

Labour market information and analysis systems

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10.1 Introduction

The identification of labour market issues in both developed and developing economies critically rests on the availability of data, information and analysis. Labour market information and analysis (LMIA) provides an essential basis for employment and labour policies, and informs the design, implementation, monitoring and evaluation of policies that are better focused and targeted. LMIA also contributes to a reduction in the transaction costs of labour markets as it helps overcome incomplete information of labour market agents.

Most countries are committed to the development of labour market information systems. However, particularly in developing economies, the functioning of LMIA systems, if such systems have been established at all, is hampered by various constraints, including the data limitations that have been repeatedly noted in previous chapters. Data limitations affect not only complex issues such as informality (Chapter 4) and employment protection (Chapter 8), but also labour market measures that are available on a monthly or quarterly basis in most developed economies, such as employment and unemployment indicators. Data limitations are related to other constraints in developing economies, including resource scarcity, limited analytical capacity and other structural factors. Furthermore, labour market institutions, including employers' and workers' organizations, are weak in many developing economies (Cazes and Verick, 2010), which hampers the development and use of mechanisms to feed information and analysis into decision-making. Such problems may lead to ill-informed policy formulation and inadequate monitoring, hindering efforts to achieve labour market and development objectives.

This chapter provides an overview of the issues involved in the establishment and development of LMIA systems. The focus is mostly on information and analysis of quantitative data (statistics), but part of the content is relevant to qualitative labour market data and information (e.g. laws and regulations, information on institutions) as well. The chapter starts with a conceptualization of LMIA systems, highlighting not only the importance of statistics and the indicators based on them, but also the need to establish or develop appropriate institutional arrangements that ensure the information and analysis being produced can be used (section 10.2). Section 10.3 discusses the analytical core of LMIA systems, sets of indicators that are used to monitor and analyse labour markets and, at times, to make labour market projections. Common sets of indicators are briefly reviewed, emphasizing the use, rationale and limitations of selected sets. Section 10.4 discusses the main steps in establishing LMIA systems, including the role of technical cooperation in this area.

10.2 Conceptualization of LMIA systems

Labour market information and analysis is often equated with the availability of labour statistics. Statistics are clearly important, as they constitute the basis of much information and analysis, but this section will discuss a broader conceptualization of LMIA systems. Such systems can be defined as networks of institutions (and persons) with agreed roles to produce and disseminate labour market information and analysis.

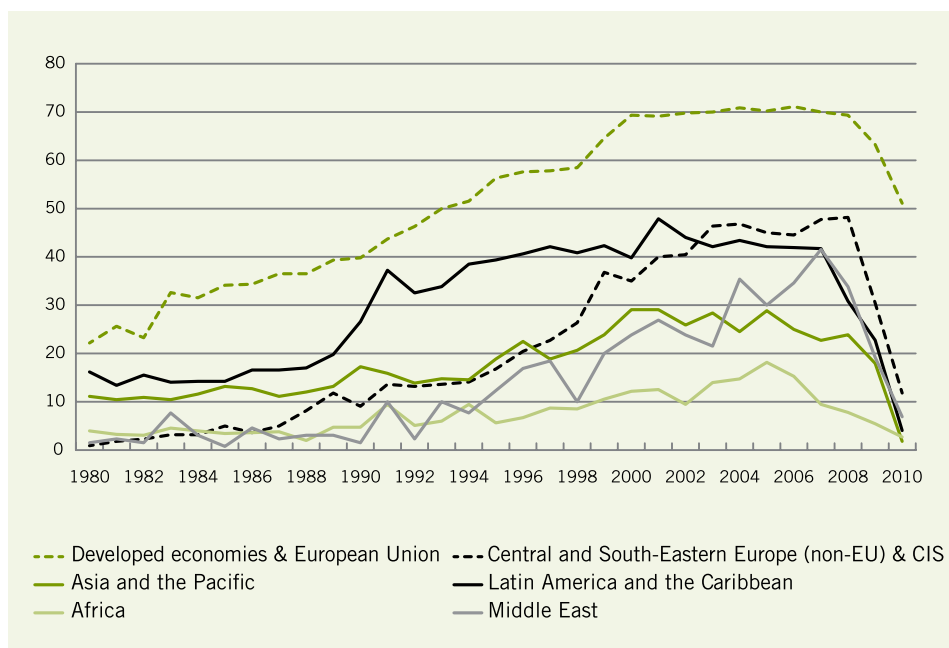
Although it is at times assumed that information and analysis are readily available and free of cost, they have to be produced or created and made available to relevant actors. These activities carry a substantial cost, not only in terms of resources needed for key data collection exercises, but also in terms of the capacity and skills to analyse data and produce information that can be used by policy-makers and other stakeholders. Given the public good nature of information, the government's strong role in LMIA has been accepted in most countries. As summarized by Goldfarb and Adams (1993, p. 1):

“No industrialized economy, however, depends solely on private markets for labour market information. It is costly to produce information on labour demand and supply in markets that are widely separated by geography and skill. Market failures arise due to the public good nature of much of this information. Once produced, it can be difficult to maintain proprietary rights to its use, which discourages its very production. Statistics on smaller markets may simply be unprofitable to collect. Lack of consistency in concepts and definitions used and methods of collection by private producers can impede comparability of data and the use of this information for social policy development. Finally, inequities may arise from rationing access to labour market information to those with ability to pay.”

Virtually all countries in the world have established publicly-funded statistical offices producing labour market information and analysis, as well as academic and research institutions that may undertake labour-related work. Further development of LMIA systems and government support depends on the function or purpose of such systems, but all systems have similar components as is set out in subsection 10.2.1.

Figure 10.1 illustrates the state of LMIA systems by region, using the availability of selected key labour market indicators as a proxy. This proxy reflects primarily the availability of data, but also the systematic storage of indicators in international repositories that are used to produce analysis. **Figure 10.1** suggests that LMIA systems are likely to be stronger in more developed regions and are particularly weak in many African countries.

Figure 10.1 Availability of selected labour market indicators by region, 1980–2010 (percentages)



Note: The figure shows the availability of ten indicators in the ILO's Key Indicators of the Labour Market database as a proportion of "full coverage" (meaning that each indicator would be available for each economy in each year). Data for the most recent years are not yet fully captured in international data repositories, which explains the downward trend towards the end of the period in all regions.

Source: Calculated based on ILO, 2011a.

10.2.1 Functions, components and levels

Three main functions of the LMIA system can be distinguished:

- (F1) The LMIA system is responsible for labour market analysis;
- (F2) The LMIA system is responsible for monitoring and reporting on employment and labour policies;
- (F3) The LMIA system provides a mechanism to exchange information or coordinate different actors and institutions that produce and utilize labour market information and analysis.

The first function (F1) is purely analytical and as such is usually being undertaken, at least to some extent, by academic and research institutions, which may or may not have a focus on labour markets. However, the main purpose of LMIA systems that have been established outside academia is the production of information and analysis for policy-makers and other labour market stakeholders.¹ For example, the functions of the European Employment Observatory are stated as follows:²

“The European Employment Observatory (EEO) contributes to the development of the European Employment Strategy (EES) through the provision of information, comparative research and evaluation on employment policies and labour market trends in [the countries covered by the EEO].”

Therefore it is important that institutional arrangements are established to make the information and analysis widely available to the target group and to provide opportunities for labour market stakeholders to influence the agenda of the LMIA system. The LMIA system can also be directly involved in monitoring and reporting on employment and labour policies (the second function, F2). If in addition to monitoring and reporting on policies the LMIA system is used to conduct policy analysis and evaluations, the system would combine functions F1 and F2.

Both at the international and the national levels, the institutional role of the LMIA system can be broadened to include a third function (F3), the exchange of information or coordination of the LMIA activities of labour market stakeholders, which include statistical agencies, research agencies and agencies involved in policy formulation and implementation including employers' and workers' organizations. This function may range from the dissemination of information on concepts, definitions and standards, to the allocation of resources regarding data collection or specific analytical activities (e.g. evaluations, econometric models).

Main components and levels

LMIA systems consist of three main components:

- (C1) Collection and compilation of data and information;
- (C2) Analytical capacity and tools;
- (C3) Institutional arrangements and networks.

¹ For more discussion on the functions of LMIA systems, see Sparreboom (2001).

² See <http://www.eu-employment-observatory.net/> [accessed 3 Oct. 2012].

With regard to component (C1), and given that LMIA systems should provide analyses of labour markets in their economic context, collection or compilation of data consists not only of data on labour markets, but also on the broader economy. For example, data on trade flows and remittances are indispensable for an analysis of the labour market effects on economic crises.

The main sources of labour statistics consist of:

- (S1) Household surveys and population censuses;
- (S2) Establishment surveys;
- (S3) Administrative records.

Labour force surveys can be designed to cover virtually the entire population of a country, all sectors of the economy and all categories of workers, including own-account workers, contributing family workers and persons engaged in casual work or marginal economic activity. For this reason, household-based labour force surveys offer a unique advantage to obtain information on the labour market of a country and its structure. Other sources, such as population censuses, multi-purpose household surveys, establishment surveys, or administrative records (e.g. employment service records), differ in scope, coverage, units of measurement or methods of data collection. Each source has advantages and limitations in terms of the cost, quality and type of information gained. For example, establishment surveys typically have poor coverage of very small or unregistered businesses but are a more reliable source on wages and earnings. Similarly, administrative records provide a low-cost source of labour market information, but this information is limited by the purpose of the records, which may be different from that of an analyst or policy-maker. Therefore, effective LMIA systems draw on all sources.

LMIA systems embody the analytical capacity to identify and interpret labour market developments and trends, and to relate these trends to policies or other factors influencing labour market outcomes (C2). In terms of analytical capacity, LMIA systems can be developed at three levels. The core or first-level LMIA system consists of monitoring or tracking a set of indicators. Activities that need to be undertaken to establish a core LMIA system, such as the compilation of data, the establishment of appropriate databases, the production of regular labour market reports and the dissemination of information and analysis, can be carried out by an LMIA unit in a government department, in collaboration with labour market stakeholders, statistical agencies and research institutions. The unit should be staffed by labour market

analysts, statisticians and staff dealing with the processing of data and information technology.

The monitoring of indicators not only results in signals on the state of the labour market, but also provides a starting point for a range of additional analytical activities and studies, focusing on relationships in the labour market and between the labour market and the broader economy (second-level LMIA system). The analysis of relationships involves the use of quantitative methods (e.g. regression analysis), but may also employ qualitative methods (e.g. stakeholder-driven forums).³ In all cases, analytical activities will draw on or will need to be complemented by a first-level LMIA system tracking labour market indicators.

The third and most advanced level of LMIA systems involves the use of comprehensive econometric models, building on second-level analysis. Econometric models represent an analytical approach that allows for the generation of economy-wide, detailed and consistent projections of labour market developments. Econometric models, however, are demanding in terms of all components of LMIA systems (C1, C2 and C3) and are therefore costly to develop and maintain. In many cases, the development of models is undertaken by specialized research institutes, while LMIA units may be involved in running existing models and/or use results from modelling exercises for policy development purposes.

Institutional arrangements (C3) enable labour market actors to use information and analysis, and facilitate the creation of networks of users and producers, including government departments, employers' and workers' organizations, statistical agencies and research organizations. These arrangements are needed for the LMIA system to effectively perform its analytical function, for example by providing access to data (from statistical agencies, administrative bodies and other entities), but also to allow for the effective dissemination of information and analysis. An example of a straightforward institutional arrangement is the establishment of an LMIA Advisory Panel joining policy-makers, the statistical agency and workers' and employers' organizations.

A strong role of the LMIA system with regard to policies (F2) and coordination (F3) necessitates institutional linkages between the system and the process of formulating and monitoring national socio-economic plans, including national employment policies, poverty reduction strategies and other development plans. This may also involve the selection of a set of indicators that are monitored to track progress in the achievement of labour market objectives, or the setting of targets for certain

³ For example, employers' and workers' organizations can be brought together to discuss the causes and consequences of major changes in the labour market.

indicators. Institutional arrangements could also encompass institutions involved in the implementation of policies.

10.2.2 Country examples⁴

Pakistan

Over the years, Pakistan made considerable efforts to monitor labour markets and human resource development, often with international support through various projects that covered not only data collection, but also labour market analysis and capacity development. Nevertheless, a number of challenges persisted, in particular concerning the analysis of labour market information and vis-à-vis policy development in general, and skills development policies in particular.

Therefore, the Ministry of Labour and Manpower (MOLM), in collaboration with the ILO and the United Nations Development Programme, started a project on the development of labour market information and analysis. A new Labour Market Information and Analysis Unit was established in the MOLM in the second half of 2006, which constituted the heart of an LMIA system, aiming to provide up-to-date and timely information and analysis to inform decent work and other policies. For this purpose, the LMIA Unit was staffed with a team of junior professionals working on information system development and policy analysis in the employment and labour field. The Unit received both on-the-job and off-the-job training on topics such as labour market analysis and the use of general and specific software for statistical analysis and data management.

Institutional arrangements of the LMIA system in Pakistan started from the formal and informal linkages of the LMIA Unit as it was located in the organizational set up of the MOLM. In addition, an Advisory Panel was established, which brought together labour market stakeholders and social partners. The Advisory Panel reviewed and planned the activities and outputs of the Unit on a regular basis and fostered linkages between data collection, analysis and policy development at the national and provincial levels. In this way the Panel ensured continued policy relevance, ownership and sustainability of the Unit.

The LMIA system developed a national LMIA database containing a limited number of key labour market indicators drawn from the ILO's database on Key Indicators of the Labour Market. These indicators were produced, compiled and analysed in

⁴ Country examples are based on Sparreboom and Powell (2009) and updates.

accordance with international standards and reflect best practice in LMIA. Over time, this set of indicators was expanded in response to the demand for information and the capacity of the LMIA Unit to maintain and update the database. Since the start of the LMIA Unit, five reports as well as a series of analytical briefs were produced (Pakistan Ministry of Labour and Manpower, 2007–10). The reports focused on various topics including decent work, skills, the position of women and the position of youth in the labour market in Pakistan. The reports laid a foundation for further analytical work on the same topics,⁵ and also for an assessment of the labour market impact of the floods that ravaged Pakistan in recent years.⁶

South Africa

South Africa presents a case of LMIA development in the context of skills policies that constitute a central policy strand following the democratic transition in the early 1990s. Two National Skills Development Strategies (NSDS I, 2001–05, and NSDS II, 2005–10) have been developed, while the centrality of education and skills in South Africa's policies was reinforced in more recent years by the Accelerated and Shared Growth Initiative – South Africa, as well as the Joint Initiative for Priority Skills Acquisition. The development and implementation of national skills development strategies have been accompanied by efforts to build adequate skills development information systems.

Central in the institutional set up to inform skills development policies was the establishment of the Skills Development Planning Unit (SDPU) in the Department of Labour (DOL). According to the Skills Development Act, the functions of the SDPU are:⁷

- (a) to research and analyse the labour market in order to determine skills development needs for:
 - (i) South Africa as a whole;
 - (ii) each sector of the economy;
 - (iii) organs of State;

⁵ See, for example, Sparreboom and Shahnaz (2007).

⁶ See, for example, http://www.ilo.org/islamabad/info/public/pr/WCMS_144470/lang-en/index.htm.

⁷ Act No. 97 of 1998, Chapter 6, section 22.

- (b) to assist in the formulation of:
- (i) the national skills development strategy;
 - (ii) sector skills development plans;
- (c) to provide information on skills to:
- (i) the Minister;
 - (ii) the National Skills Authority;
 - (iii) Sector Education and Training Authorities;
 - (iv) education and training providers;
 - (v) organs of State.

In line with the functions of LMIA systems set out previously, the SDPU performed an analytical function regarding labour markets and skills development, and has been pivotal in monitoring the skills strategies, in particular the “success indicators” that were part of these strategies. Measuring progress in the implementation of strategies through success indicators requires administrative and other labour market information. The SDPU therefore liaises with institutions such as Sector Education and Training Authorities to capture administrative data on the implementation of skills policies and programmes, as well as with Statistics South Africa to obtain information from labour force surveys and establishment surveys. In this way, the SDPU combines sources (S1), (S2) and (S3).

In addition, the SDPU undertook or commissioned studies and evaluations on a number of topics in accordance with the requirements of the NSDS, including the productivity effects of skills development, industry-training linkages and tracer studies, which track the labour market experience of trainees after completion of their training. An assessment was also made of the potential use of econometric, multisectoral models to inform skills policies. The results of this assessment showed that there is modelling capacity in South Africa, and econometric models could become important (together with other methods) to inform future skills needs. It was, however, also noted that improvement in data quality is needed (Wilson, Woolard and Lee, 2004).

Much of the work of the SDPU is reflected in annual implementation reports, annual reports on the “state of skills” in South Africa and other publications that are available on the website of the DOL.⁸ Although a successful skills development system is not the same as a successful skills development information system, the two are

⁸ See <http://www.labour.gov.za/>.

clearly interlinked. Without proper information on which to base policy decisions and adjustments, it is not possible to effectively implement skills strategies and achieve targets. According to both the research of the DOL and independently conducted research, the South African system has met a range of targets, and there was evidence of growth in training activity following the introduction of the new skills development system (McGrath and Akoojee, 2007). Monitoring of the South African skills development strategies draws on various methods,⁹ and an institutional structure has been created in which actors and stakeholders collaborate in a network to monitor progress as well as to provide feedback into the skills development system (Sparreboom, 2004). The emphasis on the monitoring of results as well as feedback to policies is reflected in, for example, the 2008 Budget Vote Speech by the Minister of Labour, which made extensive references to the evaluations and research conducted by the DOL and others.¹⁰

Ireland

The Republic of Ireland has a long history of labour market planning and development of LMIA systems, in particular focusing on the support to human resource and skills development in strategic sectors, and has developed sophisticated institutional arrangements to produce information and analysis. A key institutional position is taken by the so-called Expert Group on Future Skills Needs (EGFSN), which was established to advise the Irish Government on current and future skills needs of the economy, as well as on other labour market issues that impact on Ireland's enterprise and employment growth.¹¹ It has a central role in ensuring that labour market needs for skilled workers are anticipated and met, and reports directly to the Ministry for Enterprise, Trade and Employment and the Ministry for Education and Science.

Membership of the EGFSN is tripartite and the involvement of the Ministry for Education and Science, the Ministry for Enterprise, Trade and Employment and the Ministry for Finance helps ensure that policies will incorporate measures that support labour market adjustments in accordance with the needs of the economy. The participation of development agencies and employment authorities means that the skill needs of development projects can be quickly communicated to the relevant training authorities. Representation from private companies and employers ensures

⁹ See Sparreboom and Powell (2009, table 1) for a summary of methods, most of which have been used in South Africa.

¹⁰ See "Budget Vote Speech" at <http://www.labour.gov.za/media-desk/speeches/2008/budget-vote-speech-celebrating-ten-years-the-fruits-of-our-labour/> [accessed 4 Oct. 2012].

¹¹ See <http://www.skillsireland.ie/> [accessed 4 Oct. 2012].

that a commercial insight is taken on board, and trade union representation provides an opportunity for workers' views to be taken into account.

The EGFSN obtains its information from several sources, including the Economic and Social Research Institute (ESRI), FÁS – the Irish Training and Employment Authority, industry training committees and the Higher Education Authority. Each of these organizations provides complementary inputs. The ESRI is a government-subsidized private research institute, whose prime function is to undertake economic forecasting for the EGFSN. The second source of information is derived from FÁS, which provides a regionally-integrated and locally-based service for jobseekers, employers and community groups through a network of employment service offices and training centres. In addition, FÁS provides a range of business services to small, medium and large businesses, both indigenous and foreign owned. For most sectors there are industry training committees, consisting of representatives of both employers and unions, which advise on sector training needs. A final partner in the process of gathering information is the Higher Education Authority, which is charged with reviewing the need for higher education and assisting in the coordination of state investment in higher education.

All of the information produced by the EGFSN is discussed at Business Education and Training Forums, which recommend approaches for implementation. Subsequently, these recommendations are passed onto the skills implementation group. Membership of this group consists of public civil servants and the chairman of the EGFSN.

EGFSN's role is to provide policy-makers with the latest labour market trends and shifts in skills demand to ensure that labour market needs will be considered when undertaking policy adjustments, and a series of reports on labour market development are published and disseminated on a quarterly and annual basis. Much of the work undertaken by the EGFSN is analytical and involves the use of labour market analysis based on tracking indicators, econometric modelling, dedicated and sector studies, administrative data and stakeholder-driven forums.

10.2.3 Lessons from country examples

When considering the establishment of a new LMIA system, or the upgrade of an existing system, it is important to keep in mind that LMIA systems may perform various functions and serve various target groups and may employ an array of methods, as demonstrated in the previous section. In general, LMIA systems become more effective if data availability and quality improves across all three sources (S1, S2 and

S3), and analytical capacity in the system advances, often in accordance with the level of development of a country and the resources that are made available to the LMIA system. This process can be supported by international agencies in terms of resources and technical assistance, as happened to varying degrees in all three country examples discussed in this chapter, but international support is no substitute for the need for sustained investment in all components of the system at the national level.

The functions and progressive development of LMIA systems are evident in Pakistan and South Africa. In the former country, the LMIA system was established focusing on the analytical function (F1), while in the latter the information system was designed with a strong focus on monitoring and reporting on policies (F2) alongside an analytical function.¹² In both countries, the LMIA system developed from a core system (“monitoring indicators”) to second-level analytical activities (“relationships”) and, in the case of South Africa, third-level activities (“econometric models”). Institutional arrangements become more complex if activities of LMIA systems are outsourced to specialized agencies. In many developed economies, including Ireland, LMIA activities are linked in a well-coordinated web of LMIA institutions that has been built up over many years.

Function(s), target group(s), analytical methods, data availability and the economic and policy context all shape the activities that are carried out in the LMIA system, the institutional arrangements that are most appropriate, the location of the LMIA Unit that constitutes the heart of the system, as well as the organizational structure and staffing of the Unit. With regard to location, organization and staffing, two opposite cases are the establishment of a completely new unit, or new institution, with newly recruited staff on the one hand, and building on existing institutional capacity in a government department or research institution on the other. Both cases have obvious advantages and disadvantages in terms of planning, costs and resources. In all cases the establishment of a fully functional LMIA system should be expected to take at least several years.

One important issue to take into account when considering the establishment of a new institution is the role of the LMIA system in national policy processes, which can be illustrated with the National Employment and Vocational Training Observatory (ONEF) in Burkina Faso. D’Achon and Pagès (2011) note that ONEF was set up as a new institution, partly in view of the weakness of government departments responsible for labour market monitoring. However, in practice the functioning of

¹² If the analytical function is absent, an LMIA system exclusively focusing on monitoring and reporting of policies becomes similar to a management information system, such as an education management information system (EMIS, see e.g. Powell, 2006).

ONEF was hampered by lack of clarity about the mandate, status and budget of the institution, as it is neither an independent research institution nor an integrated part of the national policy machinery. This experience underlines the need for agreement on the functions of LMIA systems, and the importance of taking these functions into account for the development of appropriate institutional arrangements.

10.3 Indicators

Labour market information and analysis systems build on sets of indicators that are used to monitor the labour market in its economic context. This section discusses selected sets, with particular emphasis on the employment indicators used in the context of the Millennium Development Goals (MDGs). The MDG employment indicators provide a framework for labour market analysis, which can be used as a cornerstone of the LMIA system. These indicators are also used for employment projections, which is the topic of the final part of the section.

10.3.1 Sets of labour market indicators

As discussed above, at a minimum, LMIA systems track a set of indicators, which constitute the basis for the development of more advanced systems. A widely used set of indicators is the ILO's *Key Indicators of the Labour Market* (KILM). The KILM was designed to: (1) present a core set of labour market indicators; and (2) improve the availability of the indicators to monitor new employment trends. The initial set of indicators was selected in consultation with the OECD and national representatives from Ministries of Labour and statistical offices, based on the following criteria: (a) conceptual relevance; (b) data availability; and (c) relative comparability across countries and regions. The design and presentation of the core indicators has evolved since the first edition. **Box 10.1** shows the set in the seventh edition, which consists of 18 indicators (grouped under seven headings). The box also shows the major classifications and breakdowns that are used. The breakdown by sex is not shown but is in principle available for all indicators (for more details see ILO, 2011a).¹³

The information in the KILM is compiled using international repositories of labour statistics, including those maintained by the ILO's Department of Statistics and other

¹³ For some indicators, such as labour productivity, information needed to calculate the indicator separately for men and women is lacking for all countries.

international agencies, as well as national sources.¹⁴ Several repositories are also available at the regional level.¹⁵ In addition, the KILM includes estimates produced by the ILO for selected indicators, such as labour force participation rates, employment-to-population rates and inactivity rates. ILO estimates are also used to generate regional and global aggregates in the presence of missing country-reported indicators or data. Global and regional indicators are available for more than half of the set of key indicators.¹⁶

Box 10.1 Key indicators of the labour market

Participation in the world of work

KILM 1. Labour force participation rate (by age group)

Employment indicators

KILM 2. Employment-to-population ratio (by age group)

KILM 3. Employment by status (ICSE-1993)

KILM 4. Employment by sector (ISIC-2008, ISIC-1990 and ISIC-1968)

KILM 5. Employment by occupation (ISCO-08, ISCO-88 and ISCO-68)

KILM 6. Part-time workers (by age group)

KILM 7. Hours of work (by age group)

KILM 8. Employment in the informal economy

Unemployment, underemployment and inactivity indicators

KILM 9. Unemployment

KILM 10. Youth unemployment

KILM 11. Long-term unemployment (by age group)

KILM 12. Time-related underemployment (by age group)

KILM 13. Inactivity (by age group)

¹⁴ See the website of the ILO Department of Statistics for more information on sources of labour statistics, available at <http://www.ilo.org/global/statistics-and-databases/lang--en/index.htm>.

¹⁵ See ILO's Bureau of Library and Information Services for both global and regional repositories of labour statistics, available at <http://www.ilo.org/public/english/support/lib/resource/subject/labourstat.htm>.

¹⁶ For methodological information, see http://www.ilo.org/empelm/projects/WCMS_114246/lang--en/index.htm; global and regional aggregates are not available for KILM 5-8, 11, 12, 14 and 16.

Educational attainment and illiteracy indicator

KILM 14. Educational attainment and illiteracy (ISCED-97 and ISCED-76, by age group)

Wage and compensation costs indicators

KILM 15. Average monthly wages

KILM 16. Hourly compensation costs

Labour productivity indicator

KILM 17. Labour productivity

Poverty, income distribution and the working poor indicator

KILM 18. Poverty, income distribution and the working poor

Classifications used:

ICSE International Classification by Status in Employment

ISIC International Standard Industrial Classification of all Economic Activities

ISCO International Standard Classification of Occupations

ISCED International Standard Classification of Education

Source: ILO, 2011a; available online at www.ilo.org/trends.

A comprehensive set of decent work indicators that is being discussed in the ILO covers not only access to full and productive employment, but also rights at work, social protection and social dialogue. This set consists of 18 “main decent work indicators” and 25 “additional decent work indicators” grouped in accordance with substantive elements of the Decent Work Agenda (ILO, 1999), as well as indicators of the economic and social context of decent work.¹⁷ Furthermore, apart from statistical indicators, the set includes 19 legal framework indicators, which provide qualitative information on rights at work and other aspects of the legal framework for decent work (ILO, 2008). Decent work country profiles based on this set are available for a series of pilot countries.¹⁸

¹⁷ The preliminary list of decent work indicators also contains indicators on which more developmental work is needed.

¹⁸ See <http://www.ilo.org/integration/themes/mdw/lang--en/index.htm> for a list of country profiles.

The decent work country profiles, which are mostly based on national sources, reflect a level of data disaggregation that is often not available for indicators housed in international repositories or databases. For example, the profile for Brazil shows a series of indicators on employment opportunities not only broken down by sex but also by ethnic group and rural/urban area (ILO, 2009b, table 1). Such disaggregations are not available in the KILM which aims, to the extent possible, to provide indicators that are comparable across countries.¹⁹

10.3.2 MDG employment indicators as a framework for labour market analysis

World leaders adopted the UN Millennium Declaration at the Millennium Summit in September 2000. The Declaration has been translated into a framework of goals, targets and indicators that aims to reduce poverty and hunger and to tackle ill-health, gender inequality, lack of education, lack of access to clean water and environmental degradation. The eight Millennium Development Goals build on agreements made by all countries at the United Nations in the 1990s.

In 2008, a new target on decent work was included under the first Millennium Development Goal on the eradication of poverty and hunger. MDG1 currently consists of three targets, the second of which, Target 1B, focuses on achieving “full and productive employment and decent work for all, including women and young people”. This target recognizes that, for the large majority of people, labour is their main asset, and overcoming poverty and hunger requires opportunities for decent work. Target 1B is monitored using four employment indicators, namely: (1) growth rate of GDP per person employed (growth rate of labour productivity); (2) employment-to-population ratio (EPR); (3) proportion of employed people living below \$1.25 (at purchasing power parity, PPP) per day (working poverty rate); and (4) proportion of own-account and contributing family workers in total employment (vulnerable employment rate). In addition, the initial set of MDG indicators adopted in 2000 included one employment indicator under the third goal on gender equality (share of women in wage employment in the non-agricultural sector). Since their introduction, the MDG employment indicators have been monitored and reported upon in global and regional MDG reports,²⁰ and the ILO has made efforts to ensure that the indica-

¹⁹ ILO (2011a, Section 1C) provides an example of an analysis based on a set of Key Indicators of the Labour Market alongside similar indicators that are not part of the KILM database.

²⁰ See United Nations (2011) and the full list of 8 goals, 21 targets and 60 indicators, as well as the database, available at <http://mdgs.un.org/unsd/mdg/Default.aspx>.

tors are used in labour market monitoring systems, including through publications discussing individual indicators and their role in labour market analysis (see e.g. ILO, 2009a, Section 1C).

It is important to realize that the selection and adoption of MDG indicators have only in part been based on technical considerations. Labour market indicators provide complementary information, and there are seldom reasons to exclude certain indicators, apart from capacity constraints or data availability concerns. Consequently, the selection of indicators reflects technical considerations as much as consultations and dialogue. Furthermore, given the number of millennium goals and indicators, the number of employment indicators is necessarily limited. In other words, the MDG employment indicators do not replace, and were never intended to replace, comprehensive sets of indicators, such as the set of decent work indicators.²¹

Several points concerning the MDG employment indicators merit emphasis in the context of the development of LMIA systems, primarily because as a set, and despite their shortcomings (see below), these indicators provide a powerful framework for labour market analysis in developing economies. Labour productivity provides a starting point to assess the extent to which an economy can generate and sustain decent employment opportunities. The indicator reflects the connection between the broader economy and the labour market, and investigation of this connection can shed light on issues such as limitations of productivity gains to certain sectors or labour market segments, and the translation of these gains into better employment conditions. The remaining three indicators under MDG Target 1B provide key measures of labour market performance. The employment-to-population ratio captures the volume of employment, while both the vulnerable employment rate and the working poverty rate provide information on the quality of employment.

Shortcomings of the indicators relate to the interpretation of the information they convey, which is not always straightforward. Contrary to the growth rate of labour productivity, for which higher values generally reflect economic progress and development (taking the issues mentioned above into account), a rise in the employment-to-population ratio does not always signify an improvement. Particularly in developing countries, the volume of employment as such is usually not the main labour market issue, as relatively few people can afford not to work at all. Consequently, poorer countries typically have relatively high employment-to-population ratios, unless women or other large population groups face strong barriers in accessing labour markets, which would depress the level of the national EPR.

²¹ The four MDG Target 1B employment indicators are also part of the set of decent work indicators.

In general, male EPRs tend to decrease as the level of development rises, often driven by the increasing enrolment in education of young people, among other factors. The development of female EPRs is more complex, and depends on the extent to which women can benefit from growing employment opportunities in the face of (often slowly changing) social and cultural barriers to labour market access, the increase in enrolment of young women in education and changes in the division of non-market work between the sexes. Breakdowns by sex and age group are therefore essential for meaningful monitoring of national EPRs and analysis of developments over time.²²

The inclusion of the EPR as an MDG employment indicator resulted in the exclusion of other measures of the volume of employment, such as the labour force participation rate and the unemployment rate. These measures are not less important than the EPR, but the adoption of the EPR contributes to a better understanding of labour markets in that unemployment is not the single most important indicator in developing economies. This does not mean that the unemployment rate in a developing economy is necessarily lower than in a developed economy, but it does underline the need to look beyond unemployment.

The fact that few people in developing economies can afford not to work is reflected in the poor quality of much of employment and the coexistence of a productive or formal segment and a less productive non-formal segment. This dualism in the labour market is captured, to an important extent, by the distinction between vulnerable and non-vulnerable employment as defined on the basis of status in employment. Large shares of own-account workers and contributing family workers indicate widespread informal work arrangements, whereby workers typically lack adequate social protection and social dialogue mechanisms. Nevertheless, the distinction between vulnerable and non-vulnerable does not fully reflect dualism in the sense mentioned before. Some own-account workers may not be vulnerable (for example highly-skilled professional own-account workers) and some workers in wage employment may actually be vulnerable (for example casual wage workers). It is therefore important to examine vulnerable employment in conjunction with other labour market information, such as data that are available on employment in the informal economy.²³

The concept of working poverty is less ambiguous than that of vulnerable employment. The working poor are defined as employed persons living in households in which per capita consumption is below \$1.25 (PPP) per day. Working poverty therefore

²² See Elder (2011, table 3.3) for guidelines for monitoring national EPRs and the design of policy responses.

²³ See Chapter 4 for a discussion on informality.

gives an indication of the lack of decent work: if a person's work does not provide sufficient income to lift them and their family out of poverty, then this work does not qualify as decent work in terms of income (which is an important determinant of consumption), and it is likely that it falls short in other dimensions of decent work as well. Nevertheless, given that poverty status is conventionally determined on the basis of household consumption, the concept of working poverty is not as clear-cut as would be desirable. In the MDG framework, it is possible that two families, each with one breadwinner, who perform similar jobs and receive similar income, are classified differently in terms of (working) poverty status. Reasons include possible differences in the size of the family (number of dependents), household savings and (private or public) transfers which affect household consumption. In other words, because the MDG indicator links labour market status with poverty status (at the household level), it loses some of the information about jobs in favour of information regarding workers and their families.

Additional methods to assess the income component of decent work would therefore be desirable. For example, the median household size could be considered instead of the actual household size to make such an assessment (see D'Achon and Pagès, 2011, for an example of this methodology), and/or income from work could be used instead of (household) consumption. In the context of international monitoring of the MDGs, this is more problematic as such alternatives would typically break the conceptual link between Target 1A and 1B.²⁴ The result could be that some jobs would be considered decent work (at least with regard to income), while the worker (and their family) would be classified as extremely poor on the basis of conventional poverty measurements (or the other way around). This would certainly create confusion and therefore reduce the role of the MDG framework as a tool for development.

The MDG framework has helped to raise consciousness about development issues in general and (working) poverty in particular. The framework has also played an important role at both the international and the national levels in shaping development strategies and donor support, not least with regard to statistical and analytical capacity building. In this context, the availability of internationally comparable indicators as well as regional aggregates has facilitated the discussion of employment issues. Nevertheless, this brief review of the MDG employment indicators highlights the

²⁴ MDG Target 1A is monitored using three indicators, namely: (1) proportion of population below \$1.25 (PPP) per day; (2) poverty gap ratio (the mean shortfall of the total population from the poverty line, expressed as a percentage of the poverty line); and (3) share of poorest quintile in national consumption. For international monitoring of the MDG indicators, the measurement of working poverty under Target 1B starts from the measurement of poverty under 1A, and thereafter takes labour market status into account.

need to complement the indicators with additional labour market information, to the extent that such information is available or can be generated.²⁵ These considerations will play a role in the discussion on the future of the MDG framework after 2015 given that, although some of the targets will have been achieved, the goals will remain relevant.

10.3.3 Employment targets and projections

There is a growing interest in the use of (quantitative) employment targets as part of development and labour market strategies. Such targets may be formulated with reference to indicators from the sets discussed before (KILM, decent work indicators and MDG employment indicators). For example, the European Union uses the employment-to-population ratio to set employment targets. In developing economies, the MDG employment indicators are particularly relevant, because the MDG framework already includes targets, which can be used to formulate objectives with respect to both the quantity and the quality of employment.

Monitoring strategies and, in particular, the achievement of targets presuppose the availability of an effective LMIA system, and the methodology that can be used is linked to the level of development of the system. Starting from a first-level LMIA system including the MDG employment indicators, such a system would allow for the extrapolation of employment trends. For example, a linear extrapolation of the EPR in combination with population projections, which are available from national and international sources for virtually all countries, can be used to project the volume of employment (the number of employed persons) by 2015 (the target date of the MDGs). Alternatively, the volume of employment can be projected based on national or international projections of the economically active population in combination with an assumed (or target-) unemployment rate to project the volume of employment.

To take the quality of employment into account, projections of the volume of employment can be combined with a target for the working poverty rate to project the number of workers that are living above the poverty line. Similar to MDG Target 1A on poverty reduction, a halving of the working poverty rate could be targeted

²⁵ In general, this will be the case if indicators such as the employment-to-population rate and the vulnerable employment rate have been calculated on the basis of labour force surveys. Such surveys allow for many possibilities for cross-tabulations and disaggregations, which are often essential for a fuller understanding of the labour market.

by 2015.²⁶ Such an approach can be enhanced to take the linkages between the labour market and the economic environment into account, and to produce a targeted growth rate of GDP that would allow for the achievement of the working poverty target.²⁷ In terms of LMIA system development, this approach points at the move to a second-level LMIA system.

As noted in section 10.2, the next step is a third-level LMIA system which uses econometric models to project employment and to analyse progress in the achievement of employment targets. Such models allow for a comprehensive analysis of the labour market in its broader economic context, including the effects of economic policies and exogenous shocks. For example, the ILO has assisted several countries in preparing employment projections using interindustry macroeconomic models developed by the Inforum group at the University of Maryland.²⁸ These models build up macroeconomic totals from industry details and use an input–output matrix at their core. The models are particularly suited to analyse issues such as changes in the occupational structure of employment, the impact of a decline in foreign direct investment on the employment level and sectoral employment distribution, or the potential labour market impacts of decreased government spending and austerity measures. Because the models explicitly account for the interindustry linkages within each economy, they can be used to analyse the impact that increased demand for the product of one industry has on other industries (spillover effects in terms of output growth and/or employment growth). They are therefore particularly useful in assessing and developing industrial policy.

It is important to keep in mind that this type of interindustry macroeconomic model is not an economic forecasting model per se, and therefore the models are not designed to project GDP, but rather employment. Each set of employment projections is based on a specific macroeconomic outlook; when this outlook changes, then so do the projections. Although the models have been developed with a view to a range of economic and labour market issues, they allow for an analysis of most of the MDG employment indicators, and can be extended to include all MDG employment indicators (see Viet Nam Ministry of Labour, Invalids and Social Affairs, 2011). The flexibility of the approach of these models, even in a context of limited data availability, makes them relevant for developed and developing economies alike, and also makes

²⁶ See Buberwa and Matsumoto (2009) for an example of this approach in the United Republic of Tanzania.

²⁷ See Campbell (2011) for an example of this approach in Nepal.

²⁸ The Inforum group specializes in the development of econometric models and has developed interindustry models for over 20 years. For more information, see <http://www.inforum.umd.edu/>.

them a useful tool in the development of the LMIA system itself (see **box 10.2**). At a minimum, the interindustry macroeconomic models require labour force survey data for as many years as possible, an input–output table for at least one recent year, and national accounts data by expenditure category and by industry. More extensive data allow for more advanced models, which can depict output and employment more accurately and with more detail.

Box 10.2 Employment projection models as LMIA tools

Employment projection models (EPMs) that have been developed for Mongolia, the Philippines and Viet Nam track economic and social development over time in these countries on an annual basis. That is, time paths for both exogenous and endogenous variables are determined year-by-year, both over historical periods and forecast horizons (see Meade, 2010). The models are therefore useful tools for the development of LMIA systems, which also build on tracking a set of indicators over time. EPMs are particularly useful as analytical tools for examining linkages between economic variables and labour market outcomes.

The EPM activities in the three countries resulted in valuable lessons on the development of LMIA systems. For example, labour departments in developing countries do not always have the capacity – or rather sufficient confidence in their capacity – to take full ownership of the models, even after training workshops. The main reason is that the capacity building workshops that have been organized thus far have included a wide range of participants (from different government departments and areas of expertise, both analysts and policy-makers). Although this diversity made for interesting debates and discussions, it constrained the extent to which technical material could be covered. One solution being discussed for the Philippines is to offer a more extensive, module-based, long-distance training course for analysts on the use of the model (EI Achkar Hilal, 2011).

Interdepartmental cooperation is often a challenge for the work on EPMs. Required data falls under the jurisdiction of different departments that may be reluctant to share it, due to bureaucratic or political considerations. Furthermore, the question of which department should take ownership of the models at the national level may be contentious: on the one hand EPMs are LMIA tools and should be owned by labour departments but, on the other hand, they are very useful for strategic planning and preparation of national developmental plans and should be owned by the agency in charge of these functions (EI Achkar Hilal, 2011).

The three country-models produce time series on a range of economic and labour market variables, including employment by industry and by occupation. Nevertheless, many options to further develop the models exist with a view to deepening the analysis of particular issues. For example, structural change could be better captured

based on changing rather than constant input–output coefficients (if more than one input–output matrix is available). The models can also be extended to provide disaggregated industry level employment projections by age group and sex, based on historical trends. Finally, the relationships between the quality of employment and overall employment creation can be examined in more depth, and methods to analyse skills-mismatch and “green jobs” could be explored.

10.4 LMIA system development

It has been argued that LMIA systems consist of more than sets of indicators and statistics, and include institutional arrangements and analytical capacity at various levels to produce information and inform policy development. This concluding section discusses activities that can be undertaken to establish and/or develop LMIA systems. In view of the large number of factors that shape decisions regarding an LMIA system and that will subsequently influence or determine the effectiveness of the system once it has been established, much international experience underlines the need for consultations. The objective of consultations is to foster agreement among stakeholders on the functions, target groups, main activities, organization and resources of the LMIA system.

10.4.1 Information, capacity and institutional assessment

The three components of LMIA systems discussed in section 10.2 can be used as a technical framework for the consultative process, starting with an assessment of available data. Data assessments should in principle cover all three sources of labour statistics and include issues such as the geographical coverage, frequency and quality of available data. For analytical and policy purposes, time series of labour market data and indicators are of particular importance. Also important is the consistent use of statistical concepts and classifications.

Capacity assessments should cover the analytical capacity in the unit or organization that is or will be responsible for labour market analysis. But capacity among other stakeholders of the LMIA system is also important. As noted in the previous section, analytical work may draw on the expertise of specialized research and other institutions (see **box 10.2**).

An institutional assessment should focus on networks among producers of data and information, labour market analysts and users including policy-makers. It was noted

before that an LMIA system with a policy function should be institutionally linked to formulation and monitoring of strategies and policies. The assessment should therefore cover the need for labour market information and analysis in current policies, including indicators that are used for monitoring purposes.

Based on the consultative process and the assessments, proposals can be developed for the establishment or improvement of an LMIA system. Proposed activities may range from support for specific aspects (analysis) to comprehensive project development, including support for policy development. Once the activities have started, a progress assessment of the development of LMIA systems can be made for each of the three components.²⁹

10.4.2 Practical considerations

Information, capacity and institutional assessments as well as consultations constitute the basis for LMIA system development plans, which are country-specific. Nevertheless, some general considerations with regard to the establishment or improvement of LMIA systems can be suggested.

- The consultative process can be facilitated by the establishment of a task group on LMIA system development. The task group will help ensure stakeholder involvement at an early stage;
- The task group can work towards several concrete proposals:
 - A proposal outlining the functions, target group, planned analytical methods, sources of data and outputs of the LMIA system, software considerations (see **box 10.3**) as well as the institutional set-up of the system, taking existing arrangements into account;
 - A proposal for training and capacity building of the LMIA Unit;
 - A financial proposal; although initial funding may draw on donor resources for technical cooperation, long-run sustainability requires public funding;
- If donor funding is sought, the above proposals can constitute the basis for a project document. Such a document should be aligned with procedures for technical cooperation (ILO, 2010);

²⁹ For an example, see Viet Nam Ministry of Labour, Invalids and Social Affairs (2011), Annex II, Summary progress assessment LMIA system.

- If a new LMIA system is envisaged, in a context of limited experience with labour market information and analysis, it is recommendable to establish a (first-level) core system that builds on a limited set of key indicators, e.g. the MDG Target 1B employment indicators;
- Although some LMIA activities may be outsourced, in particular in more developed systems, it is essential that adequate capacity in the LMIA system be developed to oversee these activities and allow for movement to at least a second-level system.

Box 10.3 LMIA systems and software

A question that is often raised is the choice of appropriate software to support LMIA systems. All three components of LMIA systems depend on adequate software (and hardware), but it is not a matter of a single choice.

The indicators that constitute the first-level system may be stored in database or spreadsheet software, as is the case with the ILO's KILM and many country-level databases. However, even a first-level national or subnational LMIA system cannot be limited to databases storing indicators. The system often needs to be able to produce tabulations or cross-tabulations that are not readily available from published sources, which means that files with micro data (or non-aggregated data) need to be available as well (i.e. stored in a readily accessible and organized way).

In addition to the use of existing data and information, LMIA units may undertake data collection exercises, independently or in collaboration with national statistical agencies. Such exercises can be supported by spreadsheet or database software, but may also use specialized software for data capturing, coding and the production of tables. Furthermore, analytical tools involve the use of software, ranging from software for standard statistical analysis to software that has been developed for specific purposes, such as the forecasting of economic and labour market indicators. Finally, the dissemination of labour market information and analysis often involves the use of software to design and maintain websites, publish information, and so on.

Therefore, rather than a single, all-embracing software product, software for LMIA systems can best be viewed as a collection of applications that are used for various purposes. This collection includes “standard” database and spreadsheet software, but is augmented by various other applications mentioned before.³⁰

³⁰ See European Commission (2011, Attachments 5 and 6) and ILO (2011b, Annex 4) for overviews of software used in LMIA systems in Botswana and Viet Nam, respectively.

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