                        |
| USD           | United States Dollar                                                  |
| IoT           | Internet of Things                                                    |
| GDP           | Gross Domestic Product                                                |
| UK            | United Kingdom                                                        |
| US            | United States                                                         |
| ISO           | International Organization for Standardization                        |
| OHS           | Occupational Safety and Health                                        |
| FDI           | Foreign Direct Investment                                             |
| GCC           | Gulf Cooperation Council                                              |
| WBG           | World Bank Group                                                      |
| ILO           | International Labour Organization                                     |
| ITI           | Industrial Training Institute                                         |
| NGO           | Non-Governmental organization                                         |
| USA           | United States of America                                              |
| NSSO          | Safety Skill Development Foundation                                   |
| NEBOSH        | UK based National Examination Board in Occupational Health and Safety |
| IOSH          | UK based Institution of Occupational Safety and Health                |
| BSC           | British Safety Council                                                |
| CITB          | Construction Industry Training Board                                  |
| CSP           | Certified Safety Professional                                         |
| OSHA          | Occupational Safety and Health Administration                         |
| PTW           | Permit To Work                                                        |
| BOCW          | Building and Other Construction Workers Act                           |
| CV            | Curriculum vitae                                                      |
| CSDC          | Construction Skill Development Council of India                       |
| W.H.O         | World Health Organization                                             |
| ROI           | Return on Investment                                                  |
| EHSF          | Environment, Health, Safety and Fire                                  |
| BBS           | Behavior Based Safety                                                 |

| ABBREVIATIONS    |                                                          |
|------------------|----------------------------------------------------------|
| HIRA             | Hazard Identification and Risk Assessment                |
| NSC              | National Safety Council                                  |
| SDG              | Sustainable Development Goals                            |
| NEET             | National Eligibility cum Entrance Test                   |
| PMKVY            | Pradhan Mantri Kaushal Vikas Yojana                      |
| AART             | Advanced Animation and Rendering Techniques              |
| SOP              | Standard Operating Procedure                             |
| LOTO             | Lock-Out Tag-Out                                         |
| NCVET            | National Council for Vocational Education and Training   |
| NSSO             | National Sample Survey Office                            |
| NSQF             | National Skills Qualifications Framework                 |
| JHA              | Job Hazard Analysis                                      |
| ALARP            | As Low As Reasonably Practicable                         |
| PDCA             | Plan-Do-Check-Act Cycle                                  |
| O & M            | Operations and Maintenance                               |
| OPITO            | Offshore Petroleum Industry Training Organization        |
| H <sub>2</sub> S | Hydrogen Sulfide                                         |
| HAZOP            | Hazard and Operability Study                             |
| CFL              | Compact Fluorescent Light                                |
| ETP              | Effluent Treatment Plant                                 |
| STP              | Sewage Treatment Plant                                   |
| TPI              | Third Party Inspection                                   |
| EOT Crane        | Electric Overhead Travel Crane                           |
| TEC SOK          | Technical Consultancy Services Organization of Karnataka |
| KIA DB           | Karnataka Industrial Areas Development Board             |
| MSME             | Ministry of Micro, Small & Medium Enterprises            |
| KSSIDC           | Karnataka State Small Industries Development Corporation |
| DIC              | District Industries Centers                              |
| SISI             | Small Industries Service Institute                       |
| NSIC             | National Small Industries Corporation                    |
| SIDBI            | Small Industries Development Bank of India               |
| KSFC             | Karnataka State Financial Corporation                    |

## Preface

The global Environment, Health and Safety (EHS) market size are expected to grow from USD 5.3 billion in 2019 to USD 8.6 billion by 2024, at a Compound Annual Growth Rate (CAGR) of 10.2% during the forecast period. The acceptance of International standards across emerging economies and the emergence of predictive analytics and IoT in the EHS market expected to create opportunities for EHS vendors. <sup>1</sup>

In India also we have got tremendous potential in the EHS market. ASK-EHS is the pioneer in leading the EHS Domain with unrivaled expertise, in-depth understanding of EHS, and research & technology-led service solutions that have enabled us to be established as India's most preferred EHS service provider.

The International Monetary Fund (IMF) projected an impressive 12.5 per cent growth rate for India in their latest edition of the International Monetary Fund's (IMF) World Economic Outlook, April 2021. India's economy is expected to grow by 6.9 per cent in 2022. <sup>2</sup>

India, despite its promising economic growth rate, the percentage of worker involved within the informal economy has stayed relatively stable at 92%. The latest unemployment figures (2020-2021) have also hovered around 7.4% (as it currently stands).<sup>3</sup>

**Arthur Melvin Okun**, an American economist in 1962, proposed an empirical relationship now known as the **Okun's law under macroeconomics: The "gap version" states that for every 1% increase in the unemployment rate, a country's GDP will be roughly an additional 2% lower than its potential GDP.** In the context of India's economic scenario – a vast majority under the informal sector and with a relatively recent focus on “manufacturing sector” – the relationship, has been felt by almost all the tiers of employed and unemployed populace.

This working report aims to identify such gaps in skills (especially in safety) that directly affect the potential of Indian workforce based mainly within the industrial domain – ranging from unskilled to semi-skilled and skilled workers. The challenges that do not allow a worker and their skills to remain ‘relevant’ within a short span of say, 5 years, i.e. only if technological advancements, also, follow the similar pattern of growth.

Within the scope; case-based scenario(s), established with the on-ground hurdles in labour market and mindset, future legwork and how ‘targeted skill based’ programs can offset and overcome such gaps for a productive India, will be presented through this report. The sole intention of the report is to establish a strong case for skill development, their accreditations and the necessary architecture for bringing about measurable change.



MR. J.K. ANAND

(Chairman)

Safety Skill Development Foundation



## CONTEXT AND APPROACH

## Context and Approach

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Brief Background | ASK-EHS as a parent company registered a new company named as <b>SSDF (Safety Skill Development Foundation)</b> , under section 8, which is going to work as Awarding Body. ASK-EHS with its 15 years of experience in EHS (Environment, Health & Safety) Sector and based on those experience, ASK-EHS has done Independent Studies. ASK-EHS is trusted by more than 600+ global clients across 30 countries also has a loyal customer base in all state of India, via six distinct services spanning Safety Management Consultancy and Advisory, Capability building and Skill upgradation, Creating employment and placements in India and Overseas, Visual Learning via – 3D animation Movies and Simulations, Software and Digital Enablement and scaffolding management services. The stake holders of ASK-EHS belongs to EHS field. |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

This report has been prepared by **ASK-EHS Engineering & Consultants Pvt. Ltd. (ASK-EHS)**, the parent organization for the benefit of **Safety Skills Development Foundation (SSDF)**, which has been created under Section 8 of the Company Act 1923.

ASK-EHS is India's leading integrated service provider in the domain of Safety, Health & Environment. It has pioneered the safety movement in India through its practical and innovative services & solutions that have led to high safety performance for its patrons.

It serves customers through the following broadly categorized verticals, which are specialized for Safety, Environment and Health:

- 1) Safety Management Consultancy and Advisory
- 2) Capability building and Skill upgradation.
- 3) Training and Assessment in Various disciplines.
- 4) Creating employment and placements in India and Overseas.
- 5) E-learning programs
- 6) Visual Learning via – 3D animation Movies and Simulations
- 7) Software and Digital Enablement
- 8) Resource Engineering
- 9) Scaffolding Management Services
- 10) Publications – “B-Proactive EHS Magazine”

ASK-EHS is a 15-year young organization that serves over 600 customers across 30 countries. It is growth-oriented company founded by EHS professionals (veterans) with the vision of enhancing the Safety Management System of industrial organizations. It continues to serve customers from a myriad of different industries both in India and the world.

**SSDF** is a “not-for-profit” body, created by ASK-EHS for the purpose of the **generating employment** through **development of skills, competencies, and proficiencies** in the **field of Safety, Environment and Health**.

**SSDF** works towards building competencies that shall allow safety skills training to take a quantum leap and contribute to the growth of India. **ASK-EHS shall be referred as the parent body to SSDF.**

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SSDF has engaged ASK-EHS Engineering & Consultants Pvt. Ltd. to independently prepare a report which is based on indigenous research and studies. This report takes several references from other neutral reports & research material that is available for reference. However, this report is created with the sole purpose of providing credible evidence, data and information that supports its overall vision of establishing SSDF as an awarding body. Any similarity with any other research paper or study is purely coincidental.

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The sole purpose of this report / document is to provide accurate and credible data which supports and provides a strong business case for establishing SSDF as an awarding body having global footprint and influence. All information provided in this document is accurate and absolute to the best of SSDF & ASK-EHS' knowledge and belief, however, this content should not be construed as a substitute for professional advice.

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## References

Several references, internal and external, have been liberally taken for emphasizing any critically important aspect, in this document. Wherever possible, accurate sources have been provided as a pointer towards these references. These sources have been deemed credible and / or renowned, however, the credibility of these sources is not in control of either SSDF or ASK-EHS. SSDF or ASK-EHS does not take any responsibility nor are they liable for any damage that may be caused owing to such references being utilized by the reader for any purpose other than those, that are written and intended for this document.

## Acknowledgements

We are grateful to our patrons (privately and publicly owned companies) who have supported our endeavor for preparing this report. We are also thankful to members of the Government of India, State governments, representatives of various government bodies, representative of educational bodies, non-profit organizations, training institutions, training partners, individual professionals and thought leaders, for contributing generously to this document and report.

SSDF also takes this opportunity to thank its researchers, content writers and technical professionals who have contributed significantly to the successful completion and establishment of this document.

Finally, SSDF thanks everyone who has, in some way or the other, been a generous contributor towards the successful completion of this report.



# INTRODUCTION

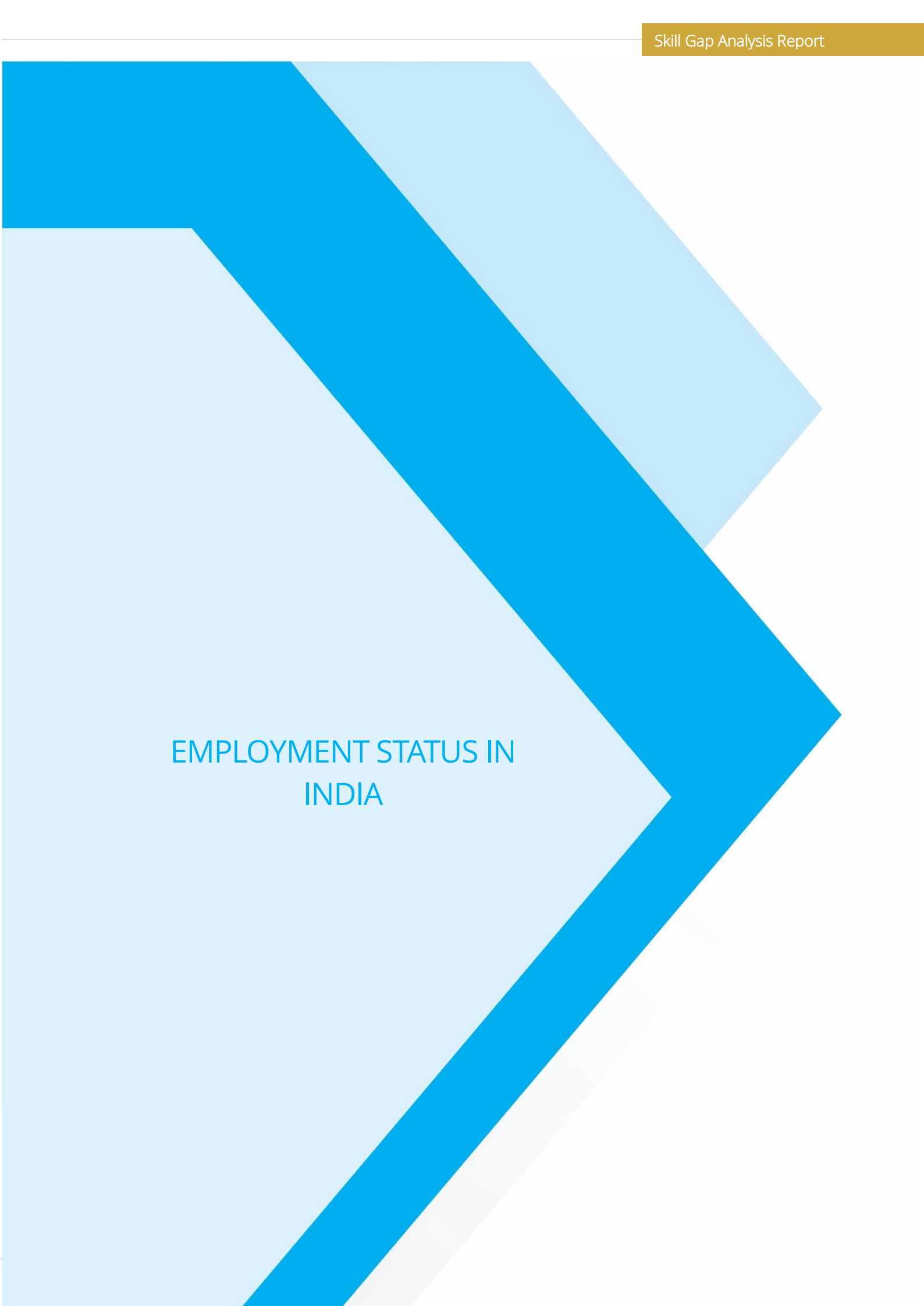
## Introduction

From ancient times, India has a rich tradition of education embedded with vast technical knowledge. The World's oldest University, the Nalanda University with a reputation of being the very best learning center in India and the whole of South Asia accustomed to attracting scholars from far foreign countries like Japan, Korea & China. There was a time, India used to dominate in the education sector, in the present scenario, and India is behind the other countries in the world, regarding world-class universities & advancement in the education system.

Contrary to the present education system, knowledge of every subject was not imparted to everyone. A student received the knowledge of those tasks, which is related to the future career path. So, the specialization-based education system started from childhood itself. But within the present education system, common subjects are taught to students till secondary or higher secondary classes, afterward, they have an option to choose their career path, specializing in subjects, concerned to his/her related field.

Especially, when we talk about the Education and Certification program for Safety, Environment, Health, and some of the key trades of industries such as Scaffolding, Rigging, Equipment's operators, etc., we are still importing lots of these certifications from overseas-UK, US, Australia, and Europe.

So, ASK-EHS created The SSDF to operate and run these QPs, both at national and international front, and it will create employment opportunities in India and Overseas both, at the same time we wish to export of certification and competency program and become part of bringing more foreign currency for our country via this education system.

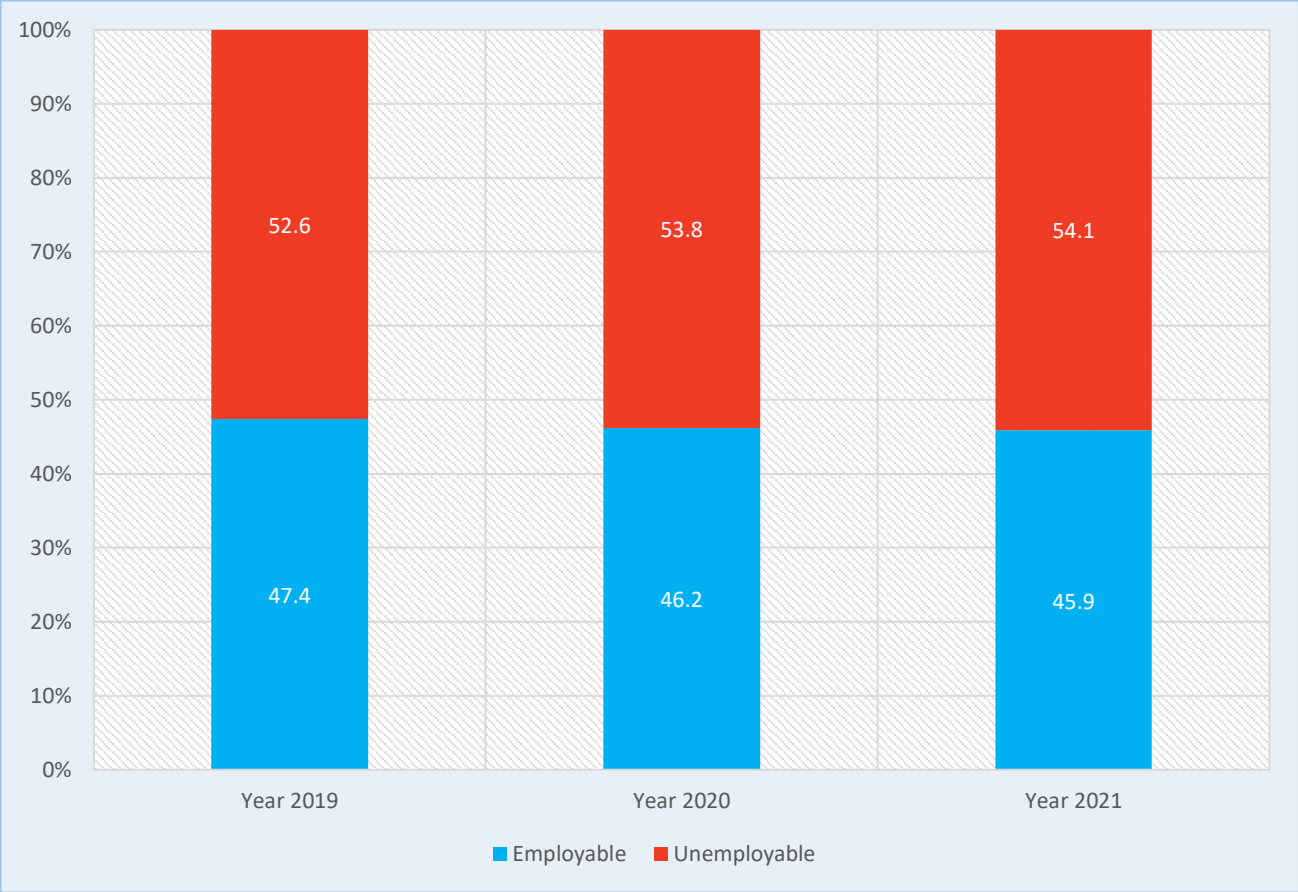


# EMPLOYMENT STATUS IN INDIA

# Employment Status in India

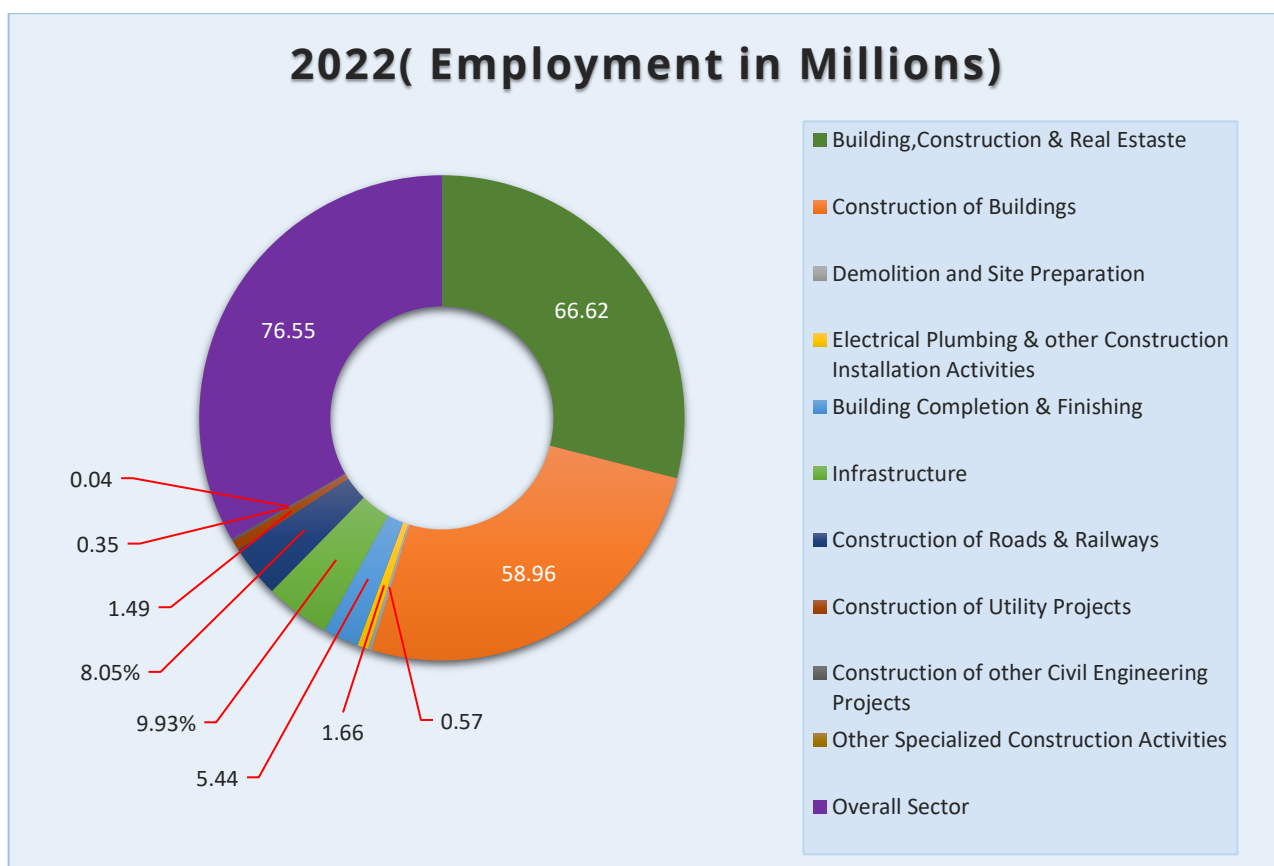
A vast number of young people in India lack the **key skills, Upskilling & Reskilling** needed to be employable, consistent with the recent survey done by The India Skills Report (ISR) 2021. <sup>4</sup>

According to the report, about 45.9% of youth would be considered highly employable resources. The number was about 46.2% in 2020 and 47.4% in 2019. India's unemployment rate reached an all-time high in 2020. Factors like deteriorating labor market, global competition and less aggregate demand. The situation further worsened with the coronavirus pandemic-induced lockdown.<sup>5</sup>



Employability Chart Year Wise

## Human Resource Requirement in 2022



Employment base in Millions

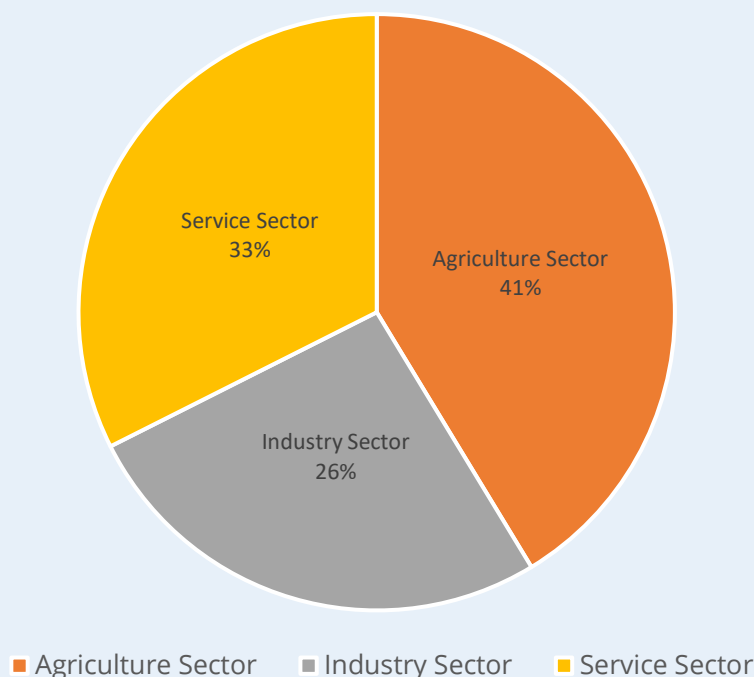
The turbulence from a macroeconomic standpoint and as an 'aspirational vortex' within the employment sector can be summarized as follows:

- 1) Lack of formal education or similarly applied level of attained education.
- 2) Lack of credible institutions, bodies, associations, and/or authorities for qualification, verification, validation, and certification in especially in the field of Safety, Environment, and Health and few important industrial trades such Scaffolding, Rigging, and equipment's operators, etc.
- 3) Limited and unreliable opportunities – for Skill Upgrade, or Upskilling; learning relevant Skills, or Re-skilling and in today's technology-driven job market, reinventing personal Skills, or Neo-skilling.

While a list of several more points can be identified and tabulated, the simple reason for the collective shortcomings can be traced to the informal sector – which stands at an uncomfortable 94%. As per Government of India statistics, the informal sector or, the unorganized sector contributes almost 50% of the total GDP.<sup>6</sup>

Let us also look at some numbers related to the percentages of workforces in various Occupational agencies or, Industries.

**Percentage (%) of Workforce in India  
501 Million Workers**



The total workforces amount to around 501 million workers in India, the second-largest behind China. If we consider just the service sector (33%), that is a very large number, largely incorporating (over 90%) unorganized sector. These migrant workers are generally employed in construction projects, diamond, textiles, chemicals, and other such industries. As is evident, this is a huge number of people that are usually uneducated and have developed skills mostly “on the job”.<sup>7</sup>

While on one hand, the proposed unification of existing labour laws into 4 labour codes will stabilize the policy and overall decision-making framework; the questions related to ‘relevance’ within changing job scenarios and its rendezvous with ‘skill association’, remains to be answered.

A premise backed with proactive policies and mechanisms in place by the Government of India through the National Career Services and Ministry of Skill development seeks to answer such questions. Moving to more comprehensive, accessible, and up-to-date digital platforms bears clear signs of commitment to transparency in governance and policymaking.

However, as it is the case with any Government policy or program, participation remains key to its success. The questions that face the Indian labour market within both the informal and formal economy and especially in the case of migrant workers; how the hurdles can be identified points 1) to 5) (above) can be tackled and effectively addressed.

Through this report, ASK-EHS has attempted to build a credible and strong case for the establishment of infrastructure and architecture to govern, manage and promote skill-driven qualifications which will give impetus to measurable growth of India - the nation.

Here's what has been covered in this report to endorse this case;

- 1) **The Opportunity:** Every report is prepared with the sole intention of providing credible data, which ultimately, gives insights into decisions and actions that are required to be taken. The Indian growth story is one of resilience, perseverance, and skill-driven. Through this document, we look at several available opportunities, primarily from the industries and construction (projects) point of view. Imminent growth will bring with it a series of challenges that need to be addressed immediately. This document will take an 'in-depth' look at some of these challenges and ways/methods to address and meet them headfirst. Towards that end, we look at the following;
  - (i) Identifying the industrial and organizational needs
  - (ii) The employment void and potential growth
  - (iii) Lack of accreditations and/or credible qualifications mechanism, especially for Safety, Environment, Health, Scaffolding, Rigging and some other important area, which are very important for any type of industry.
- 2) We look at available data (through indigenous research and external data) and weave a strong case for actionable exercises that will pave the way for growth. For this purpose, this document has underlined the following;
- 3) **List of segments of proposed qualifications by SSDF**
- 4) **Purpose of establishing these qualifications.**
- 5) **Skill Gap Analysis**
  - a) How are we fulfilling these gaps?
    - i) Prevalent practices
    - ii) Proposed model
  - b) Why have we designed these QPs?
  - c) Benefits of QPs
  - d) What is the basis of this qualification?
  - e) How these qualifications will create job opportunities in India and Overseas.
  - f) How industries will be able to reduce accidents at the workplace and able to increase productivity?
- 6) **Purpose of establishing an Awarding Body**
- 7) **Envisioning the future – SSDF - The proposition (Synopsis)**
- 8) **A summary of the Operational model of SSDF**

With all things driven towards the accomplishment of a set goal or target, this document also concludes, with a concrete "Plan of Action" (POA), which shall lead to the growth of the nation of India by taking a skill-based approach towards solving some of its most pertinent employment and skill-gap issues.



THE OPPORTUNITY

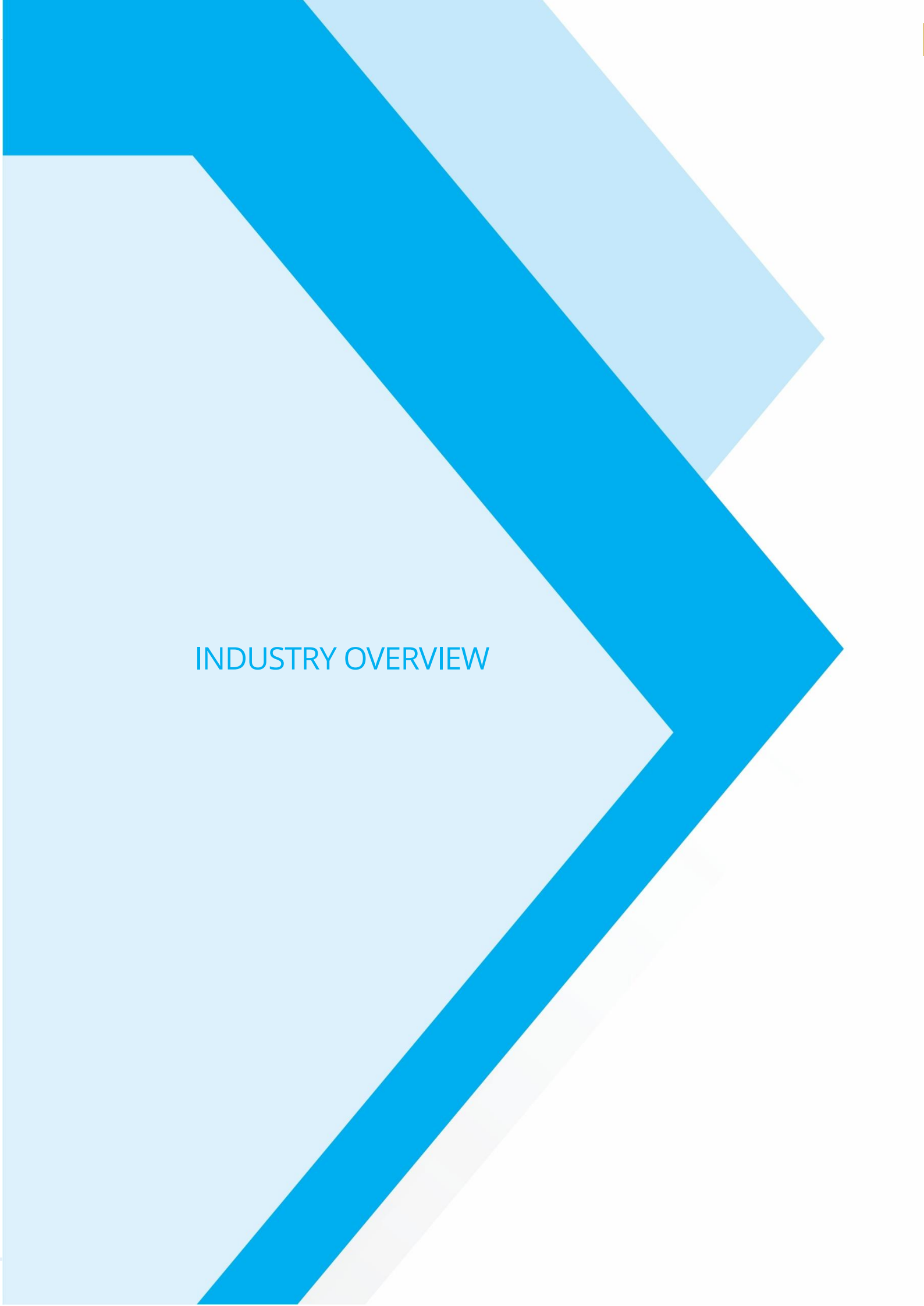
## The Opportunity

India's growth story is already well documented. Even in some of the toughest times that this generation has seen, India stood out as a nation ready to support the world and bring it back to normalcy. The growing sectors – Infrastructure, Construction, Services, Technology, Manufacturing, Telecom, and many others – are a testament to our resilience and perseverance under extreme duress. A slew of government initiatives has supported this growth and have acted as wonderful growth drivers for the nation. **A further push towards technology, innovation, and self-sustainability will lead the country to discover new avenues.**

Among all this, for the first time, 'Safety, Environment and Health' as a trait have taken precedence as never seen before.

Along with growth, the responsibilities pertaining to safety are ever growing and need to keep up with the times and changes. The latest standards (e.g. ISO 45001) that have been specifically created for the protection and safety of the working professional are a welcome initiative. The government of India has also amended rules & regulations to suitably make safety the top priority amongst all different types of enterprises/businesses, which is known as OHS Codes 2020.

However, as it is the case with any Government policy or program, participation remains key to its success. The questions that face the Indian labour or skill trade market within both the informal and formal economy and especially in the case of migrant workers; how can the hurdles be tackled and effectively addressed?



## INDUSTRY OVERVIEW

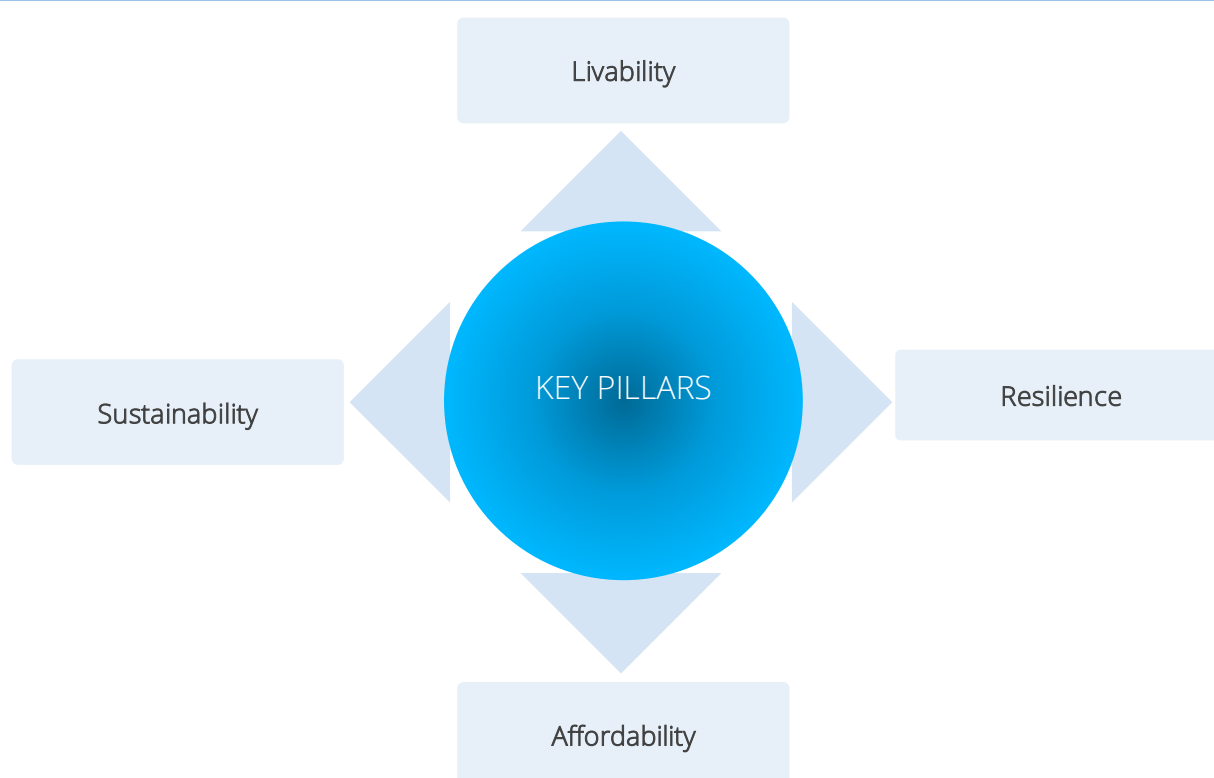
## Industry Overview

Construction Sector is projected to rebound by 14.5% in 2021 to grow \$738.5 billion by 2022.<sup>8,9</sup>

### Key Growth Drivers

- The Government has allowed 100% FDI under automatic route in completed projects for operations and management of townships, malls/shopping complexes, and business constructions.
- Indian Government boosting the National Infrastructure Plan and announcing the Affordable Rental Housing Complex (ARHC) scheme along with other investments in the industrial segment in a renewed push towards 'Atmanirbhar Bharat'.
- The Government's recent thrust on affordable housing through policy measures, viz., government incentive schemes, accordance of infrastructure tag, interest subsidy scheme under Pradhan Mantri Awas Yojana (PMAY) have resulted in sharp rise in new housing projects in the affordable segment for low income groups. Demand for affordable housing is likely to grow. It estimates that the demand for affordable housing will increase to 38 million housing units in 2030 from 19 million in 2012.
- The direct employment linkage coefficient of residential construction is the highest among all sectors even though the nature of employment is largely informal.<sup>10</sup>

### Framework for the Future of Real Estate<sup>11</sup>



## Enablers

- Digitalization and Innovation
- Regulatory Framework
- Talent and Knowledge
- Value-Proof
- Stakeholder Engagement
- Compatibility of certification to meet international norms.

## Talent and Knowledge

- The future of industrial growth requires extensive and up-to-date knowledge and competencies as well as a leading talent pool with broad market expertise and knowledge. This means upskilling existing employees and focusing on attracting talent.
- Industrial growth continues to remain disrupted across the country with labour shortage at project sites exacerbating the situation for private players already grappling with multiple issues such as liquidity crisis, rising project costs, and dwindling demands.
- The forecast for 2021, therefore, opens exciting investment opportunities in construction stocks with a medium to long-term horizon.

Here's a small case study on the shortage of skilled labor force in India–

### Short supply of 1.2 million welding professionals

Few Infrastructure Projects as per their requirements are importing skilled welding and cutting operators from China, Russia, and East European countries due to an enormous scarcity of domestic skilled welding workforce. All the infrastructure projects including roads, railways, and bridges, power, and shipping are reliant on proper metal joining technology which can be executed only by well-trained and certified manpower. The Indian Institute of Welding has estimated a short supply of 1.2 million welding professionals including welders, cutters, fitters, equipment operators besides engineers and inspectors. <sup>12</sup>

This shortage of 1.2 million welding professionals may expand to 1.35 million within the next three years, given the planned Rs 100 plus lakh crore investments in infrastructure development including road, rail, bridges, internal waterways, and power over the subsequent five years.

The ambitious 'Make-in-India' campaign (goal of making India a global manufacturing hub, reducing unemployment, and enhancing the skills of the youth by launching more job oriented industries) had pushed up growth prospects of the manufacturing sector, but there is a continuing shortage of skilled labor especially in the construction, automobile, power, and defense sectors. The union government's skill development machinery which targets to skill over 500 million Indians by 2022 <sup>13</sup> has an additional responsibility to overcome the severe shortage in employable skills of the Indian workforce. Because of the short fall, the Indian Economy is witnessing a slowdown.

## Best Case Scenario

The best-case scenario for any nation-state in the modern free-market economy is to learn from where the others' failed, faltered, or simply couldn't forecast – today, global business and policy decisions are more likely to impact Indian workers than say twenty years ago. The relationship based on reciprocity and learning has enabled India within the past decade, especially in the last 5 years to develop proactive data collecting mechanisms and use them to shape a better future.

In the preface, **Okun's law** sheds light on the different aspects that the Indian economy is undergoing as part of its growth process:

- A Shift towards services' and business sector
- Inflection within the manufacturing sector
- Circulating workers that often swap between employment and unemployment

Apart from the inflection within the manufacturing sector, India is currently deploying all possible means to attract foreign as well as local businesses to set up operations here. Some of the finest upcoming projects are the Greenko Energies Hybrid project in Gujarat; Amazon to start manufacturing electronic devices in India,<sup>14</sup> Singapore Government invests Rs 450 crore in Phoenix Mills share sale.

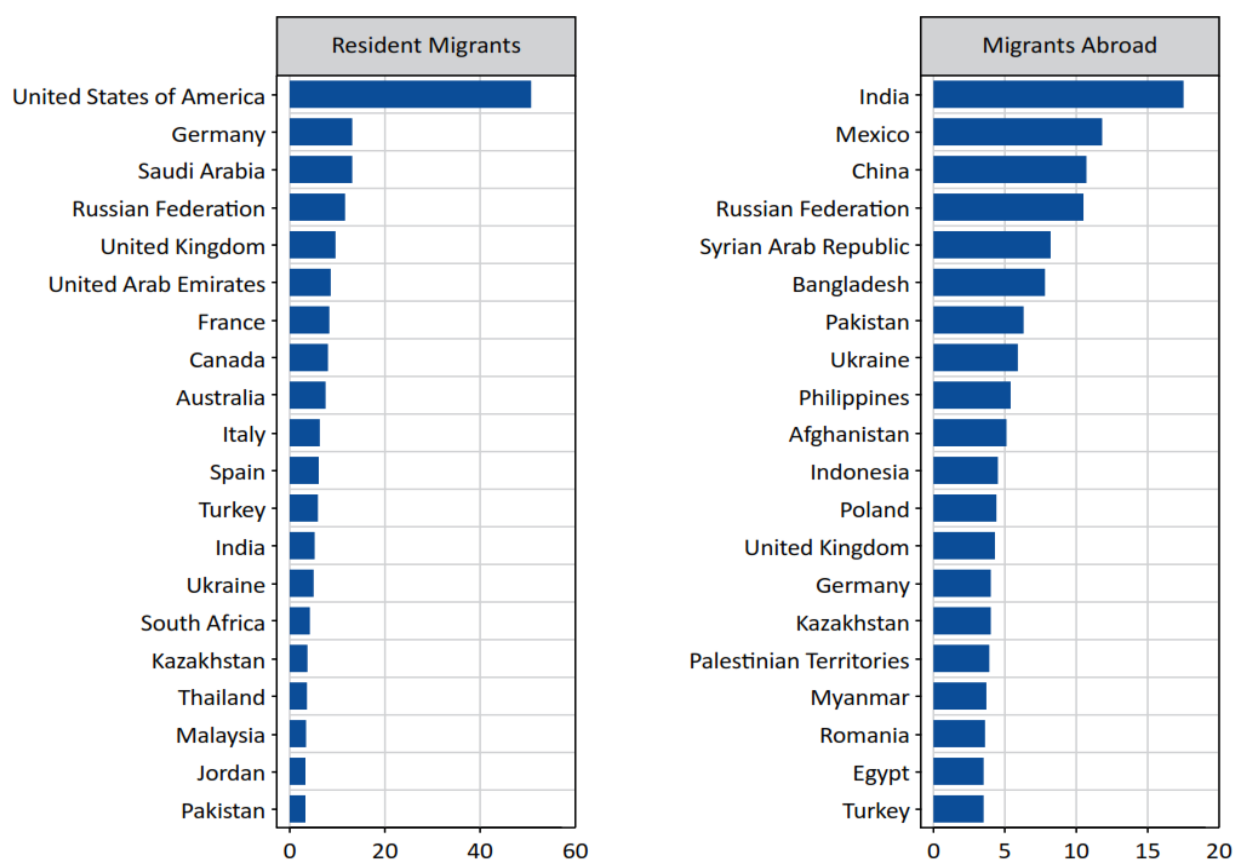


# LABOUR MIGRATION

## Labour Migration, a prominent feature in South-East Asia and a key driver of Economic Growth and Development <sup>15</sup>

In context of partnering growth, India has over 10 million migrants, of which 3.6 million are in the Middle East countries. Within the country, the migrant population, however, forms only 1 per cent of the total population. The flow of Indian migrants is largely determined by economic gains. Out-migration from India is a centuries-old phenomenon. In the olden times, there was a mix of flow of people, trade and ideas. The character of the Indian migration has changed over the years. It is no more indentured labour, as in the colonial era, but a mix of high-tech professionals and skilled and unskilled labour. The destinations for migrants falling in the category of workers are mainly the Gulf countries. The rest usually head for industrialized countries, such as Australia, New Zealand, Canada, United Kingdom and the United States. Indian migrants are found in all the professions and all the sectors of the economy, starting from unskilled to highly professional occupations. Indian migrants have been a source of strength to India. <sup>16</sup>

### Top 20 destinations (left) and origins (right) of International Migrants in 2019 (millions)



Source: UN DESA, 2019a (accessed 18 September 2019).

More than 40 percent of all international migrants worldwide in 2019 (112 million) were born in Asia, primarily originating from India.

Migration from Southern Asia to other sub regions is a key feature, with many temporary migrant workers in the GCC countries originating from this sub region. The prospects of higher wages and accessible employment opportunities have resulted in a significant increase in the number of people leaving the sub region in recent years.

For countries in the sub region with significant labour surpluses, migration has relieved labour pressures, while helping to reduce poverty through remittances. Accordingly, Southern Asia is among the largest recipients of remittances in the world. In 2018, remittance inflows to India amounted to USD 79 billion, the largest in the world.

Labour migrants in GCC countries primarily originate from Asia and Africa.

In recent years and despite the increasing size of the working-age population, annual additions to the labour force have declined. This is primarily due to the increasing enrolment in secondary school and higher education.

Although in the short run this may ease the pressure on generating employment, in the medium to long terms, there will be increasing pressure to generate employment, both quantitatively (because larger numbers of workers will enter the labour market) and qualitatively (because those who enter the labour market will have a high educational attainment as well as a high level of aspiration and expectation from the labour market).<sup>17</sup>

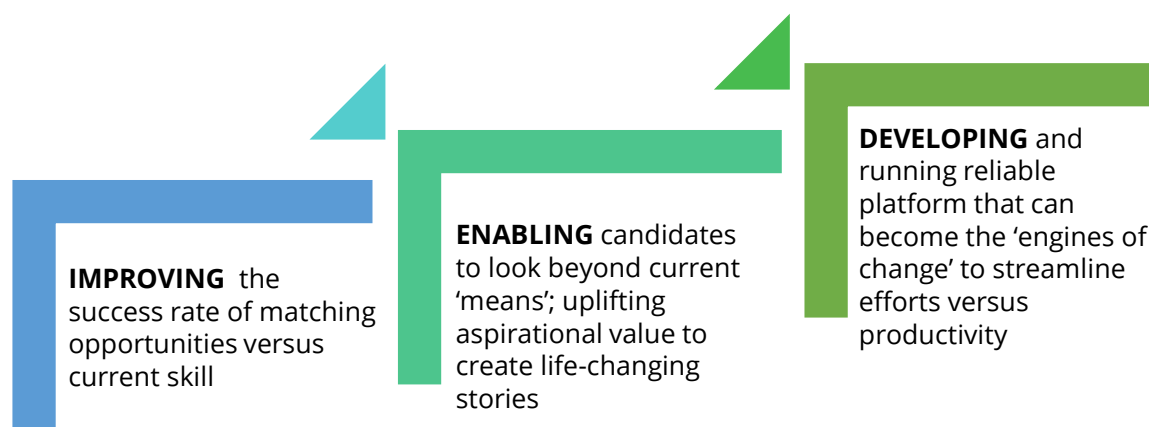
**The Indian economy is growing at a faster pace, & cheap labour supply is one of the important catalysts for it.** Thus, effective utilization of this labour force is possible only through sustained efforts at both rural and urban areas. It can be done through more productive investments by govt. in training and skill learning for the migrated, E.g.: NSDC (National skill development council), Agricultural Skills Council of India (ASCI) – National Skill Certificate and monetary reward. Reconsidering rural programmes like MGNAREGA, which help retain the distressed migrants and avoid slum formations. The government should concentrate more on planned development of the cities and neglected urban areas so that opportunities exist for even flow of migrants, to balance the mass flow and resource exploitation as well as utilize the demographic dividend of the country, through which the overall development can be made possible in a smooth way, which left unchecked may turn out to be Demographic disaster in the world.

Migration and Development are the two faces of the same coin which are inseparable, and Migration acts as the dynamic force in both rural and urban area with strong empirical support for the key prediction of the Lewis Model that rural urban migration will be influenced by the existence of surplus labour in the rural areas from where the migrants originate.

### 3 Areas that can alleviate the unrest within the labour market:

#### Improving, Enabling & Developing

These traits also highlight the necessity of creating a sustainable labour force that has the impending challenge of facing the full force of man-made climate change.



As Guy Ryder (Director General, ILO) recently remarked "There could be no clearer demonstration of the importance of a strong, resilient, occupational safety and health environment."

More than 2.8 million people die as a result of occupational accidents or work-related diseases every year. Additionally, there are some 374 million non-fatal work-related injuries each year that result in an average of more than 4 days of absences from work. The human cost of poor occupational safety and health practices is vast, and their economic cost is estimated at close to 4 per cent of global GDP each year. The COVID-19 crisis has highlighted the cardinal importance of protecting health and safety in the workplace.

WBG President David Malpass, in his foreword to *Global Economic Prospects*, notes that "Making the right investments now is vital both to support the recovery when it is urgently needed and foster resilience. Our response to the pandemic crisis today will shape our common future for years to come. We should seize the opportunity to lay the foundations for a durable, equitable, and sustainable global economy." This is why the needs of people need to be put before debt service and repayment. **Countries must be given the fiscal space to invest in education and skills, re-skilling and up-skilling workers to equip them for their transitions into new sectors, better and higher paying jobs, in health and social protection systems that are comprehensive, covering all life-cycle risks – COVID-19 has demonstrated, for instance, the need for unemployment protection and sickness benefits – and provide adequate and predictable benefits to allow a life in dignity, to truly enable people to navigate uncertainties in their lives and to invest in their human capacities and capabilities.**

With the question now in perspective, as to, how the labour market can gain, retain and re-train for skills and relevance, let us start looking at the shape and health of Indian labour market with a preference for patterns of employment, sectors and wage.

## Defining Human Capital in Industrial domain –

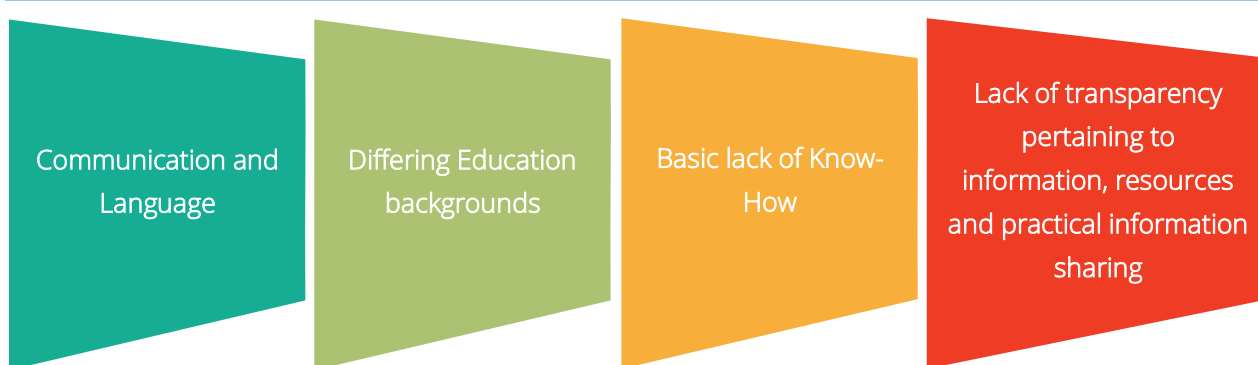
### Identifying the industrial and construction needs

The simplest distinction, for skill and knowledge, lies in its mode of delivery: skills can be acquired via say apprenticeship, but knowledge requires pedagogy and sometimes in an Indian context, a more rote-based approach.

Industries require both and use them as prescribed by the protocols and procedures.

Sometimes, a helper can double up for another menial duty, but a core set of skills acquired over a period and training dictate the domain.

### 4 Obstacles or challenges prevalent in India –



Communication and language trump both skill and knowledge as they are essentially central to the premise of the transfer of information. Herein lies the challenge for India, with diverse cultural identities and a plethora of languages that slide over the fabric of human life, a singular medium to encapsulate industrial knowledge in form of skills remains tough. This very fundamental aspect of human interaction creates a novel situation where large industrial complexes can sometimes have more than 6 different language groups, working, coordinating, and helping each other out.

The obstacle that rises from this novel situation: how does one ascertain a 'baseline' to define 'how much does a helper or basic scaffolder or rigger knows' when the medium of communication does not match?

The next challenge then rises and sits right on top of the above-proposed obstacle. **Education and qualifications are the keys to unlocking doors that provide access to stable jobs.** Most job descriptions carry their minimum requirements with them along with a desirable profile description. Within the starter level jobs in the industrial domain – sometimes, such criteria are overlooked. The main reason becomes our second obstacle.

The second obstacle being the differing education backgrounds that assess the basic criteria for qualification.

These can range from semi-literate to literate categories whilst the applicants can belong to 3 different groups: illiterate, semi-literate, and literate. The aberration is then magnified several times over due to the reliability of the said category assessment. The differing educational background applied pedagogy and training needs, or mostly their lack off is sometimes deemed by industry and corporate experts as contrasting and shocking.

The industrial training institutes (a similar effort to follow our American counterparts) have not delivered their promised potential due to a lack of relevance and corroboration with meeting international standards.

Street wisdom has a proven anecdote to yield field-trained apprentice sometimes fair better than qualified tradespeople.

Education, on the other hand, has shown tremendous progress within India. But as we rise to the top and mature into the youth that is driven to work towards set goals and objectives, our lack of a common 'baseline' pushes us into the darkness of doubt, insecurity, and fear-fueled 'stability' mindset.

Thus, like any human condition, the lack of job security sometimes keeps the right talent away from training and jobs.

Therein lies our third obstacle, the question of 'growth versus achieving stability'.

Financial background, governmental support programs, and the industry itself have a huge role to play within this confounding niche. Illiterate workforce stands to gain the most and at the same time lose to great extremes from this paradox.

Lack of formal education or technical know-how thrusts them into the labour market where they are willing to invest their time and put their bodies on the line for a contractor. However, this basic lack of know-how keeps them from following a key safety instruction that was issued on-site. An injury, incident or fatality away from carelessness or simply ignorance makes this third obstacle the most crucial and difficult one.

A basic level of compliance can be hammered into a literate and semi-literate workforce and yet the educated engineers might choose to flout the norms – this feedback loop of ignorance or carelessness makes for a great candidate if studied across the industries.

But the obstacle at hand still reflects on background, perception, and behavior.

Last but not the least, lack of transparency pertaining to information, resources and practical information sharing remains shrouded in 'mist', and the job-seeking workforce remains unclear.

Hercules used a simple string to track back his way out of the maze after defeating the mythical creature Minotaur – however, a lack of reliable source in the digital age of 'forward messages' and rumors are hampering the ability of our workforce to transition into better roles. This is purely a judgement-based faculty, which can only be developed through practical experience or via knowledge transfer. Both of which remain unreliable and mostly impenetrable to the target audience in question.

Especially, in case of malicious overseas recruitment, candidates can fall prey to disingenuous offers and can find themselves trapped on foreign soil with little to no chance for a recourse. In recent years, diplomatic escalation has prevailed over such injustices, but the onus lies with us to make sure that the vulnerable aren't preyed upon.

Information accessibility and transparency shall remain our most difficult obstacle until we trace back our steps and start thinking about uniform teaching and learning platforms for our vast majority of the workforce with differing educational and cultural backgrounds.

## The Employment Void and Potential Growth

To put the 4 identified obstacles into how the labour market outlook in India remains, we have reliable evidence to forecast the conditions that may follow, as the Indian economy transforms itself. One of the key issues identified in the ILO Labour Market Update India 2021<sup>18</sup> pointed to the fact that uncertain structural transformation such as the move from low productivity to high productivity jobs and sectors, will always create a 'background noise' of shifting priorities and opportunities. Projected lower economic growth and the lack of inclusiveness are very likely to impair the ability of lower-income countries to reduce poverty and improve working conditions.

This brings us to the second issue, where the astounding majority in the informal sector of employment will affect our 'quality'. This quality refers to the productivity, viability over longer periods, and at the same time investment and participation in India's growth. The lack of a uniform policy framework further muddles and complicates the issue. A more comprehensive measure of the underutilization of people of working age reveals major gaps in access to work; the rate of "total labour underutilization" is pronounced and greatly exceeds that of unemployment.

The third and major issue which is considered a major spillback on gender inclusion is substantial inequalities prevail in the access to work and work quality. In 2019, the female labour force participation rate was just 47 percent, 27 percentage points below the male rate (at 74 percent). There is strong regional variation in gender disparities in access to employment. **India has the lowest women's participation rate in the world** - this would lead to inequity and affect the overall functions within the industrial domain to be biased towards the male workforce.

The fourth issue, even when people have a job, there remain significant deficiencies in work quality.

# Future Trends in Employment

ILO report suggest the following trends on the outlook of employment within the developing economies, especially in case of the Indian sub-continent:

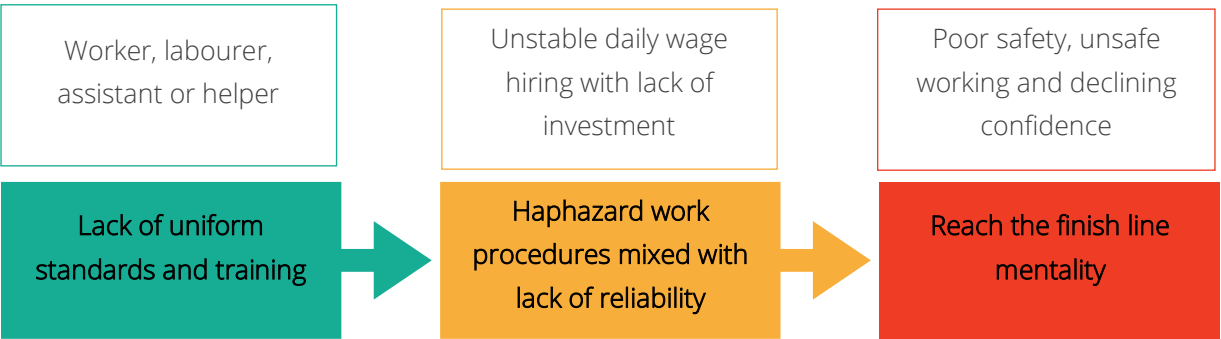
**Employment in agriculture will remain a declining trend with** as much as 3.5% jobs lost in the agriculture sector to remain stable till 2025. However, this also gives rise to the opportunity of mechanization, consolidation and increased fiscal benefits that can form part of the ‘progress’ in one of the core work activities within Asia.

**Jobs in industrial domain are either declining or stagnating** as only 10% jobs account for the manufacturing domain within the developing economy; in contrast, developed and Western economies account for 22% of the total jobs. A shift in trend is imperative if, India overtakes U.K as the third largest economy within next one year. This is due to the simple fact that production, growth and output numbers and trends rely on manufacturing domain more than construction and least upon agriculture.

**Service sector jobs are rapidly increasing in case of India**, but this should be evaluated with caution. To elaborate upon this phenomenon, 3 out of 4 employees in developed economy belong to the service sector in 2017. However, the expansion of jobs market and core employment sectors has led to this change. The same cannot be said for India where skill, attrition and lack of opportunities can stymie growth and prospects, too fast and too soon.

Sectoral variations in gender inclusion, formative skills and lack of common evaluation platform leads to lack of participation, stunted growth prospects fueled by lack of trust in the established economy. The choices become constricted and with a paradoxical outlook, poor learning mindset affects the knowledge economy, on each level.

The account that follows in the pages to come, will describe such inequities and challenges pertaining to some of the most critical tradesmen that ensure both construction and industrial development from the scratch.

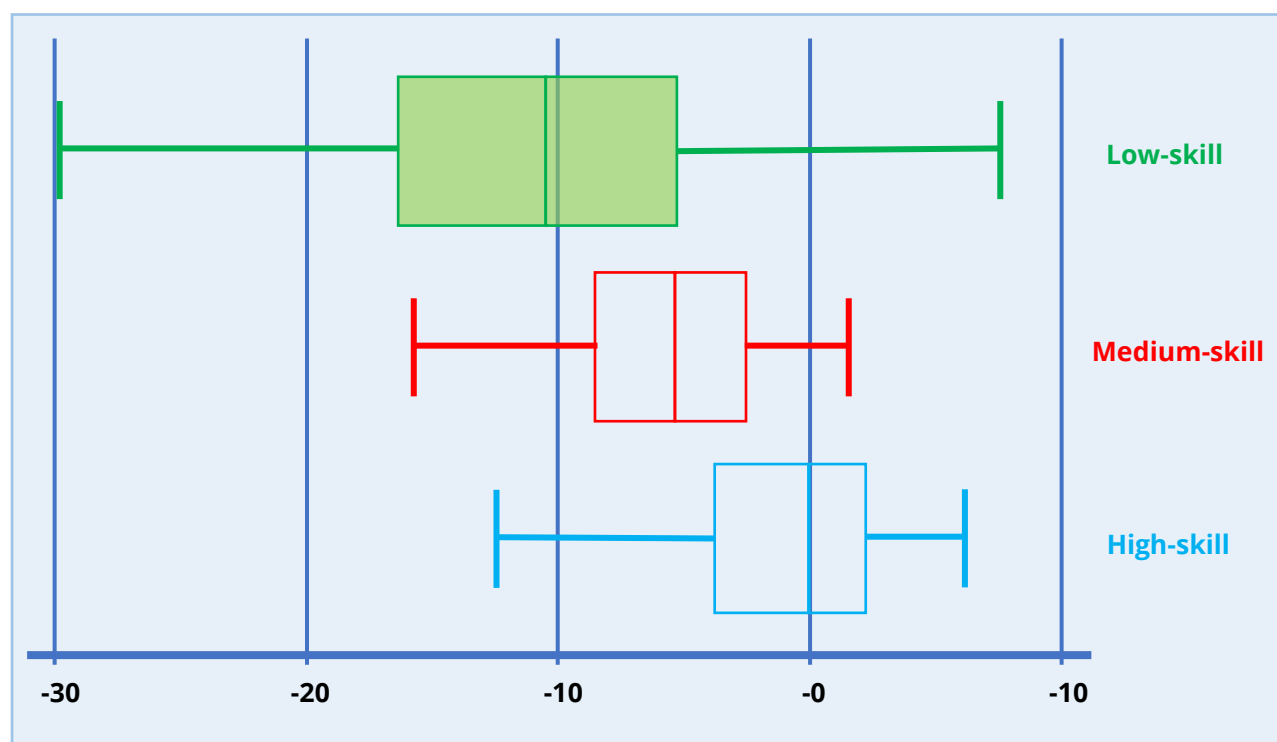


These case scenarios present not only the level of skill that is required on the national level to cut it as to be considered ‘on-par’ with industry defined standards. The commentary based on actual industrial data gathered over a decade identifies some of the crucial challenges and mismatches that has often become a norm and thereby hindrance, which perpetuates a talent pool of workforce that is trained, tested and judged without much thought to applying one accepted uniform standard or code of standards.

## Low-skilled workers have shouldered a large share of the job losses <sup>19</sup>

The uneven impact of the crisis on workers with different skill levels can be seen not only in terms of income but also when looking at decreases in employment. A sample of 50 countries shows that the magnitude of job losses tended to be much larger for low-skilled workers (figure B2). The mean loss for low-skilled workers was 10.8 per cent in the second quarter of 2020, compared with 7.5 per cent for medium-skilled workers and 2.2 per cent for high-skilled workers.

Country-level changes in employment, by skill level, second quarter of 2020 (year-on-year) (percentage)



Low-skill = elementary occupations and skilled agricultural, forestry and fishery workers; Medium-skill = clerical support workers, service and sales workers, craft and related trades workers, plant and machine operators, and assemblers; High-skill = managers, professionals and technicians, and associate professionals. The skill levels are based on ISCO-08; see ILOSTAT for further details.

Note: The sample consists of 50 high- and middle-income countries and territories with employment data for the second quarter of 2020 disaggregated by occupation. The box graph should be read as follows: (a) the vertical line in the middle of the box represents the median value (50th percentile); (b) the left-hand side of the box (whisker) represents the 25<sup>th</sup> percentile; (c) the right-hand side of the box (whisker) represents the 75th percentile; (d) the adjacent lines to the left and right of the box represent the lowest and highest values, respectively.

Source: ILOSTAT database, accessed 12 January 2021.

## Sectors at Risk and Diverging Trends

Table 1. Sectoral working-hour and employment growth rates in the second and third quarters of 2020 (year-on-year) compared with the predictions of at-risk status from the second edition of the ILO Monitor (percentage)

| Sector                                                          | At-risk status<br>(2nd ed. Of<br>ILO Monitor) | Growth of working<br>hours (year-on-year) (%) |         | Growth of employment<br>(year-on-year) (%) |         |
|-----------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|---------|--------------------------------------------|---------|
|                                                                 |                                               | 2020 Q2                                       | 2020 Q3 | 2020 Q2                                    | 2020 Q3 |
| F. Construction                                                 | Medium                                        | -14.8                                         | -4.0    | -8.4                                       | -2.2    |
| C. Manufacturing                                                | High                                          | -11.9                                         | -4.4    | -5.6                                       | -2.5    |
| L, M, N. Real estate; business and<br>administrative activities | High                                          | -7.9                                          | -4.0    | -2.5                                       | -2.1    |
| A. Agriculture; forestry and fishing                            | Low-Medium                                    | -6.9                                          | -4.3    | -3.9                                       | -3.1    |
| Q. Human health and social work<br>activities                   | Low                                           | -3.4                                          | 0.2     | -0.8                                       | 0.5     |
| B. Mining and quarrying                                         | Medium                                        | -2.4                                          | -1.6    | 3.6                                        | 2.8     |

\* The “other services” sector includes employment in “arts, entertainment and recreation”, “other service activities” and “activities of households as employers”.

Note: Average growth in total working hours and employment for any given sector is unweighted and based on a maximum sample of 49 countries (see the list below); for each sector, the composition of the countries in the sample varies slightly. Colour coding is based on 20 steps between the minimum value of the working-hour growth rate in the second quarter of 2020 (-33.0%), which is marked dark red, and the maximum value (+1.3%), which is marked turquoise. The same colour coding is used in the other columns.

Countries and territories considered in the analysis: Argentina (limited to main cities and metropolitan areas), Austria, Belgium, Brazil, Bulgaria, Chile, Colombia, Costa Rica, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Georgia, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Mongolia, Montenegro, Netherlands, North Macedonia, Norway, Occupied Palestinian Territory, Peru, Poland, Portugal, Republic of Korea, Republic of Moldova, Romania, Saint Lucia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Thailand, Turkey, United Kingdom, United States, Viet Nam.

Source: Total working hours (calculated as the product of employment and average actual weekly working hours) and employment – ILOSTAT database, accessed 6 January 2021; At-risk status – ILO, ILO Monitor: COVID-19 and the World of Work – Second Edition, 7 April 2020, table 2.

## The quality of Labour Supply as a factor in the rise and persistence of Informality

The final factor that resulted in the growth and persistence of informality in India was the education and skill levels of the workforce. We begin by noting that 146 million (or 30 percent) of the workforce of 485 million in 2012 are illiterate, an additional 52 percent (or 253 million) of the labour force are those only with education upto secondary level (class 10). (But 40 percent of this 52 percent have less than eight years of education.) An additional 15 million have tertiary level technical education, about half of whom have diploma or certificate level and the other half of this group has graduate-level technical education. In other words, barely 3 percent of the workforce has technical education at tertiary level, and another 7.2 percent has general academic education at the tertiary level as recently as 2017-18, only.<sup>20</sup>

What is notable is that technical education below graduate levels well as at the graduate level and above significantly raises the probability of your getting a regular salary job than if you were a graduate with only general academic education. The rate of unemployment for those with graduate general academic education is only slightly lower at 7.3 percent than for those with technical education below or at the graduate level (8.8%).<sup>21</sup>

With a labour force that has relatively poor levels of education, it is not surprising that most of them have been absorbed, if they are not in agriculture, in traditional services, or construction, or unorganized manufacturing.

**Shifting focus towards "Safety"**, much of the above inferences can also be held true and factual. A large part of a productive operation/activity is dependent on the safety performance of the project. That said, there are hardly any qualifications, accreditations, or certifications available that address this exclusive need that is taking an evolutionary shape with every passing day. Furthermore, adequate infrastructure or environment for training is missing. With no centralized authorization body, most skill training is restricted and limited to ITIs.

## Lack of Accreditations or Qualifications Mechanism

This brings us to the question – What can be done to establish a well-processed and reformist standard that will allow workforces to get the desired skills, competencies, and qualifications that are required? How can we communicate and provide the necessary environment for workers to develop and grow? How can communication be improved to achieve the last-mile delivery? Is it then possible to develop the skill and competency levels of workers to such an extent that they can compete with others solely based on their skill levels alone? What job opportunities and avenues can be opened through skill development?

The structure needs to flow from the top – with the government acting as the apex body - and flowing down to industrial behemoths who contribute with their experience and knowledge. Some initiatives have already been taken; however, a lot more remains to be planned and done. Most importantly, separate functions would require separate expertise and knowledge to ensure distinctiveness and excellence in performance. Developing competencies would require active contribution – not just from individuals but also from the industrial communities at large. It also requires break-through participation from the unorganized sector through a paradigm shift and bringing about a mindset change towards better growth. Suffice to say that vigilantes like trade unions, labour groups and associations, NGOs, and other active supporters will have to participate actively to bring about this paradigm shift.

With the affluence of a centralized body, one will be able to achieve a quality of standards that would allow skill development at a mass scale and at the same time improve industrial and work performance. Such authorization will require a tremendous amount of knowledge sharing, operational know-how, adequate domain experience, appropriate and intelligent investments, and a whole lot of committed effort to bring fruition. Expectedly, this report is the start of this process.

Several critical categories that give rise to majority of employment in the industrial and construction engineering sector have been defined within the following cases. Most of the issues and challenges share common facets, which sit at the trisection of institutions, economic and social backgrounds.

The below-provided diagram simplifies the overall message, while the individual cases clearly identify and document the on-ground challenges, all the while making a case for different solutions, which when merged together can **alleviate and bridge skills to employment for a stronger workforce and progressive India.**



In the context of countries like Australia, the U.S.A, and the U.K, specialty work domains and sphere of activity with their ongoing work and developing expertise has given rise to organized bodies that support this niche.

In doing so, these organized bodies not only provide certified training that becomes part of their national standard and an International accreditation to aspire and achieve – a uniform platform for skill development, certification, and accreditation solidify its position. Sustainable development within the industrial domain in the 21<sup>st</sup> century depends on the creation of such bodies and organizations that can gather both national traction and international approval.

A rising manufacturing economy such as India which wishes to influence international trade and create better human capital needs to take interest and emulate such a model.



SAFETY SKILL DEVELOPMENT  
FOUNDATION (SSDF)  
LIST OF IDENTIFIED QPS FOR  
BRIDGING SKILL GAPS IN EHS  
WORKS

## List of Identified QPs for bridging Skill Gaps in EHS works

Based on extensive research and establishing and analyzing case studies/data, SSDF proposes a list of 400+ **skills & competencies qualifications** for which it is **seeking authorization to award qualifications/certifications**. This is a comprehensive list compiled with due care, covering (broadly) the following qualifications segments;

1. Safety Engineering and Management
2. Industrial/Occupational Health Awareness and Certification
3. Industrial Environment awareness and compliance program
4. Scaffolding Engineering and Management
5. Lifting – Rigging Engineering
6. Few specifics trade validation for Construction and Real Estate Industries
7. Road & Transport Engineering & Management
8. Painting and Insulations
9. Offshore/Marine operational skill program
10. EHS program for School & Educational Institutions.

In reference of the list of the segments, listed above we have designed over 250 QPs and furthermore are still under research and development. Currently, we are submitting 58 QPs along with their brief description and the level defined as per NSQF for taking into consideration for the path of approval.

The crux of these qualifications lies in the demand for such skills as well as the respective shortage of personnel/qualifications in both the national and international front.

## SAFETY SKILL DEVELOPMENT FOUNDATION (SSDF)

### Proposed List of Qualification Packs (QPs)

| Sr.No. | Qualification / Course Subject | NSQF Level | Brief Description of the Qualifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------|--------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1      | Certificate in OSHE (CIO)      | 5          | <p>The Certificate in OSHE is designed for Occupational Safety, Health, and Environment (OSHE) professionals who want to learn the fundamental concepts and processes for implementation of recognized approaches to safety management at the workplace. This includes the Safety Management and Supervision, Hazard Identification techniques, JHA, Safety Inspection, Safety Audits, Accidents/Incident reporting, analysis, and recordkeeping, etc.</p> <p>This program is ideal for EHS working professionals and well as the fresh candidates, who are seeking to make their career in the field of Occupational Safety, Health and Environment. It's a very demanding course, which can give opportunity for immediate employment in various sector. This is the most suitable for youth, who has a minimum 10th pass, who want to pursue his career as "EHS Steward or Supervisor".</p>                                                                                                                                                                                                                                                                        |
| 2      | Diploma In OSHE (DIO)          | 6          | <p>The Diploma in OSHE will give the knowledge and practical skills, the individual need to perform as a leading health and safety professional of the future. The basic contents of this qualification include - understanding how OHS legislation is applied in a workplace and the possible enforcement actions that could be taken, identify and effectively communicate relevant health and safety information, advise on a range of common workplace health and safety issues including how these can be assessed, controlled and monitored, develop an OHS policy strategy (including proactive safety, Corporate Social Responsibility, and the change management process), contribute to a risk management strategy, promote a positive health and safety culture, develop and audit health and safety management systems and maintain individual and organizational health and safety competence.</p> <p>He will gain confidence in his capabilities to recognize and solve everyday safety, health, and environmental issues and take opportunities for improvement. This advanced EHS qualification will support his academic and career progression.</p> |

| Sr.No. | Qualification / Course Subject       | NSQF Level | Brief Description of the Qualifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------|--------------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        |                                      |            | This is specially and perfectly designed for the students, who have passed 12 <sup>th</sup> Std. in Science or ITI holder, this will create a better career growth.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 3      | International Diploma in OSHE (IDIO) | 7          | <p>The International Diploma in OSHE design assists in the development of professional competence, increasing learners' ability to help organizations make sensible and proportionate decisions to manage risk, meet business objectives, and meet regulatory and other requirements. Thorough but achievable, the qualification is designed to meet the needs of the modern workplace. It is a professional degree-level qualification which can make the way for Masters-level study. It is a qualification to start a new career for fresher students in Diploma/ in Engineering and Graduate in Science and it is also a very essential program for those working professional, who has lacked the qualification in EHS field want to Upskill themselves.</p> <p>The qualification covers the practical skills that are essential to health and safety professionals. It assesses learners' ability to apply their skills and knowledge and deliver positive change throughout the workplace.</p> |

| Sr.No. | Qualification / Course Subject | NSQF Level | Brief Description of the Qualifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------|--------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4      | Advance Diploma in OSHE (ADIO) | 8          | <p>The Advance Diploma in OSHE is specially designed to achieve superior competence and knowledge in the field of Occupational Safety Health and Environment. Deep understanding of workplace risk and a systematic approach to mitigate risk and achieve ALARP levels. Ability to advise senior management and Safety committees. Ability to establish corporate level EHS Plans and Schedules. Facilitate Internal OSHE Audits to achieve a healthy PDCA Cycle. Ability to drive a Proactive OSHE Culture within an organization. Actively supports in implementation of the organization's OSHE Policy and Goals. Ability to conduct effective OSHE training for the employees and contractor workmen. This qualification covers detailed aspects of both constructions as well as O&amp;M-related OSHE management. This qualification provides ample opportunity for career progression and success and every industry required quality EHS engineers, currently, there is less generation in comparison to demand. Especially students of Diploma or Degree in Engineering or Graduate in science are eligible to get admission in this course.</p>                                                                                                                                                                        |
| 5      | Master in OHSE (MIO)           | 9          | <p>The Master in OSHE is a senior position specially designed to achieve top-class competence and knowledge in the field of Occupational Safety Health and Environment. Comprehensive understanding of workplace risk and a systematic approach to mitigate risk and achieve ZERO Incident Goals. Ability to advise Top Leadership as well as the Board of Directors to facilitate a TOP Driven approach in OSHE. Capability and Skills to establish Corporate level OSHE Plans and Schedules. Facilitates and monitors implementation of OSHE Plans to achieve Continual Improvement. Proficiency to drive OSHE Cultural Step-Up programs within an organization. Actively supports in implementation of the organization's OSHE Policy and Goals. Advises and developed OSHE KRAs of employees, senior leadership to achieve ownership at all levels. Ability to develop OSHE training calendar for organization and monitor effectiveness. This qualification covers detailed aspects of both constructions as well as O&amp;M-related OSHE management of various industry domains. This qualification provides ample opportunity for career progression and success.</p> <p>This is specially design for the students of engineering graduate, who wanted to pursue master's degree in Environment, Health, and Safety.</p> |

| Sr.No. | Qualification / Course Subject                             | NSQF Level | Brief Description of the Qualifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| 6      | Certified Safety Auditor (CSA)                             | 5          | <p>The Certified Safety Auditor is an important position to facilitate Safety audits for the organization. Management of comprehensive Audit in line with the Standards / Procedures designed to keep people safe, improve operational efficiency, and reduce maintenance costs. Ensures that audit Findings are used to improve safety health and environment, set budgets, minimize the impact of Hazards among other things. Ability to develop Audit Plans with structured assessment and evaluation of how workplace activities can affect health and safety. Supports organizations to evaluate and optimize their health and safety programs and improve safety management. As an auditor, his skill will be aligned to conduct an audit as per IS 14889.</p> <p>Ensures that Safety audits are meeting the organization's goals. Ability to assess that organization complies with safety legislation and identifying weaknesses and deficiencies in safety programs and processes. Effectively supports and facilitates full compliance with the organization's health and safety procedures.</p> <p>This Position possesses promising career progression and growth. It will come under upskilling of a professional to have the additional expertise to excel in his career, those who are already working in EHS field.</p>                                                                                            |
| 7      | Certified Highrise Building Construction Safety Specialist | 6          | <p>The Certified Highrise Building Construction Safety Specialist QP is specially designed to ensure effective safety compliance for High Rise Building Projects. High-rise building projects are in large numbers in India and Abroad. Highrise Building projects are exposed to critical hazards and risks and therefore a Safety Specialist is essentially required to positively facilitate the implementation of Safety Policies and Procedures. Ability to develop a comprehensive Safety plan and extensive safety programs to capture all activities that possibly cause risks and hazards. Competency and Skills to strictly abide and comply with local code and governmental regulations and stipulations. Build and maintain a very good relationship with local authorities and utilities. Proficiency to understand PLAN – DO – CHECK – ACT, strictly and thoroughly executing the established safety plan/program; frequently review and improve for better outcomes. Thorough understanding and competency to develop emergency plans covering critical emergency scenarios i.e. fire, collapse, seismic, terrorism, etc., and periodically organize emergency drills.</p> <p>Periodically organize training, re-training for emergency drill/rehearsal, and contingency scenarios of evacuation. Carry out periodical inspections to proactively identify unsafe conditions and acts. Communicate observation</p> |

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|        |                                          |            | and control measures to project leadership and front-line supervision.<br>Ability and skill to drive Motivation and incentive schemes to promote Safety Culture within an organization. This position possesses promising career progression and growth.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 8      | Certificate in High Speed & Metro Safety | 5          | <p>This QP Certificate in High Speed &amp; Metro Safety is specially designed to cater to the need of upcoming High Speed and METRO Rail projects. Thorough understanding of hazards and risks associated with critical activities of High Speed and Metro Rail projects i.e. Excavation of Tunnel, Use of Tunnel Boring Machines (TBM), Deep excavations, Underground works, etc. Ability to develop EHS Plans and Procedures to facilitate safe execution of works.</p> <p>Competency in developing a Risk assessment for high-risk activities with appropriate control measures. Ability to understand and monitor confined space activities including tunnel entry management, Gas monitoring, Ventilation system design, Illumination, Fire and First Aid Points, Escape Routes, Emergency Exit, Tunnel Access Points, Fire emergency, etc. Development of Emergency Response Plans and organize Emergency Drills. Develop a Training calendar for staff and contractors and monitor compliance and raining effectiveness. Conduct Safety Inspections and advice senior leadership about critical observation proactively. Facilitate effective management of Safety Committees. Organize Internal Audits to assess compliance with applicable Safety Procedures and Legal aspects. Identify Gaps if any and guide the execution team on the successful closeout of all action points. The position possesses promising career progression and growth.</p> <p>Diploma holders and Graduate Engineers will be eligible to join this course.</p> |

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| 9      | Certificate in Roads & Flyover construction Safety            | 5          | <p>This QP Certificate in Roads and Flyovers Construction Safety is specially designed to cater to the huge demand for Safety professionals in Infrastructure projects. This course provides a deep understanding of Safety, Health, and Environment Management of Road and Flyover Construction Projects. Ability to understand Legal requirements, Traffic Safety Management, Safety in Road Construction Work, Temporary Structures Safety, Workplace Safety, etc. Thorough understanding of Indian and International Standards related to Roads and Flyover Construction. Ability to develop EHS Plans with Safety Policy, Goals and Objectives, Roles and Responsibilities, Risk Assessment, Training Management, etc. Proficiency to develop Emergency Response Plans covering all emergency Scenarios, Emergency Response Team, Resources, and organizing Mock Drills. Communicate and advise senior management on overall EHS performance and areas of improvement. Ability to drive Proactive EHS Culture at project sites. This position offers a very good career growth and progression roadmap. Diploma holders / BSc or Graduate engineers will be eligible to join this course.</p>                                                                                             |
| 10     | Executive Certificate in Oil & Gas Industry Safety Management | 5          | <p>The Executive Certificate in Oil &amp; Gas Operational Safety Management is aimed primarily at managers, Engineers, and EHS advisers with safety responsibilities in the oil and gas industry. The qualification focuses on operational process safety and is intended to enable learners to apply and implement effective process safety management across all areas of their operation, anywhere in the world. This qualification provides the underpinning knowledge, which when combined with experience enables holders to identify, evaluate and control a wide range of workplace hazards. It is based around international standards and management systems that enable the effective discharge of workplace safety responsibilities both onshore and offshore. Globally, employers in the oil and gas industries find a suitable Oil &amp; Gas program that can improve the safety culture of their organization by providing line management and staff with a sound understanding of operational safety management. This qualification is for those working in the oil and gas (or related) industries, who need to gain a sound understanding of the principles of operational health and safety that apply in their specialist area to give a boost to their career growth.</p> |
| 11     | International Certificate in Contractor Safety Management     | 7          | <p>The International Certificate in Contractor Safety Management, the Purpose of designing this qualification is to explain the Contractor Safety Management (CSM) practices, policies, and procedures in a process or</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

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|        |                                                                     |            | <p>operational environment and to gain invaluable knowledge, practical skills, and a globally respected qualification that supports Contractors to update Technical know-how to comply with legislation and implement best practice, Practical skills to apply back in the workplace, Confidence to influence your workforces to work more safely, Ability to adapt to changing workplaces and sites.</p> <p>This covers everything that Contractors required to make the construction site healthier and safer!</p> <p>This qualification is ideally designed for Construction site managers, Contracts managers, Line Managers, Seniors Supervisors and Engineers, and Construction health and safety advisors.</p> <p>It also makes excellent Continued Professional Development (CPD) for professional or non-professional, who are interested to become a new entrepreneur and working in other industries or looking to move into construction.</p> <p>This qualification will minimize workplace injuries and illness, boost employee wellbeing, demonstrate the commitment to health and safety, which can help grow the business, provide knowledge on how to control a range of construction hazards, and strengthen your organization's health and safety culture.</p> |
| 12     | Advance Certificate in Incident Investigation & Root Cause Analysis | 6          | <p>The Advance Certificate in Incident Investigation &amp; Root Cause Analysis focuses on techniques for gathering complete, accurate, and objective incident data, establishing root causes, reporting findings, and determining corrective action. Discussion, demonstrations, and exercises will cover investigation and interview techniques. Participants learn how to uncover the who, what, why, when, and how of each incident, and how to analyze data to prevent injuries, property damage, and financial losses.</p> <p>The main Objectives includes - how to determine which incidents required investigation, how to use effective investigation and interviewing techniques to gather complete, objective, and accurate data, how to analyzing incidents to identify root causes, The human relations aspects of incident reporting, what data to include in investigation reports and Hazard control measures and follow-up corrective actions required to prevent re-occurrence of the similar incidents.</p> <p>This qualification is designed for all levels of management, safety professionals, safety committee members, and individuals responsible for investigating incidents. This will also help to create competency in this field.</p>                |

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| 13     | Certificate in H2S Safety (As per OPITO Standard) | 5          | <p>The Certificate in H2S Safety qualification is the aims and objectives of the Basic H2S Training are to ensure that the delegate gains the required knowledge and understanding of the particular hazards and properties of H2S, and appropriate emergency response actions to take should an H2S related incident arise. Hydrogen Sulfide or H2S training is required in many different industries including but not limited to; wastewater treatment, pulp and paper, natural gas, mining, and the petroleum industry.</p> <p>This qualification also covers the emergency response competency requirements as per OPITO standards and provides The H2S training programme is for personnel that is or could be, working in an environment that could become contaminated by H2S gas.</p> <p>This qualification will help oil and gas working personnel to gain expertise or license to work in Oil &amp; Gas industries.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 14     | Advance Certificate in Chemical Safety            | 6          | <p>The course is designed as per Section 41C (b) of the Factories Act 1948 as amended in 1987 has imposed specific responsibilities on the occupier concerning hazardous processes which states that every occupier of the factory involving any hazardous process shall appoint persons who possess qualification &amp; experience in handling hazardous substances and are competent to supervise such handling within the factory and the Chief Inspector may require the supervisor to undergo training in Health &amp; Safety.</p> <p>The objective of the Chemical Safety programme is to impart training on how to identify chemical hazardous areas and where they exist around the facility. Personnel that will bring chemical hazards to the facility or engages in hazardous chemical work also need to complete the extended chemical safety training. Chemical Safety is achieved by undertaking all activities involving chemicals in such a way as to ensure the safety of human health and the environment. It covers all chemicals, natural and manufactured, and the full range of exposure situations from the natural presence of chemicals in the environment to their extraction or synthesis, industrial production, transport use, and disposal.</p> <p>Graduation/ B.tech/ B.Sc. in Microbiology/ Life Sciences/ Botany/ Zoology/ Food Science/ Food Technology/ BE/ B.Pharma/ MBBS/ BDS/ BHS/ BUMS/ BAMS or any other discipline. Diploma holders are eligible for our Executive Diploma, Industry Certificate, and Certificate Programmes.</p> |
| 15     | Certified Authorized Gas Tester                   | 5          | The Certified Authorized Gas Tester is designed to provide the delegates with the knowledge and competencies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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|        |                                                                         |            | <p>required to carry out gas testing of atmospheres in confined spaces for pre-entry and on an ongoing basis. To provide that personnel preparing for a gas tester role with the knowledge to safely conduct gas tests for oxygen levels, flammable and toxic gases. In addition, this course also equips the delegates with the knowledge necessary to conduct gas testing within confined spaces and awareness of associated confined space hazards. This course is designed as per OPITO Authorized Gas Tester standard and has been designed to equip delegates with the knowledge to conduct gas testing within confined spaces and awareness of associated confined hazards. The authorized gas tester role is critical in testing for and ensuring safe working atmospheres, in particular: permit-controlled confined spaces, and before and during hot work.</p> <p>This course aims to teach you the requirements associated with gas detection. On successful completion, participants will have the specialized knowledge to allow the person to operate as an Authorized Gas Tester.</p>                                                                                                               |
| 16     | Certificate in IMIST (International Minimum Industrial Safety Training) | 5          | <p>IMIST (International Minimum Industry Safety Training) is designed as per OPITO standard which supports the global Oil and Gas Industry to meet safety initiative targets and for existing workers in the oil and gas industry. IMIST has been developed to provide a new global standard for Health and Safety training, which will provide a comprehensive and consistent level of training across the world and enhance workforce safety and compliance. The IMIST standard ensures that workers have the necessary safety awareness and training to reduce risk and ultimately reduce the number of incidents.</p> <p>The offshore working environment is the place to have many hazards, which means that it is vital for everyone who goes offshore to have the same baseline level of safety knowledge. This course has been created to set a global safety standard by applying a consistent level of safety awareness across nine safety-critical areas and is applicable.</p> <p>The knowledge gained in this course will help them to stay safe in their day-to-day activities offshore. It will also outline some of the systems and procedures in place to manage everyday operations offshore.</p> |
| 17     | International Certificate in HAZOP Leadership and Management            | 6          | <p>The International Certificate in HAZOP Leadership and Management explores best practices in HAZOP leadership and management. Participants will learn about the application of the technique and how to plan and manage study programmes more effectively. He will also learn how best to lead study teams to ensure maximum</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

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|        |                                                                |            | <p>effectiveness and successful project execution. Participants will experience different team roles through case studies and be given the chance to practice guiding a team through the HAZOP process.</p> <p>After completion of this program participants will be able to prepare for a HAZOP study meeting and programme – including defining the scope of the study and choosing the team, choose nodes (parts of the drawings or operation for HAZOP study), estimate the programme requirements for the successful completion of a study, use facilitation techniques to motivate the team and keep them on task, avoid common problems encountered during study meetings, including challenging behaviour, formulate the HAZOP study report, understand the team leader's role in the implementation of recommendations and the management of the process.</p> <p>Who will get the benefit - Anyone with experience of the HAZOP technique who is required to lead HAZOP studies. It will also benefit process safety engineers, loss prevention specialists, production engineers, process design engineers, project engineers, process programmers, and instrument control engineers.</p>                                                                                                                                                                                                                                          |
| 18     | International Diploma in Fire Prevention and Safety Management | 7          | <p>The International Diploma in Fire Prevention and Safety Management is designed for people throughout the world who have fire safety responsibilities at work. It provides the knowledge and understanding when combined with relevant experience, to carry out an effective fire risk assessment, as well as embed good practice in the workplace. After completion of this qualification help their organization to meet its fire prevention responsibilities. It leads to a safer environment for employees and visitors to premises and an improved fire safety culture for employers and building managers. Fire Prevention is important. It protects people from injury and loss of life. It protects the property, assets, investment, and life.</p> <p>Participants of this program will be able to know how to help their employers avoid the damaging and sometimes catastrophic losses that result from fire. This qualification mainly focuses on training students in the prevention of fire and safety methods. This course teaches students how to follow and maintain safety standards at the workplace to prevent fire. Students who have completed 10+2 in any subject are eligible for this course. People who are currently working in fire and safety industries can also go for this course, this course helps them to get promotion as a fire and safety officer, health and safety manager, in charge manager.</p> |

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| 19     | Executive Certificate in Industrial Environmental Management | 6          | <p>The Executive Certificate in Industrial Environmental Management is a globally required qualification for those who have Environmental Management responsibilities or anyone wishing to have a career in this area. The Certificate in Industrial Environmental Management covers the principles of environmental management and is relevant for both Indian and international markets. After obtaining this Certificate, participants can be able to help their employers demonstrate environmental excellence and social responsibility, as well as avoid prosecution, litigation, and loss of reputation. Of international relevance, the qualification provides knowledge and skills to support the introduction and maintenance of the environmental management standard ISO 14001 within the organization.</p> <p>This qualification is developed based on extensive research with environmental professionals, employers, professional bodies, and regulators to ensure that they remain relevant, rigorous as well as achievable, and practical. This qualification is for anyone who needs to gain a sound understanding of the principles of environmental management and is relevant for both Indian and international requirements. This Environmental Certificate is a crucial first step towards establishing a lifelong professional career in environmental management. Around two-thirds of health and safety practitioners now have environmental management as part of their overall day-to-day responsibilities at work.</p> |
| 20     | Executive Certificate in Sustainable Waste Management        | 6          | <p>This QP Certificate in Sustainable Waste Management is specially designed to facilitate the major Global challenge of Sustainable Waste Management. This position covers sustainable waste management processes and aims to address the long-term pressures through the recovery, recycling, and reuse of resources, and the minimization of waste streams. Ability to understand and facilitate the management of resources in an environmentally sound and economically effective manner. Sustainable Waste Management is a crucial issue that needs to focus attention and a systematic approach. Deep understanding and knowledge of the effects that waste has on our natural environment and ultimately on the quality of our life is a major concern. Facilitate practices that protect the environment. Pollution Ensuring effective waste collection coverage leads to the reduction of air, noise, and soil pollution. Ability to consider future and present needs when making decisions about resource use and technological development. Detailed understanding of various Sustainable integrated waste management</p>                                                                                                                                                                                                                                                                                                                                                                                                              |

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|        |                                             |            | practices such as Reduce material and energy wastage, protect environmental quality, minimize impacts of disposal, eliminate or treat toxic, hazardous, and infectious wastes, improve institutional integration and increase accountability. This position provides a constructive career progression and growth. Diploma holders, Graduate Engineers, BSc, MSc will be eligible for this course.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 21     | Executive Certificate in Water Conservation | 5          | <p>This QP Certificate in Water Conservation is specially designed to cater to the major challenge of Water Conservation. This course will provide a detailed understanding of the control of water resources to minimize the damage to property and life and also to maximize the efficient beneficial use. Understanding of Water management i.e. process of developing, optimizing, and planning of water resources via many practices which are defined by many national policies and regulations. According to the statistics, the health of people is threatened by inadequate access to clean water for drinking and sanitation. This position plays an important role in minimizing the wastage of the water we use. Develop a plan and procedures for the organization and facilitate a culture of water conservation practices. Carry out inspections and identify issues related to spills and wastage of water. Develop and plan for implementation of rainwater harvesting. Ability to develop water budgeting and study of ground and sub-surface drainage systems involved in wastewater management. Plan for modifying policies, such as drainage levels of groundwater, or allocating water for different purposes.</p> <p>A thorough understanding of Reuse or conservation of water helps to recycle groundwater by reducing the consumption and using alternative water sources. This position has very good career progression and growth. Diploma holders, Graduate Engineers, BSc, MSc holders will be eligible for this course.</p> |

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| 22     | Certified Energy Conservation Specialist       | 5          | <p>This QP Certified Energy Conservation Specialist is specially designed to cater to the Nation's important need for Energy Conservation. This position will possess the knowledge and competency to make a strategy and plan for Energy conservation. Energy Conservation is the process of reducing demand on a limited supply (for example natural gas) and ensuring that the demand is met by alternative means of supply. Energy Conservation is all about using energy only when it is required and using it as much as needed for the job and not wasting any amount of it. It requires a conscious effort from the user of energy to make sure that there is no wastage regularly. This position would have the ability to make detailed plans for Energy Conservation and ensure systematic implementation. Understanding of various technical procedures of Energy efficiency. Thorough understanding of saving energy for the future, by adapting the process of monitoring, controlling, and conserving energy in an organization. This involves: Metering energy consumption and collecting the data received, finding ways to save energy and estimating how much energy is consumed and conserved, Tracking the progress by analyzing the meter data to check the energy-saving efforts. Some of the practical methods and technologies for energy conservation and energy management are: Installing CFL lights, using maximum daylight, Getting the energy audit done, Smart and Wireless systems, renewable energy sources, etc. Good maintenance practices and good energy management go hand in hand. This position has a very good career progression and growth prospects.</p> <p>Diploma holders, Graduate Engineers will be eligible for this course.</p> |
| 23     | Certified Domestic Waste Management Technician | 4          | <p>This QP "Certificate in Domestic Waste Management Technician" is specially designed to facilitate effective management of Domestic Water. This course covers the domestic waste management process and aims to address the long-term pressures through the recovery, recycling, and reuse of resources, and the minimization of waste streams. Ability to understand and facilitate the management of resources in an environmentally sound and economically effective manner. Sustainable Domestic Waste Management is a crucial issue that needs focused attention and approach. Initiate practices that protect the environment pollution. Ensuring effective waste collection coverage leads to the reduction of air, noise, and soil pollution. Detailed understanding of various Domestic waste management practices such as Reduce material and energy wastage, protect environmental quality,</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

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|        |                                     |            | minimize impacts of disposal, etc. This position provides a constructive career progression and growth.<br>12th Pass, ITI passed will be eligible for this course.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 24     | Certificate in ETP & STP O&M Safety | 5          | This QP Certificate in ETP & STP O&M Safety is specially designed to cater to the safe and efficient operations and maintenance of ETPs and STPs. This course provides detailed knowledge and skill to identify hazards and risks associated with the Operation and Maintenance of STPs and ETPs and to set effective control measures. Thorough understanding to facilitate safe management of Chemical hazards, Fire Hazards, Biological Hazards, Activity Hazards, Electrical Hazards, etc. Conducting daily plant safety rounds to identify the unsafe condition and report proactively. Good understanding of maintenance jobs and their related risks and controls. Skill and knowledge of Emergency Response Plan. Safe handling and storage of chemicals. Good understanding of legal aspects and standards related to ETPs and STPs. Understanding of Safety Signs, permit to work system. Ability to conduct Toolbox talk regularly and keep records. Develop safety progress reports etc. This position has a significant career opportunity.<br>12th pass, ITI passed are eligible for this course.                                                                                                                                                                                                                                 |
| 25     | Certified Water Supply Plumber      | 4          | This QP Certified Water Supply Plumber is specially designed to cater to the ever-growing need for quality plumbers in the country. Ability to performs skilled technical work in the installation, repair, replacement, and maintenance of domestic water systems, heating water systems, sanitary sewer systems, storm sewers, gas pipe (both threaded and fusion-welded), steam, and condensate pipes, and fire protection systems, etc. Knowledge and Skill to follow recognized procedures and techniques of the plumbing trade. The Plumber maintains the heating, water, gas, and plumbing systems using hand and power tools such as sewer auger or vacuum plunger, acetylene torch, soldering and welding equipment, sewer camera, pipe locator, and related plumbing tools. The Plumber also practices preventive maintenance of plumbing tools and equipment and complies with legal regulations governing environmental protection, hazardous waste disposal, and the use of chemical substances and materials common to the plumbing trade. Ability to monitor and report maintenance issues needing attention to the appropriate authority. Ability to the safe use of electrical test equipment, small hand and power tools, mechanical equipment, and materials applicable to the plumbing trade. This position has good career |

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|        |                                |            | progression and growth.<br>12th and ITI passed are eligible for this course.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 26     | Certified First-Aider          | 4          | <p>This QP Certified First - Aider is specially designed to facilitate competent First Aiders for the growing needs in Industry. This course covers various roles and responsibilities of a First Aider. Thorough knowledge and commitment to take these roles and responsibilities seriously as first aid is a potentially lifesaving task in an emergency. Competency to provide immediate, lifesaving, medical care before the arrival of further medical help. This could include performing procedures such as: Placing an unconscious casualty into the recovery position, Performing Cardiopulmonary resuscitation (CPR) using an Automated External Defibrillator (AED), Stopping bleeding using pressure and elevation, keeping a fractured limb still, etc., with competence to preserve life. Good knowledge of medicines and appropriate doses. Full understanding and skill to prevent the worsening of the patient's condition and to promote recovery. Knowledge of handling emergencies.</p> <p>A first aider should:</p> <p>Manage the incident and ensure the continuing safety of themselves, bystanders, and the casualty, Assess casualties and find out the nature &amp; cause of their injuries, Arrange for further medical help or other emergency services to attend (e.g.: the fire service), ability to prioritize casualties based upon medical need. Good knowledge of making notes/observations of casualties, fill out any paperwork as required, provide a handover when further medical help arrives, etc.</p> <p>This is basically for all the professionals, who are working in any industry, they should have basic knowledge of providing first-aid, its recommended for all the working professional, from the level of Supervisory grade and as minimum qualification graduate in any discipline.</p> |

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| 27     | Executive Certificate in Ergonomics Safety | 6          | <p>This QP Certificate in Ergonomics Safety is specially designed to cater to the need for better Ergonomic implementation at the workplace. A competent and certified Ergonomist ensures that the designs of systems, equipment, and facilities provide the best levels of efficiency, comfort and health, and safety for anyone using them. Ergonomics promotes both health and productivity in a work environment.</p> <p>This course provides skills and knowledge to understand human factors. To ensure that equipment and products are as safe and easy to use as possible. A certified Ergonomist will possess deep knowledge to fulfill responsibilities such as: analyzing the interaction between people and machinery/equipment, assessing the design of products/systems via practical experiments and making them easier to use, identifying problems by observing and interviewing individuals in particular environments, undertaking risk assessments within the workplace, assessing the effect of work environments on employees, ensuring that products/systems meet user needs, collecting, analyzing and interpreting data/statistics, identifying possible improvements and designing/implementing appropriate solutions, etc. Strong knowledge of various Ergonomic Survey techniques conforming to National and International Standards. Ability to compile and presenting information verbally and in writing, assessing health and safety standards, investigating workplace accidents, writing user manuals, offering information, advice, training, and recommendations to employer/clients, liaising with other professionals such as health specialists and designers. This position has a promising career progression in India and Abroad. Diploma holders, Graduate Engineers, BSc, MSc are eligible for this course.</p> |

| Sr.No. | Qualification / Course Subject | NSQF Level | Brief Description of the Qualifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| 28     | Certified Trainee Scaffolder   | 3          | <p>This QP Trainee Scaffolder is specially designed to fulfill the demand-supply gap of scaffolders gradually. This position is designed to capture basic knowledge of the scaffolding process. Initially, he will be associated with the Advance Scaffolder and capture the field knowledge to become Independent Scaffold in due course. Trainee Scaffold to develop the ability to carry out scaffold under the guidance of authorized Scaffolder. Develop understanding and skill of scaffold material inspection, understanding of drawings, ground inspection, steps involved in the safe erection of scaffolds. Complete knowledge of types of scaffolds, inspection methodology, tagging systems, etc.</p> <p>A Trainee Scaffolder will have a good understanding of Scaffold Standards, Legal requirements, manufacturer's recommendations. He will develop the skill to understand important components of the scaffold. Inspecting all scaffold components before assembly to ensure that components used are of similar material and in good repair before becoming a part of the completed scaffold. Maintaining fall protection requirements while erecting/dismantling scaffolds. Proper understanding of safe access and egress, emergency rescue arrangements. He will have a thorough understanding of hazards and risks associated with the Scaffold Erection task including effective control measures.</p> <p>This position has a very good career progression and growth.</p> <p>7th Class pass outs and above are eligible for the course.</p> |

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| 29     | Certified Basic Scaffolder (Tube & Clamps & System) | 4          | <p>This QP Certified Basic Scaffolder (Tube &amp; Clamp and System) is specially designed to cater to growing demand of Scaffold Erection both in India and Abroad. Certified Scaffolders are fully responsible for the erection and maintenance of scaffolds within an organization. Full understanding and knowledge of Hazards and risks associated with Scaffold Erection activities and its effective control measures.</p> <p>Skill and competency to carryout scaffold erection which includes: Erecting scaffolds in accordance with local, state and National Standards as applicable, must abide by all manufacturer recommendations and be capable of erecting scaffolds under the guidance of a competent person. Inspecting all scaffold components prior to assembly to insure that components used are of similar material and in good repair before becoming a part of the completed scaffold etc.</p> <p>Maintaining fall protection requirements while erecting / dismantling scaffolds, ensuring fall protection systems are in place, falling object prevention in place, appropriate access / egress to and from the scaffold, appropriate anchorage and stability of the structure, appropriate walking / working surfaces, maintaining appropriate clearances from electrical hazards, etc.</p> <p>Prior to occupation scaffold erectors must notify the competent person that the scaffold has been erected and is ready to be inspected. Training of other scaffold users if needed. Contacting and coordinating with the Competent Person regarding any issues associated with the erection of a scaffold. Report any issues / observations related to scaffold safety and risks. This position has very good career progression and growth.</p> <p>12th, ITI pass outs are eligible for this course.</p> |

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| 30     | Certified Advance Scaffolder (Tube & Clamps & System)     | 5          | <p>This QP Certified Advance Scaffolder (Tube &amp; Clamps and System) is specially designed to cater to scaffold erection needs in high-risk areas, great heights, offshore industry, Oil &amp; Gas industry, etc. Advance Scaffold will have a thorough knowledge of National and International standards related to Scaffold Management. Good knowledge of Scaffold designs, drawings, bill of material, inspection criteria and methodology, etc. Ability and competence to identify existing or predictable hazards in the surroundings or working conditions and take prompt corrective measures to eliminate these hazards. Skill and knowledge to provide training to Trainee Scaffolders and Helpers.</p> <p>An Advance Scaffolder is competent to deliver responsibilities such as Study and preplanning of the scaffold including weight limitations, scaffold type, fall protection, tie-offs, supports, etc. Overseeing the erection of the scaffold, arranging for final inspection of the scaffold before initial occupation for use, understanding of tagging system, keeping records of scaffold erection and inspections. Carry out daily inspection rounds and documentation of the condition of the scaffold and its ability to be occupied safely. Ensure re-inspections of scaffolds after changes/alterations have been made. Oversight and inspections of mobile scaffolds. Training of other competent persons, scaffold erectors, and users. This position has very good career progression and growth.</p> <p>12th, ITI pass-outs can be eligible for this course.</p> |
| 31     | Certified Scaffolding Supervisor (Tube & Clamps & System) | 6          | <p>The Certified Scaffolding Supervisor has good knowledge of implementing conventional &amp; system scaffolds in complex and high-risk situations safely and systematically. Having the expertise to read scaffolding drawings and assist the team as per the work plan during erection and dismantling of the scaffold. Ability to find unsafe practices during the scaffolding erection and dismantling. Guide the crew members on potential hazards such as fall of material, fall of people and structure collapse, etc.</p> <p>The supervisor estimates the total number of scaffolding sections that will be required to complete a job and arranges for the scaffolding to arrive on site. Along with the materials, the scaffolding supervisor decides on the number of employees that will be required on-site to assemble the scaffolding. Should possess good factual knowledge and shall be able to maintain safe and quality work practices. Responsible for protecting the job site and the workers assembling the scaffolding from injury. Prepare &amp; monitoring resource planning for scaffolding &amp;</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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|        |                                                                |            | access related. Troubleshoot technical problems that may affect. This is an additional skill to perform the job safely.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 32     | Certified Basic Scaffolding Inspector (Tube & Clamps & System) | 6          | <p>The Certified Basic Scaffolding Inspector is inspecting all basic scaffold components before assembly to ensure that the components used are of similar material and in good repair before becoming a part of the completed scaffold. This includes (but is not limited to): mudsills, screw jacks, frames, braces, planks, access ladders, brackets, etc. Inspections of scaffolds after changes/alterations have been made. At a minimum, daily inspection and documentation of the condition of the scaffold and its ability to be occupied safely. Oversight and inspections of mobile scaffolds.</p> <p>Responsible for inspection of the basic scaffold during and erection with the help of scaffolding checklist. Inspect every scaffold and its components for visible defects before each work shift and after every occurrence. Inspect ropes on a suspended scaffold, plumbing, leveling, and load distribution on the scaffold, and feasibility and safety of providing fall protection and access. Ensure the Permit to Work as well as a safe work method statement and certify the scaffold and place the Scaffold-tag "Safe for Use". Contact advanced scaffold inspector for assistance and guidance. This certification enhances work management.</p> |
| 33     | Certified Advance Scaffolding Inspector                        | 7          | <p>Advance scaffolding inspector certification required for final inspection of the special scaffold such as hung, drop, suspend, etc. before initial occupation for use. Inspect and assess the condition of the scaffolding material and reject damaged, defective and substandard material. Gain the knowledge on technical advice on scaffolding works and participate in work requiring higher-level skills. Ensure awareness of and compliance with HSE rules and regulations by subordinates and contractors. At a minimum, daily inspection and documentation of the condition of the scaffold and its ability to be occupied safely. Ability to calculate the volume of materials required to scaffold a work location, enhance knowledge on international or legal safety legislation.</p> <p>Increases the skill of inspection techniques and procedures. Ability to understand and interpret special scaffolding drawings. Ensure the Permit to Work as well as a safe work method statement and certify the scaffold and place the Scaffold-tag "Safe for Use".</p>                                                                                                                                                                                            |

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| 34     | Advance Diploma in Scaffolding Design & Engineering | 6          | <p>The Advance Diploma in Scaffolding Design &amp; Engineering provides a professional Skill like Design and Preplanning of the Scaffold, including weight limitations, Scaffold type, fall protection, tie-offs, supports, etc. capable of identifying existing or predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate these hazards.</p> <p>Provide technical review of scaffolding installation plans and procedures. Review scaffold installation work plans, pre-task planning, and method statements to ensure comprehensive safety and feasibility aspects are incorporated. Review scaffold installation work plans, pre-task planning, and method statements to ensure comprehensive safety and feasibility aspects are incorporated. Reports activities, progress, and areas of concern to management.</p> <p>Monitor offshore execution progress against the offshore integrated schedule. Ensure installation plans are developed in accordance with rules, regulations, and standards and permit to work procedures as applicable. Works effectively within established policies and procedures and participates in the further development of these to meet changing needs. The diploma provides huge knowledge of scaffolding systems, legislation, and latest technology, etc.</p> |
| 35     | Working at Height & Basic Rescue Competency         | 4          | <p>Work at Height &amp; Rescue Competency Certification course provides comprehensive knowledge, assist in developing fall prevention strategies using the fall protection hierarchy of controls. Ensure that employees performing work at heights meet current training requirements and that employees have the skills necessary for safe performance. Develop working at height and rescue plans as needed for employees. Develop working at height and rescue plans as needed for employees. Stop any work that is being performed in an unsafe manner.</p> <p>Ability to Inspect, anchor, assemble, and use fall protection and rescue equipment safely, Recognize fall hazards, Implement fall hazard control methods, Conduct fall protection, and rescue procedures, Inspect equipment and systems before use.</p> <p>Competency training enhances the work at height knowledge and advances rescue techniques to perform rescues on time.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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| 36     | Certified Advance Rigger               | 7          | <p>Advance Rigger Certification provides comprehensive knowledge of riggers, understand of the techniques/ physics behind rigging activity. Knowing the load capacity of the rigging (calculate if needed). Responsible for aligning and anchoring the machinery, attaching loads, controlling the movement of heavy equipment, and ensuring the rigging is safe for use. Able to prepare the materials before loading, set up the rigging equipment, and dismantle the rigging after the job.</p> <p>Ability to communicate with the rigging team and ensure compliance with health and safety regulations. Gain in-depth knowledge of rigging equipment, excellent spatial awareness, and good communication skills. Capable of Selecting the appropriate rigging gear. Inspecting rigging before final use. Understanding how to rig and control the load. Knowing the proper crane hand signals national and international.</p> <p>Certified advance rigger performs the job by using rigging techniques to minimize the potential accidents in the workplace.</p> |
| 37     | Certified Lifting & Rigging Supervisor | 6          | <p>Lifting &amp; Rigging Supervisor Certification gives complete knowledge on mechanical lifting and shifting, especially understanding the concept of lifting equipment and other lifting tools and tackles, the ability to determine the correct load weight and radius, etc.</p> <p>Ensure that the rigging crew is experienced and capable of selecting tools &amp; tackle and lifting gear suitable to the loads. Identify signaler and ensure that he is trained and capable of directing the crane and load using hand signals or other communication aids. Ensure the safety of the rigging crew. Keep the public and all non-essential personnel clear of the crane during operation.</p> <p>Significant knowledge on the control the movements of all personnel in the area affected by the lift, ensure all required precautions when the lift is near power lines or any other obstruction. Ensure that all personnel involved in the operation understand their jobs, responsibilities, and their role in the overall safety of each lift.</p>            |

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| 38     | Certified Lifting & Rigging Inspector              | 6          | <p>Certified Lifting and Rigging Inspector able to spot problems and provide solutions for critical and heavy lift operations, able to pick up technical systems quickly. Good knowledge of inspection and testing techniques concerning different types of lifting equipment. In-depth understanding of general engineering in lifting and rigging.</p> <p>Understanding regulations pertaining to rigging gear inspection and rejection criteria. Rigging Inspector training provides technical and hands-on training in an environment unique in the material handling field. Inspection reports are provided so not only learn proper inspection methods but also learn proper recording documentation as well. Understanding the load testing requirements/methods, proper recording of inspection findings. Identifying rigging gear deficiencies and common causes of gear damage.</p> <p>To ensure that all personnel with inspection responsibilities are knowledgeable of required standards and manufacturer's information necessary for a comprehensive inspection. Rigging gear and sling certified inspectors have the knowledge and skills required to recognize equipment deficiencies during a periodic inspection.</p> |
| 39     | Certificate in Launching Girder Operational Safety | 5          | <p>Launching Girder Operational Safety Certification enhances the technical knowledge and provides high standard safety for complex / complicated girder operations. Ability to perform inspection, testing, thorough examination, and maintenance of the launching girder. Provide the essential safety guidelines to the responsible person for launching Girder.</p> <p>A safe system of work should be established and implemented for use of the launching girder, which should cover every operation cycle, including the lifting operation as well as the erection/re-erection, dismantling, and re-location operations.</p> <p>Certification provides to develop safe systems of work/ Safe Operating Procedures (SOP) of launching girder and implementation techniques. Method statement (including safety rules/procedures) should be communicated in graphical format and in languages known to all workers involved in the lifting and launching girder operations to ensure that they understand the method statement before these operations commence.</p> <p>Eligibility - Suitable for Safety and Operational personnel</p>                                                                                             |

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|        |                                          |            | who are involved in the Girder/ Frame launching operation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 40     | Certified Crane Inspector                | 5          | <p>Crane Inspector Certification gives a complete Crane components knowledge and concept of Crane working principle. Provides knowledge of hydraulic, pneumatic, and electrical safety information. Understanding of national and international standards / safe operation procedures/ manufacture instructions etc.</p> <p>Ability to conduct the inspection, testing, and certification of lifting accessories, tools, and tackles, etc., mobile cranes, overhead cranes, pedestal cranes of all types, forklift, excavator, and other plant trucks of various types and provide inspection lifting equipment and welding points using MPI testing technique.</p> <p>Educate the Crane Operators on daily inspection, periodic inspection, and other manufacture guidelines to perform a safe operation. Identifying Crane defects or problems with all through the inspection and provide suitable solutions. Maintaining logbook for Crane inspection and replacement of components. Provides a sound knowledge of the Crane Inspector for practical situations. The ability to inspect safety features of Cranes such as SLI (Safe load Indicator), limit devices, emergency stop, etc.</p> |
| 41     | Diploma in Lifting & Rigging Engineering | 7          | <p>The Diploma in Lifting &amp; Rigging Engineering is designed for providing technical &amp; mathematical knowledge in the field of lifting and rigging operation. Ability to prepare a lifting plan, Carry out Pre-use inspections of lifting equipment, selection of suitable lifting equipment &amp; rigging gears for the job. Providing in-depth knowledge on national and international legislation on lifting and rigging and TPI certification.</p> <p>Identifying the Lifting category based on load and weight type such as complex lift, complicated lift, heavy lift, critical or non-routine lift, etc. capable to select the crew members like Riggers, Operators, Banksman, etc. as per lift category. Ability to develop a lifting plan, safe working procedures for lifting and rigging operations.</p> <p>Understanding the technical terminologies such as sling, Safe Working Load (SWL) /Working Load Limit (WLL), load chart, etc. Able to do load chart calculation as per the requirement of the work activity. Gain knowledge on lifting equipment like all types of cranes, forklift, hydra, EOT Crane, gantry and chain pulley block, etc.</p>                       |

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| 42     | Certified Project Manager      | 10         | <p>Project Manager Certification provides detailed knowledge on project management to complete projects in safe &amp; systematically. This is a senior role in an organization and requires interaction with a range of internal and external stakeholders, most often managing several moving project parts simultaneously. As a role that focuses on completing a project as efficiently and promptly as possible.</p> <p>Adequate knowledge on project planning sessions, Coordinating staff and internal resources, Managing project progress and adapt work as required, Ensuring projects meet deadlines, Managing relationships with clients and stakeholders, Designing and signing off on contracts, Overseeing all incoming and outgoing project documentation, Participating in the tender process i.e. design, submission and review, Designing risk mitigation plan, Conducting project review and creating detailed reports for executive staff, Optimizing and improving processes and the overall approach where necessary, Securing growth opportunities and initiating new projects and Managing large and diverse teams.</p>                                                                                                                                            |
| 43     | Certified Civil Supervisor     | 6          | <p>Civil Supervisors must possess leadership skills so people will stay on task and work hard to get things done. Must be outstanding organizers capable of working within budget and time constraints. Ability to multitask to watch over different teams and activities at the same time, exhibiting calmness and diplomacy to ease tensions when conflicts and problems arise, attending to detail to ensure nothing slips through the cracks, and focusing on safety at all times.</p> <p>Gain adequate knowledge of inspecting construction sites regularly to identify and eliminate potential safety hazards supervising and instructing the construction team as well as subcontractors. Educating site workers on construction safety regulations and accident protocol. Enforcing site safety rules to minimize work-related accidents and injuries.</p> <p>Handling site accidents in accordance with established accident protocol. Maintaining an accurate record of construction employee attendance. Evaluating the performance of construction employees and instituting disciplinary measures as needed. Recommending changes to construction operations or procedures to increase efficiency. Additional certification will give better opportunities in the future.</p> |

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| 44     | Certified Formwork Supervisor                | 6          | <p>The Certificate in Formwork Supervisor Course is an important role in monitoring formwork activities at the construction site/yard as per work requirements. Supervisor - Formwork is responsible for reading and interpreting drawings, calculate the quantity of material required for shuttering works, arrange and allocate resources, monitor shutter making and assembling process at formwork yard/site, instruct proper sequence of work, check for quality and stability of formwork as per plans, specifications, working drawings and also monitor installation and operation of Jump form system. The individual should possess sound technical knowledge, should be able to monitor and maintain safe and quality working practices.</p> <p>This programme is suitable for candidates who have completed Matriculation / 10th standard (preferably) and with relevant experience of 3 years.</p>                                                                                                                                                                                                                                                                                                                                                                                                        |
| 45     | Certified Mechanical Construction Supervisor | 6          | <p>The Certificate in Mechanical Construction Supervisor Course is an important role in manufacturing, erecting, repairing, or overhauling tools, equipment, machines, mechanical structure, etc. He studies drawings, sketches, specifications, available data, etc., and plans the execution of works according to schedule. Instructs workers or senior mechanics on machine and tools to be used, accuracy required and process of work, and other details to ensure correct manufacture, repairs, overhaul, or erection work according to the type of work to be done. Supervises workers, checks settings of machines, dimensions, dismantling, assembly, adjustments, etc. with appropriate gauges, tools, instruments at different stages of work, and guides workers to ensure stipulated performance and accuracy. Checks completed work makes any necessary adjustments or replacements and gets product approved. Maintains logbook and other reports in the prescribed form. May prepare sketches. May train workers for better performance. May conduct trade tests for recruitment or promotion of workers. May prepare estimates of material and costs.</p> <p>This programme is suitable for candidates who have completed the 10th standard (preferably) and with relevant experience of 3 years.</p> |

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| 46     | Diploma in Construction Entrepreneurship | 7          | <p>The Diploma in Construction Entrepreneurship Course is important in developing entrepreneurship skills in the construction field. Participants will understand the functions of an entrepreneur, concepts of entrepreneurship, stages in the entrepreneurial process, different sources of finance for entrepreneurs, central and state-level financial institutions. Role of MSME in economic development, advantages of MSME, Introduction to different schemes – TEC SOK, KIADB, KSSIDC, DIC, Single Window Agency - SISI, NSIC, SIDBI, KSFC. Business Planning Process, Marketing Plan, Financial Plan, Project report and feasibility study, Guidelines for preparation of model project report for starting a new venture.</p> <p>This programme is suitable for candidates who have completed graduation (any discipline) and with relevant construction experience of 3 years.</p> |
| 47     | Certified Seismic Mason                  | 4          | <p>The Certificate in Seismic Mason Course is designed to improve the skill of masons in earthquake-prone districts to carry out repair &amp; maintenance, retrofitting, and new construction as per the National Building Code, including the introduction of new technologies. The job role performs routine masonry works such as brickwork, blockwork, laying paver blocks, plastering, cement waterproofing, random rubble masonry, and flooring works.</p> <p>This programme is suitable for candidates who have completed the 5th standard with two years of relevant work experience.</p>                                                                                                                                                                                                                                                                                             |
| 48     | Certified Manual Brick Kiln Worker       | 3          | <p>The Certificate in Manual Brick Kiln Worker is designed to improve the skills of workers engaged in brick kiln works. The job role is responsible for the identification, handling, and use of tools and tackles, materials, and equipment. The responsibilities also include site clearance, providing support for masonry works.</p> <p>This programme is suitable for candidates who have completed the 5th standard with three months of relevant work experience.</p>                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 49     | Certified Manual Brick Kiln Supervisor   | 6          | <p>The Certificate in Manual Brick Kiln Supervisor is designed to improve the supervisory skills of people engaged in monitoring brick kiln workers. The job role is responsible for observing, correcting, motivating, training, and handholding the brick kiln workers to perform their activities properly and safely.</p> <p>This programme is suitable for candidates who have completed the 10th standard with two years of relevant work experience.</p>                                                                                                                                                                                                                                                                                                                                                                                                                               |

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| 50     | Certified Fit Out Engineer                      | 6          | <p>The Certificate in Fit Out Engineer is designed to provide advisory skills for engineers in the fit-out area. The job role is responsible for managing communication between all parties involved in the development, ensuring that all materials used and work performed are as per specifications, day-to-day management of the site including supervising and monitoring the site labour force and the work of any subcontractors, ensure the site complies with guidelines of health, safety and security, liaise with main and sub-contractors to ensure smooth completion of tasks and adherence to site regulations, quality control of work done at the site and act as the main technical advisor on site for subcontractors, craftspeople and operatives.</p> <p>This programme is suitable for candidates who have completed graduation in engineering with two years of relevant work experience.</p>                  |
| 51     | Certified Site & Road Access Safety Marshall    | 5          | <p>The Certified Site &amp; Road Access Safety Marshall Course is designed to provide skills for anyone responsible for assisting, moving, loading, and unloading vehicles and includes conducting and planning maneuvers, learning the legal duties of a traffic marshal, who can be deployed at any construction project, Road/Highway, Infrastructural, High speed, Metro train project. His learning skill also includes EHS recognized signals and risk assessment skills. This program is very important and useful, who employed as construction Site Access Traffic Marshalls Cover the duty of care of the Site Access Traffic Marshal to their employer, the general public, and themselves to comply with all regulations Work to safe practices Ensure the safe entry and exit of the site.</p> <p>This programme is suitable for anyone whose age is 18 years and who has completed 10th or equivalent successfully.</p> |
| 52     | Certificate in Defensive Driving for Industries | 5          | <p>The Certificate in Defensive Driving training for industries is designed to provide greater practical guidance for all the relevant personnel including vehicle/equipment operators, experienced mechanics, safety specialists, logistics personnel, administration personnel, and any other relevant category. This training makes the learner aware of driving rules, standard driving practices, and the required driving mechanics. The main objective is to reduce the risk of driving by anticipating hazardous situations, adverse conditions, or the driving errors of others.</p> <p>This programme is suitable for anyone who has completed the age of 18 years and who has a valid driving license.</p>                                                                                                                                                                                                                 |

| Sr.No. | Qualification / Course Subject                          | NSQF Level | Brief Description of the Qualifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| 53     | Certified Safety Trainer (CST)                          | 8          | <p>Certified Safety Trainer (CST) certification is for experienced safety professionals who is an expert in developing, designing, and delivering EHS training. To become a Certified Safety Trainer, you must meet strict international standards, professional practice, and educational requirements before earning these certificates and licenses of practice.</p> <p>The Certified Trainer Course is designed to provide candidates with the strategies and tactics to train well across all employee skill levels including management, service technicians, line supervisors, and any employee tasked with training fellow employees or customers. This programme is suitable for candidates who have completed graduation with one year of basic work experience.</p> <p>To keep this certification status valid, the candidate must stay current in the Training and Talent Development profession and recertify every three years. SSDF prepares, educates, qualifies, and certifies candidates via a multi-level, state-of-the-industry Train-The-Trainer program. This program comprises three subsequent levels. These levels represent the extent to which graduates are mastering the Training and Talent Development competencies. Certification levels are Associate Trainer (AT), Certified Lead Trainer (CLT).</p> <p>Accredited master/bachelor's degree in any subject or and at least three years of professional safety experience in any industry and have conducted at least 150 delivery hours of teaching or training in any EHS specialty.</p> <p>Conducted at least 100 delivery hours of teaching or training in any EHS specialty.</p> |
| 54     | Certified Quality Assessor (Inspection & Certification) | 6          | <p>The Certified Quality Assessor Course is designed to provide candidates with the skills of understanding the standards and principles of auditing and the auditing techniques of examining, questioning, evaluating, and reporting to determine a quality system's adequacy and deficiencies. The Certified Quality Assessor analyzes all elements of a Quality System and evaluates each criterion required of a particular subject or its degree of adherence to the specified criteria and certifies the system based on compliance to expected requirements.</p> <p>This programme is suitable for candidates who have completed graduation with three years of relevant work experience.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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|--------|-------------------------------------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 55     | Certified Assessor (Conduction of Examination & Evaluation) | 7          | <p>The Certified Assessor Course is designed to provide candidates with the skills of having a thorough knowledge of the relevant examination methods, examination documents, possess appropriate competence in the field to be examined, are fluent in both written and oral language of examination, have no personal interest or direct business relationship benefit so that they can make impartial and non-discriminatory assessments.</p> <p>The Certified Assessor Training Program as per training subject to equip industry practitioners with the required industry knowledge and skills to become a Certified Training/program Assessor.</p> <p>This training program aims to develop Assessor assessment competency among the participants through theory and practical exercises. With guidance from the faculty/trainers in conducting effective assessments. This programme is suitable for candidates who have completed graduation with three years of relevant work experience and having subject knowledge for related subjects.</p>                                                                                                                                                                                                                                                                                                                                                                      |
| 56     | Certified Train the Trainer                                 | 8          | <p>The Certified Train the Trainer Programme is designed for the development of training delivery skills of those who wish to become trainers in the sector of their preference. This will provide candidates with competency enhancement and certification on desired skills or subject knowledge, which includes Learn Effective Communication Skills, Audience and Evaluation, Selecting Appropriate Delivery Methods, Task Analysis, Develop Goals and Objectives, Training Delivery, Presentation Skills, Training technical content, and Participants Presentations, etc.</p> <p>Training is a critical piece of the success of any organization. Improved skills and knowledge at all levels increase competency and productivity. If an individual wants to improve their trainer's proficiencies so that participants have a positive learning experience. Whether any individual looking to improve training skills to become a certified trainer, subject matter experts for current organization, or internal trainers or as a professional trainer, this is the right program for them.</p> <p>This programme is suitable for candidates who have completed graduation with two years of relevant work experience. Opportunities of career progression for trainers, teachers, training designers, instructors, corporate &amp; soft skill trainers, HR professionals, and organization supervisors/leaders.</p> |

| Sr.No. | Qualification / Course Subject                                                                  | NSQF Level | Brief Description of the Qualifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------|-------------------------------------------------------------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 57     | Certificate in Basic EHSF (for Schools & Colleges)                                              | 5          | <p>The Certificate in Basic EHSF (Environment, Health, Safety and Fire) is designed to educate students in school or college study, so they should be able to understand the importance of these subjects. The EHSF is basic and fundamental needs of the country to know some basic and can be able to deal the emergencies properly, that can help in saving human lives and property both. The purpose of creating this qualification to create interest and teaching them the importance of Environment, Health, Safety, and Fire and able to understand potential risks are associated with normal life, later on, they will also to able to opt for this as a career development opportunities as well.</p> <p>This programme is suitable for all students who have completed 8th standard and it is useful for college-going students as well.</p>                                                                                                              |
| 58     | Executive Certificate in Basic EHSF (for Teachers and all supporting and administrative staffs) | 6          | <p>Executive Certificate in Basic EHSF (Environment, Health, Safety, and Fire) is designed for Teachers and all supporting and administrative staff. School safety is more complex today than ever before. That's why many schools have already started sending their teachers to attend such types of programs to better manage Environment, Health, Safety, and Fire compliance and prevent serious incidents across their campuses. These programs are designed to help busy administrators save time and money, but most importantly, they can help make your school even safer for students, staff, and parents.</p> <p>This EHSF compliance program has been specifically designed for school use and includes easy-to-use solutions for staff training, student training, tip reporting, Hazardous Chemical Management, Environmental Management, Basic Fire Fighting, Basic Safety Engineering, Emergency Evacuation Drills, and Incident Management, etc.</p> |

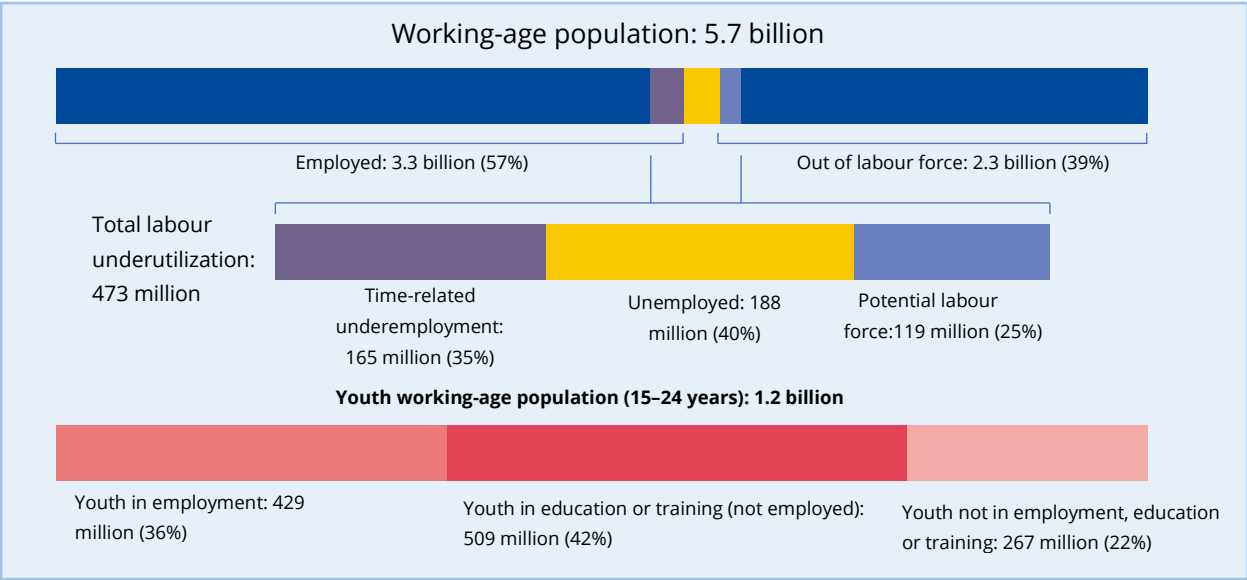


PURPOSE OF ESTABLISHING  
THESE QUALIFICATIONS

# Purpose of establishing these Qualifications

A thorough study was undertaken to determine the demand for each of these qualifications with active participation from associated individuals, industrial organizations, domain intelligentsia and researchers. It was found that there was a great dearth of safety skill driven qualifications.

Let's look at the chart that follows;



Note: Persons in time-related underemployment are employed persons whose working time is insufficient in relation to a more desirable employment situation in which they are willing and available to engage. The potential labour force consists of people who were actively seeking employment, were not available to start work in the reference week, but would become available within a short subsequent period (unavailable jobseekers), or who were not actively seeking employment but wanted to work and were available in the reference week (available potential jobseekers). Young people in employment may simultaneously be in education or training.

Source: ILOSTAT, ILO modelled estimates, November 2019.

Total labour underutilization is more than twice as high as unemployment alone in 2019, the global population aged 15 years and older (i.e. the working-age population) stood at an estimated 5.7 billion people (UN, 2019a). Of this total, 2.3 billion (39 per cent) were not part of the labour force, 3.3 billion (57 per cent) were in employment, and an estimated 188 million were unemployed.

Among young people aged 15 to 24, an estimated 429 million (36 per cent) were in employment in 2019, with another 509 million (42 per cent) in education or training without simultaneously being employed (figure 1.1). The proportion of young people not in employment, education or training (NEET) is used as an indicator for Sustainable Development Goal (SDG) 8 in the 2030 Agenda for Sustainable Development, adopted by the United Nations in 2015 – specifically for target 8.6, which calls for the proportion of youth with NEET status to be substantially reduced by 2020. That target is designed to focus policy-makers' attention on those young individuals who are neither employed nor improving their employability. As many as 267 million young people, that is, one in five, had NEET status in 2019 and were thus not gaining the skills that would enable them to participate in the labour market at some later point.

Additionally, the risk of labour underutilization is higher for youth than for adults, with 141 million young people affected by underutilization and 68 million in unemployment.<sup>22</sup>

**Vocational Training** is more likely to lead to employment in jobs that are at risk of automation. Young people with vocational training are more likely to be working in an automatable job than those with a university degree.

As there are few safe skill-related alternatives to occupations at high risk of automation, young people with lower skills and a vocational background may find themselves having to switch from one precarious job to another and may ultimately end up NEET. This reflects how the occupation-specific skills imparted by vocational training tend to become obsolete faster than the more general problem-solving skills taught at higher education institutions. Vocational training programmes need to be modernized so that young trainees are better able to adapt to the changing demands of the digital economy.

**High-quality Vocational Education and Training (VET)** prepares young people for the labour market and addresses the skill requirements of the workplace (OECD, 2016). A 2018 survey of employers in 43 countries found that skilled trades (including electricians, welders and mechanics) and technician roles were among the hardest to fill (ManpowerGroup, 2018).<sup>23</sup>

To further make the point about enhancing skills, let us now look at the educational and training environment that exists in the country. As the below chart suggests, there seems to be a **huge gap in the demand for Safety skills and the apparent shortage of supply**.

| Description                                    | Name of Awarding body in Other Country | International Market share in Overseas including India | Name of Awarding body in India     | International Market share in Overseas including India |
|------------------------------------------------|----------------------------------------|--------------------------------------------------------|------------------------------------|--------------------------------------------------------|
| Awarding body in the EHS, & Scaffolding Sector | NEBOSH, UK                             | 50%                                                    | ASK-EHS Safety Competency Training | 50%                                                    |
|                                                | IOSH, UK                               | 20%                                                    | SSDC                               | 10%                                                    |
|                                                | BSC, UK                                | 5%                                                     | NSC                                | 2%                                                     |
|                                                | CITB, UK (Scaffolding)                 | 75%                                                    | ASK-EHS                            | 60%                                                    |
|                                                | CSP, US                                | 15%                                                    | Others                             | 10%                                                    |
|                                                | OSHA, US                               | 10%                                                    |                                    |                                                        |

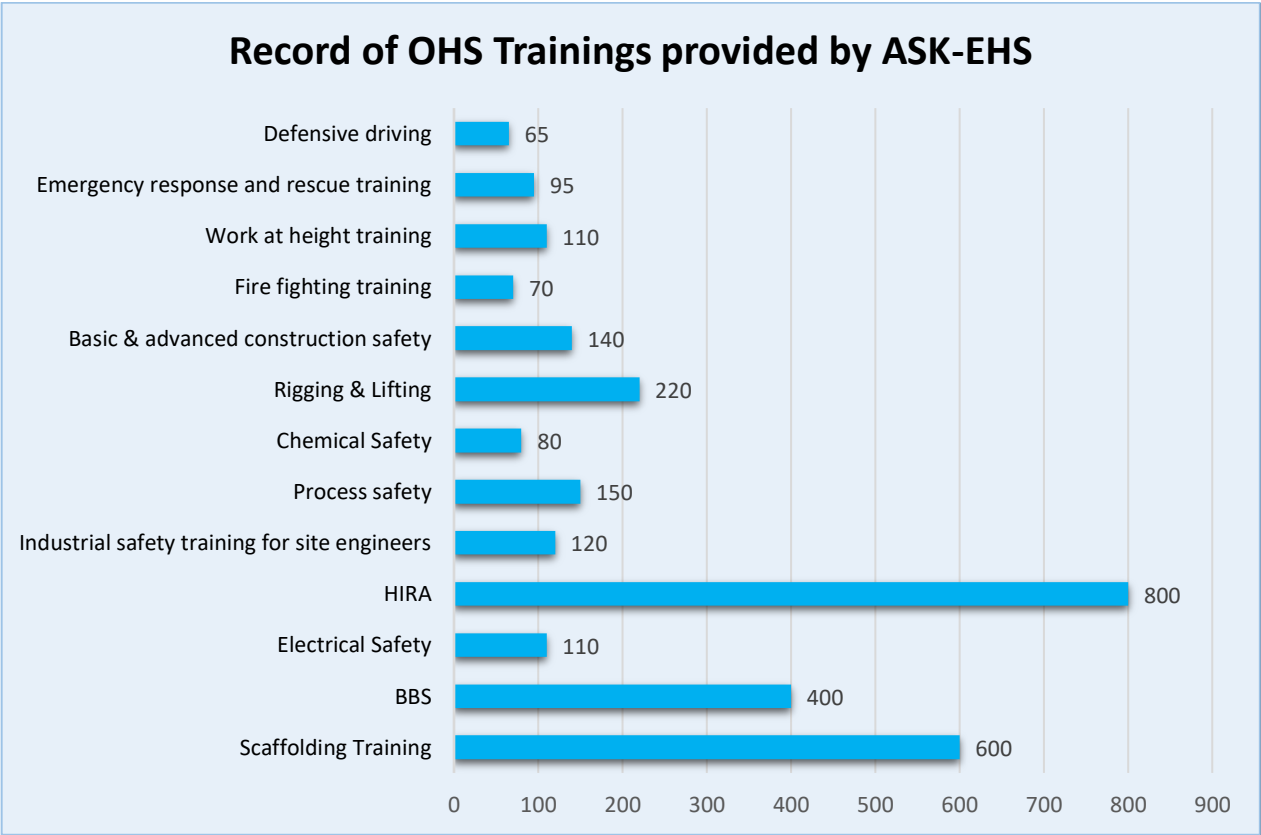
(Source: Internal study of 50 corporations / patrons over past 2 years)

As seen in this table, there are only a handful of institutions that have a bearing in the world for the certifications that they provide. However, even these are extremely limited in terms of the specifications that they address. They may have a lot of credibility globally but seemingly limited specializations (in many cases it is just for a single industry or for a single function). Indian work forces opt for a program that would allow them to further their careers in any manner possible and collect these qualifications as a pedestal to move forward and not necessarily as a competency enhancement. These certifications are usually made available to the Indian work force through their local partners / associates in some of the major Indian cities.

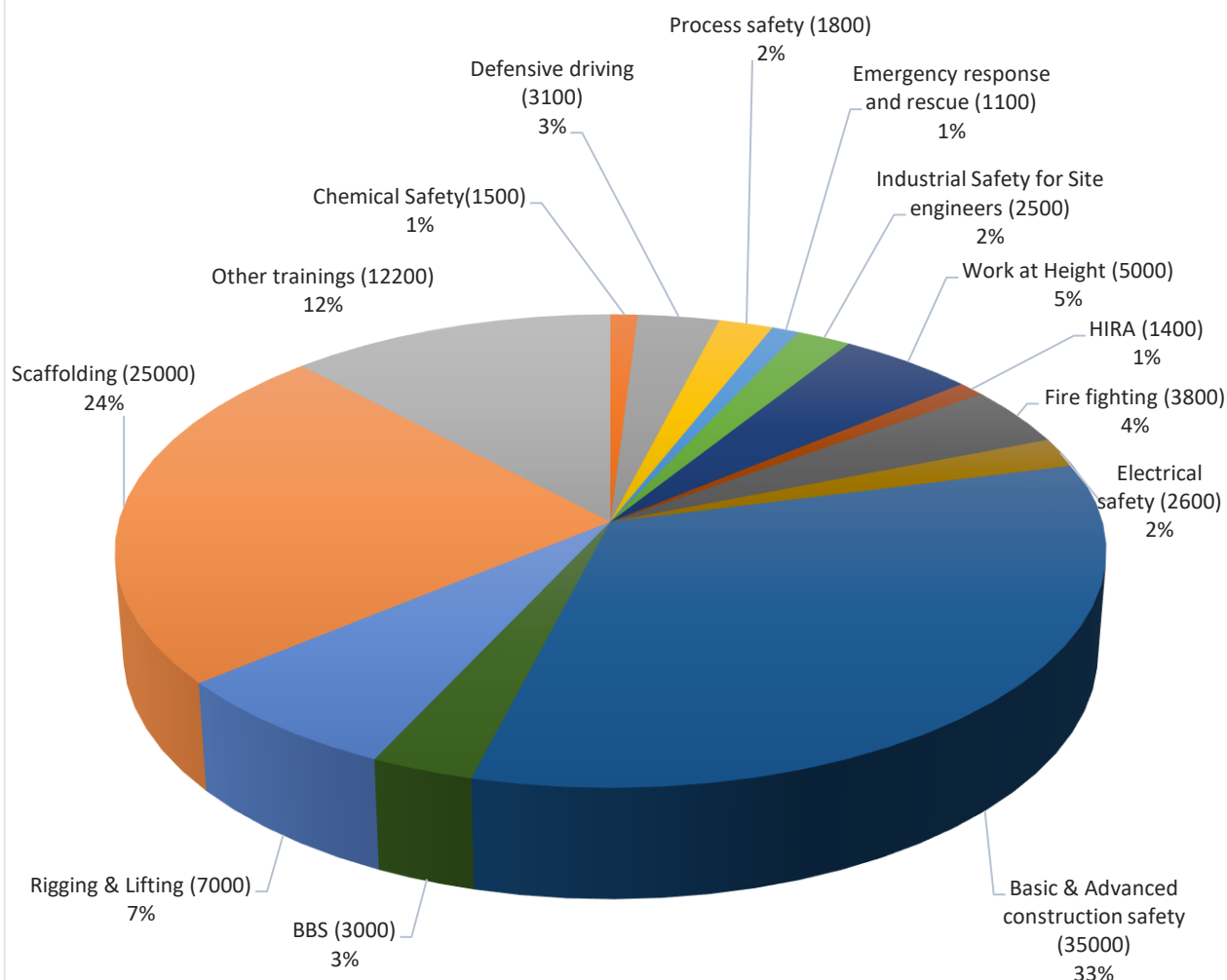
Another home truth is that these certifications are usually targeted towards the higher cadre (officers, managers, and above) of workforces. The criteria for acquiring these certifications themselves are stringent and required a person to have an adequate amount of education and experience in the field. There are very few who might make the cut, given that most workmen in India are not well educated.

It is also important to look at this from the standpoint of the growth of India as a nation. India possesses a glorious history and culture that is rich in Ayurveda, Yoga, Architecture, Philosophy, policies (Chanakya Neetee), Spiritual Accomplishments and fulfillment of the purpose of life. Ancient international universities like the Nalanda & Takshila Universities, stand witness to the fact that India was the “GURU” of the entire civilized world. We declined and lost that name and fame when attacked and ruled by invaders from West Asia and Europe. The talent and merit of young people are even now globally renowned as they shine in the ‘Silicon Valley’ (USA), technology centers in Europe, Australia, Canada, Japan, and many other geographies through their intellect and acumen. Our government has also shown keenness by focusing on “Kaushal Vikas – Kushal Vikas” (skill development + progress = Great Progress) policy for rapid and strong advancement of the Indian economy, aiming to attain 5 Trillion US Dollar GDP, by the year 2024. Considering all of this in its true context, it is imminent for India to also become a powerhouse when it comes to providing authorizations, accreditations, and qualifications that are recognized globally. ASK-EHS as a group has already done a significant amount of work in this area. **As an independent training organization, ASK-EHS’ certifications (competency certificates denoting the completion of a training program) are already well known amongst industries both in India and across some parts of the world.** These certifications have already provided many of the professionals an opportunity to scale their careers up further in their chosen fields and skills.

Given below are some **statistics of ASK-EHS accomplishments** over the years –



## Market Share of various OHS Training Conducted by ASK-EHS



Let us look at the Institutions of India that are providing **Safety specific Education and Qualification**. The table below provides not just the number of people graduating out of these institutions but also the **actual demand** against each of these qualifications.

| Description                        | ADIS/PDIS | Nos. of Students<br>passout p.a. | Requirement<br>per year in India | Requirement<br>per year in<br>Overseas | Other Certified<br>Safety Program | Nos. of Students<br>passout p.a. | Requirement<br>per year in India | Requirement<br>per year in<br>Overseas |
|------------------------------------|-----------|----------------------------------|----------------------------------|----------------------------------------|-----------------------------------|----------------------------------|----------------------------------|----------------------------------------|
| No. of<br>Institutions<br>in India | 100       | 5000                             | >75000                           | >100000                                | <10                               | <1000                            | >250000                          | >500000                                |

Again, it is evident that the numbers appear highly skewed. However, the practicality of the requirement is well captured in this table. Within the unorganized sector, most workers are generally apprentices who have then used their experience to move further up the scale.

Moreover, even the Safety Engineers/professionals passing out from these institutes, hardly have the specialization that is so crucial to the job. Often, the conventional practice is to apprentice under a strong Safety Custodian and learn the ropes on the job. While this may be practical, the outcome of such a practice can result in some dire consequences.

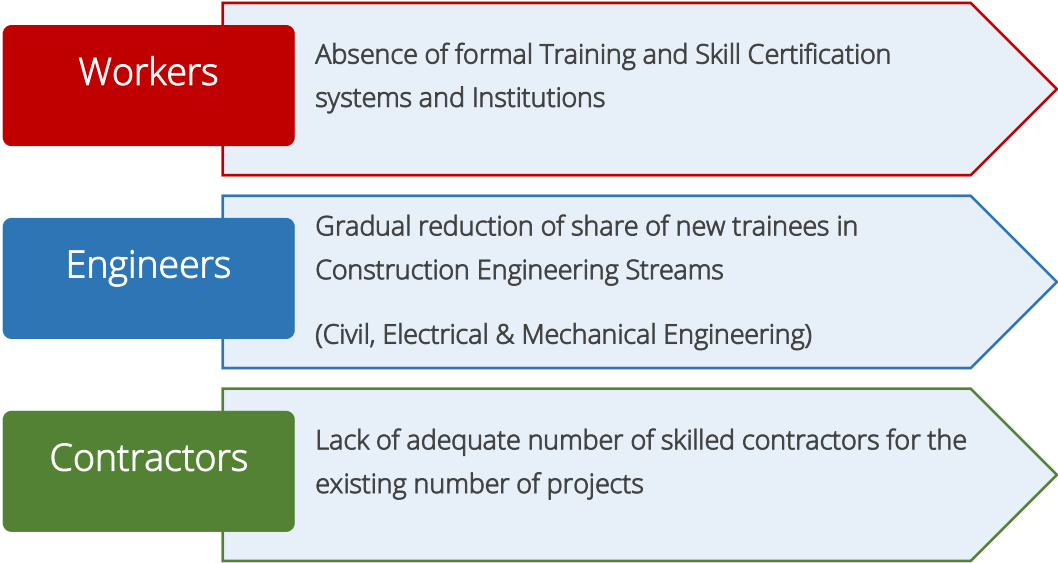
The above numbers also paint another narrative of the same story. It suggests that not many students are aware of the opportunities that exist inside the domain of Safety, Environment, Health, Scaffolding, Rigging, etc. As mentioned previously, a vast majority is looking for stability rather than careers, which leads them to choose the more popular branches of engineering/operations etc. This has also contributed to the non-growth of safety as a veritable career choice for aspiring students.

Apart from the ITIs, the scarcity of options for skill-based training and education is a big deterrent for career seekers. Most students who drop out of school and/or early college, would do it, because of a general lack of interest, lack of career options, and lack of resources to pursue a credible education. This is emphasized by the lean numbers seen in the table.

The education system is often not delivering the required number of specialists across project management, engineering, surveying, contract management, and skilled/semi-skilled labor.

The NSSO findings also reconfirmed that over 97% of individuals between 15 and 65 have no exposure to any training. So, the imminent need is to expand the reach of training providers, set up models and institutes with the capability to scale.

### Different Employment Levels in Construction and Industrial Sector



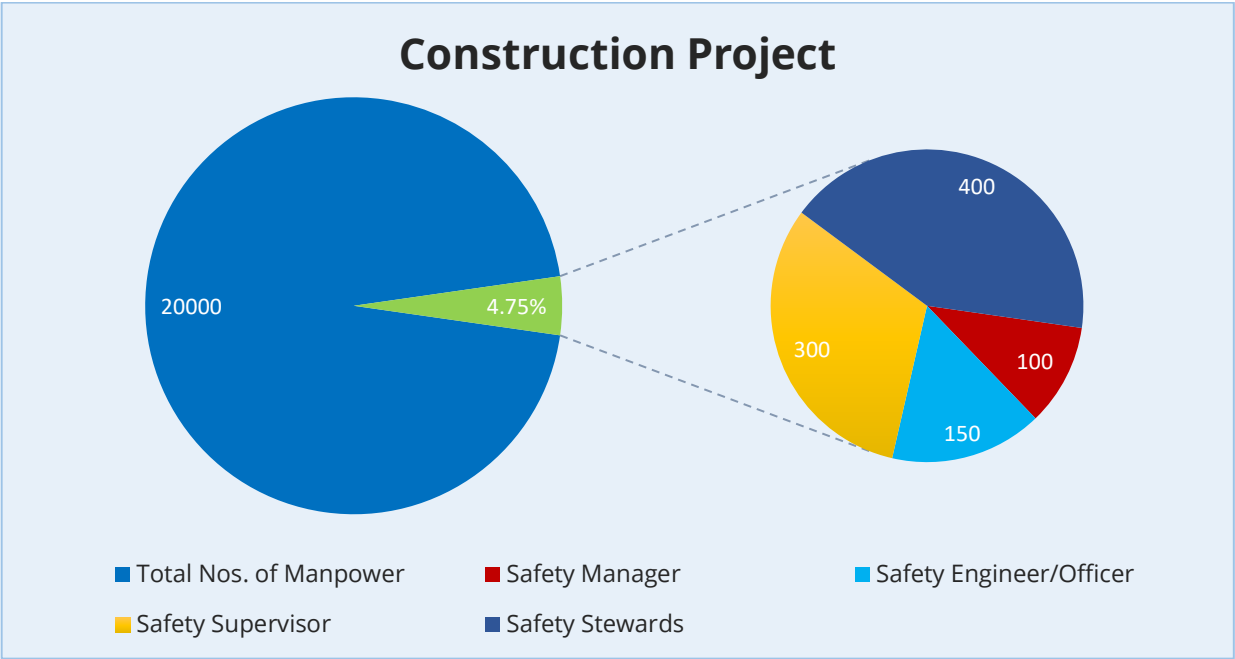


## SKILL GAP ANALYSIS

# Skill Gap Analysis

As mentioned previously in this document as well, **significant gaps** have been identified within the entire work force eco-system. These **gaps are synonymous with cultural upbringing, lack of appropriate and adequate education, lack of relevant experience and a general negligence towards safety.** A slew of studies conducted by ASK-EHS found missing links in multiple disciplines across board. Additionally, other independent studies are also included to lay emphasis on the skill gaps that persist.

Certain data are necessary to highlight some of these pertinent points. To take a case in point, let us look at the current requirement of **skilled and Qualified Safety Professionals in construction project space** through the following example;



*(Source: Internal study of 50 corporations / patrons over past 2 years)*

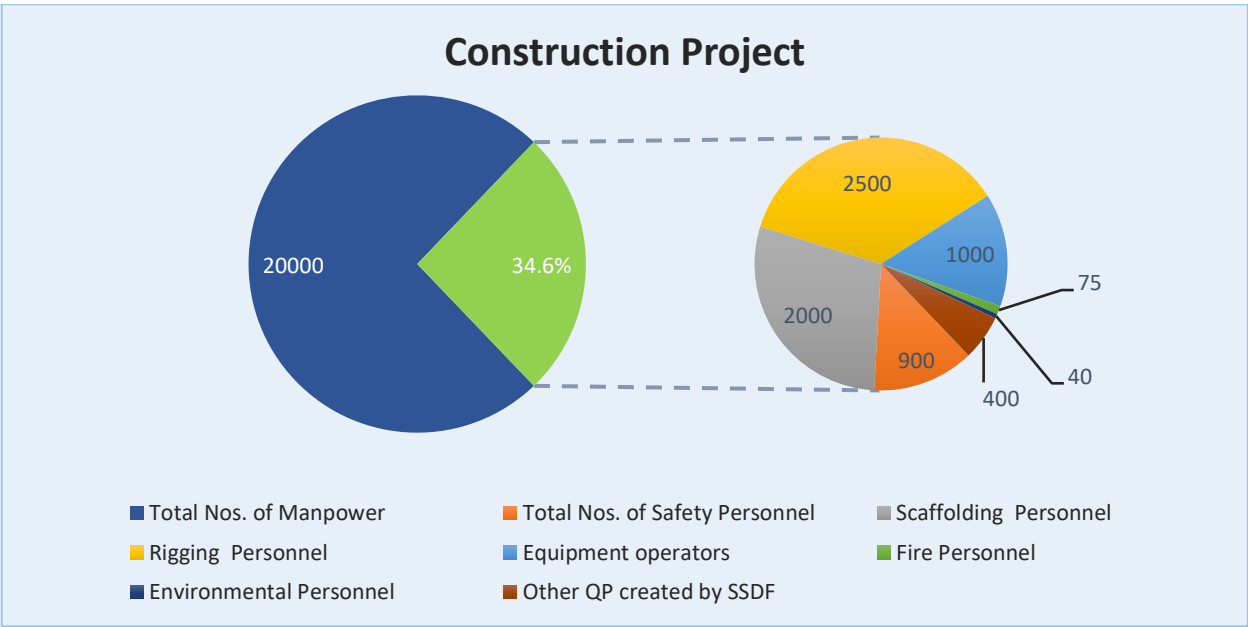
As this chart suggests, for every **25-50 nos. of workers** working in a **construction project**, 1 '**Safety Professional**' is needed. Going by these calculations, a construction project employing around **20,000 workers** would have to employ, at least **400 Safety Professionals** to ensure safety is maintained on-site. The best part of this ratio is its ability to measure the effectiveness of a construction site based on this ethos.

When we talked about the various level of Safety professional requirements in any types of constructions activities, there is nearly 5% of workmen and professional are needed to fill this by very competent, skill, and certified professional as these are very key positions for any organization to prevent the incidents/accidents at workplace and enhance the non-interrupted productivities.

What becomes clear through this case is that specifically in any type of construction project irrespective of any sector, many safety professionals are needed. Considering the above diagram, a different cadre of safety professionals is required for a productive and safe project outcome. Considering the construction of large infrastructure (Dams / Bridges / Roads / large industrial projects), it is evident that a big number of workers are working at the same time on the project. Each cadre of safety professionals needs to perform a different role and is largely responsible for many functions at the same time.

The Roles & Responsibilities of the safety professional and their key result areas are important parameters to determine productivity. These require not just special inclination but also specialized training. This is hardly a part of their learning in their training years. Some of the major roles/cadres that are critical to productive outcomes of any project, do not have any mechanism to authenticate with due certification/qualification.

To further emphasize this case in point, given below is a bifurcation of the different types of trade-specific analysis of personnel/workmen required in each construction project. Given this bifurcation, over 34% of workmen are needed for any project that might require specialized as well as certified training. To further lend support to this point, it is also clear that authentication will give the necessary fillip required to bring these functional activities to the forefront. As mentioned previously in the document, over 90% of personnel in this sector have no formal training or certification that would provide them (arm them) with the necessary qualifications to make a career out of their skill.

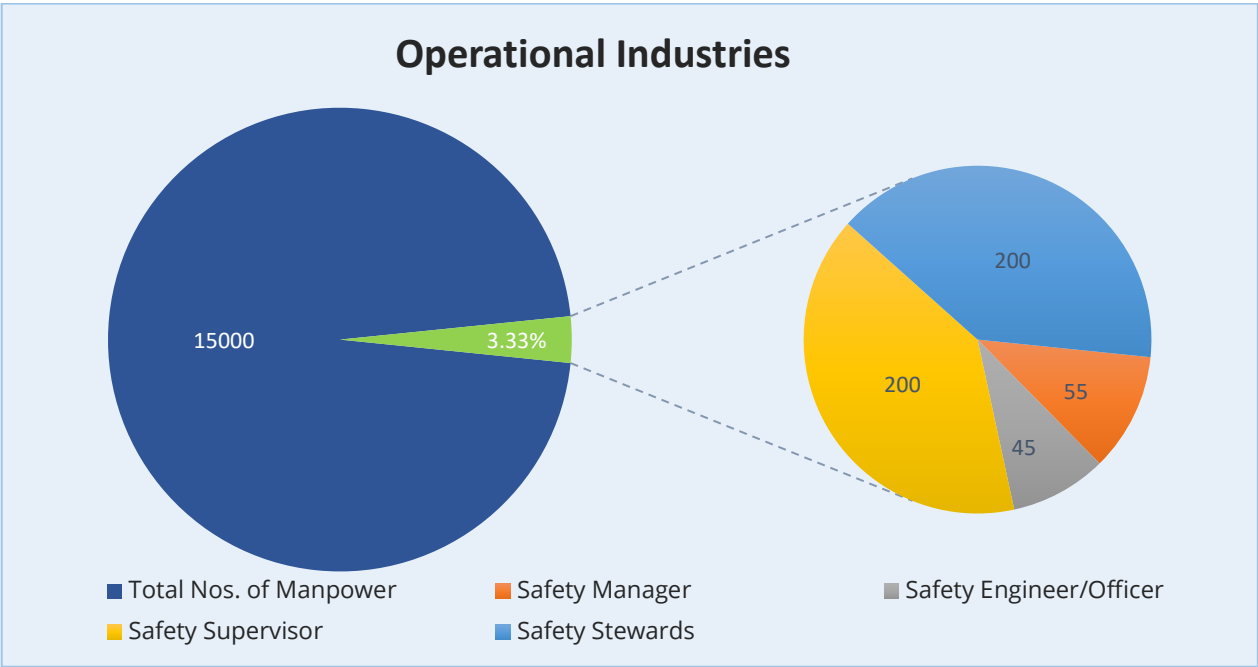


(Source: Internal study of 50 corporations / patrons over past 2 years)

The above chart is denoting the **Qualifications created by SSDF** are going to creating impact of nearly **34% of workmen and professional** in any types of **construction activities irrespective of any Industrial sector**.

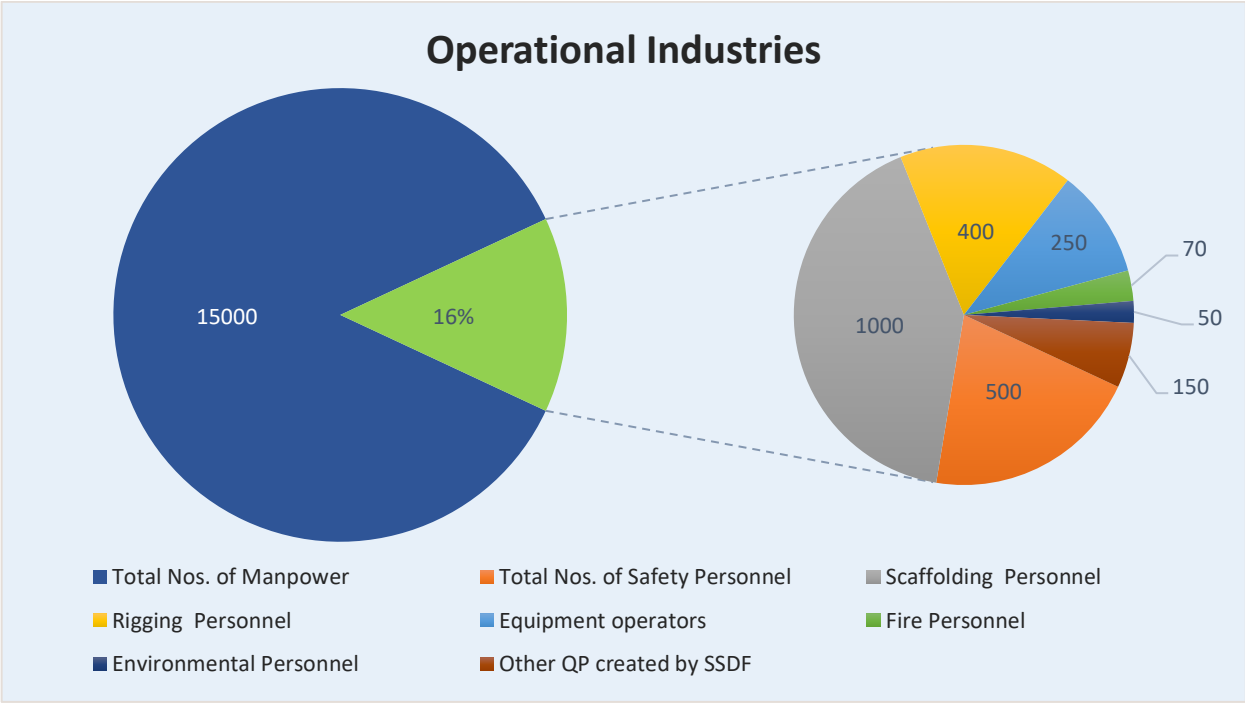
The case of work forces working in operational industries (Manufacturing plants / factories) is also similar. The quantum or magnitude may differ, but the challenges remain the same.

Operational plants also need specifically trained personnel. Functional activities are diverse, just like in construction, and equally critical. Operational industries need to work mostly on maintenance activities that are scheduled and constant as well as random repairs that might occur due to any event or malfunction. Similarly, another important bifurcation is that 1) There are maintenance and other activities that are done by internal employees and 2) There are other activities that are gotten done through external contractors. With the onset and mergers of manufacturing plants with globally renowned companies from around the world, safety has taken a major step forward in the right direction. However, the challenges remain the same – lack of authentications or, accreditation, specialized training, and relevant competencies, what follows is a general analysis chart that emphasizes this point -



(Source: Internal study of 50 corporations / patrons over past 2 years)

It becomes clear that percentage of safety professionals goes down, however, owing to different types of specializations and trade specific functional activities, these also need special attention and training. Similarly, even in operational plants / factories, trade specific skill sets are utilized. These can be displayed through the chart below -



(Source: Internal study of 50 corporations / patrons over past 2 years)

The above chart is denoting the **Qualifications created by SSDF** are going to creating impact of nearly **16% of workmen and professional** in any types of **Operational Industries/Factories**. These above listed qualifications are very important to create competence in these skills to enhance the capabilities, quality and productivities of the industries.

## Some of the Key Trade specific Skill Gap Analysis

Manpower deployment Ratio of normal practices followed by good multi-national companies

| Sr. | Position                     | Behind Every                | Required Qty. |
|-----|------------------------------|-----------------------------|---------------|
| 1   | Project Safety Head          | 03 Managers                 | 1             |
| 2   | Safety manager               | 05 Safety Officers/Engineer | 1             |
| 3   | Safety Administrator         | 10 Safety Professionals     | 1             |
| 4   | Safety Officer / Engineer    | 150 Workers                 | 1-2           |
| 5   | Safety Supervisor / Steward  | 25-50 Workers               | 1-2           |
| 6   | Project Training Coordinator | 200 Workers                 | 1             |
| 7   | Safety Induction Trainer     | 500 Workers                 | 1-3           |
| 8   | Scaffold Engineer            | 10 Scaffolding Gangs        | 1             |
| 9   | Scaffolding Inspector        | 05 Scaffolding Gangs        | 1             |
| 10  | Area Scaffolding Supervisor  | 05 Scaffolding Gangs        | 1             |
| 11  | Scaffolding Supervisor       | 01 Scaffolding Gang         | 1             |
| 12  | Advance Scaffolders          | 01 Scaffolding Gang         | 2             |
| 13  | Trainee/ Basic Scaffolders   | 01 Scaffolding Gang         | 3-4           |
| 14  | Rigging Engineer             | 01 critical Lift            | 1             |
| 15  | Rigging Supervisor           | Any Mechanical Lifting      | 1-2           |
| 16  | Rigging Inspector            | Any Mechanical Lifting      | 1             |
| 17  | Riggers                      | Any Mechanical Lifting      | 4-5           |
| 18  | PTW Controller/Administrator | 200 Workers                 | 2-4           |

Let us also look at each of these trade specific functions / activities in further detail to emphasize this point.

## Scaffolding Engineering and Management

### Introduction

If any work is required to be undertaken at a location, where there is no built-in access and platform, a need arises to build a framework where a worker may position himself, place tools and materials and perform the job. Such situations arise during operation, maintenance, servicing, and at many occasions in common life; but during building and other construction and project execution, right from the time of excavation, foundation laying, erection of columns/beams/purlins, etc., equipment installation and allied services, structural support in the form of a stable and strong scaffold is a necessity at most of the places. The categories under scaffolding: Trainee Scaffolder, Basic Scaffolder, Advanced Scaffolder, Scaffolding Supervisor, Scaffolding Inspector, Scaffolding Engineer, Scaffolding Coordinator, Scaffolding Manager, Project Manager-Scaffolding.

Stability and strength, along with compactness and of reasonable weight, become a significant technological requirement. Before undertaking the construction of any scaffold, its intended loading must be decided, and all further steps and stages will commence thereafter.

**Scaffold erection** entails risk since material handling and erection are required at height. All these factors necessitate a very systematic approach towards scaffold construction. Scaffolders must be given detailed input, know-how, and practical training in systematic scaffold erection.

Established practices, standards, rules, and regulations, mandatory provisions form essential factors to be taken into consideration. Inspection and certification for use, initially after the completion of the erection, and later for the proper upkeep and regular use, are also important requirements.

Accidents involving scaffolding mainly involve people falling, incorrect operating procedures, environmental conditions, and falling materials caused by equipment failure. The causes include failures at attachment points, parts failure, inadequate fall protection, improper construction or work rules, and changing environmental conditions (high winds, temperature extremes, or the presence of toxic gases). Additionally, overloading/misuse/locations near high voltage lines or unstable bases are frequent causes of major scaffold failures. Individuals exposed to scaffolding hazards include scaffold erectors and dismantlers, personnel working on the scaffold, and employees and the general public near scaffolding. Scaffold erectors and dismantlers are at particular risk since they work on scaffolds before ladders, guardrails, platforms, and planks are completely installed.



## Current Scenario with Gap Analysis

- We in India, are at a very vulnerable crossroad. Scaffold, which by legal definition, is a temporary means of support used by most trades in the building and other construction Industries and for maintenance and services jobs in operating plants and common workplaces. Scaffolding trade, conventional type (still using bamboos/woods) as well as system type, needs utmost and rather immediate care. **The Trade needs high Skill and strict Work-Discipline since it is very prone to failures/mishaps.**
- In Industrially advanced countries, like UK, Europe, Australia, USA, Canada, etc., **workers are fairly educated, all at least having matriculation level education.** At the workers' level, Australia successfully runs Basic, Intermediate, and Advance scaffolding courses at their Industrial Training Institutes, with inputs of candidates having average secondary education. Then, it is easier to instill the basic technical know-how such as measurement, calculations, geometrical configurations, load analysis, and solutions, etc. With little theoretical support, they are imparted rigorous practical training and the product is made suitable for use in the industries. Further enrichment in knowledge and working skill follows as value addition subsequently. It is not so in India, since we have here mostly uneducated workforce.
- **We, in India, face a scarcity of workforce with basic education.** For example, in the Scaffolding trade, the majority of workmen are illiterate. It becomes difficult for them to grasp technical inputs. Hence, the only course left is to make them understand by pictorials, movies/animations, hand-on practices, and likewise. One frank and open praise for our illiterate scaffolders is that they are a very sincere, laborious, obedient, and pains-taking workforce that should be well harnessed for the benefit of our nation.
- **The dignity of labour is a critical aspect that is often overlooked in the Indian work context.** More often, the tradesmen due to a systemic failure of institutions, economic setbacks, and educational deficiencies suffer from prejudices against them. This comes from the higher rank and file and hence

the quality and state of employment for such a workforce suffers. Our illiterate or semi-educated scaffolders are gems and need to be nurtured, groomed, and trained for scaffolding. Within them, lies the potential to serve the important trade of scaffolding.

- **Also, during testing/examination/interview, practical questions should be asked.** One foreign scaffold expert, while interviewing an illiterate scaffolder asked - "what should be the height of mid-rail and top-rail above the platform?" The hard-working scaffolder replied – "mid-rail at knee-level and top-rail at chest level, sir". The foreign expert was damn pleased and satisfied with the answer.

**Note:** Since the skilled and well-trained scaffolders are required in large number, as the demands are high, Training Agencies need extra support to establish infra-structure, workshops with miniature models, audio-visual animated films, pictorials, and simulated industrial situations, etc.

## Mechanical Lifting and Rigging Engineering & Management

### Introduction

To begin with this multitalented and diverse group of individuals, it is important to describe (broadly) the different categories and designations that belong to this group: assistant rigger/helper, basic rigger, advance rigger, rigging supervisor, rigging inspector, rigging engineer, and rigging manager or coordinator. Attached within and sharing a similar work profile is crane operations: crane operator, banksmen, signaler, assistant crane operator, and helper. Such a diverse group of activities and people call the rigging crew their home.

The majority of construction activities require loads ranging from light to heavy loads to be erected at heights safely using the different cranes. Load lifting is an integral part of any project. Significant progress can't be achieved or rather a project can't be completed without rigging and lifting activities in the project. The entire team is mainly responsible to rig and lift the loads safely using different types of cranes so that they can be lifted and shifted to another location. In this process the rigging activities involve tying, binding, roping, lifting, lowering, moving, guiding, and positioning the material at the proper location.

The main roles desired from a skilled rigger are to select appropriate lifting gears and equipment, slinging and de-slinging of the load, control the load while it is lifted, providing signals to the crane operator, assist in the preparation of rigging plan, physical/visual inspection of lifting tools & tackles, maintenance, and storage of rigging equipment, etc. The lifting and shifting of small as well as larger loads require a great deal of planning as well as skill and knowledge on part of a rigger. This is a reason why employers especially overseas employers expect the riggers to be skilled and knowledgeable to carry out such tasks.

The current scenario is that more than 90 percent of the riggers come from a poor educational and financial background, mostly 5th standard or between 5th to 10th standard. Most of them had an exposure to village environment and therefore after leaving home they face the language barrier.

They read and speak their mother tongue well and most of them understand and speak the Hindi language. The people from Southern states face difficulties in understanding or speaking the Hindi language.

They get resourced through the recruitment agencies or a reference or through a local pressure on the project or by applying through newspaper and job portal advertisements.

## Current Scenario with Gap Analysis

- **The imbalance between the demand and supply of manpower.** There is a growing number of complex projects all over the world. The skilled rigging manpower demand is much higher than the available number of competent riggers in the market. The employers end up absorbing inadequately qualified rigging manpower as a substitute.
- **Diverse and improper placements cause 'mismatch'.** In some situations, the helpers on the job are assigned as riggers in order to meet the schedule. The result is that the helper who is not exposed to such work, illiterate, and has not even completed his education up to 5th is employed for such a job.
- **No access to standardize courses.** The helper or a rigger or an operator who is already working on construction projects or elsewhere is not aware that they may seek such qualifications. The language barriers and poor financial capability are another concern.
- **Lack of understanding of standards, exposure to risks.** Such workers are exposed to unknown hazards and risks in their profession. They miss a professional approach every time they do the rigging job. They are required to be supervised and they fail to understand why they are doing the job the way it is told to them. Even the employers remain at risk of employing an unskilled workforce.
- **Communication standards aren't up to the mark.** The riggers who go overseas are required to communicate in the English language, but due to illiteracy, they rely on others who can communicate and represent their opinion. In Middle East countries, in most of the complex and large-size projects, the execution supervision is done by the representatives from reputed multinational company staff. **Other country nationals dominate the situation by virtue of a good language although they have limited working skills.** These people when on-site require someone to interact with them to discuss the issues associated with the job execution. Well, it could be about the substandard equipment, unsafe practice or procedures, etc. But unfortunately, the illiterate rigger can't communicate with these clients or owners.
- **Unaware of technology developments and advanced techniques.** The crews are unaware of the recent technological advancements in lifting equipment and the rigging gears that are available in the market.
- **Lack of onsite skill training.** The existing training on-site does not provide skill training. What they provide is safety training which is at a minimal level. The lifting rigging team can't be spared for training because of the job pressure and under the fear that the costly equipment shall remain idle.
- **Employment- based on CV and previous experience than skill.** The riggers generally obtain the experience certificate from their companies wherever they served and show the same to the next employer to seek a job. If the employers do not get certified people, their next priority would be to choose the people who have rigging experience written on their CV and or in possession of a previous employment certificate.
- Poor motivation due to the inequity and torn motivation as earning becomes the principal drive than learning.
- **Currently, there is not any firm regulatory (policy) or qualification framework that monitors the recruitment procedures.** The employers are at liberty to undertake recruitment as per their policies. In the case of overseas recruitment, the riggers are absorbed in bulk number through the overseas agencies in India, where these people are mostly not even interviewed. The employers were relying on the experience, received the recommendation of somebody about the individual an arbitrary metric.

- **Lack of skill translates and permeates inefficient work practices throughout.** The job supervisors are under tremendous pressure to complete the given tasks and they do not spare time to assess the skill gap and train the worker. The rigger has acquired the requisite skill level through hands-on practice, still, he lacks in knowledge and fails to decide whether he did the job right or his workplace is safe for working and also his work is not creating a hazardous condition for others. In addition, the rigger fails to respect the safety requirements due to inadequate education, previous work culture, and attitude.
- **Failure to allocate training resources and ensure a training-learning environment.** The training partners currently lack the necessary equipment requirements for this training. A few of the examples not limited to these are various rigging hardware i.e., slings, shackles, turnbuckles, ropes, clips, taglines, crane models, chain blocks, wedge sockets, site demonstrations, and operation, etc.

#### Recommendations for Scaffolding and Rigging discipline

- Include in brief the English and Hindi Reading and writing course as part of the existing skill development curriculum of CSDC qualification packages.
- The industrial employers and training providers who have set up such training facilities are to be audited for the inclusion of the complete curriculum and practical's in their training practices so that the training given is effective.
- A standardized system of recruitment should be conceived and applied overall, for the employers and recruiters.
- Online confirmation of certification system to be established once the course is completed by the candidate.
- Crane simulation systems must be procured along with after-sales service guarantees and initial training from the manufacturer for the operation and maintenance of this equipment. Include the models of various cranes in the training.
- Those training facilities seeking training partners should be adequately equipped with the facilities and training aids and multilingual trainers.
- Questionnaires and tutorials are required to be developed to keep the engagement of the participants during the entire length of the course. There should be some weight given in the final score in lieu of the tutorials and homework undertaken during the course duration.
- Surprise checks must be carried out by regulatory authorities to ensure that the right people are deployed for carrying out lifting rigging operations.

## Safety Engineering Professionals

### Introduction

As per the legislative provisions of any country, industrial establishments, as well as the construction sectors, needs to deploy a suitable number of qualified Safety Officers/Engineers to discharge various roles and responsibilities assigned to them within the framework set within the law of the land. For example, **“Building and Other Construction Workers Central Rule 209” states the legal requirements related to the appointment of safety officers, and the duties under schedule VIII that are expected of them.** There are similar requirements laid down in various other sectors for such requirements such as Factories Act 1948, Oil Mines Regulations 2017, etc. All these legislations demand safety officers discharge their role keeping in view their important contribution towards the accident prevention programs in the industries. **The duties of safety officers as per schedule VIII of BOCW are as below (adapted and abridged, please refer to the gazette for the original).**

“The duties of a Safety Officer/Engineers shall be to advise and assist the employer in the fulfillment of his obligations, statutory or otherwise concerning prevention of personal injuries and maintaining a safe working environment. (pertains to **planning, organizing, inspections, awareness and training** programs as well as **supervision in coordination with the management**)”.

The majority of them are absorbed as safety officers or safety supervisors on a contractual basis. They must return to their home country if the contract is finished or if his performance is found not satisfactory by the clients. There are various other reasons such as job cuts due to recession or immigration policies etc. Some people find home sickness and on achieving their financial goals they find their way home.

The statistics of an accident in the construction sector in India are alarming. According to W.H.O. nearly 50 million are injured or disabled every year in the world. The solution to this problem is not just the legislation but exercising the successful implementation of the Health and safety policy through the deployment of adequately trained EHS professionals who can advise and supervise the critical activities on the job sites. The role of a competent safety officer plays a vital part here to identify and get the unsafe conditions rectified by convincing the line supervisors and workers or by sending a persuasive safety report to management or by coaching and counseling the workers.

So, in addition, **this job role demands communication skills, proactive and tactful approach, safety leadership, hazard recognition, Risk perception, training, and safety management skills.**

## Current Scenario with Gap Analysis

- **Engineering freshers directly appointed without any specialized Safety/EHS qualifications.** In the earlier times, the flow towards the safety field was low but due to the increased number of engineering graduates and diploma engineers and the scarcity of available employment in their respective trades, most of them made their way to the field of EHS. These people after seeking an entry into the EHS field require several years to acquire an EHS practice skill. Till such time they rely on the information, instruction, and training given to them if they are lucky to find it in their occupations.
- **Underutilization of skill and inadequate empowerment by the management.** Since the management focus remains more on progress rather than on safety, the management believes that all safety problems shall be resolved by safety personnel. This doesn't happen because although the safety people are made responsible, they are not empowered with enough authority to discharge the assigned functions.
- **The disparity in safety education due to the lack of a reliable curriculum** magnifies the issues sitting on the crossroads of knowledge and application. Again, some institutes provide e-learning sessions to certify the people in EHS. The modes of education and syllabus are different.
- **Poor selection criteria** mean the employers especially the construction contractors choose only those candidates who have minimal expectations in terms of remuneration. Those candidates who did their Diploma in Industrial Safety from Central and State Govt. approved institutes keep a preference to join the operational sectors rather than construction.
- **A worker is 'converted' to a safety officer.** In most situations, a worker with some level of previous work experience and better communication is directly made as a safety supervisor by giving him a green helmet. This is a very common practice amongst the subcontractors.
- **The current syllabus lacks skill development.** The current syllabus for any of these courses is inadequate as it has a limited focus on developing the skill of the person. Even the theory is inadequate and not compatible with international courses.
- **No Continuous Professional Development (CPD) programs** are rolled out for the benefit of EHS professionals within India that can help to upgrade their knowledge and improve the membership status.
- **The vast difference between national and international syllabus standards.** There is no augmentation in the current syllabus by the national institutions to make it compatible with international standards. This is where people are not updated with the recent trends and developments. Again, the current assessment standards are poor.
- **Inadequate legislative provisions.** As per BOCW Rule 209, one safety officer is to be employed after every 500 workers. Practically the 500 workers are spread over larger areas of the project. Although he is a skilled safety officer, he can't use his skills effectively. Then the clients i.e. owners insist to increase the number of safety officers to 1 for every 50 workers. Subsequently, the contractors end up deploying semiskilled people in supervising safety.

### Recommendations for EHS Supervisor and EHS Steward

- The training institutes shall be adequately equipped with the required equipment and the surrounding location industries and construction organizations must allow for the access of the students and the trainers to their projects for learning.
- International courses syllabus may be added to the existing syllabus of the CSDC qualification packages for EHS Supervisor and EHS steward.
- There must be some regulation that shall govern the employment of EHS qualified people to the construction projects.
- Surprise checks to be carried out by the authorities on contractors as well as subcontractors for the proper recruitment of these entire EHS departments.
- The scale of safety officer's requirement as per BOCW rule 209 is to be made as 1 safety for every 100 workers instead of 1 for 500 workers.
- The training partners shall be authorized to conduct tutorials that will carry 20% weightage in the final score

## Helpers- i.e. Trainee / Support Staff for any Trade

In specific highly technical Trade: Required ratio is 1:1

One Helper/ Trainee/support staff per one tradesman

In general, technical Trade: Required ratio is 5:1

One Helper/ Trainee/support staff per five tradesmen

### Introduction

A helper is considered as a backbone of some of the major activities in the construction or any industry, as all necessary help is initiated to accelerate the production by this category of workers. They provide the necessary assistance to the respective tradesman to carry out their tasks more efficiently while maintaining quality. **There are different types of helpers categorized in the skill development program for different trades such as carpenter shuttering and scaffolding, electrician, mason, painter and decorator, hot works, bar bender, etc.**

Millions of young people, especially those who are from rural areas and illiterate or have a poor education background (between 5<sup>th</sup> to 10<sup>th</sup>) start their career by seeking a job as a helper. They are resourced through a local agency based in villages and cities. There remains a tie-up between the agencies and the major contractors to meet the manpower requirements.

Construction helpers are required to perform several work activities as per their assigned area of work. Some of the examples are loading, unloading, and shifting of construction materials, bricklaying, hoisting and lowering of materials, operating the concrete breaking jackhammers, assisting welders, laying cables, rebar fixing, concrete pouring, helping for wood cutting, manual excavation, operation of compaction machine, etc. They are required to work in association with different skilled crafts such as welder, gas cutter, scaffolder, electrician, mason, carpenter, bar bender, insulators, refractors, during such activities performed on-site. **They have a variable and insecure nature of the work that is required to be done.**

A lack of skill means worker gets paid less. The construction sector shall need to add 10 to 12 percent workforce every year for the next five years making the situation even more difficult. Skilling the workers at a rapid pace shall help to add skilled workers and improve their income levels.

There is no shortage of workers seeking employment at construction sites, often at very low wages. In the current scenario, there are more and more helpers pushed into taking up hazardous and precarious employment. For these workers, employment helps to bring about a successful escape from poverty, but it may contribute to existing vulnerabilities. They possess very little awareness about workplace hazards due to lack of access to information, or even any formal kind of education.

Many helpers give low priority to safety and argue that they may die of work, but if they do not work, their families may die of hunger. Diagnosis of occupational diseases is difficult even in the formal sector, in the informal sector it is almost impossible. The recent trends in India towards safety are quite remarkable and implementing the safety sense among the workforce through legislation, training is the most challenging task.

## Current Scenario with Gap Analysis

- **Lack of screening of previous skills before recruitment.** The helpers are recruited in large numbers on a construction site with a low wage rate to fulfill the manpower requirement and to speed up the progress. Most of them are new to the construction world. The previous experience and skills remain unchecked during the process of recruitment.
- **Inappropriate job rotation.** Another concern is that they are rotated from one job to another, depending on the requirement and the priority or a manpower shortage. Therefore, they are required to carry out such jobs where they do not possess hands-on experience. Also, they are exposed to various other unknown risks out of the job and the work environment.
- **Lack of awareness on safety and quality.** There is some level of on-job training in association with skilled craft. It is purely a hands-on experience, but they lack awareness of safety and quality. Therefore, they fail to identify common hazards and are exposed to significant risks.
- **Lack of skill development training on construction site.** Generally, they don't receive any detailed education and skill development training on the construction site, as the priority of the employer is production rather than training. Safety education is given at a minimal level. The language barrier is one of the most regular problems for them. Safety remains an overriding concern as much as the skill for them.
- **Lack of skill leading to health risks.** Construction helpers at times are deployed to carry out physically demanding jobs such as loading, unloading, manual excavation, manual hoisting and lowering, operating machines such as concrete break, etc. They are exposed to manual handling injuries such as prolapsed disc, fractures, sprains, hernia, etc.

## Recommendations

- The employers from all sectors must do **screening prior to recruitment and carry out a 'training need analyses**. If the candidate is found to be not certified, they must be sent to undertake the skill-based training in the respective trades provided by CSDC authorized training partners.
- Perhaps a central monitoring body to over watch selection and placement can provide better assurance.
- In the existing CSDC curriculum of the helpers, subject to address language and communication skills must be added for the benefit of those helpers required to improve their communication.
- **The training partners must be well equipped** with the necessary tools and equipment to provide the training and, they should employ a local language trainer for the task.
- **Awareness to increase the level of understanding of the concepts** by the informal workers can be tackled by using safety videos, posters, demonstrations and involving them in the discussions.
- For helpers, practical-based training is more useful than theoretical training. By promoting the learning culture, evaluation can be done in between training and a reward-based system used for high-performing employees.
- A policy framework is required regarding the construction companies to run their training institutes to train the helpers using the CSDC skill development programs.

# Form Work and Stuttering Work

## Introduction

Formwork provides a form for the concrete casting. Just as the mold gives shape to the castings in Foundries, so formworks shape the configuration of concrete casting. For increasing strength, castings are reinforced with a bunch of steel bars (plain & now mostly corrugated) tied together to form a collective which is enclosed in a concrete envelope. It looks easy to describe but in practice, it is a highly specialized technology, requiring great skill, knowledge, and experience in the profession.

To produce concrete forms that need all job requirements, the construction engineer must understand the characteristics, properties, and behaviors of the materials used; be able to estimate the loads applied to the forms and be familiar with the advantages and shortcomings of various forming systems.

In designing and building formwork, four major objectives must be considered-- economy, quality, safety, speed & time. Formwork must not fail during casting, solidification, and even during dismantling, for which it must be strong, sound and deflection-less. Formwork must bear static and dynamic loads both very successfully. When vibrators are used to consolidate concrete mass, the formwork is subjected to dynamic loading.

**Formwork design is a very specialized subject due to its large varieties in shapes, sizes, configurations, strength requirements of types such as a wall, column, slab constructions, etc.** Formwork materials maybe timber, steel, aluminum, plywood, and fiberglass. Accessories include form ties, anchors, hangers, side spacers, etc. Special types of formwork include-- slip form, climbing form, self-climbing form, sliding form, jumping forms (jump form system), etc.

## Essentials elements

The soundness, strength, and stability of the installed formwork assembly are so important that they need certification by a competent person for its various individual items, sub-assemblies, and the full assembly. The following individual items need specific certification for their conditions and suitability:

- |                           |                     |                               |
|---------------------------|---------------------|-------------------------------|
| • Base plates             | • Prop spacing      | • Steel condition             |
| • Frame spacing           | • Prop bracing      | • Nails in plates as required |
| • Frame bracing           | • Eccentric loading | • Columns framing             |
| • Frame extension         | • Prop inclination  | • Columns bracing             |
| • Bearer size and spacing | • Timber condition  | • Plywood fixing              |
| • Joint size and spacing  |                     |                               |

## Manpower and Asset requirements

Trade-wise single discipline of formwork is difficult to envisage as it involves active contributions from the following trades:

|                                          |                                                                 |                                                                      |                         |
|------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------|-------------------------|
| Scaffolder (systems & conventional both) | Heavy structural installations to support the formwork          | Mechanical fitters for sheet work, fitting, tightening & fixing work | Rigger & crane operator |
| Heavy installations                      | Staging work to facilitate construction of heavy RCC structures | Access platform                                                      | Shuttering carpentry    |

At the supervisory, engineering and managerial levels also, the in-charges must have full understanding of the technical intricacy of all jobs involved, right from design stage, fabrication & erection, during re-barring/concreting stages, curing/dismantling and finally finishing of concrete casting process.

## Current Scenario with Gap Analysis

With the advent of better technology, organizations around the globe are not interested in sitting on the fence anymore. **They want a piece of the action and therefore, invest heavily in both material and manpower assets to achieve the level of sophistication and efficiency that can increase their ROI.**

A simple transition is a relationship between mineral refining operations and cement manufacturers. Within a decade, with the emissions and carbon footprint, a big headache for such polluting units, slag derived from mineral ore has turned into a profitable commodity. Earlier it was offloaded by mineral refineries right at the doorstep of cement manufacturers as a means of reducing waste. While, today, slag invites a reasonable price and propositions to maintain a sustained supply with India's top cement companies exclusively using slag to reduce their carbon footprint.

**Thus, the investment in technology and training people presents itself as a challenge not just down to periods of time but also as to the adaptability of the current manufacturing process to something altogether new.**

A similar case goes for formwork. **Formwork currently dominates integrated construction engineering projects not just for public spaces but even in specialty engineering – nuclear power installations and complex design structures like novelty building complexes.**

**India needs to revisit the planning board for this one. With additive manufacturing marking the next chapter in the industrial revolution, formwork use will increase day by day.** Entire design-engineering constructs can now be envisioned for a 'special job' and the components are assembled with the use of largescale 3D printers and then with the superior building support of formwork can be implemented at sites.

Formwork interestingly being a complex engineering discipline is more carbon neutral (reusable) than traditional construction techniques.

Hence the skill and engineering presence of mind is increased several times right at the first step. As these steps increase and the project timeline progresses, worker technology synergy becomes critical to ensure efficient builds.

Without these basic constructs in place, the current workforce will find themselves lagging along each step of the way thereby experiencing time and morale setbacks. Plus, the value of a migrant workers without exposure to such a cutting-edge technique and technology means less and less traction with foreign employers. Even under a very thin premise of some foreign construction engineering project team willing to train workers on a fast track entry route (as seen in most fast-track construction projects) – complex engineering concepts like dynamic load balancing will prove to be a phenomenal challenge even for engineering graduates, let alone a young inexperienced worker.

Drawing from the descriptions provided earlier in the Scaffolding and Rigging headings; the challenge for formwork lies in the level of understanding, willingness to adapt to new technology, and communication.

## Letting the Sunshine

Platitudes and optimism aren't a position India as a developing economy which someday aspires to rub shoulders with manufacturing behemoths, can afford currently. Lack of standards and the perennial problem of neglect have allowed the issues related to the quality of our manpower to mothball and gain momentum.

The gap analysis of some of the most critical workforce categories highlights origin, course of play, and mitigating strategies that can alleviate it. However, on the home turf, we stand to lose out a sizeable chunk of workers who are being left behind with a lack of uniform policy work sitting comfortably at the trisection of social, economic, and institutional lacunae. On the global front, the working man's hardworking prestige suffers from poor communications skills and the training regime which is at the heart of their craft.

These deficiencies fuel more social insecurity that leads to even poorer choices that then prove to spiral out of any working man's control. Some of the industrial and construction houses in India have plied the situation to ensure a stable supply of manpower that proves to be the human capital – capable of harnessing the best of what new and better challenges thrown at them. Yet, the rigidity of formulaic scenario building in hindsight causes the workforce to become dependent throughout their careers. Talent diversity suffers and a nation the size of India cannot look to other countries for even prospects. With opportunities looming at far seas and deeper at the heart of cities, talent diversity and a workforce that is inclusive of all genders with the dignity of work at its heart will stand to gain the most.

Metro rail operations have proven this point more exclusively than any other institution currently. The same logic of applying a uniform potential across India would require the potential to be sharing a similar set of diverse skills that can tackle multiple problems and is willing to change in the face of adversity. No challenge is bigger than the one which we are currently facing when it comes to raising our game for delivering better values that lead to superior human capital.

# How SSDF is fulfilling these gaps?

SSDF has collated these learnings, challenges, and “problem constructs” on offer through our work with local and global clients in order to experiment, develop and formulate custom-built solutions, as seen through the lens of the environment, health and safety. Sustainable operations in industries and construction engineering are still something which is considered ‘touch and go’, whereas the International landscape is on another level than ours. With the vision to align with skill-based opportunities, safety potential, and a proving ground for candidates to increase their ‘on-the-job’ learning, ASK-EHS over the decade has proven a reliable safety partner, globally.

In short, a versatile 'environment, health and safety' thought leader that global and local industries can count on for answering their EHS concerns. Industrial diversity and its EHS challenges have been translated into peerless services or solutions that are employed each day by millions of users. **What has helped us to demonstrate such vital growth and trust within the EHS domain is the spectrum of human capital and its core competence honing the industrial safety and health vision throughout the world.**

Integration of fundamental environment, health and safety principles have evolved into a bigger challenge in the past few decades due to rapid industrialization. ASK-EHS aims to be the catalyst that accelerates EHS integration in all human endeavors. At its one end are the corporate-industrial services ensuring safer operations and healthier outcomes. While at the other end are the advisory, planning, and publication services that cultivate and nurture a responsible mindset. We strive for the implementation of core EHS tenets with the reliability to advance the learning and growth quotient, worldwide.



SSDF aims at the 'evolving challenges' of workforce wellness, asset management, regulatory-compliance obligations, and the responsibility towards living environs.

Value drivers delivered by our core EHS services includes:



Our strategy aligns purpose-built solutions to global benchmarks that deploy on a 'ready-to-use' mode sustaining EHS transformation and accelerating growth. EHS standards and benchmarks conformance firmly rest on a global-local philosophy which has remained key to numerous successful partnerships in diverse work domains spanning several countries.

Prevalent Practices

Capability building and Skill upgradation.

Training and Assessment in Various disciplines.

## Creating Employment and Placements in India and Overseas

### EHS Training Solutions

ASK-EHS serves the most basic need of industrial society learning, evaluation, and upgradation three key parameters that ensure longevity and relevance of your workforce. Rich learning modes with diverse training experience allow us to help your organization with its knowledge application motives related to the workforce. Multilinguistic medium ensures a uniform message that will prove critical for safe operations.

The onset of home-grown technology tools makes these training programs indispensable. New age training programs demand cohesion, inclusion, and active participation of the workforce. Practical aspects of the conceived training supersede classroom effort. Diversity and customization of the training to suit the preferences of organizations have become the norm.

**Safety Training is an offshoot of this model and caters to the wide and deep safety demands of industries both in India and globally.** With over 60 different types of training, a world-class faculty, cutting-edge curriculums, and a cohesive training methodology using digital tools make this training the most sought-after service amongst industrial corporations.

What makes these training special can be summarized through these salient features;

|                                                                    |                               |                                                            |
|--------------------------------------------------------------------|-------------------------------|------------------------------------------------------------|
| Customized training – industry specific, activity specific         | Practical (Hands-on) training | Pre & Post assessment for deriving measurable outcomes     |
| Training content adhering to global standards (taken as reference) | Competency certificates       | Global content with local connect (Multi-lingual training) |

These and many more digital tools and mechanisms, allow corporations to meet their safety training targets and get measurable results.

### Proposed “Awarding Body” Model

SSDF has been established with a vision to serve the community at large, through provisions of services, tools, and know-how that could make a sizeable difference in their livelihood. The aim is to build meaningful careers of individuals from the lower strata of society, those with little or no education, women, PWDs and all other categories of individuals, institutions, and agencies alike. SSDF intends to bring about significant change in society through its slew of training-related activities that empower individuals in building industry-relevant skills and provides them with an opportunity to build lucrative careers.

Under the aegis of SSDF, the promoting group wishes to enter a platform through which it envisions **large-scale job creation, employment opportunities, high skilled workforces, and global acceptability of resources.**

To foster proactive management systems for Occupational Health, Safety, Environment & Associated Professions, SSDF is ready to take up the challenges that would allow the Indian growth vision to flourish. Given below are few key points that validate our vision;

- Prior to the British Raj, India was an educational hub for the world. Our University education was the most sought after for the entire world and enthusiasts would come from all over to get necessary qualifications, knowledge, and accreditations that would be globally recognized. **Through this initiative, SSDF envisions a future where it brings this glory and honor back to India.** SSDF envisions a future where it provides accreditation of high quality and which creates new benchmarks.
- EHS professionals are much sought after globally. So much so that there is a great dearth of qualified (certified) professionals to cater to such demand. Global reputable estimates have speculated the market at 8.6 billion USD.
- EHS profession is alarmingly low with a count of a few thousand (global estimation). However, this is set to increase by about 4 times through 2024.
- Currently, the ratio stands at 1 safety supervisor for every 50 people's workforce. Additionally, there needs to be 1 safety manager for every 500 people work-force. Considering the magnitude of labour, the number of safety professionals is deficient.
- Globally, there are very few reputable certifications & qualifications that are recognized by industries. All of these are either based out of Europe, the Americas or first- world countries.
- Fees / Investments behind getting these international qualifications are very high and majorly, unaffordable.

SSDF envisions a globally diverse community of highly skilled EHS professionals who can carve out careers in multiple industries. The impact of SSDF, as an Awarding Body is to ensure that it empowers and builds a community of safety advisors, safety consultants, and safety professionals, which can serve every industry.

## Why Have We Designed these Qualification Packs (QPs)?

The primary reasons for designing these qualification programs are;

1. Establishing SSDF as an accreditation body that provides globally recognized training and certification
2. Providing employment to different cadre of safety personnel
3. Establishing India as the center for skill and competency development

As mentioned in the previous sections of this document, there is a big dearth of skill and competency-based training which can be authenticated and accredited. Moreover, these programs are targeted towards all different cadre of workforces – whether blue or white-collar, organized or unorganized sectors of the community. For any authorization body to be recognized, it needs to have the domain knowledge, experience, thought leadership, and operational proficiencies that ensure excellence and high performance.

The list of targeted QPs is the first big step towards achieving the above-mentioned goals.

## What are the Benefits of these Qualification Packs (QPs)?

Let us talk first of the **employment seeker who graduates out of a college** or university with engineering or any other discipline. Given below are some of the benefits that s/he can enjoy gaining such qualifications;

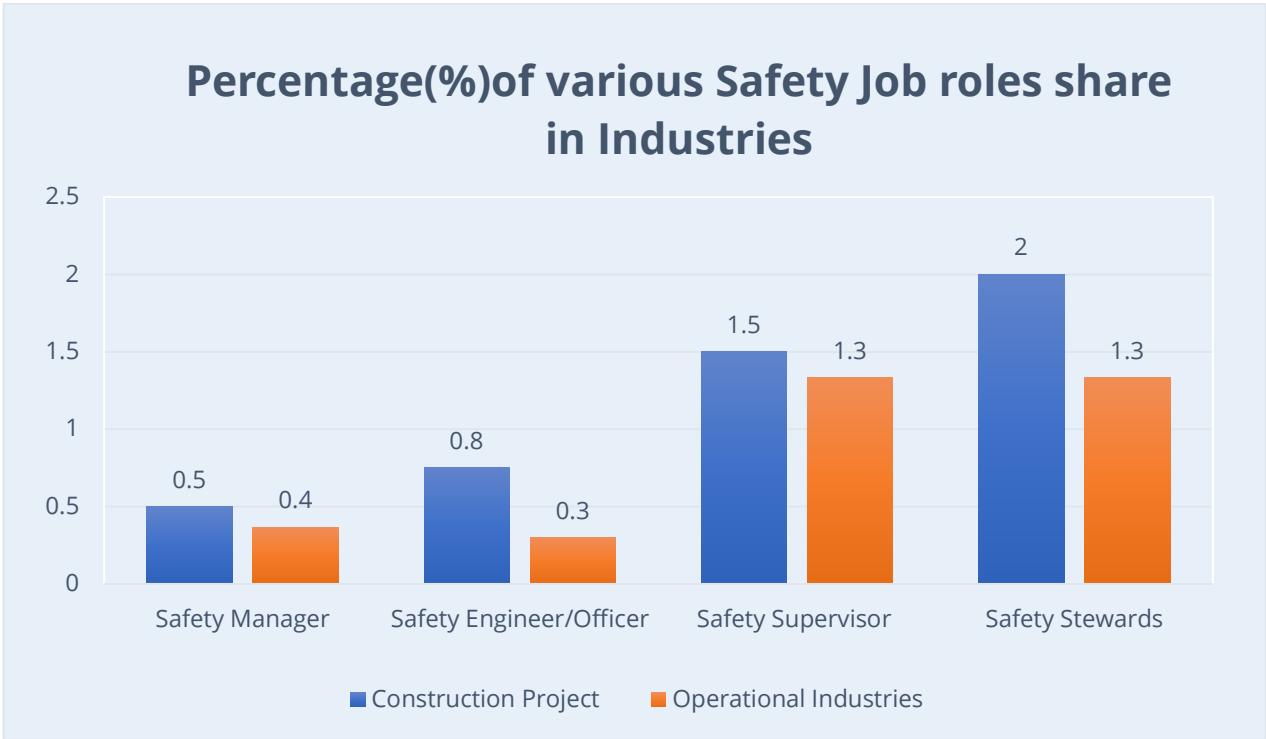
- Additional specialization in existing diploma/degree related to career-oriented Safety qualification
- Global acceptance – Opportunities available for working overseas
- Skill and competency enhancement
- Hands-on knowledge of actual work environment through practical learning methodologies

The biggest beneficiaries of these QPs undoubtedly will be **the unorganized (non-educated) segment of workforces**. A huge percentage of these qualifications are targeted towards this cadre, knowing very well about the great demand for such skills. Benefits could be as under;

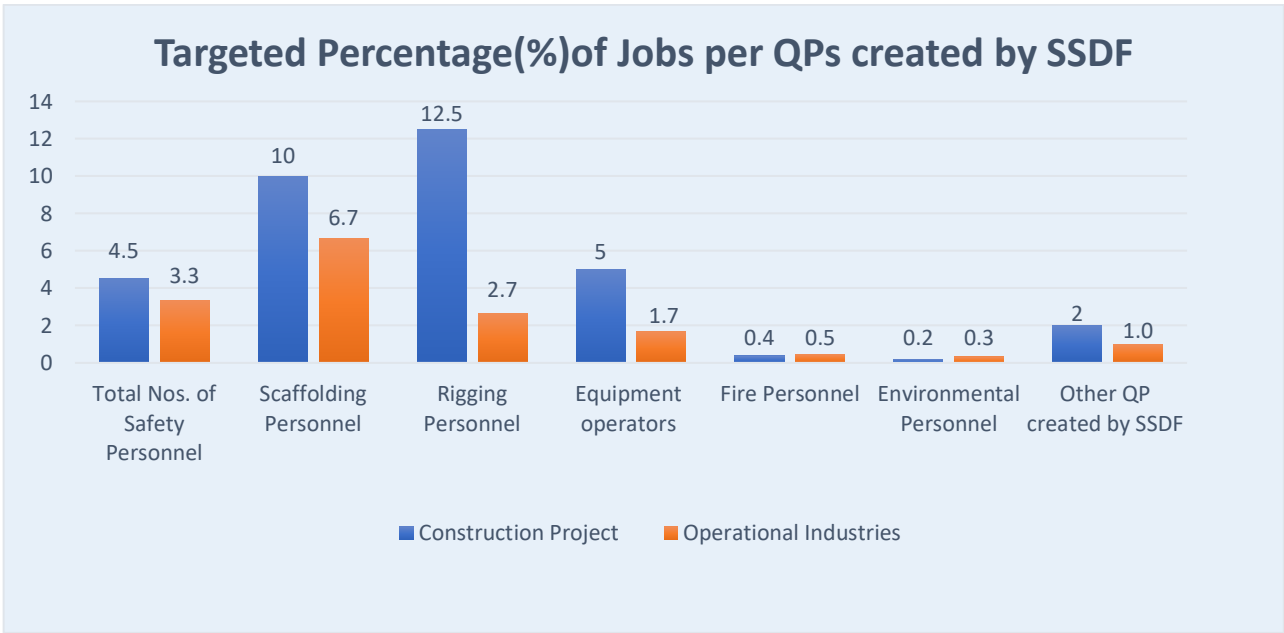
- An authentication and accreditation of skills and competencies, irrespective of one's educational background allows dignity in work
- Massive opportunity to look at stability as well as career growth
- Massive opportunity to venture into new avenues - like working overseas
- Practical and hands-on experience of critical functionalities that demand specialized training
- Great opportunity to fill in essential gaps, especially in construction projects

**Further, benefits to the industries/construction sector;**

- A huge pool of skill & competency-driven resources
- Filling in critical gaps for achieving high safety performance
- Building and establishing a safety-driven work culture
- Compliances management
- Overseas enterprises will get a huge pool of resources for selecting appropriate and relevant personnel



(Source: Internal study of 50 corporations / patrons over past 2 years)



(Source: Internal study of 50 corporations / patrons over past 2 years)

Contributing to the growth of the nation

- Establishing an epicenter for skill and competency development which will be sought after by all nations looking for job specific training, qualifications and experience
- Huge employment opportunities – especially for the masses / unorganized sector / non-educated persons

## What is the basis for establishing these Qualification Packs (QPs)?

As is clear through the multiple evidences provided in the document in the earlier sections, the unorganized and organized sectors containing non-educated/less competent personnel, are a segment that needs to be uplifted. Almost 70% of programs (especially Safety, Scaffolding, and Rigging) listed in the QPs are addressing this segment of people.

Other clear points that form the basis of this list are;

- Lack of accreditations, qualifications, and certifications in all the programs listed
- Creating mass employment & occupation opportunities
- Scarcity of authenticated and accredited skilled resources that adhere to safety standards
- Huge demand for trained and skilled resources (Authenticated & Certified)
- Generic need for accomplishing high safety performance (construction and operations)

## Why establish an Awarding Body?

The first of many steps in building and developing a safety training and certification centric culture is to have a central body that will authenticate and certify a person, an entity (training institution), an agency (training execution and certification partner), a job seeker, and other such independent entities. These authentications/certifications/qualifications must take place neutrally and independently. A clear operational model is critical for the sustainability of such an awarding body. Furthermore, the accreditation process must be well designed and developed to suit the demands of the industry, both in India and the world. Excellent dynamics when it comes to domain knowledge and a wealth of experience are absolute pre-requisites to ensure that the certifications are acceptable globally.

The central /awarding body will be solely responsible for accreditations of the following;

- Providing competent professionals to all types of industries as they are seeking such positions for a long time and still struggling to get the right people on the job.
- An experienced safety professional wanting to take up independent training as a profession (retired personnel, army/navy/air force veterans, etc.)
- A Training institute looking for accreditation to validate its training
- Agencies who are looking for partnering with the training movement by becoming centers of training and certification
- Other bodies (like colleges and universities) looking for authenticating their educational programs
- ITI's wanting to include such qualifications in their training curriculum
- Schools (both government and private) desiring to include these qualification programs in their syllabus
- Other bodies / agencies looking for accreditations / certifications



SSDF PROPOSITION

# CREATING A FUTURE FOR GENERATIONS TO COME

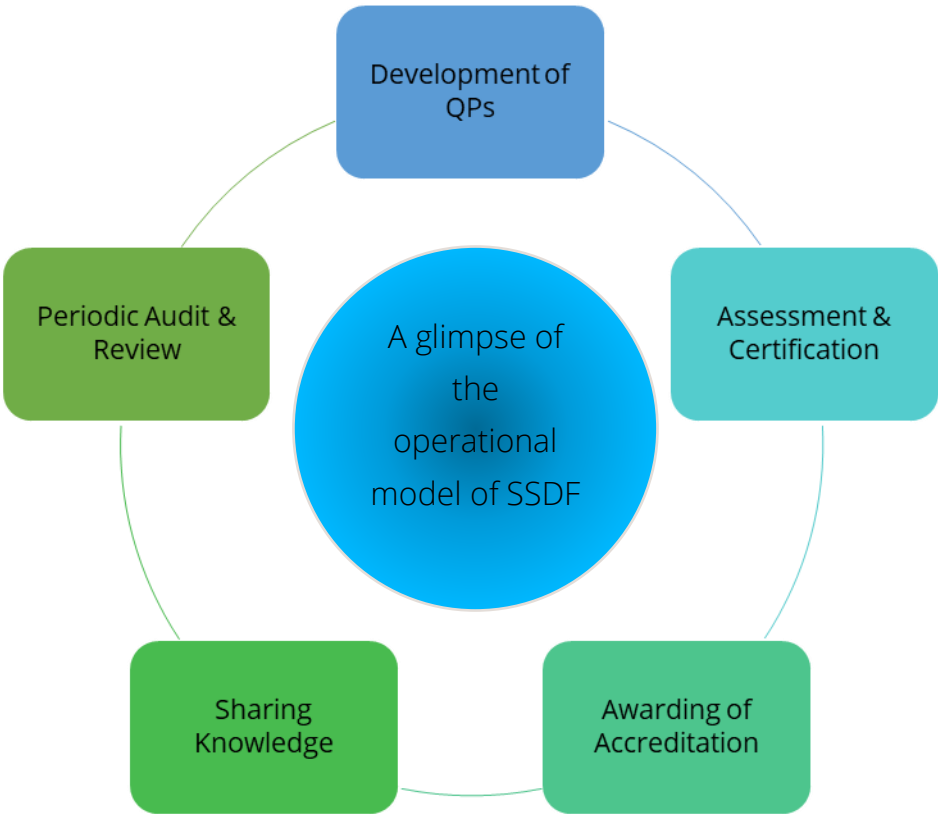
## SSDF Proposition

SSDF will be an independent body that will act as a centralized authentication and certification body with the primary intention of providing qualification-based accreditations to different entities as mentioned previously in this document. The body is created to service the industrial purpose and shall be run as an independent autonomous organization.

ASK-EHS is a pioneer, leading the safety movement in India and assisting global corporations through various services and solutions. A prosperous marriage between superior training and centralized certification shall give the necessary impetus to the safety movement in India.

This would allow a massive rise in employment as well as put India on the world map as the skill and competency development center.

For achieving sustainability, SSDF shall ensure optimum neutrality, transparency, and authenticity in its operations through a myriad of independent (apex body/government) reviews, audits, and support. This will allow SSDF to sustain as well as continue to create many more qualifications/certifications for future generations to come.



SSDF will be working with training professionals, institutes and agencies for developing skill-based certifications that will involve the process as shown in the chart above.

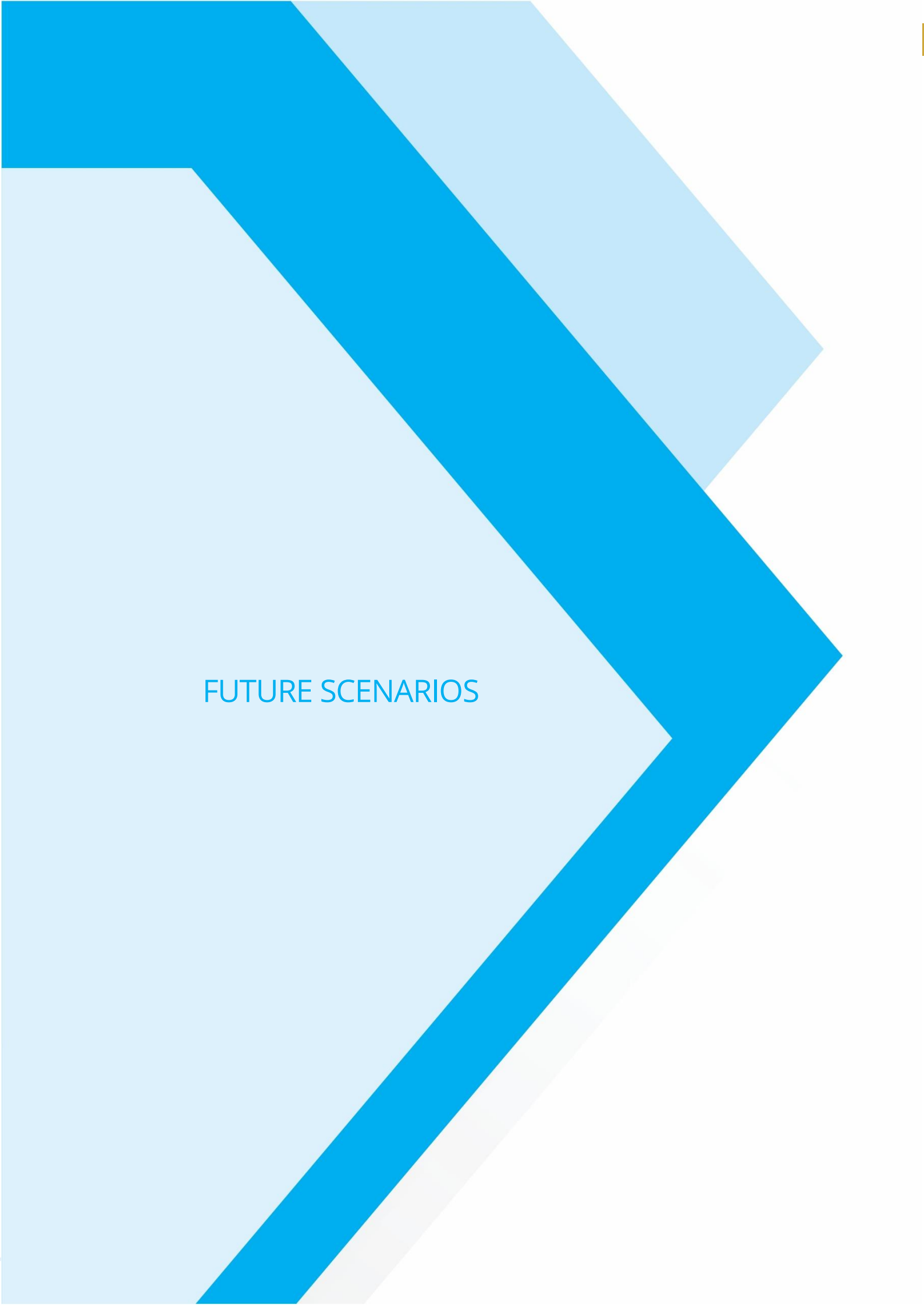


SSDF will continue to work with various training partners in India and Overseas to achieve the following training goals;

- Bringing 'safety vision' and occupational well-being that industrial-construction workplaces strive to achieve.
- Increasing employee engagement, which has a direct impact on productivity, retention, and customer satisfaction.
- Enhance employee potential – reskilling, upskilling, and competency validation (periodic assessments and refresher training based on workplace needs)
- Building a “growth mindset” within employees and across the organization. A growth mindset yields ever-higher levels of performance where people learn from their mistakes and actively seek out challenges.
- Improving motivation among employees.
- Cultivating leadership and emotional intelligence.
- Commonly used metrics for evaluation are provided below:
  - Increased productivity
  - Less supervision
  - Reduction of errors & accidents
  - Creation of stable talent pool
  - Uncover employee potential
  - Job satisfaction
  - Reduction of turnover and absenteeism
  - Address employee weakness
  - Increased consistency
  - Team spirit
  - Reduction in learning time
  - Skill development
  - Optimum resource utilization

SSDF aims to create competence through careful nurturing of skills via the following;

- To improve performance and create a 'safety vision' for the challenging work environments by job, industry, and skill-specific training programs – for global and local workplaces.
- Leverage creative pedagogy through technology aids like 3D animations and movie representation to capture, encapsulate and deliver learnings for training audience.
- Assimilate, recalibrate and rejuvenate training objectives in alignment with national and international standards and accreditations such as **NEBOSH, CITB, IOSH, CSP**, and other Skill specific programmes and revamp the existing structure of certifications provided by SSDF by mapping parameters in comparison with these standards.



FUTURE SCENARIOS

## Future Scenarios

We've started by identifying the problems there are to 'bridge gaps' that were then suggested, articulated and presented under each case.

SSDF has taken painstaking efforts to improve its response, each time we are faced with a unique industrial requirement or sometimes challenge. The service model delivery provides our clients the benefit of core safety values and the fundamental work ethic, which any organization deserves currently.

However, to generate a wider and more impactful footprint around the world, alignment with the sustainable development goals remains a constant aim to look up to.

The **Sustainable Development Goals** are the blueprint to achieve a better and more sustainable future for all. They address the global challenges we face, including poverty, inequality, climate change, environmental degradation, peace and justice.<sup>24</sup>

**Under Sustainable Development Goals, to Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (under 8th Goal of Decent Work and Economic Growth) <sup>25</sup>**

- 8.1. Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries
- 8.2. Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high value added and labor-intensive sectors
- 8.3. Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services
- 8.4. Improve progressively, through 2030, global resource efficiency in consumption and production and Endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead
- 8.5. By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value
- 8.6. By 2020, substantially reduce the proportion of youth not in employment, education or training
- 8.7. Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms
- 8.8. Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment
- 8.9. By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products

- 8.10. Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all
- 8.a. Increase Aid for Trade support for developing countries, in particularly least developed countries, including through the Enhanced Integrated Framework for Trade-Related Technical Assistance to Least Developed Countries
- 8.b. By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labour Organization

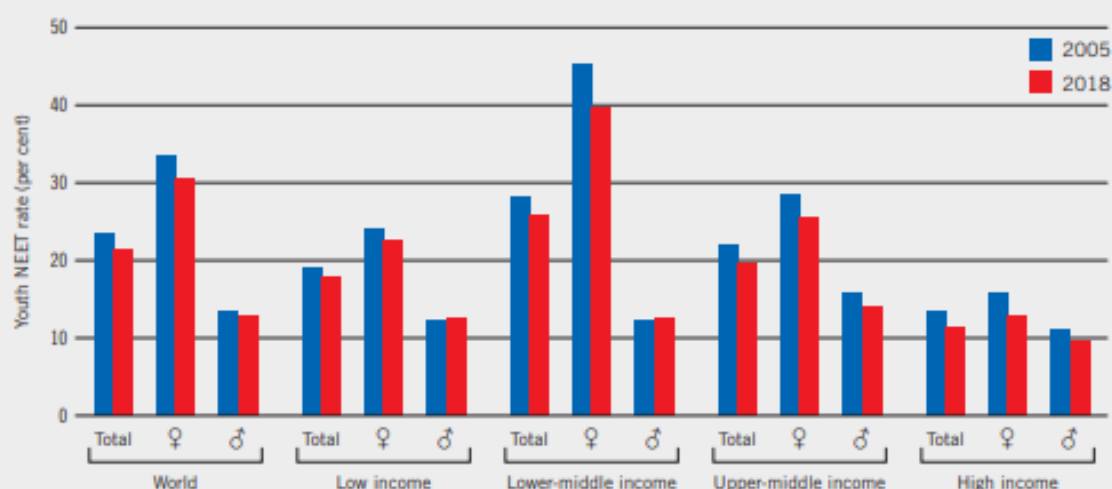
## What progress has been made towards SDG 8? <sup>26</sup>

Young people face major decent work deficits in all countries. Among both low- and middle-income countries, the share of young people not in employment, education or training (NEET) is similar. Moreover, the NEET rate is significantly higher for women: for example, in lower-middle-income countries, women's risk of having NEET status is almost three times as high as men. Overall, the global share of young people with NEET status has hardly fallen since 2005.

### NEET: Young people not in employment, education or training

Target 8.6 calls for countries to “substantially reduce the proportion of youth not in employment, education or training [(NEET)]”. Importantly, this target must be achieved by 2020, reflecting the urgency of generating adequate employment opportunities for the next generation of workers. When young people find themselves in a NEET situation, it means they are not gaining skills that are valued in the labour market, which reduces their future chances of finding employment. In the long run, this both condemns young people to social exclusion and undermines the ability of an economy to grow over a sustained period. <sup>27</sup>

**Figure 1.7. Young people not in employment, education or training, by sex, global and by country income group, 2005 and 2018 (percentages)**



Note: "Young people" refers to those aged 15–24 years.

Source: ILOSTAT database, ILO modelled estimates, November 2018.

Indicator 8.6.1 measures the proportion of young people (aged 15–24 years) with NEET status. At a global level, the youth NEET rate decreased by a mere 2 percentage points between 2005 and 2018.

Sustained growth requires structural transformation, diversification and innovation to support long term growth in productivity, income levels and decent work opportunities. **Structural transformation**, in turn, results from the enrichment and enhancement of a society's knowledge base, including socially shared mindsets and technical knowledge and skills.

The persistently high shares of workers in informal employment in many countries call for greater efforts to implement policies and institutions that can support decent, formalized work.

Labour market inclusion needs to start as early as possible, which is why target 8.6 calls for a significant reduction in the proportion of young people not in employment, education or training.

The achievement of this target simultaneously requires policy efforts to foster and sustain aggregate demand (to achieve full employment), structural transformation with learning, industrial and technology policies driving the patterns and pace of economic change (for productive employment), **effective labour institutions** (for decent work) and a commitment to address inequalities (including equal pay for work of equal value). This is an ambitious and fundamental social and economic policy agenda.

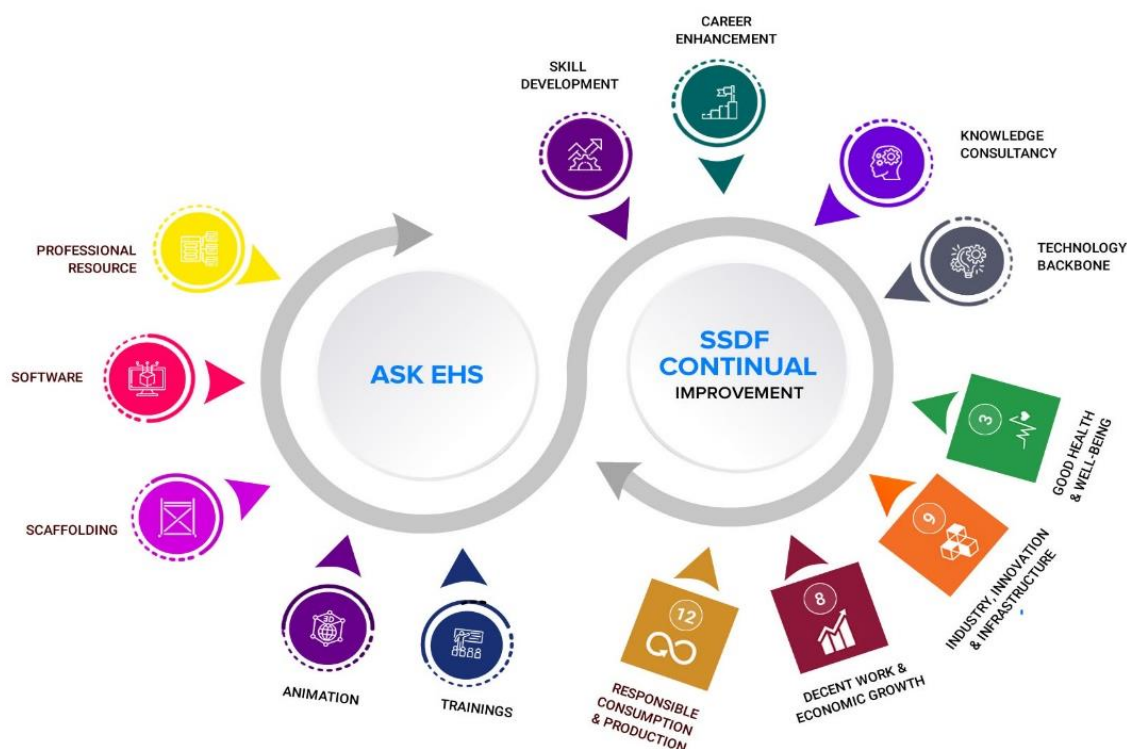
The specific mix of **vocational, technical and professional competencies** determines those technologies and products that a country may feasibly develop. The more diverse and complex the knowledge base of a society, the greater the opportunities to develop new products by recombining **knowledge** and **skill sets** that exist in the **labour force**.

The development of quality institutions (SDG 16) helps with the management of sustained learning dynamics.

The empowerment of women and girls, along with equal employment opportunities for women and men, contributes to a more diverse knowledge base, thereby leading to greater innovation, more resilient societies and stronger economic growth. The **Managing Director** of the **International Monetary Fund (IMF)** recently argued that women and men, "even with the same levels of education bring different sets of skills to the table which are complementary, and thus result in higher performance".

SSDF is determined to actively participate in achieving the targeted 8<sup>th</sup> goal of decent work and economic growth.

## Alignment with Sustainable Development Goals



Within the cycle of excellence that delivers potential problem-solving know-how; we've come to identify the following as the fundamental traits that will come to define successful organizations:

- Skill development
- Career enhancement
- Knowledge consultancy
- Technology backbone

Among the top two traits are skill development and career enhancement – you support and cultivate skill and you raise the aspirations to achieve more, thereby proving to be a game-changer in the lives of workforce that have are looking for suitable opportunities but are left to fend for themselves without much institutional support.

There are key hurdles apart from the nexus of problems which we've illustrated via logical thought process and evidence-based exercises. These can be easily formulated into a hypothesis, based on evidence and exercise of due diligence that is conducted under the EHS services' model rendered by ASK-EHS. Future of work in India is hampered by such dilemmas and poor responsive planning:

- Haphazard recruitment
- Sub-standard training
- Mismatch between qualification criteria
- Competence and know-how mismatch
- Integration and therefore development remain poor

A feedback loop that drives itself then runs the 'engines of development' countrywide where poor labour standards, feed poor planning that is accentuated by 'lack of implemented standards and training' and made to work under unsafe conditions.

Organizations have started to overcome such challenges by sharing information and hiring specialists like ASK-EHS. However, to encompass the growth cycle which India as the soon to become third-largest economy will demonstrate, shall require more than service partners.

This will need a defined vision with the possibilities of working at each level within the growth cycle – develop, enhance, standardize and implement – wider agenda for the growth responsive manpower planning.

The 'learning alignment' would have to rise with:

- State-of-the-art technology tools
- Evidence-based learning methodology
- 'No one left behind' zeal in execution
- Recognizing and working with our shortfalls and challenges

## Learning to walk

Establishing order in the Indian workforce would have to start and spread via multiple modes and points of contact. The longer work hours, willingness to participate and enthusiasm with their task are some of the defining characteristics that have often been said about the Indian migrant workers.

With this state of mind, it would be the idea to sell our Indian workforce with the promise of elevating their employment game. But first, it would be crucial to get a grip on trying to propose and impose unfounded and unmatched standard criteria which sometimes come with the qualifications that are most sought after. Animation as a tool has worked wonders within construction engineering and the industrial domain which simply means that the mental bandwidth of our labour force requires a better method as well. The rote learning methods that traditional training employ has failed even with the white-collar population.

It is, therefore, key to provide a semblance of what we may call as 'recognize and associate' exercise – the employment and candidate profile needs to come together instead of random recruitment and profile mismatch.

If that isn't the case, then the candidate can be convinced of the sort of career leverage they would derive from such certification. This cements their qualifications and their value to the international market as well. At the same time, a constant cycle of upgrades and learnings is being introduced to their work ethic.

On the other hand, a rigger or crane operator needs to have skills checked and validate even when they are out of employment. Critical operations such as these suffer from fatal breakdowns due to lack of experience or valid competency cards (sometimes to the tune of multiple fatalities while the only evidence that the crane operator produced was a heavy vehicle driving license). Skill update and validation should become a key value driver in the process of learning and skill lifecycle.

Approaching this from an organizational standpoint, the workers are being constantly made to think, stay fit and work for an earned and valuable place on the team. The aspiration and better outcomes that workers experience in terms of job placement durations and their health are already documented.

Exercises in isolation that affect the overall results when it comes to defining career and skill-based endeavors often end in failures. The pedagogy and methodology aren't the only ones to blame, logical thought exercises can iron out the creases that are left behind in policymaking. This helps to align better outcomes towards defined goals and consequently, generates better data for us to learn, emulate and transform people's lives.

Another undercurrent that cannot be neglected as we progress forward in a man-made driven climate change scenario – Safety.

Safety is an understated value and within the word encompasses Environment, Health and Safety altogether. There is little to show when we think about India's safety report card. While there have been tremendous changes to the overall ethic the problem lies within the very basic spheres that shape our behavior and provide us with a sense of responsibility. Altering a 21<sup>st</sup> -century workforce from the bottoms-up will require a significant force and this force will require safety at its heart.

In simple words, the battle to make our labour force understand the value of safety is much more important in today's day and age than a mandatory fine on not wearing PPE.

Shaping minds can solve bigger challenges than punishing them in the darkness of ignorance and lack of know-how.

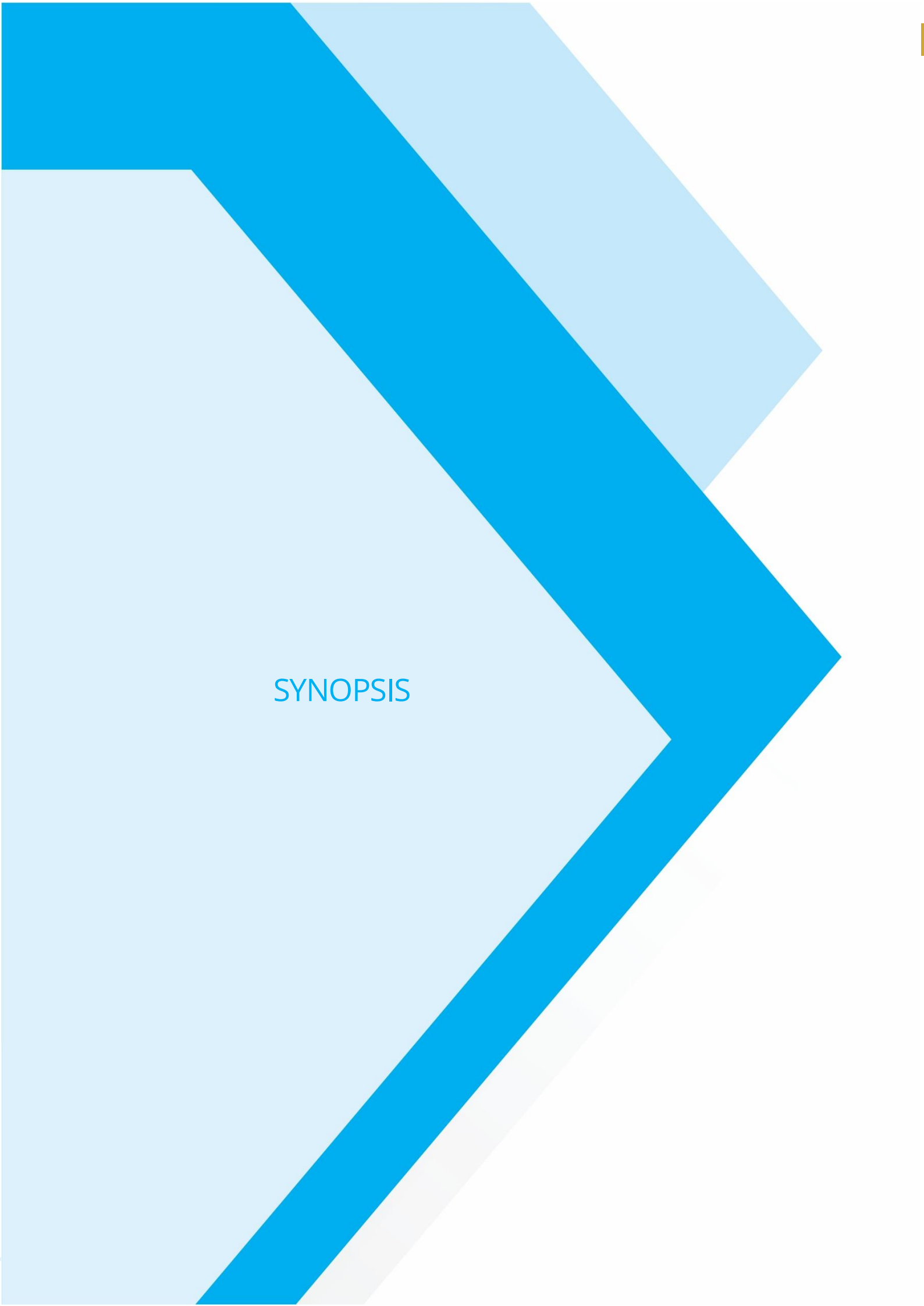
In our experience, ensuring safety learning within the curriculum has reaped dividends instead of separating and preaching them while at the site. It can solve other operational challenges when the worker aims to apply for jobs at strict compliance workplaces. The shift isn't to comply but to simply work with the positive reinforcement of applying and earning for themselves while at a compliant workplace.

The other that needs to take place is our self-evaluation. Is the current support policy framework aligned with the recruitment policies that are being used by the economies that attract most Indian migrant labour?

**If there are guidelines, do the Indian workforce understand them, and based on their education qualifications, professionals' qualifications, and vocational training; do they "actually" meet the standards that are on-demand in the International industrial or say construction engineering market.**

This dilemma breeds both favorable and unfavorable conditions – constant demand means flux of recruitment activity occurring simultaneously from several parts of India looking for the one outstanding quality that separates even the best from the rest – Skills.

The not so useful flipside of this wheel is a narrative – a differing metric of learning opportunities mixed with the experience of sub-standard work protocols leads to poor response at workplaces. In a way, a similar measuring criterion isn't applied to the workforce, and thus an unfair comparison that is based on biases and not works arises.



## SYNOPSIS

## Synopsis

Spelling out that the writing is clear on the wall might be an understatement when it comes to skill and employment for our majority young population. **However, within two decades, this population would transition into the age bracket of the 40s to 60s in times of extreme fluctuations as globally, we would be looking at newer technologies, decreased dependencies on fossil fuels and automation would become a more intimate part of our personal lives.**

This means that the social and economic challenges will hit the harder than usual; institutional challenges will cause more disruption than making traditional business sense. And **lack of cultivated skills – upskill, re-skill, and neo-skilling would mean that the working population will fall out of favors faster than compared to our current employment climate (which to us, currently, appears uncertain).**

**Partnerships based on actual field experience and encapsulated within defined frameworks – established and supported by policy framework – applied with meeting global standards; these tenets should come to define what India plans to achieve in providing the world with a stable talent hub.**

Several challenges along the way will need proactive planning. And all these challenges will face a hurdle no greater than industrial policy alignment with man-made climate change. As an industrial world, our first response has been commitments and modelling to interpret this looming threat – but the largescale displacement and shifting climate patterns would provide ripe breeding grounds for mass labour shifts within different regions. Switching of jobs at a faster rate, abandoning traditional crafts and industries (primarily agriculture) and a higher circulating rate of unemployed will become the trademark features of developing economies such as India.

This calls for strengthening our ranks as provided in the recommendations of case-based gap analysis. However, this is a smaller perspective-building document that needs to take shape into something much larger than a few trades. The baseline of such an effort would have to begin with ascertaining and establishing required standards – standards that meet the best practices within the trade, on a global scale.

This is largely worked in the western economies where the skill-based choice of employment called trade has flourished under a set stream of skill development and the talent pool has then gone onto making lifelong careers, all the while, training and upgrading their skills. Shared knowledge, new technology, and institutional programs have allowed this to spread and nourish the talent pool thus creating better chances of preserving human capital.

**India uniquely can better this model. With the due available knowledge and shared aspirations, India has the strength to not only lead on the technology front (mostly ‘white collar’ segment) but due to its traditional employment sectors now looking to pivot within the industrial domain, the challenge can be answered with uniform code of policies and public-private support. However,**

the mindset needs to take a different route, preserving talent needs to give way to cultivating talent. While opportunities are far and few, if India can provide glimpses of a superior talent hub to the world, a niche of nourishing opportunities will sail along with it.

The willingness would need to pave the path for action and the mindset would have to shift to a higher calling of creating national skill integrity with a global audience in mind.

**SSDF** has offered to partner with the Government of India to up-skill Indian youth and overcomes the shortage of skill-certified EHS workforce.

**ASK-EHS**, as the parent body of **SSDF**, is the pioneer in providing service with global ambitions. Over the past few years, it has added significant competencies to become an integrated player in the EHS domain. Their unrivaled expertise, in-depth understanding of EHS, and research & technology-led service solutions have enabled them to be established as India's most preferred EHS service provider. **ASK-EHS** delivers integrated 'service driven' solutions, focused on empowering the **Safety, Health and Environment (SHE)** efforts of organizations around the world with its Headquarters in Surat – Gujarat (India).



SOME BRIEF AND STRENGTH  
OF THE PARENT  
ORGANIZATION

# Some Brief and Strength of the Parent Organization

ASK-EHS Engineering and Consultants Private Ltd. (ASK-EHS) was founded by industry professionals that were ready to unravel the thread further, within the safety and through the lens of providing 'project-ready' resources, for both industry and construction sectors.

Undertaking overseas projects, management of assets – workforce and mechanized along with the crucial underlying foundation of safety; the professionals managed to identify, address and reiterate the key elements that were amiss or in simple words, weren't part of the core work agenda. Whether they are budgetary constraints, lack of manpower, or bureaucracy; here's a visualization of a constantly changing landscape of the 'gap' or chasm that lies between employment and skills.

## Professional Manpower Resourcing

Human capital has the potential to transform even the most adverse of situations. And yet, their potential and performance lag when compared with mechanization and technology. Bridge this gap and leap forward with a competent, skilled, and continuously trained workforce available in ready-to-deploy capacity for several industrial domains.

High-performing professional EHS personnel can make a difference in any project/operation. Nurturing them to deliver results takes time, training, and effort. Finding the appropriate match for your assignment, even more so. Getting professional EHS personnel as per your demands results in high performance.



## Scaffolding Management Services

The unique selling proposition, in the case of Scaffolding by ASK-EHS, lies in its core business model – offering integrated EHS services, worldwide. It has accomplished outstanding results with not only Indian businesses but some of the key “Safety” services pertaining to Scaffolding are being used by one of the world’s largest construction engineering organizations and a Fortune 300 company, based in the U.S.A.

Due to its core understanding of the “nature and scope” in Scaffolding works, ASK-EHS has become a sought-after Turnkey contractor in over 10 years of our operations. With more than 400 clients to date and 40 million cubic meters of scaffolding material erected and dismantled for successful operations. Our training division and overall stake in the integrated EHS services market have allowed us to grow into a position of - reliable authority and safety partnership.

End-to-end scaffolding services was key to the ASK-EHS model where each ‘service competency’ is backed by authoritative safety record and training. Here are the ASK-EHS Scaffolding services strength dashboard for a comprehensive overview:

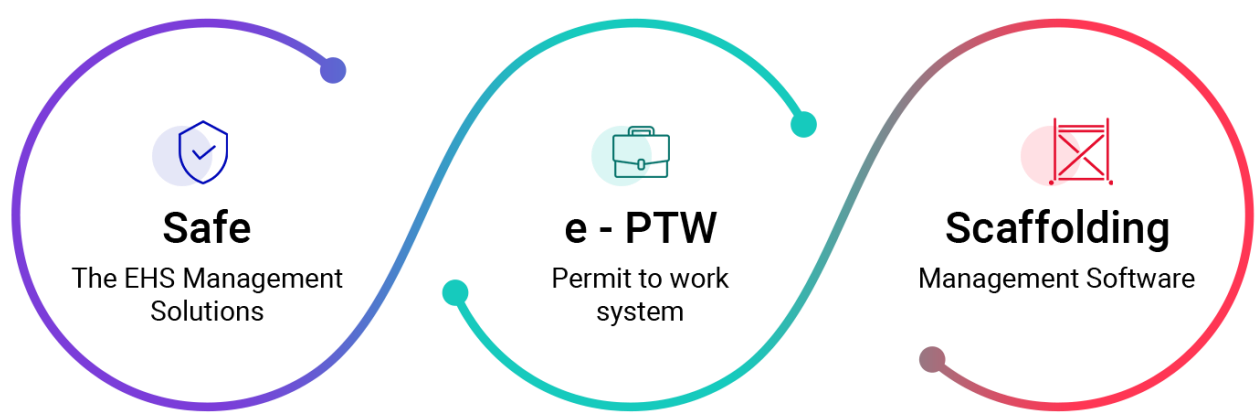


As a pioneer in safety training, ASK-EHS has led the ranks in Scaffolding training for more than a decade. Its efforts and dedicated work done with the industry and organizations has been accredited by the National Skill Development Corporation and PMKVY – as a knowledge consultancy and training partner.

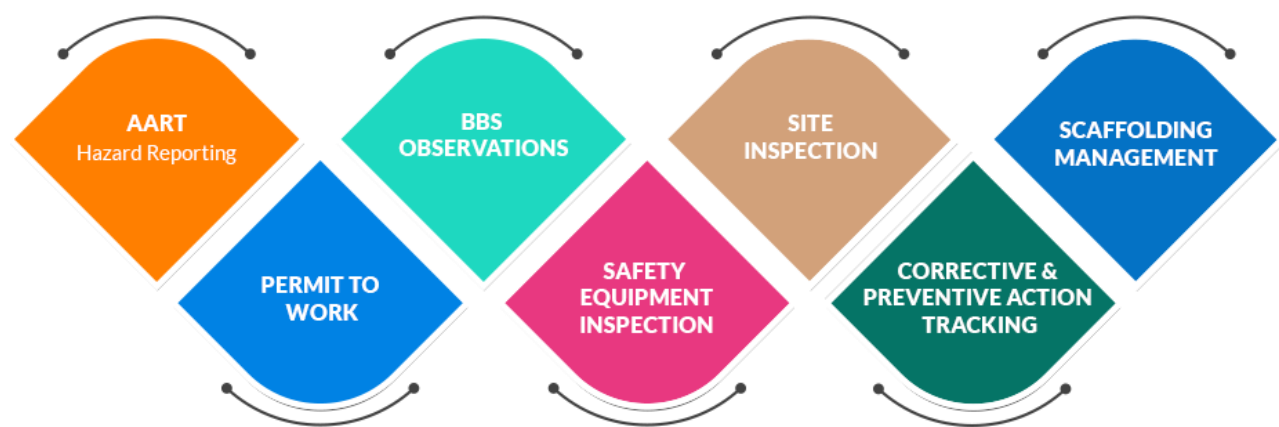
Our Scaffolding trainings are conducted by experts with extensive industrial and field operations experience – translating into ‘practical’ and ‘resource ready’ approaches. Flexible training modes and a rigorous assessment and vetting process ensure a capable and ready-to-deploy skillset, which is nurtured with ample opportunities for individuals to upskill.

## EHS Management Software

Safety and health at the workplace have widened its horizon to incorporate environment, sustainability, and quality. Software solutions crafted via functional and statutory expertise match and fortify this safety vision via automation, ease of use, and superior monitoring. In this journey, it accelerates EHS transformation by providing proactive metrics that help the organization to grow with safer operations, a healthier workplace, and a greener environment.



# Mobile Apps

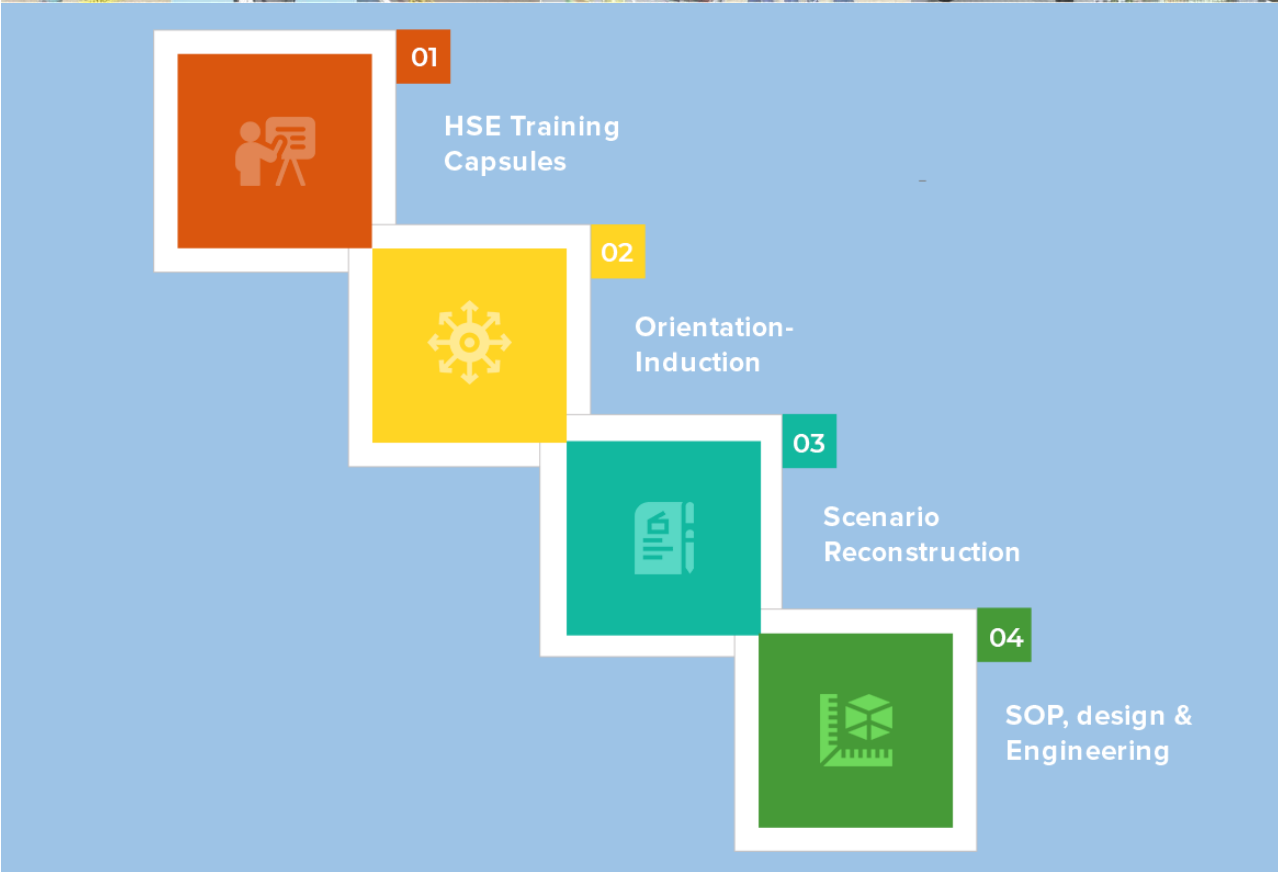


# Animation and E-learning solutions

Modern workplaces require a robust means of 'knowledge transfer' that empower safe work and ensure long-term safety and health learnings.

Animation provides an excellent platform that adapts, modulates, and delivers a tremendous diversity of HSE learning experiences. E-learning, on the other hand, encapsulates agility within this segment to secure measurable learning goals for the workforce.

An amalgamation of animation movie making, and the interactive tools of eLearning provide a cohesive, impactful, and high-performing learning experience. A unique, 'never-seen-before' experience that ensures thorough learning with accurate results.



## Creating Successful Narratives

ASK-EHS has worked to create some of the most sought-after tools within the EHS domain that penetrate the hearts and minds of the workforce to reinforce safety. With digital reporting platforms based on reliable software solutions, both local and global clients have reaped the benefits of proactive safety.

Training programs strengthened by animation movies ensure that a multilingual message delivery across all mediums and levels of education can be delivered. Here again, both local and global audiences have asked for specifically customized movies that can replicate work conditions.

The next level of sophisticated use of technology within industrial and construction domains is walkthroughs. One of India's largest conglomerates sought our assistance in designing a virtual animation-based plant walkthrough based on the east coast of India. The simple benefits of translating benefits across the whole strata of workers, executives, and supervisors can only be achieved when each one sees the same picture and identifies their roles within the niche.

ASK-EHS now is on the verge of employing Augmented and virtual reality solutions blended with such walkthroughs and protocol-based training. As such integrated environments can offer a better chance to learn, replicate and emulate the protocols for all the personnel. What they 'see' is near exact to what 'they'll get' when faced with work situations.

However, to better and uplift the safety game, one up, a different sort of environment needs to introduce and should serve as the benchmark in the pedagogy.

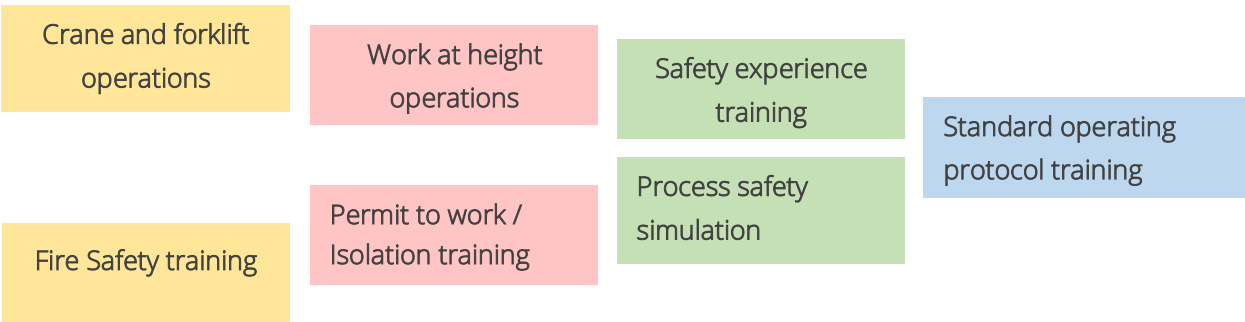
Simulation trainings are like road and fighter jet training programs. The insides of a cockpit give way to say a crane operator's position and the worker can use all the different controls and protocols under a set medium of instructions. This concept is based on what is being used by humanitarian agencies in solving wide-ranging crisis and is a defined framework with measurable performance – gamification.

Water charities across the world are using the concept to ensure even the poorest of neighborhoods realize the importance of saving water. Young kids in school are swapping this technique with their traditional rote learning methods, to ensure a better return on their efforts versus learning metric.

Similarly, simulation training has dedicated infrastructure with a feature-defined facility where workers can be taken through a course of different activities they will be performing while executing their duties.

In the current scenario, a lot of Innovation happening almost every day. Simulation Training delivering Technical Training results in saving time and use less space. So **SSDF** is planning to recommend all its training partners to implement the same in their training modules.

When we think about the range of work activities that stand to benefit from simulation trainings are:



These are only but some of the key trainings that are currently available and made possible by blending technology with know-how.

However, within the times to come, simple classroom trainings would need to be replaced with trainings that are not only more effective but have a higher churn rate.

Simulation trainings offer both these traits and ensure that the learnings are measurable via an actual demonstration. This is the next level up for an Indian context and some of the world-class facilities on offer have been provided with images below -



**Experience climbing ladders**



**Falling to openings**



**Use of extinguishers**



**Safety Guardrails**



Overpressure Explosion



Hand Tool Safety and Free Fall



Process Safety Simulation



LOTO / PTW Training



## Contribution to India's Growth

India is currently witnessing a large number of accidents across the industries. ASK- EHS is the only organization in India that exclusively recruits dedicated EHS professionals for safety jobs across the globe. Below are the key highlights they contributed so far-

- ASK-EHS strives for zero harm to people & minimal discharge to the environment.
- Applying the EHS guidelines for existing operational activities ensures a safe environment for the future generation of India. - ASK EHS contributes to the growth of the Indian Economy with improved productivity, efficiency, profitability, and market value.
- Exporting their services to other countries which further improves cash flow in Indian economy and job.
- Development of skilled workforce with training & certifications of their competency so that right people are deployed at the right job.
- Approx. 3500 tons of Scaffolding material supplied across Indian industries in the development of the country.
- Bespoke and standard induction movies were produced for industry-wide clients from various sectors which provided a uniform message to its new employees as well as the seasoned ones.
- With training services provided to thousands of personnel, ASK-EHS integrated the message of safety first and establishing safe working rules to function, several industries have reaped this benefit directly contributing to their safety bottom line.
- Through the gateways of ehsengineers.com, thousands of safety professionals have not only secured a placement but have found an opportunity to enhance their skills through regular skill-based training development. This has calmed the industry's nerves and brought much-needed peace of mind to the workforce.
- The problem of the multilingual background of the workforce was tackled by animation movies with multi-language support which meant that the workforce was getting the benefits of training at the same level as their native or fluent tongue.
- The Scaffolding domain saw a 360-degree revolution via manpower receiving scaffolding training at all levels and especially for rigging and lifting activities. Quality and safety certified scaffolding material being used to undertake superior construction and to further make enable the scaffolding domain of activity, Scaffolding Management Software has been introduced to ease operation challenges.
- Technological support through interactive training programs has enabled the workforce to keenly understand the nature and demands of the jobs at hand and uplifted the overall work performance.

## SCOPE OF ASK- EHS IN ENHANCING INDIA'S GROWTH

Mobile learning (micro learning), social learning, and corporate Massive Open Online Courses are emerging trends. E-Learning is a great alternative to saving time, money, and effort in setting up corporate training and delivering the curriculum to learners. It further improves the productivity of the Indian economy. To promote a positive HSE culture within the organization through effective communication, participation & consultation. ASK-EHS can try to touch base with all the Industries & provide a basic awareness program to make them understand the importance of adhering to EHS norms thus reduce or mitigate the environmental impacts to neighboring communities & this will further enhance India's Growth.

### Contact Info:

(+91) 2612724994; 1800-233-2474

[info@ask-ehs.com](mailto:info@ask-ehs.com)

[www.ask-ehs.com](http://www.ask-ehs.com)

## References List

- <sup>1</sup> <https://www.marketsandmarkets.com/Market-Reports/environment-health-safety-ehs-market-59608773.html>
- <sup>2</sup> [https://www.un.org/sites/un2.un.org/files/wmr\\_2020.pdf](https://www.un.org/sites/un2.un.org/files/wmr_2020.pdf)
- <sup>3</sup> <https://unemploymentinindia.cmie.com/>
- <sup>4</sup> <https://indiaeducationforum.org/pdf/ISR-2021.pdf>
- <sup>5</sup> This report is a combination of an assessment of 65,000 candidates from across the nation who appeared for the WNET, and a report from the India Hiring Intent survey where 150+ corporates spread across 15 Industry sectors participated to share their hiring forecast for the year.
- <sup>6</sup> The National Commission for Enterprises in the Unorganised Sector (NCEUS)
- <sup>7</sup> <https://data.worldbank.org/indicator/SL.TLF.TOTL.IN?locations=IN>
- <sup>8</sup> <https://www.worldcement.com/asia-pacific-rim/02022021/globaldata-indias-construction-industry-to-rebound-in-2021/#:~:text=With%20the%20government%20focusing%20on,leading%20data%20and%20analytics%20company.>
- <sup>9</sup> <https://www.indiaglobalbusiness.com/industry/infrastructure/indias-construction-industry-set-for-a-rebound-in-2021-04/A%20Framework%20for%20the%20Future%20of%20Real%20Estate.pdf>
- <sup>10</sup> <https://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/AFFORDABLE609D506CB8C247DAB526C40DAF461881.PDF>
- <sup>11</sup> <https://static.investindia.gov.in/s3fs-public/2021-04/A%20Framework%20for%20the%20Future%20of%20Real%20Estate.pdf>
- <sup>12</sup> [https://www.business-standard.com/article/news-ani/shortage-of-12-lakh-skilled-welding-professionals-may-derail-india-s-infrastructure-growth-story-120011001098\\_1.html](https://www.business-standard.com/article/news-ani/shortage-of-12-lakh-skilled-welding-professionals-may-derail-india-s-infrastructure-growth-story-120011001098_1.html)
- <sup>13</sup> [https://uil.unesco.org/fileadmin/keydocuments/LifelongLearning/en/GlobalInventoryonNQFs\\_India\\_130509\\_final-final.pdf](https://uil.unesco.org/fileadmin/keydocuments/LifelongLearning/en/GlobalInventoryonNQFs_India_130509_final-final.pdf)
- <sup>14</sup> <https://www.ibef.org/economy/foreign-direct-investment.aspx>
- <sup>15</sup> [https://www.un.org/sites/un2.un.org/files/wmr\\_2020.pdf](https://www.un.org/sites/un2.un.org/files/wmr_2020.pdf)
- <sup>16</sup> [https://www.ilo.org/wcmsp5/groups/public/@asia/@ro-bangkok/@sro-new\\_delhi/documents/publication/wcms\\_124657.pdf](https://www.ilo.org/wcmsp5/groups/public/@asia/@ro-bangkok/@sro-new_delhi/documents/publication/wcms_124657.pdf)
- <sup>17</sup> [https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---sro-new\\_delhi/documents/publication/wcms\\_397363.pdf](https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---sro-new_delhi/documents/publication/wcms_397363.pdf)
- <sup>18</sup> [https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms\\_734479.pdf](https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_734479.pdf)
- <sup>19</sup> [https://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/documents/briefingnote/wcms\\_767028.pdf](https://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/documents/briefingnote/wcms_767028.pdf)
- <sup>20</sup> [https://www.ilo.org/wcmsp5/groups/public/---ed\\_emp/---ifp\\_skills/documents/publication/wcms\\_734503.pdf](https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/publication/wcms_734503.pdf)
- <sup>21</sup> [https://www.ilo.org/wcmsp5/groups/public/---ed\\_emp/---ifp\\_skills/documents/publication/wcms\\_734503.pdf](https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/publication/wcms_734503.pdf)
- <sup>22</sup> [https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms\\_737648.pdf](https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_737648.pdf)
- <sup>23</sup> [https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms\\_737648.pdf](https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_737648.pdf)
- <sup>24</sup> <https://www.un.org/sustainabledevelopment/economic-growth/>
- <sup>25</sup> <https://www.sdgindia2030.mospi.gov.in/dashboard/india>
- <sup>26</sup> [https://www.ilo.org/wcmsp5/groups/public/---dgreports/---inst/documents/publication/wcms\\_712685.pdf](https://www.ilo.org/wcmsp5/groups/public/---dgreports/---inst/documents/publication/wcms_712685.pdf)
- <sup>27</sup> [https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms\\_598669.pdf](https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_598669.pdf)

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