



International
Labour
Organization

Towards a More Effective Labour Market Information System in India

**Discussion paper prepared for the ILO by Manipal City & Guilds
May 2013**

ILO DWT for South Asia & Country Office for India

Table of Contents

Acronyms	3
1. Introduction, Objectives and Approach	4
1.1. Introduction.....	4
1.2. Objectives of this paper	5
1.3. Approach	5
1.4 Standard definition of key terms used in this report	5
2. Useful Elements of International Good Practice.....	7
Box 1: Emerging practice: the case of Bangladesh	10
2.1 Policy questions addressed by LMI	11
3. The current situation in India	12
3.1 Known gaps in data and information.....	12
3.1.1 Supply-side data and information gaps identified in the 2011 ILO study	12
3.1.2 Additional supply-side information sources and related data gaps	14
3.1.3. Demand-side data and information gaps identified in the 2011 ILO study	14
3.1.4 Additional demand-side information sources and related data gaps.....	15
3.2 Stakeholder requirements and understanding	16
3.2.1 Sources of labour market information used by stakeholders and their usability	16
3.2.2 Views on components of an effective labour market information system.....	17
3.2.3 Current gaps in the institutional structure of the LMIS.....	18
4. Proposed Steps for Strengthening the Labour Market Information System in India	220
4.1 The vision	21
4.2 Assumptions	20
4.3 Proposed actions	21
4.3.1 Immediate: 6-9 months	21
4.3.2 Short Term (9 months-2 years).....	22
4.3.3 Medium-term (2-5 years)	28
4.3.4 Long-term (5-8 years)	32
4.5 Publication of census and sample surveys and other statistics on the web portal	37
Bibliography	38
Annexure 1: Summary Review of International LMIA Models and List of Key References .	39
Annexure 2: Summary of institutional structure, information sources and issues with the current system of LMIA in India	46
Annexure 3: Broad indicators identified in the ILO’s 2011 study: Review of the Sources and Availability of Skill Development Data in India	48

Acronyms

AICTE	All India Council for Technical Education
ASI	Annual Survey of Industries
BOAT	Board of Apprenticeship Training
CSO	Central Statistical Organisation
DGET	Directorate General of Employment and Training
EE	Employment Exchange
EC	Economic Census
IAMR	Institute of Applied Manpower Research
ILO	International Labour Organisation
ITI	Industrial Training Institute
LMI	Labour Market Information
LMIP	Labour Market Information Portal
LMIA	Labour Market Information Analysis
LMIS	Labour Market Information Systems
MHRD	Ministry of Human Resource Development
MSME	Ministry of Micro Small and Medium Enterprises
MSME Census	Micro, Small and Medium Enterprise Census
NAVTP	National Association of Vocational Training Providers
NCO	National Classification of Occupations
NCVT	National Council for Vocational Training
NOMIS	National Online Manpower Information System
NSDC	National Skill Development Corporation
NSQF	National Skills Qualifications Framework
NSSO	National Sample Survey Office
NTMIS	National Technical Management Information System
SCVT	State Council for Vocational Training
SGS	Skills Gap Study
SSC	Sector Skills Council
TVET	Technical and Vocational Education and Training
UGC	University Grants Commission

1. Introduction, Objectives and Approach

1.1. Introduction

A major challenge for developing economies, such as India, has been determining the supply and demand of skilled manpower in the labour market. As these economies integrate further with the international economy, it becomes imperative that the most relevant information relating to the demand and supply of skilled labour is readily available in order to take policy decisions concerning the development of a more highly skilled workforce. Governments are increasingly taking steps to strengthen their Labour Market Information System (LMIS) to improve the flow of data and information to employers and jobseekers, and to improve planning for the supply of skills.

An LMIS is a set of institutional arrangements, procedures and mechanisms that are designed to produce labour market information (Sparreboom, 1999). A comprehensive list of the various components of an LMIS was presented by the UK Overseas Development Agency (now DfID) in its 1996 report on Labour Market Signals and Indicators. They are:

- Users - individuals and organisations;
- Sources of signals, indicators and intelligence;
- System managers, data gatherers, operators and analysts;
- Labour market information (LMI) itself;
- Methodology of data collection and analysis;
- Equipment - computers and other hardware;
- Processing software;
- Means of communication, including public media;
- Financial resources;
- Sub-systems:
 - training for system staff and end users;
 - feedback and evaluation;
 - research, development and publications. (ODA 1996, p. 70)

An important point from this is that LMI itself is only one component in the system. Equally important are the users of LMI, the methodology that is applied to collect and analyse it and the institutional structures that establish an LMIS (Sparreboom, 1999).

Users of LMIS can be further broken down into the following broad categories:

- Policy makers and planners
- Education and training providers
- Employers
- Unions
- Community groups and civil society organisations
- Students and young people.

As it is the informational and analysis needs of these set of users to which LMI must cater, the design of an LMIS should be considered in terms of the information and decision-making needs of these different user groups.

This report discusses the process of creating a more robust LMI system in India. It breaks down the steps that would be necessary to strengthen the LMIS in the immediate, short, medium and long term, addressing the data and institutional issues identified in earlier work commissioned by the ILO in 2011 and 2012. It envisages a more effective LMIS that will improve decision-making and planning in the skills system, so that the demand and supply of skills are more closely matched. It is important to note that while LMI has a broad range of uses within public policy, this paper focuses only on its role in relation to vocational education and skills training. It does not consider other uses of LMI.

1.2. Objectives of this paper

The objective of this discussion paper is to outline the steps necessary to generate a strengthened LMIS for India. In developing the proposal, this report presents:

- Recommended steps in the immediate, short, medium and long term necessary to strengthen the system; and
- Recommended institutional arrangements and information flows related to demand as well as supply of labour in the short, medium and long term

1.3. Approach

In considering possible future LMI systems for India, a further review of selected international LMI systems was carried out to supplement that already undertaken by the NSDC in India (see NSDC 2011). Countries surveyed in this additional review include Australia; Brazil; Canada; Jamaica; Singapore; South Africa; United Kingdom and United States of America. This list includes countries that have a federal structure comparable to that of India (Australia, Brazil, Canada, South Africa, the USA and to a limited extent the UK) and countries at a comparable stage of development (Brazil, Jamaica and South Africa). The review covers the following themes:

- User interfaces and the institutional arrangements for managing these
- Labour market information and analysis available for the users
- The sources of labour market information and data flows in the LMIS
- The standards followed while collecting and analysing LMI

In addition to the review of international practices this report also draws on two previous ILO studies on LMI in India:

- Review of the Sources and Availability of Skill Development Data in India (ILO 2012):

This study was completed in January 2012 and presents an environmental scan of sources of LMI data, frequency, geographical availability, reliability, and issues with the demand and supply side data.

In addition to presenting the summary of findings of the report in terms of data sources and availability, the present report also details additional information sources to enhance the 2012 report.

- Review of the Institutional Arrangements for Labour Market Information and Skills Anticipation in India (ILO 2012):

This study was conducted in December 2012. It analyses Indian stakeholders' perceptions about information availability, information flows and the institutional arrangements in the current LMIS in India, and sets out their views on what an ideal LMIS would look like from their perspective.

Drawing inferences from these two studies and the review of international practices this report aims to identify the requirements for developing a more robust LMIS in India and to set out a broad "road map" for its development, with priority steps identified in the short, medium and long term.

1.4 Standard definition of key terms used in this report

One of the findings of the December 2012 report on stakeholder perspectives on LMI was that Indian stakeholders often lack a comprehensive understanding of the structure and components of an LMI system. For instance, the respondents often understood the word "system" in the Labour Market Information System as referring exclusively to information technology systems, rather than a more comprehensive set of institutional arrangements, technology platforms, datasets and information flows, and the way these are combined to provide information to those requiring it.

This confusion of the overall system with specific technology-based delivery mechanisms can cause confusion and risks the obscuring of important aspects of LMIS. Accordingly, we include

here a list of standard definitions of terms used in this report, drawing a clear distinction between wider systems and specific mechanisms.

- **Labour Market Information (LMI):** The statistical (quantitative) and non-statistical (qualitative) information concerning labour market actors and their environment, as well as information concerning labour market institutions, policies and regulations that serves the needs of users and has been collected through the application of accepted methodologies and practice to the largest possible extent (Sparreboom, 1999). Standalone use of the term 'Information' in this report should be understood to mean 'Labour Market Information'.
- **Labour Market Data:** Quantitative and statistical LMI, excluding qualitative information. Standalone use of the term 'Data' in this report should be understood to mean 'Labour Market Data'.
- **Labour Market Indicators:** Several signals, which, when processed together, imply a trend or direction (Gray et. al., 1996), which could be called Labour Market Indicators. These indicators may exist for other purposes (for instance job vacancy adverts) but be used to derive labour market information (KILM, 2011). Standalone use of the term 'Indicators' in this report should be understood to mean 'Labour Market Indicators.'
- **Labour Market Information System (LMIS):** A labour market information system consists of a set of institutional arrangements, procedures and mechanisms that are designed to produce labour market information (Sparreboom, 1999).
- **Labour Market Information Analysis:** the processes whereby labour market information is reviewed, manipulated and related to other sources of information in order to identify trends, directions and needs (Gray et. al., 1996).
- **Database:** A collection of information (quantitative and qualitative) that is organised so that it can easily be accessed, managed, and updated.
- **Web portal:** A web portal is a website that brings information together from diverse sources (dependent or independent), including from other websites and databases, in a uniform way, intended for public use. Standalone use of the term 'Portal' in this report refers to 'web portal.'

2. Useful Elements of International Good Practice

In this chapter, key lessons from international practices of LMIA have been presented from the following countries: Australia; Brazil; Canada; Germany; Jamaica; South Africa; the United Kingdom; and the United States of America (other countries are also cited where they are referred to in general literature on the subject). These countries offer examples of interesting and effective practices. They also include countries that are comparable to India in terms of characteristics such as population (USA), federal structure (Australia, Brazil, Canada, Germany, South Africa, the UK and the USA) and stage of development (Brazil, Jamaica and South Africa).

A more detailed summary review of international practices is also attached in Annexe 1. The annexe also includes reference to important studies on practices and models of LMIS, including the NSDC study on LMIS (NSDC 2011).

The following paragraphs set out the key elements of international LMI systems that emerge from this review and briefly outline the possible implications for India as it develops its LMIS. It should be stressed that these reflect only patterns seen in international practice based on this limited review. In some cases, there are clear practical challenges in doing so and overcoming these obstacles or developing innovative policy alternatives should be a priority of the Indian government.

1. LMI systems are usually overseen by a single government ministry or department, or by an appointed agency

In all countries studied, a single government ministry or department manages the LMIS. This department is responsible for aggregating (or ensuring the aggregation of) the supply and demand side information related to the labour force and ensuring that the information and data required by different users is available.

***Implications for India:** Policy making in India, not least in the area of skills development, is challenged by deep organisational silos. The system is characterised by a large number of institutions at both the federal and state level, which can lead to inefficiencies in the sharing of information, unclear lines of responsibility, and unhelpful competition among different bodies. In this context, establishing an agreed single lead institution to oversee the LMIS is challenging, but would help a great deal to ensure a coherent approach to overcoming the other challenges the country faces in this area. Please refer to the key issues related to the institutional structure, information sources and information flows in Annexe 2.*

2. Collection of LMIS is based on a clear and defined understanding of the purposes for which it is required

A clear rationale for the information and data available within an LMIS is key to ensuring that the right information is collected at the right time, and is made accessible to the right users in the form that best suits their needs. This includes purposes of direct relevance to skills development (in particular, information shedding light on the supply and demand of specific skill sets and skilled occupations) as well as a range of other purposes. These purposes should explicitly be tied to broader policy objectives within the nation's overall framework for human resource development.

***Implications for India:** A crucial early step for India will be to further develop a clear and detailed set of priorities for LMI, the key decisions LMI should inform, and the information and data needs of the relevant user groups, and to establish agreement among key stakeholders that these priorities should be used as the basis for the ongoing development of the LMIS.*

3. The LMIS makes it possible for users to access quantitative and qualitative information in a clear format

In several reviewed cases, the users of LMI are able to access key labour market data and qualitative information in a summary format, through a user-friendly portal. The qualitative information is also available in the form of reports and visual display as maps. Different users can access information and data in different ways according to their needs: for instance, economic policy planners will require complex levels of detail, while jobseekers may only require more general information about the types of opportunity prevalent in the sector or

location in which they wish to work. Mechanisms to provide users access to information must therefore cater to a broad range of requirements.

Implications for India: *While the challenges of developing the tools to gather and to analyse data vary according to the level of detail required, they should not be considered in isolation from how the data will be used and accessed. An early priority should be to understand the different users of LMI and the ways in which their needs can be met, so that a suitable access portal can be developed which will cater to the initial needs of all main users and then developed further over time.*

4. Information/data flows from multiple sources integrated in a common information system

LMI consists of multiple flows of information or data from different sources, including surveys, vacancy data, sector reports, information held by industry bodies about their members, and other sources. This multiplicity of sources must be brought together if a coherent and comprehensive LMI system is to be established, and this calls for a common information system as an essential component of the LMIS. In the UK, for example, the LMIA portal integrates the Annual Population Survey; Annual Business Inquiry; Annual Survey of Hours and Earnings; VAT Registrations; and other data from the Office of National Statistics. Since different organisations are responsible for collecting this data, which can often be of a sensitive nature, stakeholder engagement is key to ensure that the flows of information are maintained and that the organisations involved can trust that their information will be treated securely and sensitively.

Implications for India: *The 2011 ILO report previously mentioned identifies the major existing information sources relevant to skills in India; this, combined with the 2012 stakeholders report, sheds light on where data gaps exist. Mapping all these sources and developing the mechanisms to feed them into a single information system will be technically challenging and will require decisions on which data gaps should be given priority in the short, medium and long term; this paper makes suggestions as to what these decisions might look like. However, arguably the greater challenge lies in securing the buy-in of stakeholders, who may be unaccustomed to sharing information particularly where it could be regarded as sensitive in commercial or political terms. Indian policy makers should be prepared to dedicate resources to this stakeholder engagement challenge.*

5. The extent to which up to date LMI is available depends upon the frequency with which information or data is collected, collated and fed into the common information system

For example, most LMI data in Singapore is updated quarterly whereas in California it is updated monthly. This however does not mean all the surveys collect data at the same frequency, nor that all data in an LMIS needs to be collected and updated this regularly. Surveys with different frequency could be used depending upon the costs and time requirements and the kind of information required for planning purpose.

Implications for India: *This is one of the most challenging areas for India, as developing the mechanisms for regular updating of LMI in a country of India's scale, and particularly with a large informal sector, will be very difficult. In the early stages of LMIS development, it is likely that a less frequent updating of information will be a more realistic goal, with longer-term aims to reduce this to improve timeliness and accuracy. Setting over-ambitious goals in the short term risks leading either to disappointment or to the collection of inaccurate information. Brazil, which is also a large country with a federal structure and a significant informal sector, may offer an interesting example for India to study: Brazilian sectoral bodies have played a key role in involving the informal sector and their decentralised structure has helped them to involve organisations such as cooperative societies and rural labour unions in the decision making process.*

6. The use of information from different sources is possible because they follow standard classifications

Standard occupational and industry classifications are used in LMI systems to make possible the integration of different data information systems, even when they have been conducted at

different times and by different institutions. For example LMI in Canada and Australia follows national classifications that are used to codify information such as courses, qualifications and occupations.

Implications for India: *The development of such standard classifications presupposes a number of the features highlighted above: in particular, it requires a clear lead organisation to refine and accompanying stakeholder work to develop buy-in. In India's case, classifications have been developed by the DGET in 2004, based on the ILO's international standard, but it is not clear how aware stakeholders are of this or the extent to which these classifications may need review. Given the emergence of Sector Skills Councils India has an opportunity to use this mechanism to review, update and apply the classifications; however, this also presupposes that the new SSCs (and other industry bodies) will be sufficiently robust and sufficiently connected to industry to be able to play a lead role both in developing and disseminating the standard classifications.*

7. Segregated data is available for different administrative regions, age, industries and social groups

Implications for India: *Information should be broken down at the very least by state and ideally by smaller geographical units when available; sector-specific information should be available; and given India's specific policy concerns, information addressing other lines of distinction such as gender and caste should also be gathered. This means that state authorities and sector skills councils will be key actors in developing the LMI system to ensure that geographical and sectoral distinctions can be addressed. Further data segregation should follow from the detailed rationale for gathering LMI mentioned in point two above; however subsequently, as data requirements become more complex, collecting the relevant information will present significant implementation and resourcing challenges. Again, it is likely that certain indicators will need to be prioritised in the short term, linked to immediate user needs, with commitment to develop a more comprehensive set of indicators in the medium to long term. India also faces the additional challenge of large internal migration flows, which will have a profound effect on these datasets and the monitoring of which will be an essential part of an effective Indian LMIS.*

Box 1: Emerging practice: the case of Bangladesh

Bangladesh is currently working to develop its LMIS in co-operation with the ILO. It shares a number of issues with India, including: large skills shortages relative to numbers of TVET graduates; fragmented delivery and accountability; lack of consolidated data on existing programmes; existing datasets that are of limited value for skills planning; piecemeal and ad hoc assessment of employer demand for skills; and the existence of many informal courses without affiliation to central bodies for which data is not collected. A 2010 ILO report gave recommendations to improve the system in Bangladesh, which are included here for reference.

Institutional arrangements:

- An NSDC Data Cell (NDC) should be set up to undertake primary roles in the collection, management, analysis and publication of data for the TVET data system.
- Industry Skills Councils (ISCs) should work with the NDC to gather information about employment and skill use/needs in their industries.
- The NDC and ISCs, at least initially, should outsource IT and survey administration.

Data standards:

- New data collections should adopt a new Standard Occupational Classification based on the most recent International Standard Occupational Classification.
- New collections of qualifications and course data should use the nomenclature of the Bangladeshi Technical and Vocational Qualifications Framework (BTVQF).

Data collections:

- New data templates for TVET providers, students, curriculum, subject, enrolment and qualification completed should be adopted by all stakeholders.
- Initial coverage for the core TVET data should be providers and students associated with Bangladesh Technical Education Board (BTEB)-affiliated courses and all courses should be provided by public agencies.
- NDC should be empowered to require public agencies to submit data in specified formats.
- Private providers of courses should be encouraged through registration norms to provide data.
- More detailed data should be collected in a regular survey of Enterprises and Employers on qualification and occupation distributions.
- ISCs should collect industry qualification and occupation data, supervised by the NDC.
- The Bangladesh Bureau of Statistics (BBS) should consider developing more detailed industry/occupation/qualification datasets and are should cooperate with NDC to achieve efficiencies in surveying.
- The Bureau of Manpower Employment and Training (BMET) should be resourced and tasked with collecting more detailed skills and qualifications data according to NTVQF for Bangladeshi workers as they leave and re-enter Bangladesh.
- BMET should be resourced and tasked with producing regular forecasts of overseas demand for Bangladeshi workers according to standard classifications
- A regular survey of student outcomes should be conducted by the NSDC.
- BBS should be tasked with developing a set of job vacancy indices based on regular surveys.

8. A single interface that allows access to a variety of data and information drawn from a common system that is easily accessible and user friendly

The usual interface for accessing the variety of labour market information is a web-based portal. This information on the portal is mostly freely available. Sometimes a small fee is charged to access raw statistical data, in which case the user is required to register and pay the fee. In some countries additional services such as job vacancy lists or a web space for job-seekers to apply for jobs online are also available.

Implications for India: *The development of such a portal may be seen as a longer term objective, if the short term priorities are to improve the flow of information to policy and decision makers. In the longer term, an objective should be to facilitate the use of LMI to improve decision-making in the labour market, with public access to information connected to suitable advice and guidance services.*

2.1 Policy questions addressed by LMI

As highlighted above, the collection of LMI has a range of uses for policy making. Although these are not confined to decision making around skills development, this is the focus of this report. As India develops its system, it will be important to establish clear priorities in terms of the uses to which it wishes to put LMI, and this will affect structural and methodological decisions. For the purposes of this report, however, we assume that these purposes will broadly follow the policy questions identified by the ILO (2010). The table below sets out these broad questions and some examples of specific data or information that might be gathered under each broad question, broken down by type of user.

Table 1: Policy questions informed by LMI

<i>Users of LMI</i>	<i>Broad questions</i>	<i>Specific data/information (examples)</i>
Students	What courses should they undergo and training institutions where to take them?	<ul style="list-style-type: none"> • What providers offer the course students are interested in? • How many others will be/have been doing the same or similar qualification? • How many of those enrol complete the course? • How qualified are the teachers and what are the class sizes? • What sort of jobs do the graduates get and how long does it take them to find a job?
Employers	Whether they can attract sufficient employees with the appropriate skills?	<ul style="list-style-type: none"> • Which training institutions currently offer programs for a particular industry? • How many new graduates will in a year? • Will employers obtain the numbers of particular skills and qualifications they need?
TVET and other training institutions	What are the broad trends in skills markets? What is their level of performance with respect to other similar institutions?	<ul style="list-style-type: none"> • What is the quantity of a particular set of skills from different providers in their region? • What are the pass and dropout rates of different TVET institutions? • What is the cost per graduate in comparable courses, across institutions? • What are the qualifications of teaching staff?
Government and policy makers	What is the extent to which skills target are being met; whether institutions are meeting their obligations in respect of funding and mandate; and whether the sector needs a new policy direction?	<ul style="list-style-type: none"> • How many potential new workers will be available at a point in time with a particular set of skills, in each region? • Does the skill and geographic pattern of supply of graduates match well with what is known about demand? • What is the dropout rate from courses? • How well qualified are the teachers? • What is the cost of training per person? • Are some TVET providers giving better value for money than others? • How well do graduates perform in the labour market once qualified?
Sectoral bodies	What are the skill gaps in a particular sector?	<ul style="list-style-type: none"> • What is the demand and supply of labour force in a particular sector? • What are skill levels of labour working in particular the sector?
Researchers	How can the present system of skills anticipation be improved and what will be the likely trend in the structure of the labour market in future?	<ul style="list-style-type: none"> • Is the LMIS adequately able to anticipate future skills needs of different stakeholders? • Is the LMI reports generated user friendly? • How is the nature of jobs changing with introduction of new technology?

Source: ILO (2010), A proposal to strengthen TVET & skills data in Bangladesh

3. The current situation in India

3.1 Known gaps in data and information

This paper and the previous ILO reports on LMIS consider LMI specifically for the purpose of supporting policy and planning decisions related to skills development. Accordingly, we are largely concerned with LMI that informs understanding of the demand for skilled labour in the market (both in India and overseas) and the supply of skilled labour emerging from the education and training system.

This section summarises the findings of the ILO's 2011 study, *Review of the Sources and Availability of Skill Development Data in India*. The findings have been presented under the following two broad sub-sections:

1. Data and information gaps related to the supply of labour force
2. Data and information gaps related to the demand of labour force

These information gaps are listed according to the broad parameters identified in the 2011 study. In addition, this section also lists a number of additional information sources (linked to the broad indicators) and related information gaps that were not identified in the 2011 report.

For the purpose of later reference, we number each broad indicator identified in the 2011 study and mark these as supply- or demand-side indicators using the letters S and D. Within each indicator we then assign a letter to each identified data gap (e.g. D2c is the third data gap listed under the second demand-side indicator).

3.1.1 Supply-side data and information gaps identified in the 2011 ILO study

Parameter 1: TVET and skills training providers in public, private and voluntary sector; their numbers, location, annual enrolments, course graduates, learning outcomes and post-graduation pathways of students; and types of trade and duration of courses.

Sources:

- Directorate General of Employment and Training
- National Skill Development Corporation and individual provider websites

Identified data gaps:

- S1a. No centralised database is available for public and private ITIs detailing enrolments; course graduates and dropouts; and students placed in jobs.
- S1b. No centralised database is available for other public and private vocational training providers related to enrolments; course graduates and dropouts; and students placed in jobs.
- S1c. Lack of information related to the learning outcomes and post-graduation pathways of students
- S1d. No centralised database available for employers sponsored vocational training programs under their Corporate Social Responsibility initiatives
- S1e. Double counting of numbers trained under different schemes

Parameter 2: Trade-wise formal apprenticeship enrolments and graduations per year

Sources:

- Directorate General of Employment and Training

Identified data gaps:

None

Parameter 3: Rates of employment; unemployment and underemployment of the workforce

Sources:

- NSSO
- Employment Exchanges

Identified data gaps:

- S3a. Employment data not segregated into educational attainments and skill levels. Unemployment statistics not available for districts
- S3b. Available data in employment exchanges is not comprehensive or accurate, partly because it is not a mandatory requirement for everyone to be registered at an employment exchange; registrations of employed persons also occurs.

Parameter 4: General education

- a. Number of youth in different age groups

Sources:

- Population Census and National Sample Survey

Identified data gaps:

- S4a: District level information is not readily available especially of numbers of youth in different age groups

- b. Enrolments in general education, progression and graduation rates

Sources:

- Department of Higher Education

Identified data gaps:

- S4b: Discipline wise enrolment, progression and graduation rates for universities and colleges are not available in the public domain.

- c. Graduations from the primary and secondary school; dropouts; and their shares enrolled in further education including TVET and skills training establishments

Sources:

- Department of Primary and Secondary Education
- District Information System on Education

Identified data gaps:

- S4c: Tracking system of dropouts does not exist
- S4d: Details of dropouts enrolling for TVET and other skill training are not available.
- S4e: There is no system for reconciling dropout against the total TVET enrolment, due to lack of individual tracking system.
- S4f: District wise and college wise enrolment data is not available for higher education

Parameter 5: Trade-wise occupational qualifications and employability of the recent graduates finishing education under different programmes

Sources:

- National Technical Manpower Information Systems (IAMR);
- Economic Census

Identified data gaps:

- S5a: Employability information is mostly qualitative in nature
- S5b: Time lag in information collation of more than 3 years
- S5c: Prone to sampling error due to poor response rates
- S5d: Lack of information about streams related to general education
- S5e: Employability information is not available for unorganised sector

Parameter 6: Trade-wise annual supply of labour force due to massive retrenchments and company closures

Sources:

- Labour Bureau
- Board of Industrial and Financial Reconstruction
- National Sample Survey

Identified data gaps:

S6a: Inadequate information about service industry and informal economy

S6b: No tracking mechanism for retrenched workforce from the private sector: segregated by area; company; position; and skills level

S6c: Limited data available on the sick companies

Parameter 7: Trade-wise annual arrival of the skilled and educated workforce returning from overseas

Sources:

- Ministry of Overseas Indian Affairs
- Ministry of Home Affairs

Identified data gaps:

S7a: Lack of collated statistics with regards to the skilled and educated workforce returning from overseas; trade and occupation wise

3.1.2 Additional supply-side information sources and related data gaps

Broad parameters covered by additional sources:

Parameter 1: TVET and skills training providers in public, private and voluntary sector; their numbers, location, annual enrolments, course graduates and learning outcomes of students; and types of trade and duration of courses.

Data sources and gaps not identified in the 2011 ILO report:

S1f: Data from AICTE and other government departments is not available in the public domain. The information gathering of different bodies does not follow the same methodology. (Sources: in-house data management system of AICTE / national and multilateral organisations that fund skill development in training)

S1g: The Skills Gap Studies initiated by NSDC and different SSCs do not follow the same methodology. Also, some sector-specific Skills Gap Studies lack sampling rigour due to limited available data. (Source: NSDC and SSC studies)

In addition to this, data related to the migration of the workforce, between states and regions is not collected. This constitutes a significant gap in the current availability of information essential to a well-functioning LMIS in India and can be considered an additional broad indicator (S8) that the LMIS should seek to address.

3.1.3 Demand-side data and information gaps identified in the 2011 ILO study

Parameter 1: Occupational and qualification structures of economic sectors (organised and if possible, unorganised sector) at the national, state and district levels

Sources:

- National Occupational Qualification of the DGET
- National Industrial Classification of the CSO
- Central Statistical Organisation
- Annual Survey of Industries
- Population Census
- Economic Census

Identified data gaps:

D1a. Inadequate information regarding occupation and qualification structure

D1b. Time lag in information collection

D1c. Occupational and qualification classifications do not keep pace with changing realities in the workplace

D1d. Information related to qualifications in different sectors is not available

Parameter 2: Occupational data on the annual demand for semi-skilled, skilled and highly skilled workers, and technicians for overseas employment

Sources:

- Ministry of Overseas Indian Affairs

Identified data gaps:

- D2a. Lack of regular survey of overseas demand for labour
- D2b. Lack of linkage between demand and supply
- D2c. Lack of linkage with placement agencies involved in overseas employment
- D2d. Lack of regular update and linkage with overseas employees

Parameter 3: Annual local demand for skilled and semi-skilled workers and technicians due to demographic replacement needs (due to sickness, death, retirements, etc.); labour turnover; and retraining in new skills

Sources:

- Central Bureau of Health Intelligence

Identified data gaps:

- D3a. Time lag and regular update of demographic replacements due to death by state, age, sex and occupation.
- D3b. Only 50% of the deaths are reported and registered in civil registration systems.

Parameter 4: Average demand for skilled and educated workforce for the new jobs created annually (emerging from new investments, company registrations, etc.) in both the organised and unorganised sectors

Sources:

- Department of Industries (available at the state level)

Identified data gaps:

- D4a. Data available only with leading industrialised states
- D4b. Disconnect in aggregation of national and state level data

Parameter 5: Other data used to forecast the demand for skills in different economic sectors

Sources:

- Ministry of Finance
- National Accounts
- Population Census

Identified data gaps:

- D5a. Lack of base data for informal sector

3.1.4 Additional demand-side information sources and related data gaps

Broad parameters covered by additional sources:

Parameter 1: Occupational and qualification structures of economic sectors (organised and if possible, unorganised sectors) at the national, state and district levels.

- Data source and gap not identified in the 2011 ILO report:

- D1e. MSME census does not follow National Classification of Occupations, hence combining it with Annual Survey of Industries for an overall national picture is not possible (Source: Micro Small and Medium Enterprise Census conducted by the CSO)

Parameter 4: Average demand for skilled and educated workforce for the new jobs created annually (emerging from labour turnover, new investments, company registrations, etc.) in both the organised and unorganised sectors

- Data sources and gaps not identified in the 2011 ILO report:

- D4c. The Skills Gap Studies initiated by NSDC and different SSCs do not follow the same methodology. Also, some sector-specific Skills Gap Studies lack sampling rigour due to limited available data.
- D4d. The data on demand for labour submitted by companies to Employment Exchanges are not timely and accurate. Additionally, not all companies report this information even though it is mandatory to do so under *Compulsory Notification of Vacancies Act, 1959*.

Additional information sources not identified in the 2011 ILO report:

- In-house management information system of the Sector Skills Councils, including Skill Gaps Studies
- Studies conducted by the Labour Bureau

3.2 Stakeholder requirements and understanding

This section summarises the findings of the 2012 study *Review of the Model and Institutional Arrangements for Labour Market Information and Skills Anticipation in India*. In this study a total of 23 stakeholder institutions were consulted to understand the source of labour market information they use for skills anticipation and their perceptions on: the usability of information; the components of an effective LMI system; and the gaps in the current institutional arrangements. The institutions consulted for this study belonged to the following categories:

- Central government ministries and directorates
- Industry associations
- Research Institutions
- State level ministries and departments
- Sector bodies
- Trade unions

The section below presents the findings of the study; and has been organised on the basis of following three broad themes.

1. Sources of labour market information used by stakeholders and their usability
2. Stakeholder views and analysis on components of an effective LMIS
3. Gaps in the current institutional arrangement of LMIS

The three themes have been summarised below.

3.2.1 Sources of labour market information used by stakeholders and their usability

The stakeholders identified 14 distinct types of information or data on skills development that they currently use or are likely to use in foreseeable future. These have been listed below along with stakeholders' perception about its usability. The text within the parenthesis after the information name refers to the institution that produces/houses or houses the information.

- a. Data from industry associations: Data from industry associations mainly comprised of data that is submitted by individual companies to their associations, whenever requested by the association. This data source is generally considered reliable, accurate and timely by the stakeholders; it is also quite easily accessible. According to the stakeholders the limitation of this information source is that it captures only broad brush pictures of the demand side of the labour market and the general profiles of those employed within the member industries.
- b. National Sample Survey: This data source is considered the most reliable by stakeholders. It is available in the public domain for use. However, stakeholders expressed concerns about lack of availability of current (recent) data and need of expertise to analyse the raw data that it offers. Other concerns included its lack of sufficient indicators on the skill levels of the workforce and its lack of availability of representative data for the districts and blocks to assist in micro-level planning.
- c. NSDC Skill Gap Studies – State and Sector: The information provided in the growing collection of skill gap studies have been considered useful in terms of

providing state and sector specific demand and supply of workforce in specific job roles. However, skill gap studies are based on limited data, and on certain assumptions that may not remain true in future.

- d. In-house Project Management Information System: The in-house data was considered accessible, reliable, accurate and timely by the stakeholders. In their opinion however this data helps only in tracking the progress of a project or a programme, and the lack of standardised coding limits its wider applicability.
- e. Government ministries/department and institutions: The stakeholders were of the opinion that this data is not easily accessible and requires significant effort to gather. Though not easily accessible, this data is considered accurate.
- f. Reports and data from multilateral and bilateral institutions: The report and statistics made available by multilateral institutions are considered reliable and accurate.
- g. Micro, Small and Medium Enterprise Census: The available data is considered very reliable by the stakeholders, in terms of the workforce data that is available. It is considered the best source of data about the current employment in the MSME sector, a large part of which comes under the unorganised category.
- h. Population Census: Stakeholders considered the population census as a reliable source of information for assessing aspects of labour supply. But they unanimously considered it to suffer it from a time lag of up to 10 years and sometimes even more.
- i. MOSPI Annual Survey of Industries: The stakeholders considered this data source useful in terms of estimating the size of labour force in the industries. It provides reliable information of the workforce working in the organized sector.
- j. National Technical Manpower Information Systems (IAMR and AICTE): Stakeholders considered this data source as reliable in terms of four disciplines (engineering, management, pharmacy, and hotel management and catering technology), but noted its limited scope.
- k. Data from Labour Bureau: The ILO report found that Labour Bureau statistics are only used by organisations dealing with labour policy formulation and planning but are generally considered reliable and accurate.
- l. Data from Trade Union Members: This data is mostly collected on ad-hoc basis depending upon the need or issue. It not considered representative and seldom used by external stakeholders.
- m. One-off studies: These studies are issue specific and commissioned by stakeholders to get information about different aspects about the labour market and have been found to be useful by the concerned stakeholder.

The stakeholders identified 14 distinct sources of labour market information, which interestingly did not cover all the sources identified by the ILO (2011) study. Identification of these many sources may suggest that stakeholders do not have clarity on what information sources are available or most useful; alternatively, it may indicate divergent needs among different stakeholders and accordingly varying levels of interest in the various sources of information. As found during the interviews, the stakeholders referred to more than one source of information, for the same indicator. This is indicative of lack of uniformity or common understanding across information sources.

3.2.2 Views on components of an effective labour market information system

The following sets out the components of an effective LMIS that were seen as most important by the interviewed stakeholders, broken down by broad stakeholder type.

- **Central government institutions** identified demand and supply information of the workforce as the core element of an LMI system. They felt that it should also have information about training providers and assessment bodies; about wages; and demand and supply information of specific job roles.
- **Industry associations** prioritised information on the supply of workforce broken down on the basis of geographical locations, sector and social category and information about the labour force and current employment situation.

- **State-level institutions** emphasised labour market information categorised on the basis of gender and caste, current vacancies in the job market and quality (skill level) of the workforce.
- **Sector-specific institutions** were of the opinion that the labour market information system should have information about providers, test centres and examinations in addition to the demand and supply information of the workforce.
- **All stakeholders** identified that an effective labour market information system should be able to accurately project the future skills requirements of the economy.

Contrasting the content of the interviews with the review of literature revealed a significant gap between stakeholders' understanding of what comprises an effective labour market information system and what evidence and practice from elsewhere reveals on the subject.

Only a few stakeholders could identify the other outputs of an LMI revealed in the literature, such as:

- Demand for different occupations (job roles) and their changing work content;
- Information on school to work transition;
- Employability (quality of education and training) of labour force;
- Recurrent manpower shortage areas and its analysis;
- Information on workplace training;
- Labour productivity and wages
- Career advice and guidance functions

In addition to this, stakeholders frequently expressed unrealistic expectations of the possibility of collecting real-time aggregated data. Such an expectation is quite common, both in countries that have an effective LMIS and those that are in the process of developing it. In this respect an NCVET 2013 conference paper on maximising the use of data on vocational education and training observed:

'...there is a growing expectation for real time data. This might be possible if all RTOs (training organisations) ran identical student management systems and all students enrolled online, but the reality is far from this. While 'real time' data is many years (decades or centuries?) away, there is a push for more frequent data submissions, and the development of quarterly reporting is under current consideration'. (NCVER 2013, p.10).

This appears to indicate that a programme of awareness-raising among stakeholders – to make them more aware of the full complexity and potential of LMI – should be part of India's approach to developing its LMIS.

3.2.3 Current gaps in the institutional structure of the LMIS

With regards to the institutional structure, the study found the following gaps in the system:

- Lack of clear leadership in terms of a national body or stated policy on LMI to coordinate the labour market information related activities of different stakeholders. The stakeholders pointed towards the fact that lack of clear leadership is hindering the formation of a consensus around different indicators, data sets and mechanisms for collection, analysis and reporting of the labour market information system.
- Lack of clearly defined roles and responsibilities related to the following functions:
 - Institutions that should be responsible for data collection and collation;
 - Institutions that should analyse and report data;
 - Institutions that should be responsible for overall management of the system; and
 - Institutional mechanisms for information dissemination and sharing.
- Lack of communication and coordination between stakeholders with regards to sharing of information and data between some institutions, especially in government. In-house management information systems are not in the public domain and it takes repeated attempts

by an external organisation (public or private) to access that data. The stakeholders also expressed reservations about lack of trust between institutions when it comes to sharing data.

- Lack of a system or platform to share and assess the data and information needs and to discuss the common indicators used by stakeholders involved in implementing skill development programmes.
- Lack of clarity amongst stakeholder on financial, material and human resources required to build the system.

4. Proposed Steps for Strengthening the Labour Market Information System in India

This section draws on existing knowledge about gaps in Indian LMI, stakeholder views and expectations, and international good practice, to propose a set of actions towards developing a more robust LMIS in India. These actions are divided into immediate (6-12 months), short term (1-2 years), medium term (2-5 years) and long term (5-8 years) stages, with detail on:

- Goals of each stage
- The key information gaps to be filled at each stage
- The rationale for prioritising these information gaps
- The institutional arrangements and mechanisms that need to be developed to obtain, analyse and disseminate the prioritised information
- The information flows necessary to incorporate the relevant information into the overall LMIS
- The institutions that should take the lead on this activity
- The key stakeholders whose engagement and support will be essential for success.

For the short, medium and long term stages, we further divide the approach into steps to be taken on the supply side and the demand side of LMI.

4.1 The vision

The overall vision for Labour Market Information and Analysis (LMIA) is that demand and supply signals should inform skills development programme planning and implementation. This has been represented in simplified form in the figure below.

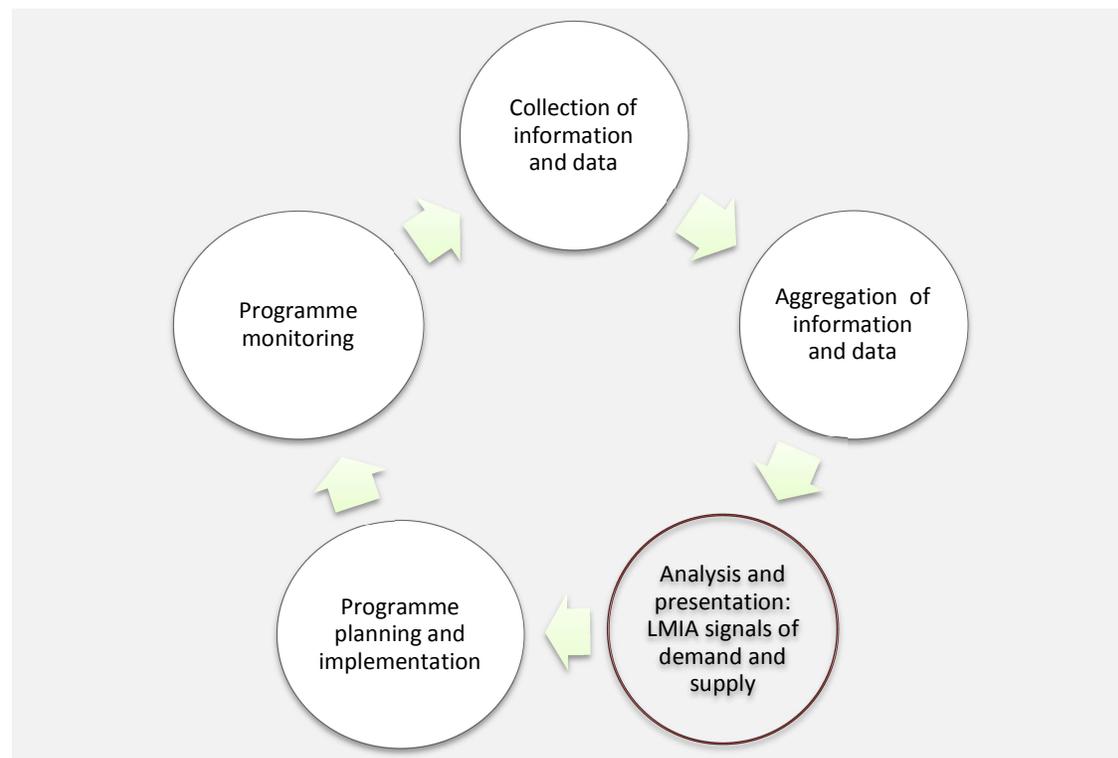


Figure 1: The LMI loop

4.2 Assumptions

The proposed pathway to developing a more robust system is based on a set of assumptions regarding institutional arrangements. These include the assumption that, given the large number of involved institutions already existing in India, it is undesirable to further complicate matters by

creating new ones. As far as possible, therefore, we have assumed that development of the LMIS will be carried out by existing institutions.

It is possible that in the early stage of this process, as India's priorities for LMIS are more fully articulated, an incompatibility between these priorities and existing institutional structures may become apparent. It is important to stress that, in this case, institutions should be fitted to objectives, rather than vice versa.

We also assume the following concerning the institutions spearheading the aggregation, analysis and publication of information or data on demand and supply of skills in the labour force:

1. That the National Skill Development Corporation will take the responsibility of aggregating the data and information related to the demand for labour and skills.¹
2. That the National Skills Development Agency be designated to take overall responsibility for leading further development and improving the current system of LMI in India.
3. That this institution will be responsible for aggregating and publishing the supply side information and data.
4. That the national authority will also be responsible for the national-level analysis of demand and supply side data and for publishing the analysed information, with recommendations for the national skill system.
5. That a long term goal is for LMI to be available for public use via a web based online portal and for the basic information to be available free or for a nominal fee.

The proposals below to strengthen the Indian LMIS focus on filling the identified information gaps, prioritised according to our understanding of Indian stakeholder needs and international good practice. However, as reflected in section 4.3.1, further work is required to further clarify the priorities for LMI in India and gain a clear picture of the data and information needs of the concerned stakeholders. This exercise may have a bearing on which elements of the LMIS are prioritised and, in turn, the subsequent actions taken towards the development of an LMIS.

4.3 Proposed actions

4.3.1 Immediate: 6-9 months

Because of the dynamic nature of skills development policy and the high priority being placed on this by the Indian government, a number of the actions detailed below are already underway through various initiatives. This section however, aims to bring these together in a coherent framework that positions the role of these various initiatives in the development of an improved LMIS for India.

Goals

1. A single lead institution with responsibility for driving forward the development of the LMIS is agreed by all key stakeholders.
2. Formal agreement is reached at government level on the specific questions, challenges, and decisions for which LMI is required for policy and planning in overall Indian skills system.
3. Based on these priorities, the specific data and information required to answer them, should be agreed by all key stakeholders.
4. The key stakeholders in developing the LMIS, the users of the LMIS, and different users' requirements, are formally identified, mapped, and shared among key stakeholders.
5. A set of occupational, sector and course codes for use in the skills sector, based on an interpretation of existing ISCO/ISIC codes, is approved and adopted by key stakeholders

¹ In May 2013, as this report was being finalised, it was announced that the newly-formed National Skills Development Agency would assume a role as the 'nodal agency for Sector Skills Councils'. As yet no details on this role, or how it will affect the future role of the NSDC, are available; accordingly we have retained the assumption of a longer-term role for the NSDC on the demand side of the LMIS. This is based on the existing contractual relationship between the NSDC and the SSCs.

6. Stakeholder engagement activity is initiated to raise awareness among stakeholders of the importance of the LMIS and their role within it, and of the occupational classifications.
7. The NSDC is formally identified as the lead agency to aggregate demand-side data and information.

Key information gaps to be filled

- D1a: Inadequate information regarding occupation and qualification structure

Rationale

This stage is the foundation upon which the LMIS can be built: without a full understanding of the purposes behind collecting further LMI, it will be impossible to determine how the information gaps should be filled and what should be prioritised. A review of existing occupational classifications will allow for any gaps or inaccuracies to be addressed, and the creation of the SSC structures gives an opportunity to do this with dedicated sector experts.

This report recommends that a number of specific outputs be generated. The focus is on general outputs required to support broad information and data requirements; however, when the priorities of LMI are reviewed it may be decided that more specific outputs are required (for instance, it may be decided that a specific report is required for SCST workers, or that particular sectors should be given specialised treatment; a need for reporting on other specific issues may arise over time). Any such prioritised outputs for the medium term should be decided at this stage and planning to produce them built into the plan, with specific responsibilities assigned for their production. This approach to planning should then be integrated within the LMIS as it develops.

Priority activities

- Establish a temporary inter-agency LMIS taskforce, chaired by the interim NSDA office, to lead on the action points at this early stage until the NSDA has developed sufficient capacity to take on a permanent leadership role
- Establish agreed set of detailed objectives for the first phase of LMIS development in India
- Produce revised stakeholder map
- Produce stakeholder engagement strategy
- Produce inventory of priority LMIS outputs to be delivered

Lead institutions

Until a lead agency has been agreed, the Ministry of Labour and Employment and the National Skill Development Corporation should jointly take the lead, as representatives of the supply and demand side (respectively) of the market for skilled labour.

Key stakeholders

Given the nature of this stage, the full range of stakeholders concerned with LMI will need to be consulted. However, it is not clear at this stage which institution will take the lead on LMIS development in India.

Proposed outputs

- Publishes, agreed set of objectives for LMIS development
- Revised stakeholder map
- Stakeholder engagement strategy

4.3.2 Short Term (9 months-2 years)

4.3.2.1 Demand Side (short term)

Goals

1. A standardised sectoral skills anticipation methodology, based on agreed information requirements, is agreed and incorporated into SSC and NSDC skill gap studies

2. A deeper understanding is built of the current structures of economic sectors (building on the NSDC's sectoral studies and including, where possible, largely informal sectors) in terms of occupations, skills and qualifications
3. A model for delivering LMI on skills needs by sector and by district is piloted at the state level
4. Capacity building is carried out towards the goal of carrying out LMI reporting on an annual basis
5. Data related to the existing employment in micro, small and medium enterprises harmonised with the agreed national classification of occupation
6. Data and information collected by Labour Bureau is harmonised with other demand side data and information

Key information gaps to be filled

- D1b: MSME census does not follow National Classification of Occupations, so combining it with the Annual Survey of Industries for an overall national picture is not possible
- D1c: Occupational and qualification classifications do not keep pace with changing realities in the workplace
- D1d: Limited information related to qualifications in different sectors
- D5a: Lack of base data for informal sector

Rationale

In the short term, the priority should be on developing the framework in which demand side LMI can be collected, the data classifications to be used and the methodology to be applied. Wide roll-out will take considerable resourcing, so in the short term a pilot phase, working perhaps with an individual State, will allow for any issues in implementation to be better understood and planned for.²

Evidence from the study of existing information sources and views of stakeholders, suggest that there is a definite lack of an aggregated picture of industry skill requirements; the state pilot project should aim to demonstrate how this gap can be filled through engaging with employers at the state and district level. The model piloted should be sector-based – that is, delineate the results by sector – but should also aim to achieve a district-level geographical granularity. Based on the pilot, a clear understanding of resource requirements at the state level to implement such a model should be developed; any lessons learned from the pilot should also be incorporated before rolling out nationally.

There is a need to give particular attention to the reporting of MSMEs, most of whom are in the informal sector. This, combined with the scale of national roll-out, means implementation is likely to be long, complex and require the engagement of multiple stakeholders.

Finally, the various strands of data and information collected by the Labour Bureau should be harmonised with other demand-side data under the auspices of the NSDC as early as possible, to allow this information to properly feed into the wider LMIS. This should include:

- Integrating the Labour Bureau's Occupational Wage Survey with the Annual Survey of Industries
- Integrating the Labour Bureau's 'quarterly quick employment surveys' with the SSCs' skills gap surveys under a new, standardised methodology
- Establishing institutional linkages and information flows between the Labour Bureau, the SSCs and the NSDC to allow for efficient sharing of information on trade unions and of one-off studies carried out by the Labour Bureau.

Priority activities

² This approach is currently being progressed under the India-EU Skills Development Project under the auspices of the MOLE.

- Establish institutional linkages between employers in the pilot state with organisations responsible for collecting LMI using the standardised classifications and agreed methodology.
- Establish connections at the state and district level between SSCs / industry bodies and local employment exchanges in the pilot state.
- Deliver increased capacity to undertake employer engagement in the pilot state for SSCs, industry organisations, and employment exchanges, including, where necessary, investment in physical infrastructure and staff training/recruitment.
- Carry out pilot survey of skills needs by sector.
- Standardise the indicators related to the demand for labour based on National Classification of Occupation in ASI conducted by the CSO and MSME Census conduct by the Ministry of MSME. This could be facilitated by the NSDA as the proposed national authority.
- The national authority should arbitrate between CSO and Ministry of MSME to arrive at a consensus regarding the frequency with which the two surveys are conducted and sampling methodology they follow. Currently, ASI is done annually and is a sample survey whereas MSME Census is conducted every four years and is a census survey. This model proposes that the data should be reported once a year, coordinated with the annual district-level skills needs reports.
- The two institutions: CSO and the Ministry of MSME adopt a standardised template for reporting data to the national authority.

Lead institutions

- The agreed lead agency should work closely with Sector Skills Councils, MOLE and the NSDC to revise the standardised classifications.
- The agreed lead agency should commission a suitable research agency (with expertise in the field of skills anticipation and labour market economics) to devise appropriate methodologies.
- In the pilot project, different agencies will need to be involved in order to deliver the required access to employers. The State government will be a key supporting partner, helping deliver access to key stakeholders and working with:
 - Sector Skills Councils – in sectors where they are well established, the SSC should take the lead on developing the employer engagement strategy in support of the pilot LMI collection mechanism
 - Industry organisations – where SSCs do not exist or where they have yet to operationalise, industry organisations such as FICCI and CII should be brought on board as partners, both to utilise their networks with employers and to provide strategic support to the employer engagement process
 - Employment exchanges – given existing capacity problems, employment exchanges are unlikely to be able to play a leading role. However, at the district level they have valuable networks and an existing brand name among local employers which, in certain sectors, SSCs and industry organisations may lack. Accordingly, where appropriate, at the pilot stage they should be treated as an important partner for the SSCs and industry organisations. This will help to avoid duplication of effort, avoid starting from scratch and quickly develop local-level labour market insight.
- The NSDC should lead on aggregating the data from the pilot and producing the pilot demand report.
- MSME and CSO should work with the agreed lead authority to harmonise their data collection with the overall LMI approach

Key stakeholders

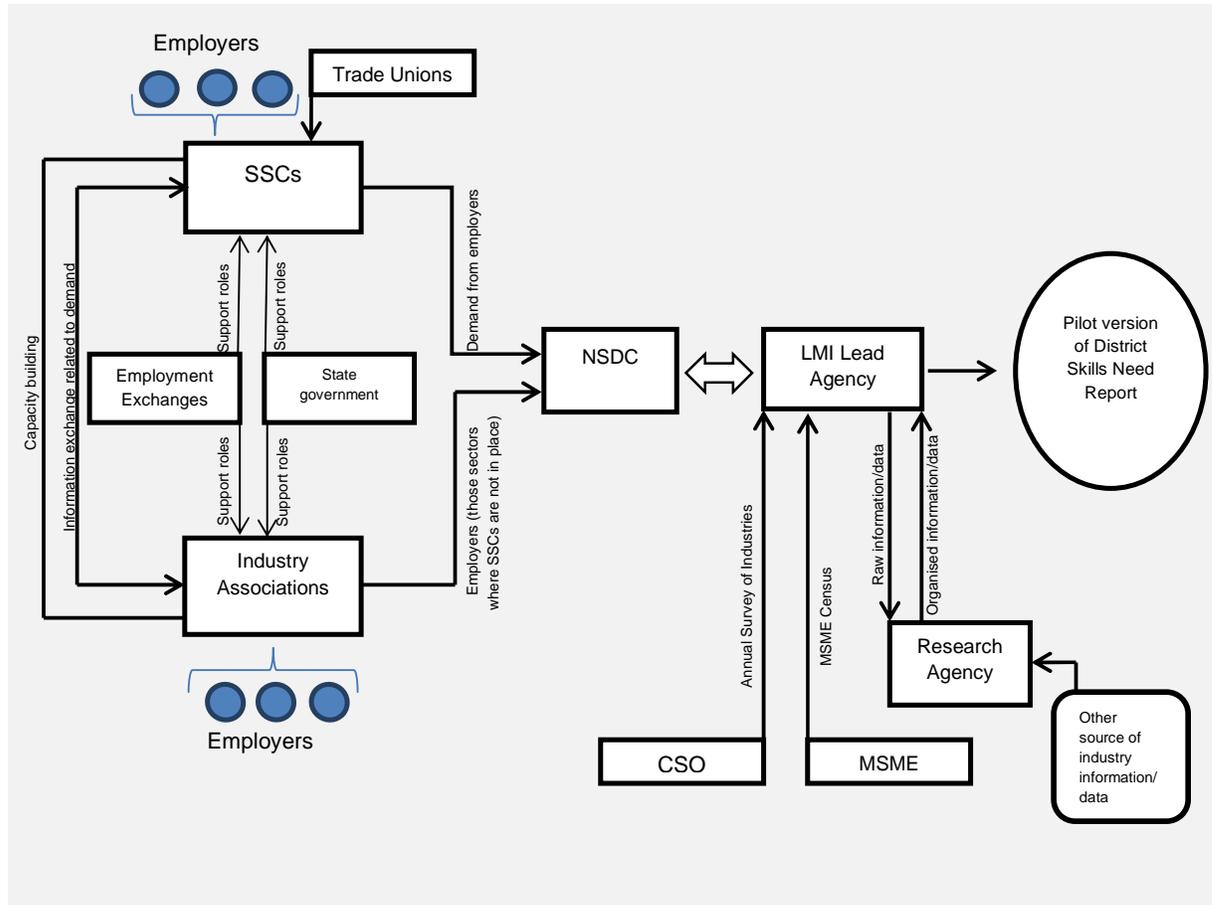
- The state government in the pilot state should be treated as a core partner to ensure smooth implementation.
- State governments – should be kept informed of progress on the pilot approach and prepared for roll-out.

- Training providers – should be kept informed of any changes to national occupational classifications and how this relates to parallel work to improve LMI on the supply side. This should be done through the lead agency, in cooperation with MOLE, to ensure compliance by all public providers or funders of training.
- Trade Unions should be engaged as key partners in understanding the present skills levels of the workforce.

Proposed Outputs

- Standardised sector-based methodology for anticipating skills needs at a national level.
- Sectoral skills needs report for the pilot states, with information at a district level, to be used as a model for future annual reports.
- MSME occupational classifications in line with overall classifications used
- State-level report on skills needs in the MSME sector in the pilot state.

Information Flows



4.3.2.2 Supply Side (short term)

Goals

1. Data collection from public and private ITIs and other training providers in receipt of public funds, including enrolments (and the background of those enrolling), completions, and outcomes, is standardised.
2. A standardised approach to course and learner classification is agreed, building on current initiatives to introduce a unique student ID number.
3. Supply side data collection is harmonised with the new National Skills Qualifications Framework (NSQF)
4. A mechanism for aggregating this data and creating an integrated national supply side information system is piloted among central ministries and states.

Key information gaps to be filled

- S1a: No centralised database available for public and private ITIs related to enrolments, course graduates, drop-outs and students placed in jobs
- S1c: Lack of information related to the learning outcomes of students
- S4d: Details of dropouts enrolling for TVET and other skill training are not available
- S5a: Lack of quantitative data on employability

Rationale

Evidence from the study of existing information sources and views of stakeholders suggest that there is a definite lack of an aggregated picture at the national level of people who enrol/complete TVET and other skills development programmes and what the outcomes of training are.

Establishing a clear picture of the current supply situation is essential in order to have a starting point for future development of the skills supply in response to improved demand-side indicators.

Given the large number of training institutes in India, it is proposed to focus in the short term on public and private ITIs and other providers in receipt of public funds, as these are more accessible and their numbers are more precisely known. In the longer term it will be necessary to expand this to include other private training providers who do not receive public funds to deliver training.

Priority activities

- Institutional linkages between training providers in receipt of public funds and the agreed lead agency
- Pilot mechanism for collecting data on public and private ITI learners using standardised methodology

Lead institutions

- The agreed lead agency should work with MOLE and the National Association of Vocational Training Providers to gain access to the public and private ITIs respectively, and with other ministries to access training providers in receipt of funds from them.
- The lead agency should work with SSCs and industry bodies to gain access to employers in order to carry out the pilot study of existing skill levels; and work with industry bodies and employment exchanges to carry out the estimate of existing skill levels in the informal economy. A suitably qualified academic institution will be required as a partner in order to devise the methodology.

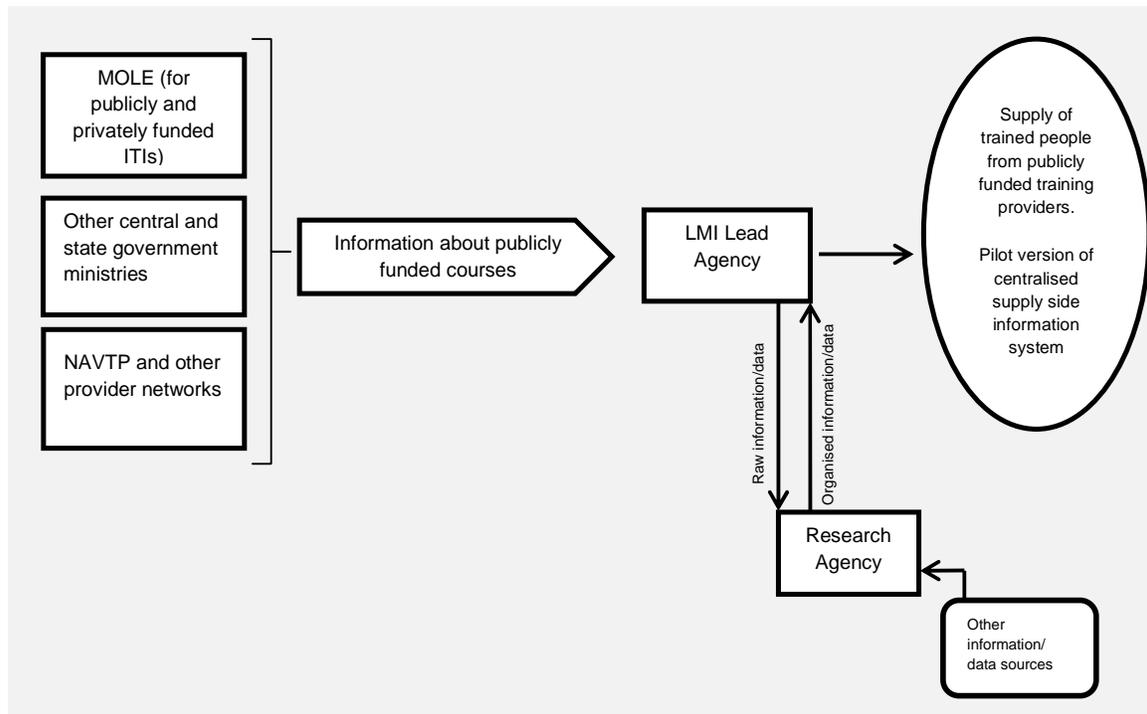
Key stakeholders

- The state government in the pilot state should be treated as a core partner to ensure smooth implementation.
- Demand side institutions (particularly SSCs and the NSDC) should have the opportunity to have input on the pilot mechanisms to ensure that they accord with employer needs.
- The All India Council for Technical Education should be given the opportunity to feed into the design of the supply side mechanism and their support should be sought to ensure training provider cooperation.
- Other Central Government Ministries should be kept informed of progress in preparation for rolling out the mechanism to other training institutions at a later stage.

Proposed Outputs

- Report on supply of trained people from publicly-funded training providers in the pilot state, to be a model for future annual reports
- Pilot version of centralised supply side information system, developed jointly with the pilot demand-side system as the two building blocks of the LMIS

Information Flows



4.3.2.3 Other outputs: short term

Pilot demand/supply report

The lead agency should produce a report bringing together the demand and supply information generated in the pilot states during this stage. This will not be comprehensive (on the supply side, for instance, it is recommended that at this stage it include only those publicly funded providers in order to be manageable) but it should be designed to be a template for more comprehensive, national-level reports at a later stage.

The report should include recommendations for government ministries with responsibility for training provision in terms of how they should best respond to the demand-side information generated at this stage.

Beta version of electronic information system

The lead agency should commission the production of the beta version of the shared electronic information system, based on the agreed purposes and questions previously developed, and test the specifications and design. This should include provision for both demand- and supply-side data and information and specific user interfaces for the different stakeholder groups based on their differing needs. The design should allow for those elements of data and information that are planned for the medium and long term, so that these can easily be incorporated in due course.

4.3.3 Medium-term (2-5 years)

4.3.3.1 Demand side (medium term)

Goals

1. State skills needs report is rolled out nationwide
2. Institutional capacity built to support roll-out and to ensure better response rates by institutions supplying LMI
3. Annual schedule for collection of skills needs reports agreed, with clear timetables for collection, analysis and publication
4. Online portal piloted and operationalised.

Key information gaps to be filled

- D1b: Time lag in information collection

- D4a: Data on workforce demand only available in leading industrialised states
- D4b: Disconnect in aggregation of national and state level data

Rationale

The primary medium term objective is to expand the collection of state- and district-level skills information nationwide, building on the skills gap analysis developed by the NSDC and the state level pilot proposed in the first stage, and using the shared information system piloted at the first stage. Annual reporting should be established as the norm at this stage. Particular attention should be given to building capacity in those states where data is less available, or not made available in the required formats.

Priority activities

1. Insights gained from the development of the LMIS to date should be used to inform the 2018-2023 five year plan, as part of the shift towards demand-driven resource allocation and planning.
2. Roll out standardised demand side information gathering to all of India's states.

Lead institutions

- The agreed lead agency should take overall responsibility for rolling out the district-level demand side information gathering
- Sector Skills Councils, where possible, should be the primary agency for collecting data within their respective sectors
- Where SSCs do not exist, industry associations should take the lead, working in cooperation with employment exchanges to take advantage of their infrastructure and networks, and with the MSME where the relevant sector is largely informal
- Industry bodies should also work with SSCs that as yet lack capacity, to build up their ability to carry out the information gathering in future

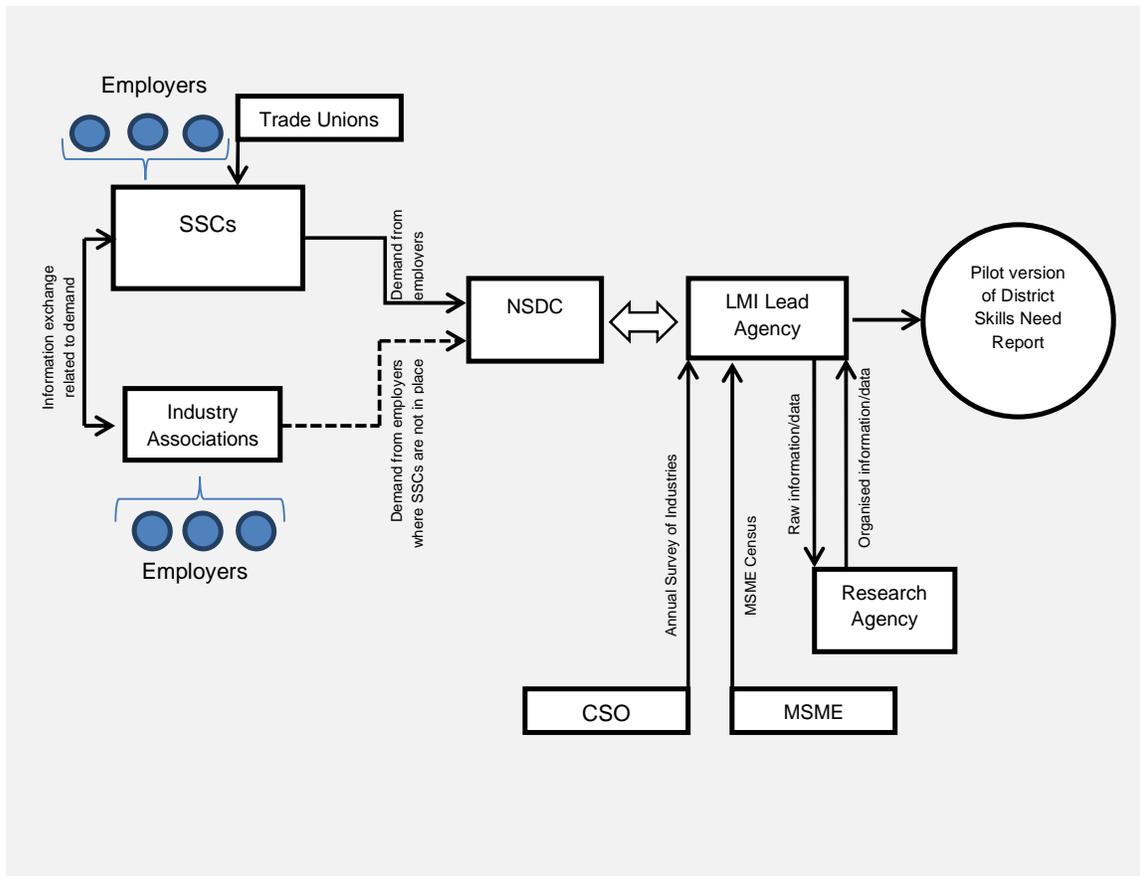
Key stakeholders

- The support of state governments will be essential to the success of the roll-out. They should be brought in as partners to promote the project and generate buy-in within each state.

Proposed Outputs

- Annual state skills needs report
- Annual state report on skills needs in the MSME sector.

Information Flows



4.3.3.2 Supply side (medium term)

Goals

1. Mechanism for aggregating data and information from training providers in receipt of public funds is rolled out nationwide.
2. Pilot expansion of supply-side LMI to include training providers not receiving public funds in selected pilot states.

Key information gaps to be filled

- S1b: No centralised database available for vocational training providers other than ITIs related to enrolments, course graduates and drop-outs, and students placed in jobs
- S1d: No centralised database available for employer-sponsored vocational training programmes
- S3a: Employment data not segregated into educational attainments and skill levels
- S3b: Available data in employment exchanges is not comprehensive or accurate

Rationale

Following the piloting of ITI information gathering, nationwide expansion is the first step to building up a comprehensive picture of the supply side of the market for skilled labour.

Non-publicly funded training providers are diverse, diffuse and hard to reach, so at this stage, a state-level pilot to bring them into the LMIS is necessary to better understand the challenges. A completely comprehensive picture is probably unrealistic but through working through key stakeholders such as regulatory bodies, a broadly indicative picture should be possible.

Given the diversity of providers, a register of training providers will be necessary and linkages set up to allow the collection of information from them and the incorporation of this into the LMIS.

Priority activities

- Full roll-out of ITI data collection and linkage back to central LMIS
- State-level consultation with key partners in the pilot state to begin developing a state-wide register of training providers that can feed into a centralised register
- Roll out training provider survey to non-ITI training providers in the pilot state, and link to LMIS

Lead institutions

- The agreed lead agency should be responsible for developing a centralised register of non-ITI training providers, taking inputs from the various government ministries with responsibilities for training and from state governments.
- The agreed lead agency should oversee the incorporation of these training providers into the LMIS and the collection of information from them, with support from state governments, government ministries, SSCs, industry bodies and NGOs where required.

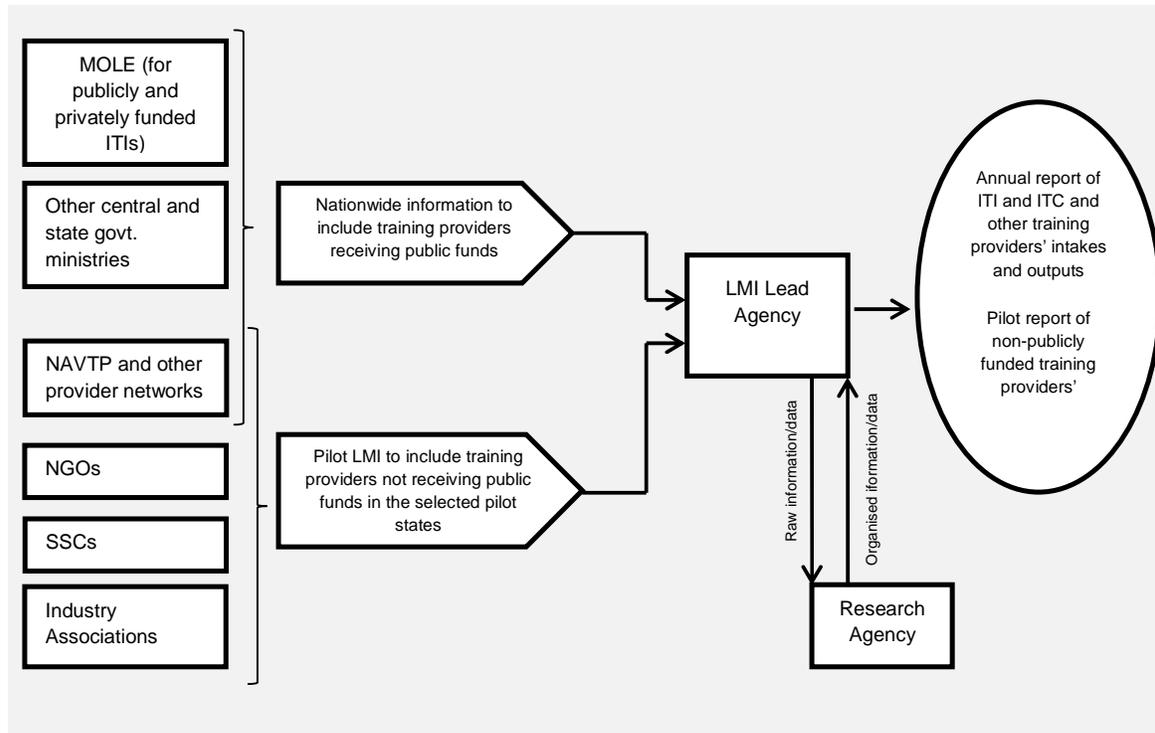
Key stakeholders

- State governments will need to be engaged to support the lead agency in gathering information on the ground and in accessing those training institutes affiliated only at the state level
- Various government ministries with responsibility for training will need to work with the lead agency to provide the details of training providers under their remit
- Industry bodies and SSCs will be needed to support the collection of information with regard to companies running training centres / initiatives
- The lead agency will also need to work with NGOs operating training initiatives to ensure their inclusion

Proposed Outputs

- Pilot report of non-ITI training providers' intake and outputs in the pilot state
- Annual report of ITI intakes and outputs (enrolments, drop outs, pass outs, qualifications, placements etc.)
- Register of non-ITI training providers in pilot state

Information Flows



4.3.3.3 Other outputs: medium term

Using the state-level demand/supply report generated at the previous stage, the lead agency should now produce a national skills demand/supply report, to be the model for an annual report. In the early years there are likely to be significant information gaps; the lead agency will need to work closely with stakeholders, particularly SSCs and state governments, to identify where these gaps still exist and to invest in capacity building to be able to address them in future annual reports.

The shared electronic information system should be launched at the national level by the end of the medium term period.

4.3.4 Long-term (5-8 years)

4.3.4.1 Demand side (long term)

Goals

1. Incorporate census data and overseas markets and migration factors into LMI
2. Review and refine system

Key information gaps to be filled

- D2a: Lack of regular survey of overseas demand for labour
- D2b: Lack of linkages between information on overseas demand for skilled labour and supply
- D2c: Lack of linkage with placement agencies involved in overseas employment
- D2d: Lack of regular updates and linkages with overseas employers
- D3a: Time lag and regular update of demographic replacements due to death by state, age, sex and occupation
- D3b: Only 50% of deaths are reported and registered in civil registration systems

Rationale

In the long term, once the core demand assessments are established, there will be a need to tie this in more closely to other data flows, particularly around demographic change and migration, both of which will have a significant impact on both the demand and the supply sides.

The Economic Census collects data on employment in agriculture and non-agriculture establishments by major activity groups. If it could be made comparable with ASI and MSME Census; the three sources combined will contribute to a clearer aggregated picture of demand for labour in the whole economy.

Priority Activities

- Revised census data to include impact of demographic change on skills requirements
- Linkages to incorporate census data into LMIS
- Channel data related to current employment from Economic Census survey
- Annual update of skilled labour demand in key overseas markets
- Institutionalised linkages between LMIS, overseas placement agencies and major overseas employers

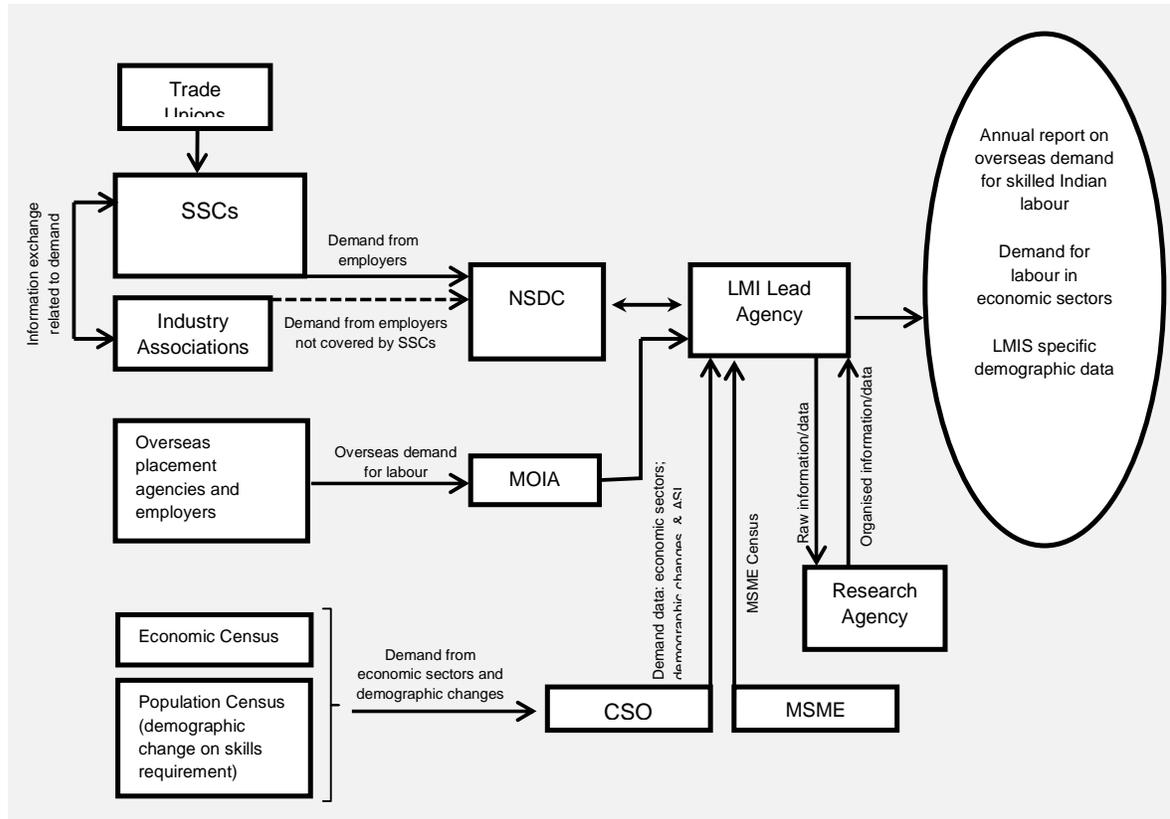
Lead institutions

- The lead agency should work with the CSO (MOSPI) to review census techniques and establish linkages between census data and the LMIS
- The lead agency should work with the MOIA, and India's network of diplomatic missions in key overseas markets, to develop reporting mechanisms for annual updates on the demand for skilled labour overseas
- The MOIA should lead on establishing mechanisms to gather data from placement agencies and other key data stakeholders.

Proposed Outputs

- Annual report on overseas demand for skilled Indian labour
- Aligned census data in order to support LMIS

Information Flows



4.3.4.2 Supply side (long term)

Goals

1. Develop relevant demographic information in support of LMI
2. Strengthen linkages between demographic statistics and LMIS
3. Rationalise information on training providers to eliminate double counting
4. Develop deeper understanding of patterns of non-completion and other priority research issues
5. Develop mechanisms for an improved understanding of the impact on the labour force of company closures / retrenchments
6. Channel data of graduates passing out of non-vocational streams in universities and the secondary school boards, to estimate the pipeline supply of potential future labour force

Key information gaps to be filled

- S4a: District level information on numbers of young people is not readily available, especially of numbers of youth in different age groups
- S1e: Double counting of numbers trained under different schemes
- S4b: Discipline-wise enrolment, progression and graduation rates for universities and colleges are not available in the public domain
- S4c: Tracking system for course non-completions does not exist
- S4e: No system for reconciling dropout against the total TVET enrolment, due to lack of individual tracking system
- S6a: Inadequate information about service industry and informal economy with regard to closures and retrenchments
- S6b: No tracking mechanism for retrenched workforce from the private sector, segregated by area, company, position and skills level
- S6c: Limited data available on 'sick' companies

Rationale

In order to build towards longer term anticipation, improved demographic information will also be necessary to anticipate the numbers coming into the education and training system by district. This implies both improvements to the current demographic data available via the census and closer linkages between census data and the LMIS.

An individual tracking mechanism for learners, and particularly dropouts, will also help deepen understanding of learner destinations and how to encourage re-entry into training / reduce drop out. This can only be developed in the long term when current initiatives to establish a national ID system (UID) have taken root.

The information base related to students studying in universities and secondary schools is essential for the long-term planning of building infrastructure and for the future demand of training courses and schemes. Part of this information exists with concerned institution, but is not collated and fed into a common data system. It will be necessary to incorporate this information into the overall LMIS.

Priority activities

- Revised census data to include more detailed demographic information by district, with particular attention to numbers of young people and children
- Linkages to incorporate census data into LMIS
- Linkages to incorporate sample survey data on employment and unemployment into LMIS
- Tracking mechanism for individual learners, perhaps building on the national unique identification number currently being rolled out
- Reporting mechanism for closing companies to report the skill profiles of their workforce

Lead institutions

- The agreed lead agency should liaise with the CSO to address improvements to census data and to strengthen the information flows that feed census and other demographic data into the LMIS.
- The agreed lead agency should work with the MOLE, regulatory bodies and individual ministries to develop a tracking mechanism for learners associated with their national ID numbers.
- The lead agency should work with MOLE and other relevant agencies on developing a protocol for requiring closing companies to report on the skills profile of their laid-off workforce.

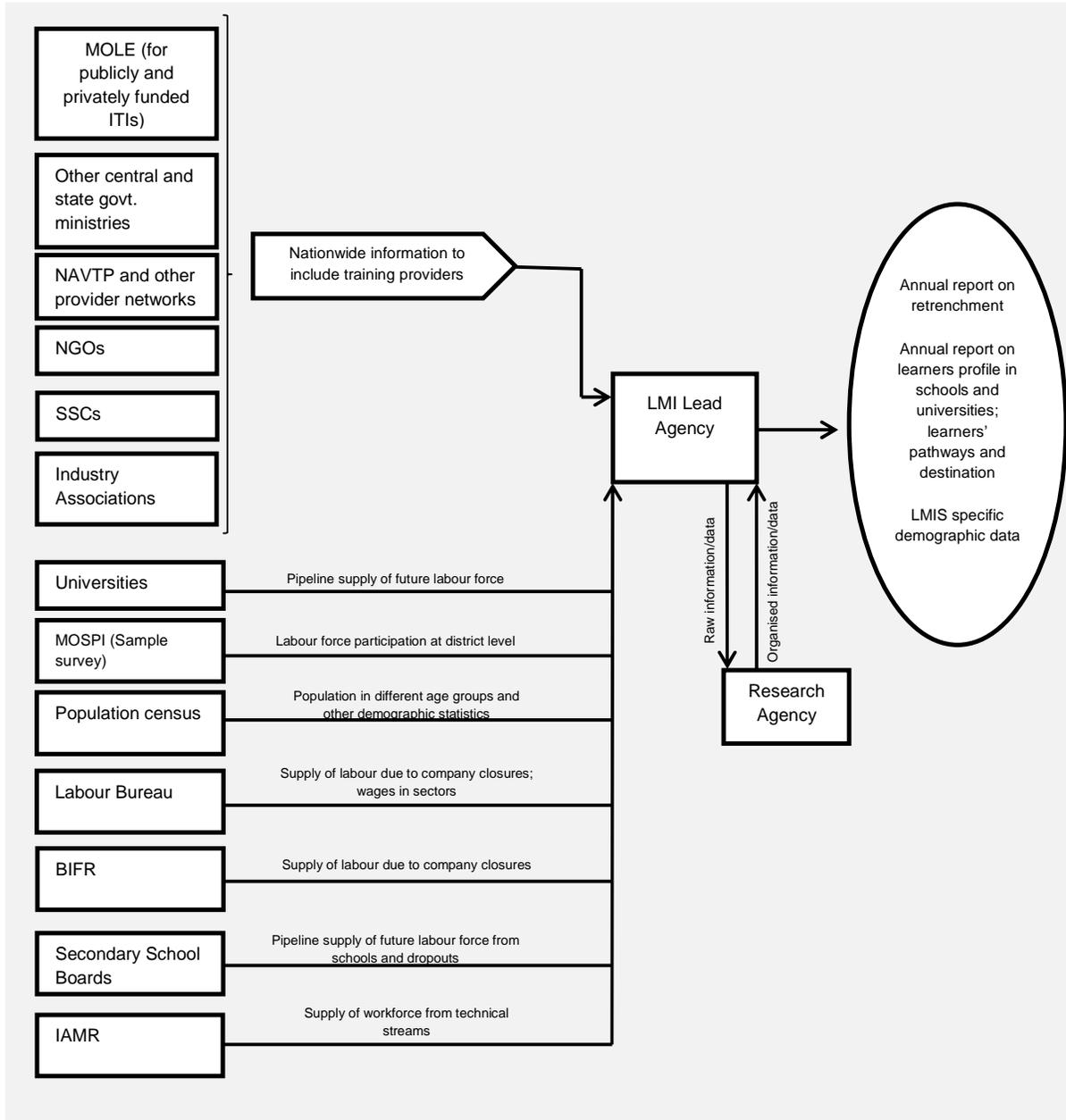
Key stakeholders

- The CSO will be a crucial partner in developing the census data to support the LMIS and developing the linkages between the two
- University Grants Commission, Institute of Applied Manpower Research (IAMR) and Secondary school boards will be key partners in ensuring buy-in of schools and universities to provide information for the LMIS

Proposed Outputs

- Amended census data with specific intent to support LMIS
- Mechanisms to provide census data for the LMIS
- Annual report on retrenchments to feed into LMIS
- Annual report on learner pathways and destinations
- Annual report on learner profiles in schools and universities

Information Flows



4.5 Publication of census and sample surveys and other statistics on the web portal

In addition to the availability of demand and supply data mentioned previously it is essential that data from census and sample surveys and other broad labour statistics and signals are made available to users of the Labour Market Information Portal (LMIP) in the long-term. These data sources are:

1. Population Census conducted every 10 years
2. National Sample Survey on employment and unemployment conducted every 5 years.
3. Regular surveys and one-off studies conducted by the Labour Bureau such as:
 - Rural Labour Enquiry
 - Occupational Wage Surveys
 - Socio-economic Conditions of Different Segments of Labour
 - Survey of Labour Conditions
 - Contract Labour Survey
4. Other sources of information or data such as Skills Gap Studies and the National Technical Manpower Information System.
5. Other reports recommended in this paper.

The national authority should coordinate the collection of information from the institutions responsible for collecting and publishing broad labour market statistics and signals, carry out necessary analysis according to the agreed system requirements, and make it available on the web portal.

A pilot web portal should be developed early in the process, immediately following the agreement on the purposes of LMI and the needs of stakeholders. It should be designed to be as flexible as possible, with different tools available according to the different needs of the user, and the possibility to add new tools as new information sources become available (e.g. the proposed survey of overseas labour demand). The goal should be for this portal to be piloted at the short term stage, and rolled out at the medium term stage.

In addition, non-online versions of the information will need to be made available for populations who lack internet connectivity. State governments should be consulted on how best to promote access to information among their less connected populations.

Bibliography

- Gray, L., Warrender, A. M., Davies, P., Hurley G., Manton, C. (1996). Labour market signals & indicators. *Overseas Development Administration Education Research Paper No. 15, 1996.*
- International Labour Organisation (2010). *A proposal to strengthen TVET & skills data in Bangladesh.* Retrieved on April 3, 2013, from http://www.ilo.org/dhaka/Whatwedo/Publications/WCMS_142745/lang-en/index.htm
- International Labour Organisation (2011). *Review of sources and availability of skill development data in India.* Retrieved on December 17, 2012, from http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---sro-new_delhi/documents/genericdocument/wcms_175095.pdf.
- International Labour Organisation (2011). *Key indicators of the labour market (KILM).* Retrieved on April 15, 2013, from http://www.ilo.org/empelm/what/WCMS_114240/lang-en/index.htm
- International Labour Organisation (2012). *Review of the model and institutional arrangements for labour market information and skills anticipation in India.* Unpublished.
- Karmel, T (2013). Maximising the use of data: vocational education and training, *NCVER, Adelaide, Conference Paper.*
- Mangozho, N. (2003). Current practices in labour market information systems development for human resources development planning in developed, developing and transition economies. *ILO Geneva Skills Working paper No. 13.*
- National Skills Development Corporation (2011). *Concept paper on labour market information system: an Indian perspective.* Retrieved on February 18, 2013 from <http://www.nsdcindia.org/pdf/concept-paper-labour-market-info.pdf>
- Powell, M. (2008). Tools that can be used to undertake labour market analysis. *Cambridge, Cambridge Education Occasional Paper.*
- Sparreboom T, Powell M. (2009). Labour market information and analysis for skills development. *ILO, Geneva Employment Working Paper No. 27.*

Annexure 1: Summary Review of International LMIA Models and List of Key References

In this annexure a brief review of LMIS models has been presented for seven countries: Australia; Canada; Jamaica; Singapore; South Africa; the United Kingdom and the United States of America. The review of countries are not comprehensive, it rather aims to highlight important elements of the model in these countries. The review has organised on the basis of following sub-themes:

- The user interface and the institution/s managing it
- The kind of labour market information and analysis available to different users
- The sources from which labour market information flows into the LMIS interface
- The standards that are followed while recording the information/data
- Website link for further information

1. Australia

- LMIA system in Australia exists in the form of a portal called Labour Market Information Portal (LMIP) operated by the Department of Education Employment and Workplace Relations
- Following are the list of information available on the LMIP
 - Labour Market Statistics
 - Unemployment and employment rate full-time and part-time categorised by gender
 - Job seekers
 - Working age population (15-64) and population by age group
 - Labour force participation rate
 - Unemployment duration
 - Employment by industry and occupation
 - Employment rate by state and territory
 - In addition information could be found related to schooling; higher education; international education, skill development courses
- Follows standard industrial classification
- Data is provided by Australian Bureau of Statistics Monthly Labour Force Survey
- For further detailed information about the LMIP can be accessed at <http://lmip.gov.au/>

2. Brazil

- The Labour Market Information System in Brazil is managed by the Ministry of Work and Employment, Government of Brazil.
- The ministry has a repository of information related to the regulations in Brazil with regards to Employment and Income; Labour Inspections; Labour relations. It also houses data and statistics related to the labour Market and the world of work.
- A key feature of the data and statistics system in Brazil is the presence of a Labour Market Observatory (LMO). The LMO is a national research and planning institution that aims to produce and disseminate information; analysis; and proposals for action; advising policymakers and assisting government, non-government and private institutions develop policies and actions concerning labour issues.
- They key information sources related to the labour market and the world of work produced by the LMO under the Ministry of Work and Employment are the following:
 - General Register for Employed and Unemployed
 - Research on Employment and Unemployment
 - National Household Sample Survey
 - Monthly employment survey
 - Annual Report of Social Information: statistics related to the workforce working for the government sector

- The different information source follows Brazilian Classifications of Occupations, for comparison of databases.
- The information related to various regulations and labour market statistics is available on a web portal, which can be freely accessed by different users. This portal can be accessed at <http://portal.mte.gov.br/portal-mte/>
- The LMO also publishes 'E-Statistics' from all the information and data sources on one web page and yearbooks on key themes, for example on Labour and Vocational Trainings; Public Systems Employment; and Income.
- The other key feature of the TVET system in Brazil is the presence of sectoral bodies. It is a network of non-profit institutions providing national training services to different sectors: industry, commerce, transport and rural. Though these institutions are financed by the government they are managed by industry bodies, creating a strong link between vocational training and labour market needs. Other stakeholders such as rural labour unions, cooperative societies in their respective sectors are also involved in the decision making. The organisational structure of sectoral bodies is also decentralized across the regional administrations and states.

3. Canada

- LMIA exists in the form of a web based portal called "Working in Canada". It is managed by Human Resource and Skills Development Canada and Citizenship and Immigration Canada, and Canada's provinces and territories.
- The portal provides information related to
 - Unemployment
 - Supply and demand of workforce: broken down into age, gender and education
 - Industry types; list of employers; wages
 - Careers: educational requirements, workers availability/shortage for different job roles; where to get skills development training from
- The data is available for provincial, local and community levels
- National Occupation Classification is used to codify data from different sources
- It is freely available to users
- For further information on the web-based portal visit <http://www.workinginCanada.gc.ca/home-eng.do?lang=eng>

4. Jamaica

- Jamaica Labour Market Information System is managed by Ministry of Labour and Social Security. This national LMIS is a job matching facility as well as a database of qualitative and quantitative information.
- The Jamaican LMIS has the following components
 - **The Electronic Labour Exchange (ELE) and Skills Bank:** It facilitates the matching of job seekers with employers. The services are available both on-line and off-line.
 - On-line services for job-seekers include tips on resume writing; preparing for interviews and job search; career counselling; posting resumes; and job search.
 - Off-line services for Job-seekers consists of computer facilities to post resumes and conduct job search; referral to other institutions; presentations/workshops on topics such as labour market trends and workplace readiness; entrepreneurship workshops which expose ELE clients to income generating skills which are easily learnt e.g. floral arrangement, sewing and making gift baskets; and career development activities for secondary schools.
 - On-line services for employers comprises of posting job vacancies; access to a database of skilled workers; and search for and selection of candidates.
 - Off-line services for employers consists of interview and short listing of candidates for employers; guidance to employers on how to post job

- orders; posting vacancies for employers; and conference room facilities to conduct interviews.
- **Labour Market Intelligence:** This is a combination of current and historical data on the local economy, population and labour market. It also includes information on training opportunities for the youth, sources of funding for education, the most frequently advertised jobs called “hottest jobs” and summaries of labour market research conducted by the Ministry of Labour and Social Security.
 - The information is collected from a number of labour market information producers and disseminated using a web site in order to improve access³. The information is available free of cost for users. On the website following types of information could be found.
 - Labour Market Indicators:
 - Economic Statistics
 - Remittances
 - Population and labour force; by geographical distribution and age grouping
 - Labour force indicators
 - i. Employment: size of labour force; employment status; self-employment; employment by training received; overseas employment; and work permits
 - ii. Unemployment: size of the unemployed labour force; unemployment by training received; first seekers by training received; and redundancies
 - Education attainment: school enrolment; literacy; certifications; education expenditure
 - Poverty
 - Labour productivity and compensations
 - Wages and salaries: average wage and minimum wages
 - Industrial relations: disputes; work-stoppages; man days lost
 - Social protection
 - Labour market programmes
 - Labour market forecast and report generation
 - Labour market analysis
 - Education and training: primary; secondary; tertiary; special education; vocational education; continuing education; accreditation bodies; and financial assistance
 - Information related to regulatory framework: labour legislations and ILO conventions and recommendations.
 - Links to other labour market resources.
 - Sources of data for the Jamaican LMIS:
 - Statistical Institute of Jamaica which provides information on labour force, employment and earning
 - Ministry of Labour and Social Security
 - Planning institute of Jamaica
 - Ministry of Education
 - The data sources follow standard codifications for classifications of sector and industries.
 - Key users of Jamaican LMIS are as under⁴:
 - Local and international investors
 - Employers
 - Workers’ organisations
 - Government policy makers and planners
 - Guidance and career counsellors
 - Planners and policy makers in education and training
 - Self-employed persons
 - Students
 - For more information please visit the website of the Jamaica LMIS <http://www.lmis.gov.jm/home.aspx>

³ http://www.lmis.gov.jm/AboutLabour_Exchange.aspx

⁴ NSDC (2011). *Concept Paper on Labour Market Information System: An Indian Perspective*. retrieved on 18 February 2013 from <http://www.nsdcindia.org/pdf/concept-paper-labour-market-info.pdf> pp 43

5. Singapore

- The website of the Ministry of Manpower, Singapore Government makes available manpower statistics.
- Following information is available on the web-portal
 - Labour force
 - Total labour force and residential labour force
 - Educational composition of the labour force
 - Median age and labour force participation rate
 - Employment
 - Employment levels as at the end of the year and employment distribution by sector
 - Employment change in every quarter
 - Unemployment rate, quarterly as well as long-term
 - Job vacancy (quarterly)
 - Labour turnover: recruitment and resignation rate
 - Hours worked per week
 - Redundancy rate per 1000 paid workers
 - Re-entry into employment (quarterly)
 - Median gross monthly income: nominal and real
- Ministry of Manpower conducts Labour Force Statistical Information Survey every year. Some of the information is also sourced from Central Provident Fund Board's administrative records.
- A standard codification is followed for data collection
 - Singapore Standard Industrial Classification 2010
 - Singapore Standard Occupational Classification 2010
 - Singapore Standard Educational Classification 2010
- The web-based portal is easy to use and information is freely available
- In addition to the labour market information statistics it provides to users access to the following
 - Job vacancies
 - Skills in demand
- For more information about the type of information available and the user interface please visit the website of the Ministry of Manpower, Singapore Government and navigate to 'Statistical & Publications' menu. <http://www.mom.gov.sg/statistics-publications/national-labour-market-information/statistics/Pages/default.aspx>

6. South Africa

- The information related to the labour market is gathered, collated and released by "Statistics South Africa" which is the national statistical service of South Africa under the jurisdiction of the Government of South Africa. In addition to the labour market statistics 'Statistics South Africa' also gathers and publishes demographic and macroeconomic statistics. The labour market statistics is however mostly related to indicators of employment and unemployment. The two surveys it administers for this purpose are⁵:
 - Quarterly Employment Survey (QES) which is a business survey and collects statistical information on employment and earnings in formal non-agricultural industries.
 - Quarterly Labour Force Survey (QLFS) is the household survey, is used as the primary instrument for collecting labour market information in South Africa. It collects data on the labour market activities of individuals aged 15 years and above who live in South Africa. The labour market information relates to the following categories: employment, unemployment and inactivity. Supplementary modules are also developed and implemented for the QLFS, depending upon labour market dynamics.

⁵ Statistics South Africa (2011). *Annual Report 2011*. Retrieved on 28 March 2013 from <http://www.info.gov.za/view/DownloadFileAction?id=152679>, p 49

- Using the information gathered from the QES and QLFS it also publishes labour market statistics on its website called 'StatsOnline'. Key indicators published are as under⁶:
 - Unemployment rate (aged 15 - 65 years)
 - Unemployed population (aged 15 - 65 years)
 - Employed population (aged 15 - 65 years)
 - Percentage change in average monthly earnings including bonuses and overtime
 - Average monthly earnings including bonuses and overtime
 - Percentage change in gross earnings
 - Gross earnings
- South African Department of Labour Online maintains Employment Services of South Africa (ESSA). It serves as an online repository of jobseekers and employers wanting to hire labour.
 - For jobseekers (individuals): Once registered on the website of the ESSA, the jobseeker is able to search the database for available vacancies.
 - For organisations (employers): First, the organisation or the employers needs to registered on the website, after which it is able to post job opportunities and then receive resume of job-seekers based on the job description. This service is available free of cost for the employers.

7. United Kingdom

- Run by the Office of the National Statistics, National Online Manpower Information System (NOIMS) is a web based database. It provides free access to detailed and up-to-date UK Labour Market Statistics.
- Information is available related to the following:
 - Population
 - Employment and unemployment
 - Employment by occupation
 - Economic inactivity
 - Qualifications
 - Earnings by residence
 - Out-of-work benefits
 - Jobs: total jobs/employee jobs
 - Job-center plus vacancies
 - Local enterprise
- Registering for NOMIS is optional and free.
- Following analysis options are available from the web based portal,
 - Time series (possible to download data)
 - Summary statistics and comparison:region/district/county/ward wise/parliamentary constituencies
 - After registering and payment of extra fee Business Register and Employment Survey data is also accessible
- A number of information sources are used to generate the information: Annual Population Survey; Annual Business Inquiry; Annual Survey of Hours and Earnings; VAT Registrations; Data from Office of National Statistics
- For further information about the NOIMS visit <http://www.nomisweb.co.uk/>

8. State of California, United States of America

- The LMIA is managed by State of California Employment Development Department which is part of Labour and Workforce Development Agency of the Executive Branch of the State of California.
- The user interface is in the form of a web-based portal that segregates LMI into four broad categories
 - Top statistics (monthly)
 - Unemployment rate
 - Total labour force
 - Number of employed

⁶ <http://www.statssa.gov.za/keyindicators/keyindicators.asp>

- Number of unemployed
 - Number of non-farm jobs
 - Number of mass layoffs
 - Number of unemployment insurance claims
 - LMI by subject
 - Economic indicators
 - Industries
 - Occupations
 - Population and census
 - Projections of employment
 - Unemployment and labour force
 - Wages
 - LMI by customers
 - Job seekers
 - Business / employers
 - Economic developers
 - Educators / trainers
 - Workforce partners
 - Researchers
 - LMI by geography
 - California
 - Counties
 - Metropolitan statistical areas
 - Cities and census designated areas
 - Local workforce investment areas
 - Other states
 - Whole country
- It makes available to its users publications such as
 - LMI e-Newsletter
 - California Manufacturing Jobs in Demand
 - California Labour Market Review
 - California Regional Bulletin
 - A Labour Day Briefing for California
 - Labour Market Information Fact Sheet
 - Labour Underutilization Trends in California, 2013
 - California Occupational Guides
- The information is available free of charge to all users. A nominal fee is charged for customised data/reports and services.
- Information/data flows from at least three main sources
 - California Employment Development Department
 - Labour Market Information Division
 - US Bureau of Labour Statistics
- Data gathering and collation follows standard classifications such as
 - North American Industry Classification System
 - Classification of Instruction Programmes
 - Standard Occupational Classification (SOC)
- For further information on the LMIA portal visit <http://www.labormarketinfo.edd.ca.gov/> and navigate to 'Labour Market Information' menu.

9. List of key references related to international practices of LMIA

- a. *Current Practices in Labour Market Information Systems Development For Human Resources Development Planning In Developed, Developing And Transition Economies*, authored by Nicholas Mangozho and published by the International Labour Organisation in 2003 presents practices from ten countries: Canada, United Kingdom, Singapore, Philippines, India, Hungary, Ukraine, Jamaica, Bahrain and Zimbabwe
- b. *Concept Paper on Labour Market Information System: An Indian Perspective*, published in 2011 by The National Skill Development Corporation, New Delhi reviews the LMIA practices in the following countries/administrative regions: Australia; Canada; State of

- California, USA; Europe; State of Florida, USA; Jamaica; New York City, USA; State of Oregon, USA; United Kingdom and Singapore.
- c. *Labour Market Information Systems and Labour Migration Information in Six Developing Countries: The Challenge of Integration* published in 2011 International Organisation for Migration. This is a comparative study of best practices in Colombia, Costa Rica, Ghana, Nicaragua, Senegal and Tunisia related to collecting and sharing labour migration data for the improvement of the LMIS project.

Annexure 2: Summary of institutional structure, information sources and issues with the current system of LMIA in India

In this annexure a summary table of institutions (collecting demand and supply information); information/data sources of the institutions; specific data points related to the source; and specific issues related to the available information has been presented. In addition to the summary table it also highlights the overall issues with information flows and institutional arrangements related to the current system of LMIA.

The contents in this annexure have been drawn from two recently conducted studies by the ILO related to the current system of LMIA in India:

- Review of Sources and availability of Skill Development Data in India; and
- Review of the Model and Institutional Arrangements for Labour Market Information and Skills Anticipation in India.

Some additional institutions and information sources that were found to be important in the literature review but were not a part of the two ILO studies have also been included in this annexure. Likewise, institutions and information sources that were perceived as having less significance for the LMIA were not included in this annexure.

1. Demand of labour force from heavy industries; micro, small and medium enterprise and agriculture sector

	Institutions	Information/data sources	Specific data points	Specific issues with the information
1	Central Statistical Organisation	Economic Census	Employment in agriculture and non-agriculture on the basis of major activity	Does not follow National Classification of Occupation
2	Central Statistical Organisation	Annual Survey of Industries	Existing employment in heavy industries	Does not follow National Classification of Occupation
3	Employment Exchanges	In-house information system	Existing demand of the labour force	Data is not collated
4	Sector Skills Councils	Skills Gap Studies	Projected demand of labour for various sector	All SGS do not follow the same methodology
5	Ministry of Micro Small and Medium Enterprises	MSME Census	Existing and likely employment in micro, small and medium enterprise	Does not follow National Classification of Occupation
6	National Skills Development Corporation	Skills Gap Studies	Projected demand of labour force in the sector	All SGS do not follow the same methodology

2. Supply of trained labour force from TVET and skills development institutions; universities and secondary education

	Institutions	Information/data sources	Specific data points	Specific issues with the data source
1	All India Council for Technical Education	In-house information system	Students currently enrolled and completed TVET in polytechnic institutions	Data is not available in the public domain

2	Board of Apprenticeship Training (MHRD)	In-house information system	Students undergoing and completed apprenticeships training	Data is not available in the public domain
3	Central government ministries/departments other than AICTE, DGET	In-house information system	Students currently enrolled and completed TVET and skills development training under different government schemes	Data is not available in the public domain
4	Directorate General of Employment and Training	In-house information system	Students currently enrolled and completed TVET in ITIs	Data is not available in the public domain
5	Funding organisations that fund skills development training in voluntary sector	In-house information system	Students currently enrolled and completed TVET and skills development training under different projects	Data is not available in the public domain
6	Institute of Applied Manpower Research	National Technical Management Information System	Post Graduates, graduates, post diploma holders and diploma holders in engineering, management, pharmacy and hotel management and catering technology	None
7	Central Statistical Organisation	National Sample Survey	Labour force participation; employment and unemployment	Detailed data is not collected on the type of occupation of the labour force
8	National Skill Development Corporation	Skills Gap Studies	Students currently enrolled and completed TVET and skills development training under different public-partnership scheme	Data not available in the public domain
9	Ministry of Home Affairs	Population Census	people under different age groups; literacy levels	The census is conducted once in 10 years
10	Private sector companies and industry associations	In-house information system	Students currently enrolled and completed TVET and skills development training under different public-partnership scheme	Data not available in the public domain
11	State government ministries	In-house information system	Students currently enrolled and completed TVET and skills development training under different state government schemes	Data not available in the public domain
12	Secondary school boards	In-house information system	Students currently enrolled and completed education in secondary standards (Std. 10 th and 12 th)	Data not available in the public domain
13	University Grants Commission	In-house information system	Students currently enrolled in various streams	Data of course completions is not collated in aggregate or disaggregated.

Annexure 3: Broad indicators identified in the ILO's 2011 study: Review of the Sources and Availability of Skill Development Data in India

Broad indicators relating to the supply of the trained and educated workers

1. General education
 - a. Number of youth in different age groups
 - b. Enrolments in general education, progression and graduation rates;
 - c. Graduations from the primary and secondary school and dropouts and their shares enrolled in further education including TVET and skills training establishments (public and private institutions including NGOs, ITIs, polytechnics, etc.)
2. TVET and skills training providers in public, private and voluntary sector; their numbers, location, annual enrolments, course graduates and learning outcomes of students; and types of trade and duration of courses
3. Trade-wise formal apprenticeship enrolments and graduations per year
4. Trade-wise occupational qualifications and employability of the recent graduates finishing education under different programmes
5. Trade-wise annual supply of labour force due to massive retrenchments and company closures
6. Trade-wise annual arrival of the skilled and educated workforce returning from overseas
7. Rates of employment; unemployment and underemployment of the workforce, where it exists

Broad indicators relating to the demand for trained and educated workers

1. Occupational and qualification structures of economic sectors (organised and if possible, unorganised sector) at the national and state levels
2. Occupational data on the annual demand for semi-skilled, skilled and highly skilled workers, and technicians for overseas employment
3. Annual local demand for skilled and semi-skilled workers and technicians due to demographic replacement needs (due to sickness, death, retirements, etc.); labour turnover; and retraining in new skills
4. Average demand for skilled and educated workforce for the new jobs created annually (emerging from new investments, company registrations, etc.) in both the organised and unorganised sectors
5. Other data used to forecast the demand for skills in different economic sectors.