IMPROVING LABOUR MARKET INFORMATION
IN SOUTHERN AFRICA

THEO SPARREBOOM

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ILO/SAMAT POLICY PAPER SERIES

PREFACE

I am pleased to present this 10th contribution to the ILO/SAMAT Policy Paper Series entitled 'Improving Labour Market Information in Southern Africa'. As labour markets and labour market policies are changing rapidly in the sub-region, the demand for adequate information from the ILO constituents is increasing continuously. This paper is one of the outputs of SAMAT activities currently underway to improve the quality of labour market information in the sub-region.

The objective of this paper is to provide concepts and definitions that assist countries in establishing information systems that meet the demand for information from policymakers as well as other users. After a discussion of the concept of labour market information, which emphasises the needs of the information-users, the paper examines common criteria to assess information systems. Examples of recently established information systems are discussed, as are the linkages between labour market information and labour market policies in the context of southern Africa. The paper concludes with elaborating on the role of databases as a tool to analyse labour markets and support the development of labour and employment policies.

SAMAT Policy Papers focus on policies and strategies that are pursued and developed in southern Africa which affect labour standards, employment, and other labour issues. The series is intended to provide an ILO perspective on such issues, with a view to suggesting ideas and alternatives that can be taken into account by policy makers in the fields of labour and development. In this way, the Policy Papers aim to provide a basis for technical cooperation between the ILO and its constituents in southern Africa.

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1. INTRODUCTION

1.1   Labour markets have changed profoundly in southern Africa, especially in more recent years. Many countries have implemented dramatic legislative reforms, in conjunction with an impressive array of labour market programmes and projects. In some countries these initiatives followed the end of years of apartheid, civil strife or outright war. In others they coincided with an increasing pace of implementing structural adjustment programmes. These programmes entail radical policy changes, such as privatisation, deregulation and liberalisation of the economy after years or even decades of strong involvement of the State in the economy and the pursuit of inward looking strategies. Moreover, most countries in southern Africa participate in an ambitious programme of sub-regional integration through the Southern African Development Community (SADC), which includes several key areas of labour market policy and human resources development. Finally, the increased flows of trade and investment that shape the process of globalisation affect southern African economies in many ways. The introduction of new technologies, new systems of production and organisation of work and the promotion of export-led manufacturing all have strong repercussions on labour markets.

1.2   Countries in southern Africa have recognised the need for adequate information to support new labour market policies and programmes. Available information on labour market developments in southern Africa, however, is often fragmented, limited in scope or outdated. A number of labour market indicators are not collected on a regular basis, and statistical practices in terms of classification and documentation are not harmonised (ILO/SAMAT 1998). Many countries are therefore in the process of building or rebuilding their *labour market information systems* (LMIS). Naturally, the question what should be the essential parts and ingredients of these systems has repeatedly been brought forward. How should the system be designed, what labour market information (LMI) should be sought, what should be the priorities in terms of collection of quantitative and qualitative data, and how should these data be stored?

1.3   These questions have become more complex in view of the changing methodologies to examine labour markets and develop policy interventions. The emphasis in many areas of labour economics has shifted from long-term concerns towards monitoring of actual developments and short term labour market policy assessment. This paper examines the implications of these shifts for labour market information systems in southern Africa. The aim is to provide concepts and definitions that guide countries in designing and maintaining labour market information systems. The paper also discusses a number of criteria that can be used to assess to what extent information systems adequately support labour and employment policies.

1.4   The paper is organised as follows. Section 2 considers definitions of labour market information as well as the set of procedures and arrangements that constitute labour market information systems. The contents of LMIS will be discussed using examples of recently established labour market information systems in Lesotho and Namibia. Section 3 looks into the linkages between labour market information and labour market policies. It starts with an examination of the information supporting specific labour market interventions in Malawi and Lesotho. The section continues with a description of methodological changes in labour market analysis, and the implications for information systems. In Section 4, we draw some conclusions and highlight a number of areas in which more research is needed.

2.   LABOUR MARKET INFORMATION AND INFORMATION SYSTEMS

2.1   Despite the widespread use of the concept of labour market information, it is usually not clear what exactly is meant by it. This section will discuss several definitions of LMI, and suggest a broad definition that emphasises the user perspective. The section continues with looking into the main components of labour market information systems, including the contents of the system (the labour market information itself). It ends with some observations on the institutional structure of LMIS in Africa.

What is labour market information?

2.2   An early definition of LMI reads as follows (Jones 1980):

> Any information concerning the size or composition of the labour market or any part of the labour market, the way it or any part of it functions, its problems, the opportunities which may be available to it, and the employment-related intentions or aspirations of those who are part of it.

This definition may be confusing for a number of reasons. One is that it is hard to observe the labour *market* directly, or to measure its size with the aim of producing information. The usual starting point for the analysis of labour market developments is the labour *force*, which, as a result of labour market transactions, is subdivided into the employed and the unemployed. Measurement of the size, structure and characteristics of the labour force is part of the set of *basic* labour statistics as defined in international standards (see below).

2.3   A second example of a definition of labour market information can be found in a recent research report by the former Overseas Development Agency (ODA, currently named DFID). In ODA (1996) LMI was defined as 'the total package of labour market signals, indicators and intelligence'. Furthermore, 'labour market signals' are defined as 'discrete pieces of raw evidence, whether quantitative or qualitative', and 'labour market indicators' are defined as 'several signals, which, when processed together, imply a trend or direction' (ODA 1996, pp. 6-7). These broad definitions thus include both quantitative and qualitative information. They also reflect new approaches of examining labour markets that will be discussed in more detail in Section 3.

2.4   Labour market information in southern Africa is indeed often considered in broad terms, leaving it to the *producers* of information to operationalise the content and to set priorities in the collection of data. A different approach is to define labour market information in terms of needs of *users*. An example of such a definition is offered in a study of the labour market information system in Malaysia, in which labour market information is defined as follows (NEI 1998, Volume II, p. 94):

> ..., labour market information can be defined as the end product of needs assessment, preparation, collection, processing, dissemination and analysis of labour market and other data.

The NEI report emphasises that information is the end product of a number of processes, starting with an *assessment of the needs* of the users of the information. The report also gives a broad interpretation to the concept of labour market information, and it explicitly includes 'other data' in LMI.

2.5   For purposes of this paper, labour market information is defined as follows:

> Statistical and non-statistical 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.

This definition recognises that LMI can only be *defined* by the users of the information. It also points at the fact that concepts, definitions and methodologies exist to collect information on labour market actors or participants. The definition further allows for the inclusion of both *statistical* and *non-statistical information*, as well as information on the broader economic environment of labour market actors. Statistical information is defined here as information collected through the application of statistical methodologies (e.g. censuses, surveys, etc.), which includes quantitative as well as qualitative information. Non-statistical information can also be of a quantitative or qualitative nature, and may be subject to certain conventions or practices. The result of a collective bargaining agreement, for example, includes quantitative information on wage increases, and is formulated according to certain (legal) formats based on previous experience and practice.

Labour market information systems

2.6   A labour market information system consists of a set of institutional arrangements, procedures and mechanisms that are designed to produce labour market information. The usual components of LMIS are listed in the ODA-report referred to before as follows (ODA 1996, p. 70):

-       Users - individuals and organisations;
-       Sources of signals, indicators and intelligence;
-       System managers, data gatherers, operators and analysts;
-       Labour market information 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.

This list shows that labour market information as such is only one component in the system. Equally important are the users of LMI, and the methodology that is applied to collect and analyse it. One part of the system that is subject to a tremendous development is the equipment that is used, as the capacity to store and retrieve information using relatively simple hardware is increasing rapidly (see Section 3).

2.7   Similar to many other systems, information systems can be assessed using four criteria. Firstly, an information system is *relevant* if it is instrumental in the achievement of the objectives set for an organisation or for a country as a whole (economic and social objectives). The yardstick of the *effectiveness* of an information system - the second criterion

- is whether it produces the planned outputs. Thirdly, a system is *efficient* if it produces outputs without wasting resources, for example with respect to the interaction of the various components of the system. All three criteria are related to the fourth criterion - the *sustainability* of the information system.

2.8   The definitions of LMI and LMIS suggested before imply that a *relevant* information system should provide those responsible for the formulation, monitoring and evaluation of labour market policies and programmes with adequate information. Policymakers are important users of the information system, and the system should therefore also be an integrated part of the structure or cycle for labour and employment policy development (Castley 1996). The main components of this structure can be depicted as in Figure 1 below.

2.9   It is important to note that the identification of policy issues constitutes the first stage of this cycle, which ideally precedes the collection of data. Indeed, in some countries in southern Africa users are involved at early stages of data collection. These consultations with stakeholders may point at key issues, which might otherwise be missed by labour market analysts and statisticians. Furthermore, such consultations constitute an important method to ensure the *relevance* of the information system. In all too many cases, however, the collection or collation of data is still primarily supply-driven. LMIS that are focused exclusively on the technical aspects of data collection risk providing information that nobody will use, thus jeopardising the *sustainability* of the information system. Resources will be cut sooner rather than later if potential users are not convinced of the relevance of the data collected.

2.10   The process of policy formulation can start when the analysis and dissemination of the data have been completed. Already at this stage, policy implementation should be taken into account as well. The policy delivery system may take the form of programmes or projects, but also of a legal framework that can be enforced without major difficulties. LMIS should contain information concerning policies and the policy delivery system, thus facilitating the monitoring of their effects, and, at a later stage, evaluation of the impact of policies and programmes. It can be noted that this task may become difficult if labour market policies have been formulated in a general manner without ensuring that a policy delivery system is in place. Employment promotion policies, for example, are often formulated in broad terms, without specifying the strategies and objectives in sufficient detail. This has happened in SADC and elsewhere, and in such cases an effective information system cannot be developed either.

2.11   The policy *cycle*, including the labour market information system, should add value to each of the component parts through the interaction between various components and the working of feedback mechanisms. For example, field workers monitoring a particular labour-intensive public works programme may detect that most of the beneficiaries of the programme are not part of the intended target group. The role of the analyst would then be to identify what additional information is needed to determine the causes of this lack of effectiveness of the programme, which is part of the policy issue. After the information has been collected, it is analysed and used to evaluate the programme. Subsequently, decision makers can be provided with informed advice on desirable changes in policy. The analyst should thus be focused on ideas and issues that arise from policy implementation, and not on the collection of data as such.

Figure 1. The labour and employment policy development cycle
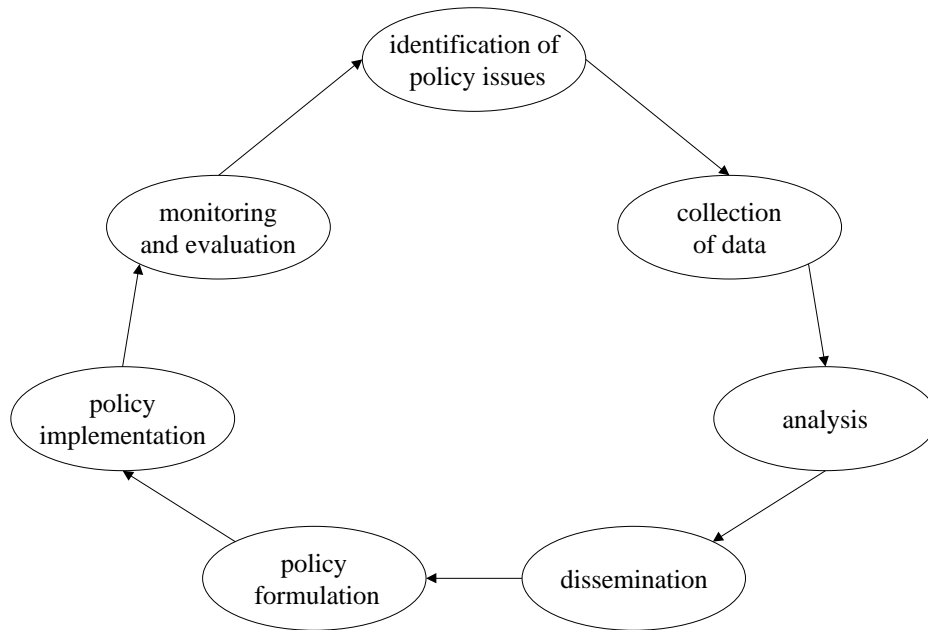
The contents of labour market information systems

2.12   The definitions of labour market information and labour market information systems suggest that the contents of these systems are not predetermined. There are however common policy objectives as well as accepted methodologies to analyse labour market developments, which at least require certain types of *statistical* information to be collected in each country. Many African countries have for example ratified ILO Employment Policy Convention No. 122 (1964) which states that '... each Member shall declare and pursue, as a major goal, an active policy designed to promote full, productive and freely chosen employment' (Article 1). The Annex of the Recommendation concerning this Convention emphasises the need for each Member to make studies of the labour force and to improve the statistical data needed for such studies.

2.13   Article 1 of Convention No. 160 concerning Labour Statistics states that 'Each member which ratifies this Convention undertakes that it will regularly collect, compile and publish *basic labour statistics*, which shall be progressively expanded in accordance with its resources to cover the following subjects:' (italics added)

(a)   economically active population, employment, where relevant unemployment, and where possible visible underemployment;
(b)   structure and distribution of the economically active population, for detailed analysis and to serve as benchmark data;
(c)   average earnings and hours of work (hours actually worked or hours paid for) and, where appropriate, time rates of wages and normal hours of work;
(d)   wage structure and distribution;
(e)   labour cost;

(f)   consumer price indices;
(g)   household expenditure or, where appropriate, family expenditure and, where possible, household income or, where appropriate, family income;
(h)   occupational injuries, and, as far as possible, occupational diseases; and
(i)   industrial disputes.

This list of subjects provides guidelines for the establishment of an information system containing labour statistics, which are indeed reflected in the information systems of several SADC countries.

2.14   Many of these categories are included in the design of the contents of the LMIS in Namibia (Appendix 1 and Ministry of Labour 1995) and the published labour market information in Lesotho (Appendix 2 and EPF/LMA 1997).[1] However, both countries have also made adaptations that reflect the importance of certain parts of national labour markets and the availability of data. In Namibia, for example, a separate category of LMI is included on the informal sector, while the relevance as well as the availability of migrant labour statistics in Lesotho is reflected in the *Labour Market Information Bulletin 1996*. The latter also includes extensive sets of general economic indicators and statistics on education and training. Perhaps most noteworthy in the published information on Lesotho, in view of their importance for monitoring of the labour market, is the total absence of data on wages, which is due to the scarcity of this type of information in this country (Sparreboom 1996).

2.15   It can further be noted that data on labour costs and productivity, which are generally scarce within SADC, are not yet available in Lesotho or Namibia. These data are key inputs for an assessment of labour market developments and the formulation of labour policies, and many countries have undertaken efforts to establish productivity centres and compile productivity data on a regular basis. The newly established ILO-database on key indicators of the labour market, which is an important part of the attempt by the ILO to increase the relevance of readily available labour market information, includes data on labour productivity, among other indicators (Appendix 3 - indicator no. 18).

2.16   The report on labour market information by ODA includes an example of a 'basic labour market information system' (ODA 1996 - see Appendix 4). As the report is primarily concerned with training issues (half of the categories listed in Appendix 4 deal with training), the labour market information system is clearly designed for purposes of assessing and improving the training system. The proposed information system appears to comprehensively capture the information required for such exercises, and includes a number of indicators on the *costs* of training ('Training System Costs and Financing'). These are precisely the indicators that are being increasingly emphasised in the literature on labour market information systems (see Section 3).

2.17   Labour market information should fulfill a number of requirements to serve the needs of users. Examples of these requirements are the accessibility, comprehensiveness, timeliness, regularity, scope & coverage, accuracy, and presentability of the information stored (see e.g. Young 1993). It is well known that LMI in developing countries often shows deficiencies with regard to many of these requirements (see e.g. Richter 1978, 1989 and

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[1] Data on occupational safety and health, such as occupational injuries and diseases, are often captured in separate information systems that are not the subject of discussion here.

1991). The SAMAT labour market information database -- SamatData -- was established with the long-term objective of improving the quality of LMI in southern Africa. The database facilitates easy access to information on the labour markets in the sub-region, and is used to identify gaps and provide insight into the consistency and comparability of data (ILO/SAMAT 1998).

2.18   SamatData captures labour market variables and indicators in a series of tables, which are listed in Appendix 5. The scope of the database - the range of topics, the number of tables and the choice of indicators - has been determined by considerations of relevance, availability and comparability of data, as well as by the limited capacity of ILO/SAMAT to compile, assess and store data from various sources. The number of tables and the volume of data in the database will however increase as more data become available to SAMAT and new indicators are added. Databases that are being developed in the sub-region could follow a similar procedure. Once a series of indicators has been selected, the contents of the information system can be adapted to allow for changes in the needs of users, such as changes in labour market policies, as well as changes in methodologies to examine the labour market.

Institutional arrangements to collect labour market information

2.19   Institutional arrangements to collect information are an integral part of a labour market information system. The possibility to collect and gather relevant information, and thus the sustainability of the LMIS, is directly dependent on the institutional structure in which the system operates. At the very least, linkages are required between government departments responsible for various policies affecting the labour market on the one hand, and statistical agencies on the other. The use of innovative methods to collect labour market information, however, may necessitate more extensive institutional collaboration and co-operation. The use of administrative records, for example, or the operation of a system of key informants, involves establishing a network of many organisations, including both users and producers of information.

2.20   An example of how such an institutional network may be initiated can be drawn from recent experiences in Lesotho. In 1995, an ILO-executed project funded by UNDP was started in the Ministry of Labour in that country, with the objectives of improving the availability of labour market information, as well as the formulation of employment policies. The project document envisaged two committees to support and manage the project: the Steering Committee (SC) and the Technical Committee (TC). The SC, composed of senior representatives from ministries involved in labour market policies, is crucial to ensure the relevance of project activities, notably the collection of information. The TC has a more operational character, and consists of representatives of institutions involved in the collection or use of labour market information. Both committees were established soon after the project activities started and proved important in creating a network of persons and institutions committed to the collection of information on labour market developments. An effective linkage with the Bureau of Statistics was established through the attachment of a staff member of the latter institution to the Ministry of Labour and Employment where the project was located.

2.21   Interesting examples of structures to collect and analyse labour market information can also be drawn from experiences elsewhere in Africa. Several West African countries, for

example, have established *labour market observatories*, whose primary function is to collect information from various sources and analyse this information for the development, management and evaluation of activities (ILO/EMAC 1998). Although the *objectives* of these observatories do not seem too different from similar institutions in southern Africa (for example the project in Lesotho), the institutional structure of these observatories varies considerably between countries, and makes generalisations difficult.

2.22   *Systematic* analysis of institutional structures that aim to collect and analyse labour market information could provide valuable insights on how an efficient and effective information system could be established. The analysis could focus on the division of responsibilities and the degree of autonomy of various institutions, the involvement of users, linkages with the broader economic environment, etc. A comparative analysis looking into similarities and differences between observatories in West Africa and elsewhere, as well as between those and the present structures in southern Africa, could be a point of departure.

3.   LABOUR MARKET POLICIES AND INFORMATION

3.1   Similar to 'labour market information', the term 'labour market policies' may mean different things to different people. On the one hand, labour market policies can refer to labour legislation and regulations, conditions of work, etc. On the other, labour market policies may refer to employment policies, which are strongly linked to macroeconomic policies as well as various sector policies (educational policies, infrastructure policies stimulating labour-based methods, etc.). At a general level, at least five forms of public intervention in labour markets can be distinguished (adapted from Rodgers 1986):

(1)   Legislative and regulatory reforms (minimum wage legislation, microenterprise legislation, etc.);
(2)   Creation of or support to institutions (wage or employment councils, workers' organisations, etc.);
(3)   Dissemination of labour market information (job seekers and job opportunities, information on wages and prices, etc.);
(4)   Action to modify the demand for labour (public works programmes, wage subsidies, etc.); and
(5)   Action to modify the supply of labour (education and training, skills development, etc.).

These interventions will of course differ in their requirements regarding the contents of the labour market information system. In general terms, the information to support actual interventions has often been weak in southern Africa. To illustrate this point, this section will discuss specific labour market interventions in Malawi and Lesotho, respectively. The section continues with a critical view on recent changes in the methodology to analyse labour market developments, and the implications for information systems to support policy interventions.

Labour market policies and information

3.2   In Malawi, the low degree of urbanisation is the direct result of regulatory and institutional labour market policies that were designed to retain people in the rural areas. At the time of independence in 1964, the economy was agriculture-based with the estate sector producing tea and tobacco for exports, and the peasant or smallholder sector producing maize

and a limited number of cash crops. The Government turned the smallholder farmers into a source of cheap, low-skilled wage or tenant labour for the estates, while administering prices for somewhat higher skilled labour in industry and services.

3.3   The Government of Malawi formally introduced a National Wages and Salaries Policy in 1969, the objectives of which were to encourage people to remain in rural areas, to contain wages especially of unskilled and semi-skilled workers in order to promote labour-intensive economic growth through expansion of estate farming; and to expand paid employment opportunities (World Bank 1993, Manda 1997). In line with this policy, the Government decided to hold minimum wages at their 1969 level, and, in 1971, the Wage Restraint Policy required employers wishing to increase wages with more than 5 per cent to seek approval from the Wages and Salaries Restraint Committee. The Committee had to take into account the following criteria:

-       labour productivity
-       prevailing pay rates in the company relative to comparable jobs in other private sector firms and in the public sector
-       whether the proposed increase might lead to the adoption of more capital-intensive technology and the displacement of labour; and
-       whether an increase was needed to attract scarce skills to expanding sectors of the economy

3.4   The decisions made by the Committee were however not supported by adequate information in accordance with these guidelines. For example, data on productivity were never collected routinely in Malawi, while discussions on the establishment of a productivity centre are on-going only now. Furthermore, Manda (1997) notes that the institutional mechanisms for the determination of minimum wages, in particular the Wages Advisory Councils and the Wages Advisory Board, were completely ineffective. Changes of minimum wages were both erratic and irregular, and were never based on factual information. Sometimes the Board was not even consulted as government unilaterally revised the wage rates and promulgated the wages orders.

3.5   Lesotho provides an example of a country in which the institutional and the policy framework has been focused on one objective: labour migration. Paton (1995) documents that the *colonial development of the country was an exceptionally straightforward case of creating a colonial labour reserve* (p. 212). During the colonial history of Lesotho, the Government was actively stimulating labour export and most institutions were instrumental in running this process as smoothly as possible. The result of these policies has been that during a period of 150 years, from the 1840s up to the 1990s, at least 6 per cent of the population worked in South Africa, peaking at almost 20 per cent of the population in 1970.

3.6   Not surprisingly, labour market information has been available on many issues concerning migrant labour, notably because many South African institutions have always had an obvious interest in this type of information. The number of migrants, wages and earnings as well as skills profiles of migrant miners are readily available. Until fairly recently, however, information on the domestic labour market was hardly collected or collated (Sparreboom 1996). For example, time-series of wages in Lesotho are only available for the public sector.

3.7   These two country-cases show that labour market information was either very limited, or becoming less and less relevant for policy purposes. In both cases the countries have taken up the challenge, however. The programme in Lesotho aiming at the improvement of labour market information has already been mentioned in the previous section, while plans for the establishment of a research and analysis unit within the Ministry of Labour and Manpower Development in Malawi have been in existence since at least 1994. The responsible ministry in that country has formulated a number of related proposals for funding in the areas of industrial training, industrial relations, strengthening of employment services and the establishment of a manpower development unit and a labour market information system. These initiatives could serve as a basis for more detailed plans, that could be developed in collaboration with the National Statistics Office.

3.8   Even if information to support labour market policies has been collected, it may not be available to the users. For example, surveys of the labour force constitute the most comprehensive source of LMI in southern Africa. Due to the relatively low frequency of full-fledged labour force surveys in the sub-region, and the limited availability of data collected on a more regular basis, these surveys often provide benchmark data for a variety of purposes.[2] The use that can be made of the results of these data collection exercises, however, depends on the quality of the data in terms of presentation and tabulation, as well as on the depth of analysis. Both show large differences in the sub-region. Reports of labour force surveys sometimes consist of only a very limited set of tables, without providing adequate information on concepts and definitions. Furthermore, in too many cases, hardly any discussion or interpretation of the results is offered. In yet other cases, reports do contain an extensive analysis of the results, but the tables only show relative values of key variables (expressed in percentages), thus preventing users from making calculations for their own purposes. Such reports with a relatively low informational content suggest an inefficient use of the considerable resources needed to undertake the collection of data in southern Africa, and hamper the design and implementation of labour market programmes and projects.

3.9   Statistical surveys are not the only source of labour market information. Policymakers and other users of LMI need both statistical and non-statistical information as inputs in the system supporting labour market interventions. Non-statistical information derived from policy documents, legislation, or reviews and studies is essential to supplement the statistical information from household and other surveys. Some reports of labour force surveys in southern Africa indeed include an analysis of the results using information from other sources. The usefulness of many other survey reports could have increased considerably if an attempt would have been made to analyse survey data in the context of other LMI.

From manpower planning ...

3.10   Manpower planning reflects a more comprehensive approach of labour market interventions than low-wage policies or policies stimulating labour migration. During the early years of independence, and before, many SADC-countries used some form of manpower planning. Manpower planning consists of a set of policies that may include all five

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[2] The only country in southern Africa that has been conducting a series of *annual* household surveys providing information on the main labour market indicators is South Africa. The series of October Household Surveys conducted since 1994 nevertheless provides more limited information on the labour market than is available from dedicated surveys of the labour force.

forms of public intervention that were mentioned before (legislative, creation of institutions, etc.). It was based on the assumption that the shortage of specific skills was the most important bottleneck on the road to development, and could be tackled through specific interventions mostly, but not exclusively, in the area of formal education and skills development. Although an array of techniques is available to assist the manpower planner,[3] manpower planning has become synonymous with 'manpower requirements forecasting' (Middleton et al 1993). This method starts with setting targets for the growth of GDP by sector, and subsequently uses a number of assumptions and calculations to derive levels of educational demand from these targets, which can then be compared with supply from the educational system. In this way, manpower planning can serve as an instrument for localisation policies, and as a means of quantifying or justifying technical training to produce skills for an expanding modern sector (Richards and Amjad 1994).

3.11   Manpower planning was part of a broader economy-wide planning process, which has been labelled 'blueprint planning' (Toye 1995, p. 28):

> Blueprint planning is the construction of a unique pattern of future resource allocation, and supporting policies designed to ensure its achievement. Its scope is economy-wide, but it further strives for a unified approach to economic and social problems, including the planning of employment as well as the more narrowly economic macroeconomic variables. Its method is that of economic calculation, often based on a mathematically soluble macroeconomic model. The planning process could, but does not usually, consist of the imposition of a centrally calculated plan on all subordinate levels of government and economic entities: usually some interactive consultative process is used, to check the centrally determined numbers against the information available to (some) decentralised agents. But at the end of [the planning] process, a document - 'the Plan' - is approved and published, and is intended to guide future action. The blueprint is made in order to control: it is not just 'indicative'.

3.12   Detailed economy-wide planning was part of the dominant strand of thought on development during the 1950s and 1960s, and even later. The paradigm allowed for strong involvement of the State in the economy, which was in due course expected to result in prosperity for all. During the 1970s, however, when it became clear in many countries that achievements had not worked out according to the plans, the emphasis shifted from a 'top-down' to a 'bottom-up' approach of the development problem (or from 'trickle-down' to 'basic needs'). Following a deterioration of economic conditions in many developing countries, the 1980s witnessed an era dominated by structural adjustment programmes, that emphasised macroeconomic adjustment, a reduced role of government in the economy, and liberalisation and deregulation of markets. By that time, manpower planning in the sense referred to above had lost much of its attractiveness. The minimal impact of these exercises in many countries, and the increasing feeling that they did not address the real problems of unemployment and underemployment in developing countries, resulted in a search for alternative approaches. During the 1990s, the paradigm seems again to have shifted, this time somewhat away from laissez-faire and towards 'making markets work'. The latter does not necessarily imply a hands-off policy stance.

3.13   Labour market policies were not always adapted to the changing economic environment and insights. The manpower requirements approach remained popular in many

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[3] See for example Godfrey (1996) for an overview; methods include productivity-based projections, employment-elasticity-based projections, input-output models, macroeconomic models and computable general equilibrium models.

countries long after it had been convincingly shown that its assumptions were difficult to defend (Jolly and Colclough 1972, Amjad 1987, Godfrey 1996), and the actual forecasts had often proven to be wildly inaccurate (Ahamad and Blaug 1973).[4] The intuitively logical approach, the relatively transparent methodology in terms of demand and supply imbalances, and the preference of politicians for numbers known with apparent certainty, all contributed to the survival of the technique (Van Adams, Middleton & Ziderman 1992). Some agencies like the World Bank contributed to the lengthening of its life as manpower planning was used to justify requests for educational loans and project appraisals (Psacharopoulos and Woodhall 1985).

… *To labour market analysis*

3.14 Without a 'blueprint' to guide policy advice on labour market interventions, what is the role of the labour economist or education specialist? An instructive overview of new approaches to examine labour markets can be found in Psacharopoulos (1991), and is summarised below (on the left are concepts that are becoming relatively less important, on the right are those that seem to have gained prominence). The changes reflect the new emphasis on labour market *analysis*, as opposed to *planning*, as well as the shift from a long-term, technical approach of the labour market towards a concern with short term supply-demand imbalances and the effects of labour market interventions.

Table 1. From planning to analysis

Planning	Analysis/policy making
Manpower	Labour force
Counting heads	Measuring wages
Firm labour surveys	Household surveys
Opinion surveys	Tracer studies
Occupational profile	Educational profile
Public sector only	Private and informal sector
Production efficiency only	Equity/poverty
Technical efficiency	Economic efficiency
Output-labour relationships	Cost-benefit analyis
Fixed wages	Flexible wages
Manpower needs	Labour supply and demand
Skill-specific training	General training
School-based training	Firm-based training
Free education/training	Cost-recovery/user fees
Public education/training	Private education/training
Filling long-term skill gaps	Correcting present labour market distortions

Source: Psacharopoulos (1991)

3.15 The 'paradigm shift' in manpower analysis and planning has been summarised in a stylised way as follows (Richards and Amjad 1994, p. 5):

> ... away from that of a factory manager who knows (or is told) he will need a certain number of technicians in a few years in order to cooperate with a determined level of technology, and is

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[4] The approach has been criticized by Blaug as early as 1967; some proponents of the usefulness manpower planning, at least for certain purposes, have pointed at inconsistencies in the criticism as well; see e.g. Colclough 1990.

supplied with these workers fresh from training school to labour in that enterprise indefinitely. The current paradigm is of relatively short-term time horizons, of relative wages changing with demand and supply and of managers substituting technicians of one skill level for another in a flexible and profit-maximising manner.

These changes are part and parcel of what has been labelled the *labour market signalling approach*. Labour market signalling is concerned with economic outcomes measured in terms of wages and employment which can be compared with the costs of specific education and/or training programmes involved (Hinchliffe & Youdi 1993, Middleton et al 1993, ODA 1996). Labour market signalling should thus not be viewed as one particular method of analysis, but rather as a collection of methods focusing on the concepts listed before, such as actual demand and supply. Examples of labour market signals are movements of relative wages, changes in the growth rate of employment of workers with specific schooling or training, or changes in job vacancy rates. Important instruments are also tracer studies, through which the placement of graduates can be monitored, as well as applicant-to-admission ratios of training institutions.

3.16   While a shortage of particular skills used to be quickly translated into an increase of the number of institutional training positions to acquire those skills, the new approach questions the cost-effectiveness of this policy. For example, would it not be more cost-effective to upgrade the skills of certain segments of the current labour force? Could the provision of incentives to employers with the objective of increasing on-the-job training not be a better policy? And what kind of information would be needed to answer these questions?

Labour market information for labour market signalling

3.17   Appendix 6 shows key data sources for labour market analysis with labour market signals (Van Adams, Middleton & Ziderman 1992). The emphasis on costs in the listed purposes of the collection of data shows similarities with the design of the basic information system described in the ODA-report as discussed in Section 2. Rate of return analysis in particular features prominently in the new approach.

3.18   The labour market signalling approach thus marks a shift in emphasis in the type of data that are likely to be needed for the analysis of current labour market issues and policy interventions. Prices, such as wage rates and the costs of training programmes will become a much more important part of the overall programme for data collection. Furthermore, the costs of establishing and maintaining labour market information systems could be reduced. Van Adams, Middleton and Ziderman (1992) emphasise the potential to produce labour market signals without a well-developed system of labour market statistics. Thus, the *efficiency* of LMIS may be increased, if signals of labour market imbalances can be collected without maintaining a fully-fledged information system.

3.19   As the labour signalling approach has technical advantages in comparison with earlier approaches, and is potentially more efficient, the question arises why it has not been widely adopted. Some reasons that have prevented an early shift away from manpower planning have been discussed before, such as the attractiveness of the latter approach to policymakers, and the role of international organisations. In addition, a number of weaknesses of the labour market signalling approach should be mentioned. For example, the usefulness of relative wages as an indicator can be limited by institutional constraints on the movement of wages, or the signals can become blurred by imperfect labour markets. Even in labour markets with

relatively few distortions, however, it may not be that straightforward to interpret signals for analysts without in-depth labour market training. This problem might be particularly pertinent in SADC, where many countries have a shortage of well-qualified staff within the public service.

The role of databases in labour market analysis

3.20   In many cases, additional data are necessary to distinguish between 'true' labour market signals and mere 'noise'. Is the increase in wages in industry A this year really significant, or do we observe an average increase? Has unemployment really decreased in comparison with earlier measurements, or is it only the definition applied during data collection that has changed? Such questions can only be answered if labour market data are systematically stored and documented. A labour market information database can thus be a powerful tool to identify signals and to analyse labour market developments.

3.21   It should be noted that the use of databases for labour market analysis in itself is of course not new. Traditional manpower planners used computers and databases for calculations and storage of detailed information. The new elements are the relatively low costs of establishing and maintaining comprehensive labour market information databases, as well as the contents of the database. The latter is much more focused on *actual* developments, instead of detailed plans on how labour markets and actors *should* behave. In addition, as noted before, the emphasis in terms of the choice of labour market indicators has changed.

3.22   The literature on storage of information using various hardware and software configurations has expanded tremendously over recent years. As information has increasingly been considered as an organisational resource, much has been written on how information technology can be used to establish a strategic advantage for an organisation (Guimares 1988). Many studies are devoted to how *companies* can benefit from databases that contain information on customers, costs, finance, production etc. *Information resource management* can be utilised to reduce costs, target specific customers, or implement management systems such as *just-in-time production*.

3.23   Storage of information in databases assumes that the implementing organisation, in collaboration with the users, has developed a model of reality. This model should contain the variables on which data should be stored in the database. A database can be defined as *an integrated, self-describing collection of data describing sets of related entities and the relationships that interconnect them* (Lorents and Morgan 1998, p. 27). The latter definition uses the language of *relational databases*, which are the type of databases that are most widely used as part of information systems for private companies. Much current labour market information is however stored in other formats, for example in spreadsheets (Quattro Pro, Excel, etc.) and software packages for processing and analysis of surveys (SPSS, various packages developed by the Bureau of Labour Statistics of the United States, e.g. Integrated Microcomputer Processing System software, etc.).

3.24   The software that is used to store and analyse labour market information reflects the various needs by users of this information. A distinction can be made between immediate, *operational* uses of labour market information and information stored in view of longer term objectives, so-called *analytical* databases. The latter contain more historical data, based on extracts or summary information from operational databases. For example, a labour force

survey may be stored in SPSS containing detailed answers of respondents in individual records. The individual records can be viewed as part of the operational database of the labour market, which is used to answer questions concerning the unemployment rate in a specific region of the country, or the number of persons employed in a particular economic sector.

3.25   To analyse trends in employment and unemployment, however, and detect various labour market *signals*, this information will have to be compared with previous surveys and other sources of labour market information. To that end, the main tables of the survey-report, or extracts from several tables, can be stored in separate files. One would be tempted to use a spreadsheet for this purpose, as the tables are probably already stored in this format. The use of spreadsheets as databases however has a number of well-known disadvantages, for example in terms of ease of retrieval, and risk of duplication, inconsistency and redundancy of data. Depending on the actual use of the database and the amount of available information, a better choice would generally be to use relational database software to support an analytical database.

3.26   Labour market information can thus be stored in several databases simultaneously, which, in analogy to database systems used in the private sector, is called *data warehousing*. Under the database warehousing concept, data to support different types of analysis are stored separately (Lorents and Morgan 1998). One reason why separate labour market databases should be used for analytical as opposed to operational purposes is the type of records that will be stored. In the case of an operational database storing data from a labour force survey, each record will contain data concerning an individual respondent. In an analytical database, this is usually not the case.

3.27   Most countries in southern Africa do not systematically collect and store non-statistical labour market information. Policy documents, reports and studies are kept in libraries and offices, but often without having a system in place that allows for convenient retrieval of information. It is also usually a cumbersome undertaking to retrieve information on laws and regulations, minimum wages or labour market institutions. Although there is no substitute for a qualified librarian operating a computerised documentation system, certain categories of information can also be stored in computerised text databases. Text databases consist of a collection of records containing textual information, and are thus the counterpart of individual files stored in filing cabinets. Much of the information stored in filing cabinets could be conveniently summarised in a text database. Examples are the storage of certain information on labour disputes or collective bargaining agreements.

3.28   Contrary to common word processors, the indexing of text databases such as *Cardbox for Windows* and the database in *Microsoft Works* allows for rapid retrieval of specific information. Cardbox for Windows contains an index that allows for retrieval of records by searching selected fields in each record for key words (Business Simulations Limited 1994). Labour disputes could be indexed on the name of individual companies in which the department of labour has been involved. Contrary to relational databases that have been designed to store quantitative information, the volume of text is less limited. Labour disputes could be described in detail, but key features such as the number of workers involved in industrial action or the main reason for the dispute could be stored in a special field. Furthermore, reference can be made to relevant legislation, and part of the legislation could actually be stored in the same system.

4. IMPROVING LABOUR MARKET INFORMATION IN SOUTHERN AFRICA

4.1   The demand for labour market information in southern Africa has increased due to dramatic economic and political changes in the sub-region, as well as developments in labour market theories and policies. The supply of labour market information, however, shows a series of well-known deficiencies. Many countries in the sub-region therefore attempt to meet demand through the establishment or improvement of their labour market information systems. The objective of this paper was to provide concepts and definitions that assist countries in establishing information systems that adequately support labour and employment policies.

4.2   A number of common criteria to assess labour market information systems have been discussed in Section 2. The sustainability of an information system is dependent on its relevance, and is also related to other criteria such as the efficiency and effectiveness of the system. It has been argued that labour market information systems can only be relevant if they are an integrated part of the institutional structure for labour and employment policy development. The contents of the system, the labour market information, should thus be defined to serve its users, in particular policymakers. Labour market information should provide a solid basis for the formulation, monitoring and evaluation of policies, while feedback mechanisms should be in place to assess the contents of the information that is collected. There are accepted methodologies and guidelines to analyse labour markets that should be taken into account as well, as was shown in several examples of information systems in southern Africa and elsewhere. In the field of statistical information conventions and methodologies exist to provide guidance on what information should be collected and how.

4.3   The advent of new approaches to labour market analysis that were discussed in Section 3, in particular labour market signalling, emphasised the need for a *regular* flow of information. A labour market information database can be a powerful tool to store information on a regular basis, which can be used to distinguish 'signals' from 'noise'. At present, statistical and non-statistical labour market information are not systematically stored in most SADC countries. Development of appropriate databases can provide an improved and adequate basis for the design and implementation of employment and labour policies. The development of a database could start with the selection of a limited range of basic indicators that are well-documented. The database should subsequently be extended and adapted to serve the needs of various users of LMI and to allow for changes in methodology to examine labour markets. It should be emphasised, however, that a database cannot be a substitute for labour market analysis. The interpretation of signals and the translation into concrete policies is not always straightforward.

4.4   In view of a number of similarities in labour policies in countries in southern Africa, a collective effort to develop databases on certain labour market characteristics would be a fruitful exercise. Development of common formats to collect information on for example the formulation, monitoring and evaluation of small enterprise development policies, or on policies stimulating labour based methods, can bring economies of scale and would facilitate exchange of information and experiences.

4.5   Finally, it cannot be denied that many previous efforts to establish sustainable labour market information systems have failed. A review of the experience of SADC countries, and the role of technical cooperation in this area, would be beneficial for countries establishing new systems, even when efforts were not successful. The criteria to assess labour market information systems mentioned before could be a starting point. In particular, the sustainability of previous efforts could have been hampered by the absence of the involvement of users and the limited relevance of the information sought. Experiences in the institutional design of labour market information systems elsewhere in Africa could also be useful to countries that are in the process of establishing new systems.

Appendix 1. Labour Market Information in Namibia
(Ministry of Labour 1995, pp. 8-10)

1. Population and Labour Force

1.1 Population Size and Structure (Age, Sex, Region and Urban/Rural).
1.2 Population Growth Rate (Age group, Sex, Region and Urban/Rural).
1.3 Projected Population (Age group, Sex, Region and Urban/Rural and Total).
1.4 Participation Rate (Age, Sex, Region and Urban/Rural).
1.5 Labour Force (aged 10+ by Sex, Region and Urban/Rural).
1.6 Projected Labour Force (by Sex, Region and Urban/Rural).

2. Employment and Unemployment

2.1 Employment by Industry, Occupation and Sex.
2.2 Employment by Industry, Region and Sex.
2.3 Employment by Industry, Educational Level and Sex.
2.4 Number of Hours Worked by Industry, Occupation and Sex.
2.5 Projected employment by Industry and Occupation.
2.6 Number of Unemployed by Educational Level, Sex and Age.
2.7 Number of Unemployed by Educational Level and Urban/Rural.
2.8 Number of Unemployed by Sex, Region and Educational Level.
2.9 Number of Unemployed by Sex, Educational Level and Urban/Rural.

3. Wages and Earnings

3.1 Average Earnings by Industry and Occupation.
3.2 Average Earnings by Industry and Sex.
3.3 Average Earnings by Industry, Sex and Region.
3.4 Average Earnings by Occupation, Sex and Region.

4. Labour Demand and Supply

(a) Demand

4.1 Number of Job Openings by Occupation, Industry and Region.
4.2 Number of Job Openings by Occupation, Industry and Sex.
4.3 Projected Job Openings by Occupation, Educational Level and Industry.
4.4 Projected Job Openings by Occupation, Educational Level and Experience Required.

(b) Supply

4.5 Number Job Seekers by Sex, Educational Level and Region.
4.6 Number Job Seekers by Educational Level, Previous Job (Occupation) and Experience.
4.7 Number Job Seekers by Educational Level, Sex and Preferred Jobs (Occupation).
4.8 Number of Education/Training Institutions by Courses offered.
4.9 Number of Students Enrolled by Course and Sex.
4.10 Expected Output by Sex and Job Titles (Occupation).

(c)   Emigration

4.11   Number of people issued visa/employment permit by duration, by occupation (profession) and sex.

4.12   Number of people issued visa/employment permit by occupation, educational level and duration.

4.13   Number of people issued visa/employment permit by sex, educational level and duration.

4.14   Number of people issued visa/employment permit by country, occupation and education.

4.15   Number of people issued permanent residence permit by sex and occupation.

(d)   Indicators of Labour Demand/Supply Relations

4.16   Number of Job Seekers placed by Industry, Sex and Region.

4.17   Number of Job Seekers placed by Educational Level, Occupation and Sex.

5.   Industrial Relations

5.1   Number of Trade Unions and Employers' Organisations by Industry.

5.2   Number of Disputes resolved/unresolved *i.e.* strikes and lockouts by industry.

5.3   Number of Collective bargaining agreements by industry.

5.5   Number of Recognition Agreements by Industry.

6.   Informal Sector

6.1   Estimated Employment by Type of Business and Activity (Industry).

6.2   Estimated Employment by Sex, Type of Business and Region.

6.3   Average Wages by Occupation, Sex and Type of Business.

6.4   Projected Growth in Employment by Type of Business and Activity (Industry).

Appendix 2. Labour Market Information in Lesotho
(EPF/LMA 1997)

SECTION 2 ECONOMIC STATISTICS

Statistical Tables

SECTION 3 POPULATION

Statistical Tables

SECTION 4 EDUCATION AND TRAINING

Statistical Tables

SECTION 5   LABOUR AND MANPOWER STATISTICS

Statistical Tables

Appendix 3.   Key Indicators of the Labour Market (ILO-KILM)
(ILO 1999)

No.	Indicator
KILM 1.	Labour force participation rate
KILM 2.	Employment-to-population ratio
KILM 3.	Status in employment
KILM 4.	Employment by sector
KILM 5.	Part-time workers
KILM 6.	Hours of work
KILM 7.	Urban informal sector employment
KILM 8.	Unemployment rate
KILM 9.	Youth unemployment
KILM 10.	Long-term unemployment
KILM 11.	Unemployment by educational attainment
KILM 12.	Time-related underemployment
KILM 13.	Inactivity rate
KILM 14.	Educational attainment
KILM 15.	Real manufacturing wage trends
KILM 16.	Hourly compensation cost
KILM 17.	Productivity and unit labour cost
KILM 18.	Poverty and income distribution

Appendix 4.   A Basic Labour Market Information System

(ODA 1996, pp. 70-72)

italics indicate data collected using labour market signals, indicators and sampling

1.   Socio-demographic Data

Population over time by age and gender
Population distribution by region
Literacy rates by gender, age and region
Migration patterns
Main social/ethnic groupings by size and location

Other data may be added as a more detailed system develops, particularly information relating to health, wealth and social groupings.

2.   Educational Data

Enrolments by gender in primary, secondary and tertiary levels
Numbers completing each level by age and gender, and as a proportion of enrolments
Educational attainments by qualification and gender
Regional variations of above

3.   Employment and Labour Market Information

Macro level economic trends showing projected growth of various sectors (inclusive of informal sector), disaggregated by region
Size of labour force and its projected growth, overall and by sectors
Size of any migrant labour groups and their origins, by region
Distribution of workers between modern wage employment (formal and informal) and its projected growth
Growth or contraction of wage employment by occupational sector
Skill level of workers by occupation/sector
Levels of unemployment and under-employment by age groupings and gender, by sector and educational/training attainment, disaggregated by region
Levels of youth unemployment and under-employment by gender and region
Identification of training needs as reported by sector

4.   Analysis of Labour Market Policies

Identified sources and methods of collecting LMI
Policies on remuneration and social benefits in public/private sectors
Government industrial investment and promotion policies and their effects on employment and the demand for skills, by sector and employment category
Policies relating to economic liberalisation and the structural adjustment of the labour market
Policies relating to technological development and their effect on employment by category and gender

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Policies relating to unemployment subsidies and work creation

Policies to promote the employment of special groups (women, school dropouts, illiterates, unemployed youth, ethnic minorities, disabled)

Trends in the labour market and the impact on future demands for skills, knowledge and their effect on gender employment

5. Analysis of Training Policies and Programmes

The main features of the education and training system, its co-ordination, inter-relationships, and the balance of public and private sector provision

Details of staffing at training institutions - qualifications (technical, pedagogical, industrial experience), staff/trainee ratios, opportunities for staff development, staff turnover

Training policies relating to equity, gender, role of private sector, and role of employers

Training responsibility: numbers disaggregated by public/private institutions and in-plant training

Apprenticeship, duration, numbers by sector, gender and region

Available programmes by vocational fields/trades, duration and qualification

Capacity and numbers enroled in each category of training by gender and region

Trainee performance, pass-rates, repetitions and drop-outs, by type of programme, region, and gender

Provisions of career guidance/counselling and job placement services

Results of tracer studies showing training relevance to future employment

Capacity of training systems to undertake evaluation and research

Available evaluative studies of training system's effectiveness and responsiveness

6. Content and Quality of Training Programmes and Facilities

Subject distribution and balance of practical and theory elements

Contributions of government agencies, employers, labour organisations and training institutions to curriculum development

Processes of curriculum review, evaluation and reform

Quality of instructional methods, media, learning materials, assessment

Quality of facilities and equipment in terms of new technologies, relevance to world of work, curriculum standards, safety

Effectiveness of standard settings, testing and certification

7. Training System Costs and Financing

Unit costs of formal training at all levels, by public sector, private institutions, and by private sector (in-plant)

Analysis of costs with regard to capital costs, other fixed costs (insurance, calculated interest/opportunity costs), variable costs/recurrent expenditures, by sector and region

Actual or potential income from income generating activities (training-cum-production) in public/private institutions

Extent to which income from self-finacing activites can be retained by training institutions

Sources of funding by type of establishment (government, student fees, enterprise levy, etc.)

Scope for resource bargaining by training providers

Planned future investment in training by sector.

8.   Assessment of Training Response to Employment Needs

Extent of fiscal contribution or other allocation by employers in support of training system

Recruitment of training graduates by employers, immediately after training, within six months, after one year

Quality of graduates, training standards vs. employers' stated requirements

Relevance of curriculum and/or standards as evidenced by extent of subsequent on-job training

Formal linkages between employers and training system/institutions, including attendance of enterprise representatives on training committees, participation of employers in industry placements and curriculum review

Numbers of training graduates entering self-employment, by gender and sector, and those successful after one year, three years

Measurements of effectiveness (relationship of outputs to objectives): output of successful graduates by training programme numbers of graduates finding paid employment

- continuity of graduates in original employment and/or trade
- unemployed graduates compared with unemployed youth without training
- excess or shortfall of training places compared to demand
- numbers of graduates found jobs through institutional placement services
- *extent of satisfaction expressed by employers*

Measurement of efficiency (relationship of inputs to outputs):

- student/teacher ratios
- utilisation of facilities (equipment, workshops) by numbers and time
- scope for cost reduction (higher student/staff ratios, better utilisation of facilities, economies of scale)
- ratio of qualifications achieved, completions, repetitions to enrolments.

Appendix 5.   List of tables of SamatData
(ILO/SAMAT 1998, Appendix A1)

Name	Description
Table 01-RefInfo	Reference information
Table 02-Pop	Population
Table 03-Eap	Economically active population, current (labour force)
Table 04-EapU	Economically active population, usual
Table 05-EapPar	Economically active population participation rate, current
Table 06-EapParU	Economically active population participation rate, usual
Table 07-EmpSec	Employment by economic sector, current
Table 08-EmpSecU	Employment by economic sector, usual
Table 09-EmpOcc	Employment by occupation, current
Table 10-EmpOccU	Employment by occupation, usual
Table 11-EmpStat	Employment by status, current
Table 12-EmpStatU	Employment by status, usual
Table 13-EmpIsSec	Informal sector employment by economic sector
Table 14-EmpRate	Employment rate (employment to population ratio), current
Table 15-EmpRateU	Employment rate (employment to population ratio), usual
Table 16-Un	Unemployment, current
Table 17-UnU	Unemployment, usual
Table 18-UnRate	Unemployment rate, current
Table 19-UnRateU	Unemployment rate, usual
Table 20-UnderRate	Underemployment rate
Table 21-RegUn	Registered unemployment
Table 22-RegVacSec	Registered vacancies by economic sector
Table 23-WageSec	Wages by economic sector
Table 24-Price	Prices
Table 25-EdLit	Literacy
Table 26-EdPop	Educational attainment of the population
Table 27-EdEmp	Educational attainment of the employed
Table 28-EdUn	Educational attainment of the unemployed
Table 29-TriWoSec	Membership of workers' organisations by economic sector
Table 30-IndAct	Industrial action (strikes and lockouts)

Appendix 6.   Key data sources for manpower analysis with labour market signals
(Van Adams, Middleton & Ziderman 1992, p. 277)

DATA SOURCE	TYPE OF DATA	PURPOSE
National household survey	Population Labour force activity Employment Unemployment Incomes and wages Education and training Other demographic characteristics	Rate of return studies Wage and employment trends Labour market analysis
National establishment survey	Employment Industry Earnings Firm size Value added	Wage and employment trends Productivity and labour market analysis
Social insurance data	Employment Unemployment Earnings Industry	Wage and employment trends
Tracer studies	Employment Unemployment Earnings Occupation	Rate of return studies (benefits)
Cost studies	Capital costs Recurrent costs Enrolments Training capacity	Rate of return studies (costs)

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