United Nations Educational, Scientific and Cultural Organization
منظمة الأمم المتحدة للتربية والعلم والثقافة

TVET
Reforming Technical and Vocational Education and Training in Iraq
إصلاح التعليم والتدريب التقني والمهني في العراق

Project funded by the European Union
مشروع ممول من الاتحاد الأوروبي

#SKILLS_BUILD_IRAQ
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Assessment of the Labour Market & Skills Analysis
Iraq and Kurdistan Region-Iraq

Construction

وزارة التخطيط

Ministry of Planning

جمهورية العراق
وزارة التخطيط - الجهاز المركزي للاحصاء
CSO
Central Statistical Organization IRAQ

Kurdistan Region Statistics Office
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UNESCO and Sustainable Development Goals

UNESCO actively helped to frame the Education 2030 agenda which is encapsulated in UNESCO's work and Sustainable Development Goal 4. The Incheon Declaration, adopted at the World Education Forum in Korea in May 2015, entrusted UNESCO to lead and coordinate the Education 2030 agenda through guidance and technical support to governments and partners on how to turn commitments into action.

Acknowledgements

This report is the result of the strong and collaborative relationship between the Government of Iraq and Kurdistan Region-Iraq (KR-I), European Union, and UNESCO. The report was drafted by David Chang, Rory Robertshaw and Alison Schmidt under the guidance of Dr. Hamid K. Ahmed, Louise Haxthausen and the Steering Committee Members of the TVET Reform Programme for Iraq and KR-I. The Central Statistical Organization (CSO) and the Kurdistan Regional Statistics Office (KRSO) provided valuable feedback and contributions to which the design and implementation of the survey was made possible.

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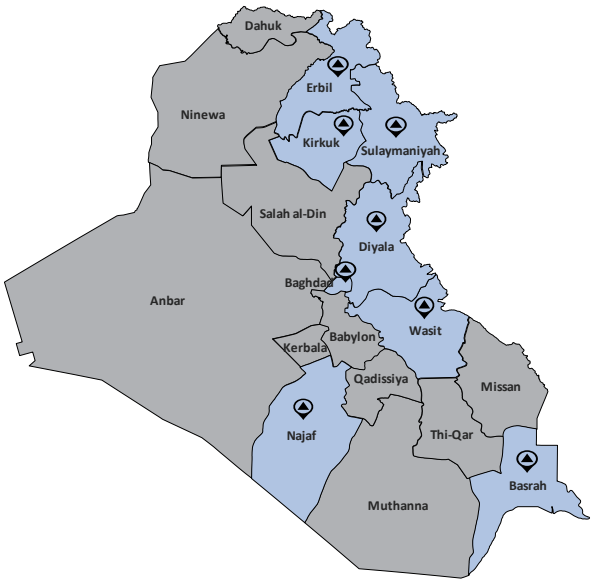
TVET Reform Programme for Iraq and KR-I

This is one of a series of reports on selected key economic sectors in Iraq and Kurdistan Region-Iraq (KR-I), prepared by UNESCO under the auspices of the European Union funded TVET Reform Programme, in partnership with the government of Iraq and KR-I. The purpose of the reports is to inform decision makers and education and training providers about issues of supply and demand in priority sectors. Research and data collection activities were implemented in 2017 and the reports were completed in 2018.

Desk-based research on the sector was based on publicly available documents and statistics; and on documents and submissions provided by the relevant ministries, agencies and organisations. Research on the supply of skills to the sector relied on data submissions from the Ministry of Education (MoE), Ministry of Labour and Social Affairs (MoLSA), Ministry of Higher Education and Scientific Research (MoHESR). Every effort was made to mitigate issues of the completeness, quality and currency of the data available.

Qualitative data for this report were collected during interviews with ministry officials and professional body representatives; and during two days of discussions with eight pilot sector councils constituted to provide public and private sector perspectives on the challenges and opportunities of the sector. A survey of firms in each sector (excluding the informal sector) was implemented in eight governorates through the Central Statistical Organization (CSO) and the Kurdistan Regional Statistics Office (KRSO).



Construction sector

The construction sector in Iraq was on a booming trajectory in the first decade of the 21st century, until it was hit very hard by ISIL/Da'esh incursion and economic downturn. In 2013, at its peak, construction was the third largest non-oil sector, representing 13.7% of non-oil GDP, but by 2015 its size and value had diminished dramatically.

Historically, domestic and foreign investment in the sector were substantial, and this is expected to resume with normalisation of the security situation and reduced military expenditures; reduction of political uncertainty and partial recovery in oil prices; as well as the need for rebuilding damaged infrastructure. Growing demand for real estate from a burgeoning population, and availability of manpower and raw materials for construction will support the future growth of the sector.

The government controls most aspects of allocating land, awarding of construction contracts and licenses for construction, registration of property and the supply of construction materials, and these processes are reportedly subject to corrupt practices. Banking systems which make it almost impossible to get loans are also a barrier to entrepreneurial construction activity. These issues need to be addressed to enable the sector to fulfil its promise.

Construction is a labour-intensive activity and the sector is historically one of the largest employers, especially of young men. The sector employs that largest proportion of 15-25 year old workers, but the proportion of female workers is less than 2%. The sector also employs a large number of foreign workers, despite high unemployment of local youth. Employment in the sector is precarious, since it is generally project based, without long term contracts. Most jobs in the sector are for basic, semi-skilled and skilled workers, which do not require tertiary education.

The top ten construction occupations identified in the survey provide a snapshot of employment in construction during a period of economic crisis and conflict. It seems likely that these occupations represent the occupations least likely to be laid off during stagnation of the sector, with over-representation of high level professionals, and under-representation of artisan (semi-skilled and skilled) workers.

In both Iraq and KR-I, the majority of all construction related training is in the field of electricity. In Iraq, metal work (welding and foundries), civil engineering and surveying are the next biggest fields for training, and the second largest field of training for construction occupations in KR-I is surveying. The skills supply data provided in this report indicates that training is not offered for five of the top six artisan occupations in Iraq.

Top ten most frequent construction-related occupations in employment by region

Rank	1	2	3	4	5	6	7	8	9	10
Iraq	Civil engineers	Construction managers	Mechanical engineering technicians	Bricklayers and stonemasons	Building construction labourers	Heavy truck and lorry drivers	Earthmoving and related plant operators	Electric engineers	Carpenters and joiners	Tied: Carto-graphers and surveyors & Concrete workers
KR-I	Civil engineers	Electric engineers	Building architects	Mechanical engineers	Electrical engineering technicians	Carto-graphers and surveyors	Construction supervisors	Physical and engineering science technicians	Construction managers	Tied: Building construction labourers & Mechanical engineering technicians

In view of the expectation of significant construction activity in the foreseeable future, it is recommended that training for a much wider range of construction occupations should be developed and offered, especially for semi-skilled and skilled occupations. Planning should take into consideration the hierarchies of manpower on a building site. Each building project requires the expertise of a few high-level professionals, many craftsmen and a larger number of semi-skilled labourers.

The UNESCO Office for Iraq, under the TVET Reform Programme, has developed competency-based training for bricklayers, concrete workers, and carpenters (all in the top ten occupations). These programmes also address other skills gaps identified by employers in the survey, such as practical skills, reading and writing, communication, teamwork and foreign languages. They also include preparation for employment, addressing some of the factors which influence employers hiring decisions. It is recommended that these benchmarked competency-based programmes, based on locally developed occupational standards are used as a model to develop other artisan training programmes for construction occupations. This report also includes recommendations for higher education, including possible diversification of programme offerings which may better support the sector and the employment of graduates.

Chapter 1: Introduction to the Sector Skills Analysis Project

This report on the construction sector is one of a series of eight reports on the seven economic sectors and informal sector in Iraq and Kurdistan Region-Iraq (KR-I). The series consists of:

- Report on the **Agriculture, Forestry and Fishing** sector in Iraq and KR-I
- Report on the **Manufacturing** sector in Iraq and KR-I
- Report on the **Construction** sector in Iraq and KR-I
- Report on the **Wholesale and Retail and Repair of Motor Vehicles** sector in Iraq and KR-I
- Report on the **Transport and Storage** sector in Iraq and KR-I
- Report on the **Accommodation and Food Services (Hospitality)** sector in Iraq and KR-I
- Report on the **Information and Communication** sector in Iraq and KR-I
- Report on the **Informal** sector in Iraq and KR-I

These reports are the culmination of a series of primary and secondary research activities implemented in 2017.

The Sector Skills Analysis (SSA) Project[1] is a component of the Technical and vocational education and training (TVET) Reform Programme, funded by the European Union and in partnership with the government of Iraq and KR-I. The twin aims of the SSA project are (I) to inform education policy and priorities at secondary and tertiary levels, especially curriculum development for TVET and the development of training and opportunities for unskilled and/or unemployed people (with emphasis on women and youth) to enter the labour market and participate in formal and informal economic activity and (ii) to build the capacity of stakeholders to survey businesses and analyse employer demand in order to determine the best use of funding and target relevant TVET provision to better meet the demand of the labour market.

1.1 Global expectations of TVET

TVET is widely understood to be key to achieving a range of sustainable development goals including alleviation of poverty by empowering people to work and create jobs for others; increasing productivity and economic growth; promoting social equity, stability and peace; and increasing awareness of environmental issues and promoting green practices. TVET is regarded as pivotal to the achievement of inclusive, equitable and sustainable economic growth of industry and business, youth employability and enhanced social well-being. A TVET system has potential to influence work practices in the long term by emphasising occupational and professional standards, through developing skills and knowledge for sustainable work practices, and by introducing new technologies.

A TVET system capable of achieving these aspirations should be demand-driven by the current and projected needs of the labour market and by identified social and economic development opportunities for the future, so that it is relevant to the needs of employers and the opportunities of the formal and informal sectors.

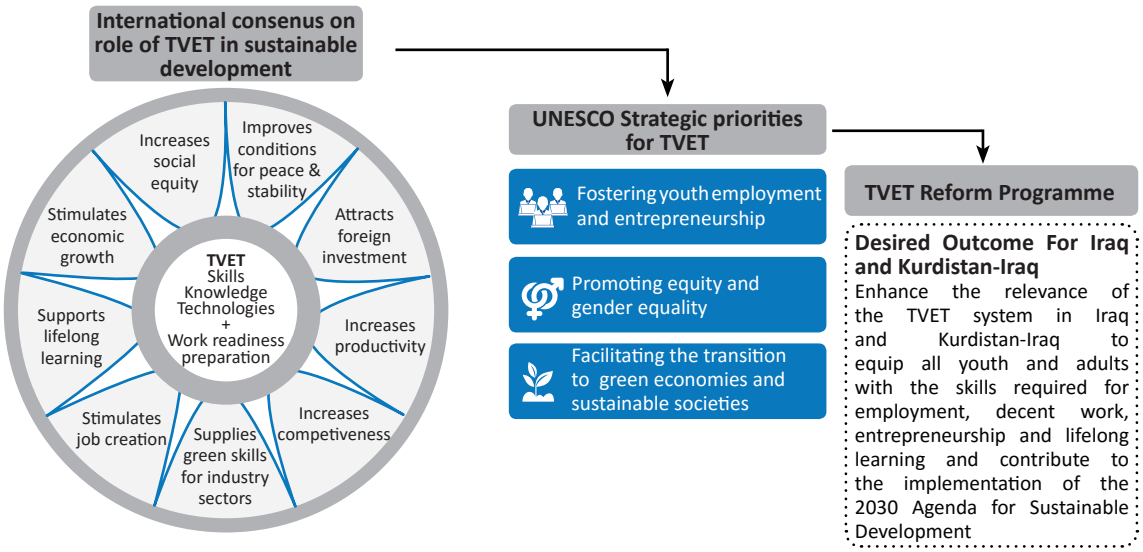
[1] The full title of the project is "Labour Market Assessment and Sector Skills Analysis. In this document, the short name "Sector Skills Analysis" is used to refer to all parts of the project, including assessment of the labour market

It needs to be accessible to all social groups (including urban and rural and marginalised segments of the population) and include a range of components to ensure that graduates (especially youth) are equipped with work-ready skills.

1.2 Context of the project

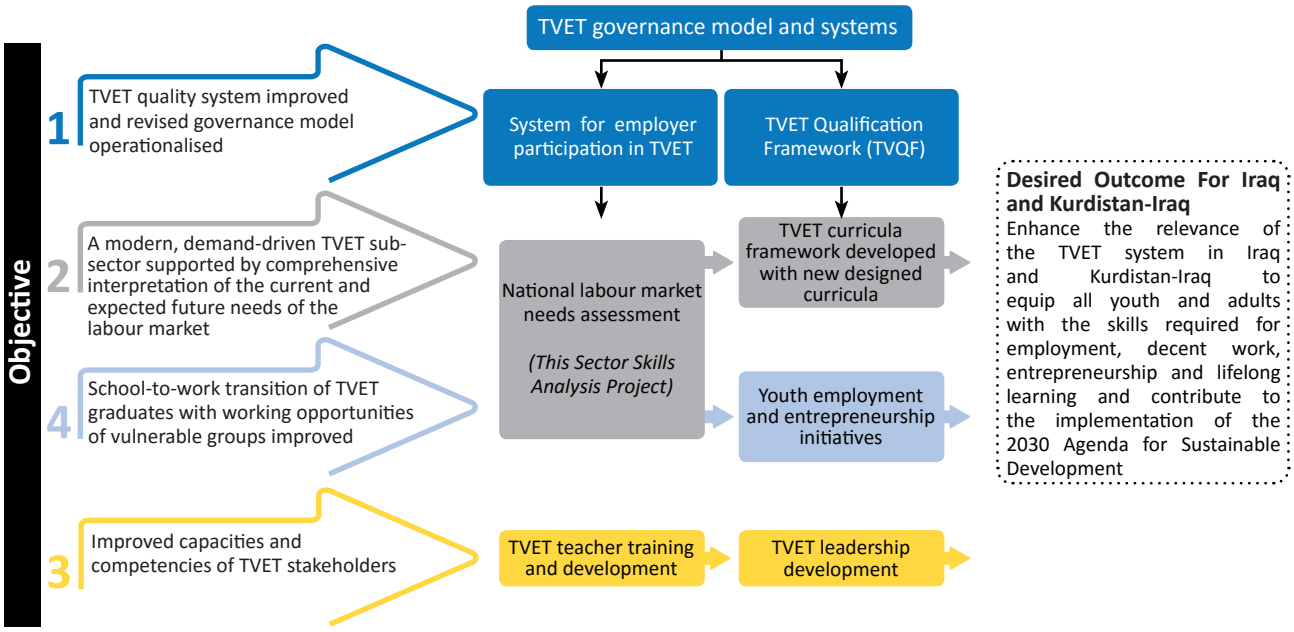
These concepts have shaped the UNESCO Global TVET Strategy and underpin the TVET Reform Programme for Iraq and KR-I (see Figure 1).

Figure 1: TVET Reform Programme for Iraq and KR-I is aligned with global thinking about TVET



This SSA Project is an essential element in the realisation of the desired outcome for the TVET system in Iraq. It constitutes a specific component in the overall design of the larger TVET Reform Programme (as shown in Figure 2), and it contributes to the other components. The larger Programme needs labour market information and analysis of skills supply to inform the development of new training programmes leading to the award of TVET Qualification Framework (TVQF) qualifications and youth employment and entrepreneurship initiatives. The Project provides skills demand and supply analysis for these purposes and it lays the groundwork for a system for employer participation in TVET, through the establishment of pilot Sector Councils.

Figure 2: Relationship between the Sector Skills Analysis (SSA) Project and other elements of the TVET Reform Programme



1.3 Scope of the project

There are no established systems in Iraq and KR-I for monitoring changes in the demand for labour and ascertaining employers' changing requirements for human capital, and there are no systematic arrangements for responding to emerging skills needs by adapting curricula, developing qualifications or designing learning provision to meet those needs. Information on labour market trends and skills needs is scarce, and any existing information is the result of ad-hoc initiatives of national and international institutions. As a result, the mix of occupational training offered, and the number of students enrolled in each occupation have little relationship with the needs of the labour market.

Assessing the needs of the labour market requires synthesis and analysis of information about the dynamic relationship between the labour market, the economy and the education and training system. The Project synthesises information about these three systems by collating data from the past (existing data and identified trends), from the present (actual current situation and needs of employers) and about the potential future (planned and untapped potential development). It includes desk review of existing data and past trends, qualitative and quantitative data from the present situation (Enterprise Survey, interviews and structured pilot Sector Council meetings) and projected and planned future development (national and sectoral strategic plans, Enterprise Survey and pilot Sector Council meetings).

1.3.1 Focus on selected economic sectors

The Project focuses on seven ISIC[2] economic sectors and the informal sector. The seven economic sectors selected for the focus of the Project are shown in Table 1.

The selection criteria for the economic sectors, which were determined in consultation with the Programme Steering Committee, the Inter-Ministerial Working Group (IMWG), the Central Statistical Organization (CSO) and the Kurdistan Regional Statistics Office (KRSO), were as follows:

- Minimum of 6 sectors relevant to both Iraq and KR-I
- Sectors considered to be drivers for inclusive, equitable and sustainable economic growth in Iraq and KR-I
- Sectors conducive to fostering youth employment, decent jobs and entrepreneurship
- Sectors that can support the reconstruction of the country and transition to green economies and environmental sustainability
- Sectors with potential for leveraging employment opportunities and business development in other sectors
- Include primary, secondary and tertiary sectors of the economy
- Take into consideration growth potential in terms of GDP, employment and exports, and changing technology
- Capable of using and applying the results and insights from a sectoral skills analysis (i.e. the sector is relatively well organised).

[2] International Standard Industrial Classification of All Economic Activities

Table 1: Selected economic sectors and subsectors

Section	Sector	Selected subsectors of interest based on consultation and desk-review
A	**Agriculture, Forestry and Fishing**	01 - Crop and animal production, hunting and related service activities 03 - Fishing and aquaculture
C	**Manufacturing**	10 - Manufacture of food products 11 - Manufacture of beverages 19 - Manufacture of coke and refined petroleum products 20 - Manufacture of chemicals and chemical products 21 - Manufacture of basic pharmaceutical products and pharmaceutical preparations 22 - Manufacture of rubber and plastics products 23 - Manufacture of other non-metallic mineral products 24 - Manufacture of basic metals 25 - Manufacture of fabricated metal products, except machinery and equipment 26 - Manufacture of computer, electronic and optical products 27 - Manufacture of electrical equipment 28 - Manufacture of machinery and equipment 32 - Other manufacturing
F	**Construction**	41 - Construction of buildings 42 - Civil engineering 43 - Specialised construction activities
G	**Wholesale and Retail Trade, Repair of Motor Vehicles and Motorcycles**	45 - Wholesale and retail trade and repair of motor vehicles and motorcycles
H	**Transport and Storage**	49 - Land transport and transport via pipelines 52 - Warehousing and support activities for transportation 53 - Postal and courier activities
I	**Accommodation and Food Services**	55 - Accommodation 56 - Food and beverage service activities
J	**Information and Communication**	61 - Telecommunications 62 - Computer programming, consultancy and related activities 63 - Information service activities

1.3.2 Focus on a sample of governorates

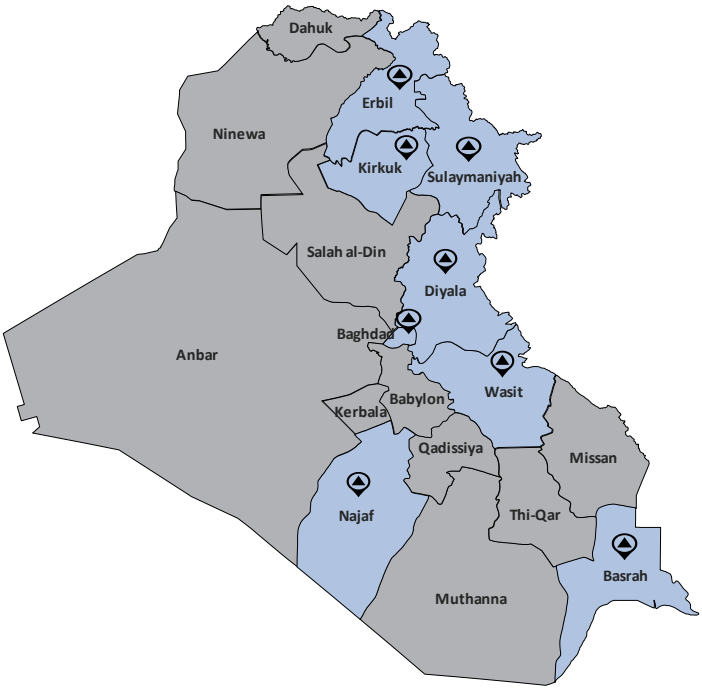
The scope of the Enterprise Survey included a sample of firms from each of the 7 economic sectors from 8 governorates, as shown in Figure 3 (survey was not conducted for the informal sector).

The selection criteria of the governorates for the Survey were as follows:

- Have at least 5 governorates in Central and Southern Iraq (CSI) and 2 governorates in KR-I to represent the whole country
- Urban and rural economic areas

- Based on population, employment trends and growth predictions
- Consistency with the selection of economic sectors (i.e. the selected sectors are active in the selected governorates).

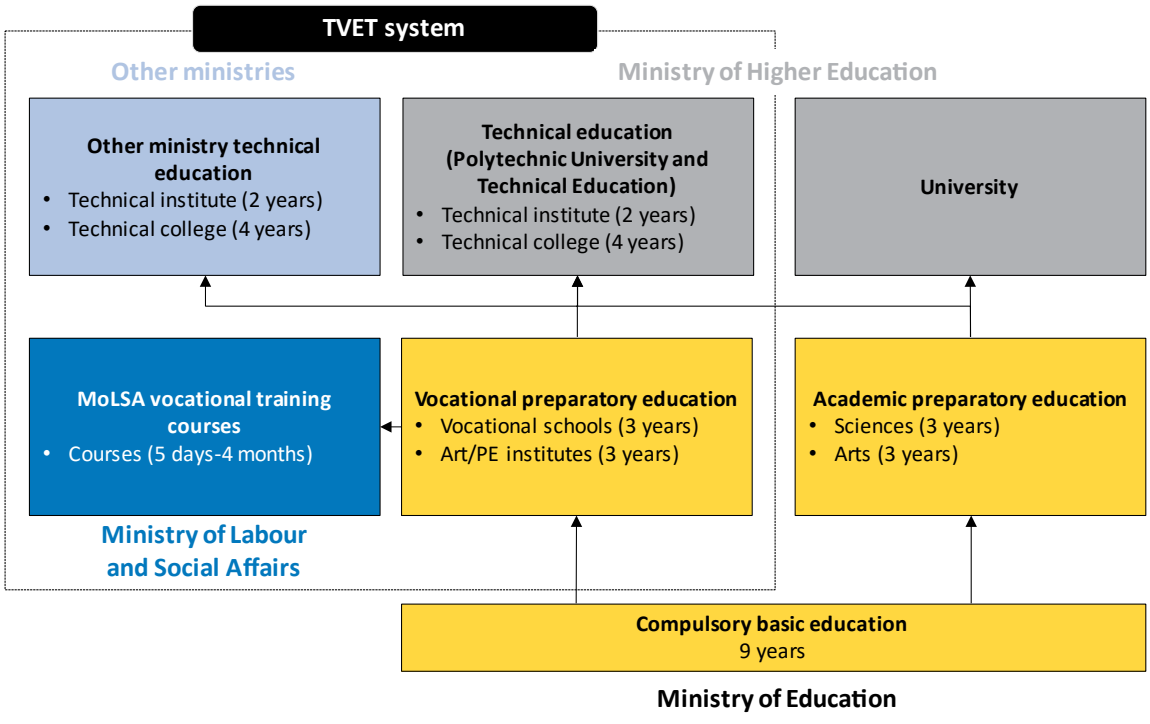
Figure 3: Map of governorates of Iraq and KR-I showing those selected for the Enterprise Survey



1.3.3 Focus on TVET skills providers

Figure 4 below provides the overview of provision of TVET by the Ministry of Education (MoE), Ministry of Labour and Social Affairs (MoLSA), Ministry of Higher Education and Scientific Research (MoHESR) and other ministries.

Figure 4: Structure of TVET provision



Vocational preparatory education is offered by the MoE in Iraq and KR-I. Vocational education is offered in 3-year programmes (equivalent to years 10, 11 and 12) in vocational schools and institutes. Due to capped numbers, a very small percentage of vocational education graduates are eligible for entry to tertiary technical education in the polytechnic universities and technical universities. In Iraq, there were 315 vocational education institutions. The total number of all vocational students enrolled in specialist vocational programmes was just over 50,000 in 2016-2017. In KR-I, there were 33 vocational schools and 28 institutes (for a total of 61 institutions). The total number of students enrolled in all three years of the programme in 2015-2016 was nearly 8,000.

In Iraq, there are 38 MoLSA training centres with an average annual MoLSA cohort size of 16,659. In KR-I , there are 7 MoLSA training centres with annual enrolment of approximately 1,500 learners.

In Iraq, there are four technical universities with 29 institutes and 16 colleges (for a total of 45 institutions) with an annual admission of approximately 30,000 students. In KR-I, there are three polytechnic universities with a total of 36 institutes and colleges, and a total estimated annual enrolment of approximately 12,000 students.

The Boards of Tourism in both Iraq (Ministry of Culture) and KR-I (Ministry of Municipality and Tourism) offer training for tourism and hospitality. The nine tourism and hospitality institutes in Iraq provide pre-service training in four 3-year programmes with a total enrolment of 756 students in 2015-2016. The operationalisation of the KR-I Tourism Training Centre has been subject to significant delays. A specialist facility with capacity for approximately 120 students is only partially equipped for training of hospitality staff; and licensed by MoHESR.

The Ministry of Communications in Iraq offers training through its Higher Institute for Communications and Post, but insufficient information was provided for inclusion in the skills analysis. Likewise, the Ministry of Agriculture has many training centres (78 not including KR-I) all over the country offering professional development to farmers and ministry staff, but no detailed information about these was accessible within the research period. The Ministry of Transport in Iraq also has three training centres, which are reportedly partially operational, but no detailed information was available for these.

Therefore, the analysis of skills supply included programmes relevant to the selected economic sectors delivered by the following provider types:

- All public vocational preparatory schools in Iraq and KR-I
- MoLSA training centres in Iraq and KR-I
- All public technical institutes in Iraq and KR-I
- All public technical colleges in Iraq and KR-I
- Travel and tourism institutes and training centres in Iraq and KR-I (Ministry of Culture, and Ministry of Municipality and Tourism).

1.4 Methodologies of the project

1.4.1 Methodology overview

Four streams of information inform the final Sector Skills Analysis (SSA):

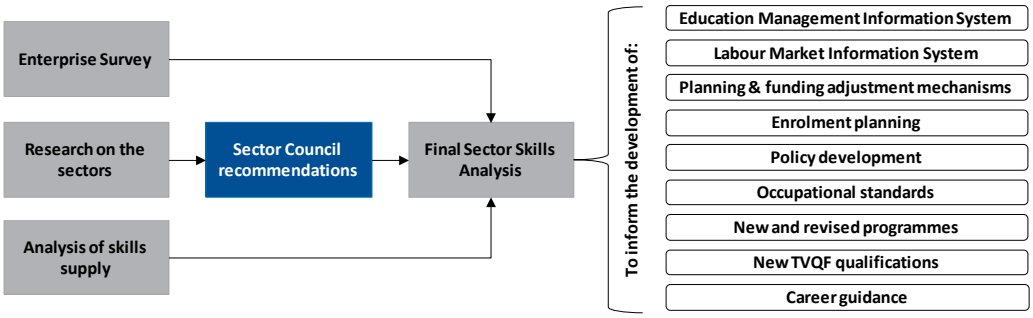
- Desk-based research on the seven ISIC economic sectors and the informal sector

- Synthesis and augmentation of the desk-based research by the eight pilot Sector Councils
- Analysis of skills supply
- Results of the Enterprise Survey (not conducted for the informal sector).

The sources of primary data for the analysis include (i) the Enterprise Survey, (ii) 32 interviews with ministries and leading private sector organisations, and (iii) eight pilot Sector Council meetings. The secondary data sources for the background research included existing documents (strategies, plans, reviews, policies, laws), and international and national websites and data sets.

The purpose of the SSA is to inform education policy and priorities, especially curriculum development for TVET and the development of training and opportunities for unskilled and/or unemployed people; and to build the capacity of stakeholders to analyse and respond to labour market demand. Figure 5 shows the multiple potential uses of the information.

Figure 5: Overview of the Sector Skills Analysis (SSA) Project



1.4.2 Desk-based research methodology

Preliminary analysis of the economic sectors of Iraq and KR-I commenced during the inception period, for the immediate purposes of selecting the sample of economic sectors and governorates for the Enterprise Survey.

After final agreement on the selected sectors, each of the selected economic sectors was researched and analysed, using the PESTLE framework (Political, Economic, Social, Technological, Legal and Environmental) as a tool for analysing, holistically, each sector from different perspectives.

1.4.3 Mapping the supply and demand systems

Background research included mapping the institutional landscape within which economic development and education and training are planned, financed, regulated and delivered.

Mapping the supply and demand systems includes analysing the mandates of, and the relationships between, organisations providing related and complementary services in the broad fields of the labour market and the TVET system.

These stakeholder organisations are the main beneficiaries of this Project, since the Project aims to influence policy and planning in these two fields, and any developments resulting from the TVET Reform Programme will be implemented by these organisations.

Therefore, it was important to have a detailed understanding of the component parts of the systems: how they work; how information flows between them; the location and processes of decision making, implementation and monitoring and evaluation; the main outputs and outcomes; and any identified constraints or issues of concern. Sources of information for mapping included both desk-based research and interviews.

1.4.4 Interview methodology

The ministries relevant to all the selected economic sectors in Iraq and KR-I were involved in the research through participation in interviews, submission of documents, and participation in the pilot Sector Council workshops. The other main public sector participants included MoLSA, MoHESR, and MoE.

32 interviews were conducted in Baghdad and Erbil between January and February 2017 and some additional interviews were conducted in Erbil in April 2017. In some cases, formal data requests were sent to the interview participants in advance, and in some cases written requests followed the interviews. The format of the interviews varied according to the availability of participants and prior access to relevant information. In most cases interviews took between 1 and 2 hours.

1.4.5 Sector Council methodology

Both the Enterprise Survey and the pilot Sector Council meetings are mechanisms for collecting information about employer demand and increasing employer participation in TVET. The qualitative data collected from the pilot Sector Councils complements the quantitative data collected in the Enterprise Survey.

Eight pilot Sector Councils were established to represent the public and private leadership of each of the selected seven economic sectors and the informal sector. Private sector representatives included the Chamber of Commerce and Industry and relevant professional federations, unions and associations.

The rationale for including an Informal Sector Council includes these considerations:

- The Enterprise Survey of employers includes mainly formal sector businesses
- Skills development should acknowledge the skills needed for informal economic development opportunities and transition to the formal sector
- The informal sector includes traditional forms of informal skills training such as informal apprenticeships which can be further developed
- Women and vulnerable groups like unemployed youth, displaced people and refugees work in the informal sector
- Entrepreneurship initiatives often start on a small scale in the informal sector
- Green skills and sustainable development practices need to penetrate all of society and all workplaces
- The informal sector employs a substantial proportion of the population.

Sector representative bodies are a necessary element of a demand-led TVET system. The system can only be 'demand-led' if the sectors have organised leadership that is well informed and able to advise on the skills needed by the sector.

Formal establishment of permanent Sector Councils will take time as the concept needs to be widely discussed and agreed upon, and policy and legislative implications need to be considered. Thus, for the purposes of this project, 'pilot' Sector Councils were constituted to act as 'think tanks' for the sector; to provide a forum for strategic discussion about sector growth and development; to identify challenges and opportunities; and to develop goals to address challenges and exploit the opportunities and achieve its goals.

The eight pilot Sector Councils met between April and July 2017, and played an important role in validating, augmenting and interpreting the findings of the desk-based research; and providing explanations and illustrative stories behind the statistical information presented.

Each two-day workshop (with slight variation for the Informal Sector) consisted of a structured series of progressive small group activities to explore the issues of the sector and identify the prioritised skills needs. Five worksheets were designed to guide the deliberations of the small groups and capture brief written responses from the small group activities. The structured activities were as follows:

- **Activity 1:** Define 3-4 main challenges that impact the growth and development of the sector (a problem statement)
- **Activity 2:** Identify new opportunities and untapped potential to be explored
- **Activity 3:** Formulate goal statements to address the challenges and/or seize the identified opportunities for the sector
- **Activity 4:** Identify occupations needed for the sector to address challenges, seize opportunities and achieve goals
- **Activity 5:** What should the training for the identified occupation look like?

Analysis of the written and verbal outputs of each meeting triangulated what the participants wrote down, what they presented and responded in small groups, and any other response or critique of the participants.

1.4.6 Skills supply methodology

The data supplied by MoE, MoHESR and MoLSA, and data accessed from CSO, have significant weaknesses in terms of sufficiency and adequacy for estimating the supply of skills to each economic sector in this study.

The minimum information required for a results-oriented evaluation of a TVET system generally includes enrolment by level and programme, retention, progression, completion, success, graduation and employment rates of graduates. Ideally, this information would be routinely collected by all providers and uploaded to a central TVET Management Information System (MIS). However, in Iraq, routine, standardised, continuously updated and centrally managed TVET data collection does not routinely occur, nor is there any systematic use of skills supply data to inform enrolment planning.

Weakness in the data available for estimating the skills supply included:

- The data obtained from various sources was a mix of enrolment numbers and graduate numbers. It included these variations for each specialisation and programme:
    - Enrolment in each year of a three-year programme.
    - New enrolment in the first stage of a programme each year for a 3-4-year period.
    - New enrolment for two years (2014 and 2016) over a 3-year period.
    - Graduates over a period of three years.
- In some cases, two spreadsheets provided at the same time, by the same organisation, were contradictory in some respects (e.g. different totals), which raised more questions than answers

- Spreadsheets provided by ministries included adding and formula errors (e.g. vertical summation contradicted horizontal summation). Tables provided in Word format were especially prone to this kind of error
- In some cases, much data processing effort has been devoted to inputs (e.g. number of workshops held, number of teaching and training staff, and other matters which are of exclusive interest to supply management) or issues of low significance, with little or no attention given to investigating outcomes and issues relevant to the labour market
- There appears to be no indicators or benchmarks to guide (i) what units of analysis and data are required to evaluate the quality and effectiveness of skills supply and (ii) how to recognise data which are causes for concern or require further analysis, and which data are within an agreed normal range, and do not require further analysis.

Because of the limitations of the data, it was decided that both average student cohort size and average graduate cohort size by specialisation will be used as proxies for skills supply. This means that the estimation of skills supply can only be regarded as a rough guide.

Generally, student cohort size is larger than graduate cohort size, because some students do not graduate (i.e., they fail and/or drop out). There is not enough information available to estimate a drop out-rate to apply to student cohorts at all levels. The only reported drop-out rate (5% reported by CSO in 2015) is for vocational (school) education. Longer programmes at non-compulsory levels generally have much higher drop-out rates than short or compulsory school programmes. With no scientific basis for estimating drop out and failure rates, no adjustments could be made to the average cohort size to allow for failure and drop out.

It is possible that an overestimated proxy for supply (average cohort size) is somewhat balanced out by (i) the absence of any data in this study for NGO training (mainly for refugees and IDPs) or private providers (very few), and (ii) the exclusion of informal apprenticeship training, which is unrecorded but may be substantial, especially in fields like construction. This is, of course, an assumption without any evidence.

Calculating average cohort size is valid when enrolment seems steady (when the difference from one year to another is negligible), but not when there is a significant difference. A dramatic difference suggests either (i) a new or discontinued programme or (ii) some kind of external shock, such as temporary closure of a specialist institution due to the ISIL/Da'esh incursion. In the few cases where averaging does not seem to give a correct reflection of the skills supply, this is noted in the Chapter 4 tables by an asterisk (*).

In some parts of Iraq, colleges and institutes have closed. This appears to have inflated enrolment in other colleges and institutions (with big differences between 2014-2015 and 2015-2016 cohorts). Information provided by the MoHESR was incomplete for 2015-2016. In many cases, only one enrolment figure is available. Therefore, for all Technical Foundation University programmes, the 'cohort size' is the last known enrolment (see Chapter 4 tables, noted by an asterisk*).

As can be seen from the discussion above, at best the figures provided in this report for skills supply are indicative. However, since there has been no previous study on this scale to quantify the supply of skills to the specific sectors of the economy, this assessment can provide a benchmark estimation based on the best evidence available. For the first time in this study the unit of analysis is not the institution or the governorate which *supplies* the skills, but the economic sector which *demands* the skills.

1.4.7 Enterprise Survey methodology

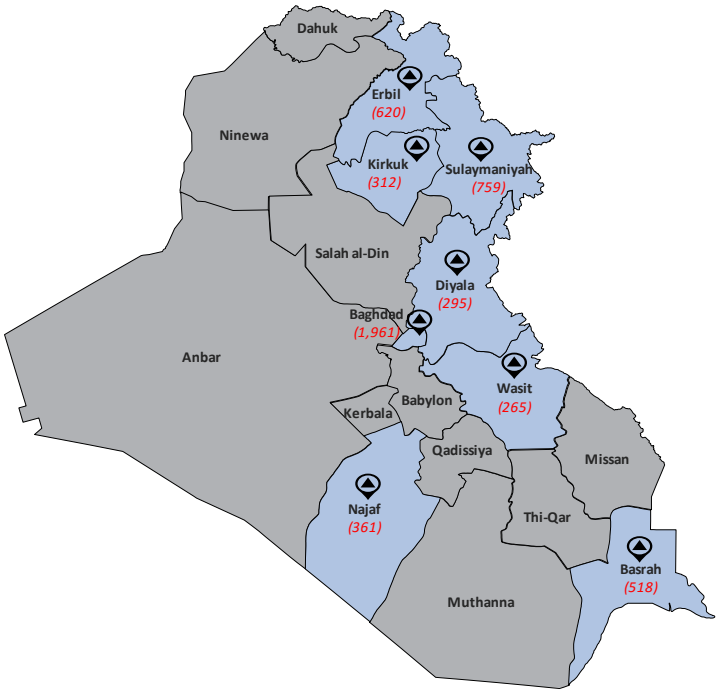
The survey was carried out so that it can inform reforms to the TVET system i.e. to make it more demand driven. In view of this, firms were surveyed (excluding for the informal sector) regarding the number and kind of employees at present, with consideration of labour requirements for the future. The goal of the survey was to enable a view into the future skill needs of Iraq's economy so that relevant capacity could be built to fulfil such needs, in terms of offering the relevant TVET training programmes at TVET institutions.

Sample design

The sample was chosen from the *CSO (Central Statistical Organization) Business Register*. Established in 2009, the Register contains all firms in Iraq found during a census survey, numbering 490,080 across the 18 governorates of Iraq and KR-I. It is developed at the establishment level, meaning that all units of a firm (the headquarters as well as all subsidiaries) are identified within the Register ('population frame'). This is presented in Appendix 1.

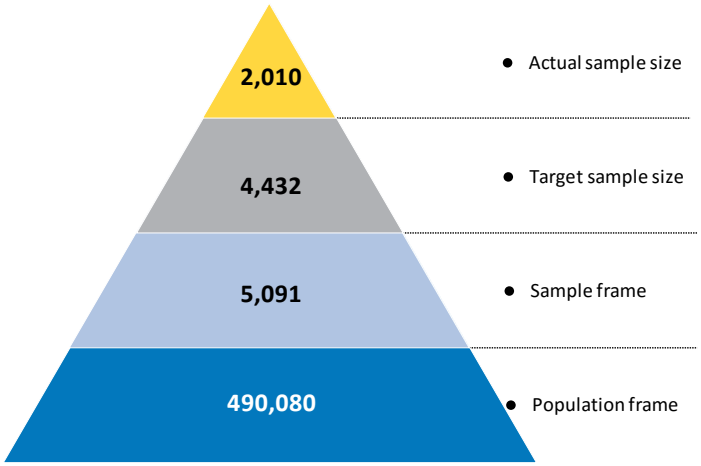
The sample taken aimed to assess the needs of firms, with 10 or more employees, within the 8 selected governorates. From the Register ('population frame') there are 5,091 such firms ('sample frame') in total, which can be seen below in Figure 6. A complete breakdown of the sample frame can be found in Appendix 2.

Figure 6: Sample frame for the Enterprise Survey



The Register was stratified by both 27 subsectors (across the seven ISIC selected economic sectors) and the 8 selected governorates. A simple random sampling method (each firm equally likely to be selected) was used for each of the 216 strata (27x8) with the goal of minimizing the margin of errors within each stratum. The result was a target sample size of 4,432 firms of which 2,010 were surveyed ('actual sample size'). More details on the sample sizes are provided in Figure 7 and in the following sections.

Figure 7: Enterprise Survey population and sample frames & target and sample sizes



Sample size

The determination of the sample size depended on the:

- Types of questions being asked (i.e. population parameter of interest)
- Degree of desired confidence and precision of final estimates
- Anticipated response rate.

In this survey, the questions of interest had 3 possible responses (multinomial response). For example, asking a company how important (not important/somewhat/very) is having relevant technical skills is in the occupation. In this case, the parameters of interest are the proportion of firms that place importance on technical skills (not/somewhat/very). Therefore, the target sample size should be calculated to ensure that these proportions are accurately estimated by the sample.

As is typical, a 5% margin of error, and 95% confidence level were selected. This means that the sample size was calculated so that the estimated proportions are within 5% of the true proportions 95% of the time. That is, we want the 95% confidence interval for the proportions of each response to have a width at most of 0.05 (5%). These confidence intervals are calculated as the proportion plus or minus the margin of error:

$$p \pm e,$$

where the margin of error is dependent on the sample size.

For example, if 'very important' was answered to the above question 80% of the time, then we would like a large enough sample size, so that we would be 95% sure that the true proportion of firms who value technical skills as 'very important' is between 75% and 85%.

The response rate was estimated to be 95%, indicating that 95% of firms sampled were expected to answer the survey questionnaire.

As mentioned in the preceding section, the sample was selected to allow for analyses within each stratum. Therefore, required sample sizes were calculated for each stratum, with the total target sample size being the sum of the stratum sample sizes. The benefits of sampling this way are two-fold. Firstly, this approach ensures that each stratum is represented sufficiently to allow accurate analyses at that stratum level. Secondly, by minimizing the margin of errors within each stratum, the overall margin of error of the survey is greatly reduced.

Based on the above assumptions, the sample size within each strata was calculated as:

$$n_h = \left(\frac{z^2 p(1-p)}{e^2 + \frac{z^2 p(1-p)}{N_h}} \right) x \frac{1}{1 - NR}$$

Where:

n_h : the required sample size in stratum h

p : the proportion of firms that select a particular response within a given question

z : the value (z-score) associated with a 95% confidence level (z = 1.96)

e : the margin of error

N_h: the number of firms in the CSO Business Register in stratum h

NR: the anticipated non-response rate

For example, for the telecommunication firms in Baghdad, there are N_h= 120 firms in the Register of size 10 or more employees. To find the sample size required for a margin of error of 5% (e = **0.05**) with a 95% confidence level (z=**1.96**) and 5% non-response rate (NR =**0.05**) we need only to determine a value of p to use in the above formula. Often, previous surveys or pilot data are used to determine an approximate value for p. Since no pilot data exists for a survey of this kind, we want to use a value of p that will result in a conservative value of n_h. In this case, n_h in the formula above is largest when p =**0.5**. Therefore, we use p =**0.5** to ensure that the value of n_h will be sufficiently large to estimate any true value of p .Inserting all these values into the above formula gives a stratum sample size of n_h=**97**. A similar calculation was done for all 216 strata. The result was a total target sample size of 4,432 to ensure the 5% margin of error for each stratum. The complete breakdown of the target sample size can be found in Appendix 3.

In the above formula, the calculated target sample size applies to estimating the proportion of a single response to a question, i.e., the possible responses are treated as binary for the purpose of calculation (the single response/not). For example, if we are interested in the needed sample size to estimate the proportion of firms who answered 'very important' to the 'technical skills' question, then for the purpose of the calculation, the possible responses are treated as 'very important' and 'any other response'. As mentioned above, the case that requires the largest sample size is when the proportion of firms answering 'very important' is 50% (p = 0.5). Therefore, p = 0.5 is used in the above formula to determine the sample size needed to accurately estimate the proportion of firms answering 'very important'. To determine the sample size needed to estimate the 'somewhat important' and 'not important' categories an analogous approach is taken. Since we use p = 0.5 in all 3 cases, we get the same result from the above formula. This means that the same value for n_h is sufficient to estimate each of the 3 proportions accurately.

Since in the above we set each of the 3 proportions to be 50% (p= 0.5) for the purpose of the calculations, we are ignoring the fact that the 3 proportions must sum to 100%. That is, we are treating the 3 proportions as independent when in reality they depend on each other. Ignoring this dependency is not of concern as the calculation leads to having a sufficient sample to ensure each question is answered to within the specified margin of error independently of one another.

Alternative methods that properly account for this dependence, such as those in Thompson (1987)[4], can be used to estimate the sample size. For reference, using this approach the total sample size for the stratum margin of errors to be 5% is 4,457. For this survey, the calculated total size of 4,432 (as outlined above) was used for the sample size as it is sufficient to ensure each question is answered to within the 5% margin of error within each stratum.

As discussed below, these sample sizes proved to be challenging to obtain, and in some strata replacement methods were required which still allowed for the analyses undertaken to find significant results. In total, 2,010 firms with 10 or more employees were surveyed (see Appendix 4 for breakdown). The fact that the Register has not been updated since 2009 makes it possible that these 2,010 firms represent a greater proportion of the population.

Design of the questionnaire

The survey explored information about the employers' current workforce and workforce management practices. In particular, it collected information about current and future employment opportunities; about occupations in employment; about the skills of current and prospective employees, and the hiring and service training practices of the firms (as illustrated in Figure 8).

Figure 8: Enterprise Survey lines of enquiry

[3] Thompson, S. "Sample Size for Estimating Multinomial Proportions," February 1987

Implementation of the survey

The Register is typically updated annually for medium (11-29 employees) and large (30+ employees) firms. However, given recent turmoil in Iraq with the dual crisis of decreased oil prices and the ISIL/Da'esh conflict, the Register has only been updated for large firms in the manufacturing sector since 2009. As a result, all other sectors in the Register were out of date, and many of the firms listed had ceased operations. Therefore, many of the initial firms randomly selected to be surveyed were no longer operational and replacement firms were identified by CSO regional offices. These replacements were selected from the same stratum in such a way as to ensure similar characteristics to the no longer operational firms.

In some strata, the CSO regional office could not identify a sufficient number of firms with 10 or more employees. In these cases, the threshold was lowered, first to 7 or more, and in some cases to 5 or more employees. This replacement was done in an attempt to maintain as closely as possible the original sample size, and stratum allocation.

Despite this replacement strategy, the final actual sample taken contains 2,010 firms with 10 or more employees, and an additional 643 firms with 5-9 employees (totalling 2,653). Since the original sample was chosen from the firms of 10 or more employees, the primary analyses focus on this group only. This allows for the most accurate representation of the target population, and most accurate calculation of the sample weights.

Although not included in the primary analysis, the 643 firms of size 5-9 have been analysed as an independent subset as to make best use of the data. These analyses are presented in Chapter 5.

Survey quality assessment

A subsample of the firms were interviewed and audit analysis was done to ensure that interviews had been completed. Information was also collected from interviewed firms selected for the monitoring exercise to evaluate the quality of the interviews and the understanding of the objectives of the survey and its usefulness. The proportion of firms to be interviewed was targeted at 10%.

As noted in Table 2 below, calls were made to a total of 583 of the total records reaching 448 which corresponds to a sample size of 18% of the total. Of the 448 contacted, 400 of the firms surveyed (89% of the sample) verified that interaction between a CSO/KRSO surveyor and a company representative took place.

Table 2: Enterprise Survey lines of enquiry

	Iraq	KR-I	Total
Total firms surveyed	1,787	866	**2,653**
Total calls made	412	171	**583**
Contact made	295	153	**448**
% Contacted	16.5%	17.7%	**16.9%**
Verified	260	140	**400**
% Verified	88%	92%	**89%**
Inconclusive survey respondents	34	14	**48**

Definition of Terms

- *Contact made: All respondents that were reached by phone. This group does not include wrong numbers where an individual was reached, or calls where a person was reached but language precluded identification.*
- *Verified: All respondents that were reached by phone and with whom an interview by a CSO or KRSO surveyor was determined to have been made.*
- *Inconclusive: All respondents that were reached by phone but whose participation in the survey could not be verified.*

As one would expect, the time spent on the survey varied between interviewers. Using time spent on individual survey interviews as a primary indicator of whether a valid survey was performed, the results show that more than 70% of respondents indicated that the interviewer spent at least 30 minutes doing the interview. This 30-minute benchmark was applied as the minimum time required based on the training conducted for both CSO and KRSO.

As a part of the planned monitoring process, field personnel were instructed to submit reports. However, some of the field personnel did not respect the reporting schedule. In some cases, information was not transmitted until the end of the survey collection period, eliminating the possibility of corrections and feedback to weaker interviewers.

While the results support the conclusion that the survey activity was completed successfully, based on the information provided by respondents, there are indications that the quality of survey results varied from interviewer to interviewer. Some surveys did not meet the benchmark minimum time needed, and interviewers may not have effectively communicated with the company representatives. This is further supported by the responses from several respondents indicating that they did not understand the reason for the survey.

Analysis of the data

From the initially planned sample of 4,432 firms, 2,010 (45.4%) completed the entire survey questionnaire. Although this response rate is lower than hoped, the fact that the Register has not been updated since 2009 makes the true population size difficult to estimate. Therefore, it is possible that these 2,010 firms represent a greater proportion of the population.

Margin of error. The non-response rate and degree of replacement varied by governorate and subsector. Therefore, the margin of errors within the strata can be expected to vary. For example, in the manufacture of food products subsector in Baghdad, the calculated sample size (based on 5% non-response rate) for a margin of error of 5% was to try sample 144 of the 211 total firms in this stratum. In the actual sample, only 81 were obtained (56.2%). Therefore the true non-response rate for this stratum was 44%. We use the following formula to compute the margin of error in each of these situations:

$$e = \left(\frac{z\sqrt{p(1-p)}}{\sqrt{n}}\right)\sqrt{\left(1-\frac{n}{N}\right)}$$

where $\boldsymbol{e}$ is the margin of error, $\boldsymbol{z}$ = 1.96 (for a 95% confidence level), n =0.5 is the assumed proportion of a specific answer (as in the 'Sample size' section above), $\boldsymbol{p}$ is the sample size, and N is the population sample size.

In the above example, if we sample the full 144, the margin of error is 4.6%. If the non-response rate was 5% (as originally assumed) then the sample size is 137 and the margin of error is 5%. Finally, if the sample size is 81 (actual), then the non-response rate is 43.8% and the margin of error is 8.5%.

The differences in the above margin of errors result in differences in the width of the confidence intervals for the survey estimates. Specifically, holding everything else fixed, the confidence intervals will be (in this case) 8.5%/5% = 1.7 times wider. For example, if 20% ($\boldsymbol{p}$=0.2) of firms answered 'very important' to technical skills question then in the above example with a sample size of 137 the 95% confidence interval would be [16%, 24%]. With the increased non-response rate (and therefore a higher margin of error) the confidence interval would be [13%, 27%].

Most results are available at the subsector and governorate level, however, given the small number of firms in some strata, it is important to verify the response rate for these strata before presenting the results. In all governorates, there was no responses to the survey in two subsectors (32 – Other manufacturing and 62 – Computer programming, consultancy and related activities). The target sample size was small in each of these two subsectors, which helps explain the no response rate. These subsectors are not included in the results.

In the firms that did respond, missing data was not a problem, and therefore imputation methods were not required.

Weighting. In a given sample, it is preferred that it represents the true population with respect to all variables under consideration in the survey. For example, if the sample contained 60% males in telecommunication firms and the true population contains 70% for a given stratum, population inferences can therefore only be made by appropriate weighting.

Sample weights for each stratum were calculated based on the Register. The strata weights were based on the inverse probability of selection for a given company in that stratum. That is, the weights were calculated as:

$$W_{h*} = N_h / n_h$$

where $\boldsymbol{N_h}$ is the number of firms in the Register of size greater than 10 for stratum h and $\boldsymbol{n_h}$ is the size of the sample of firms of size greater than 10 drawn from stratum h.

As non-response may cause some groups to be over- or under-represented, these weights were further adjusted to obtain final strata weights of:

$$W_h = W_{h*} \times \frac{n_h}{n_{hr}}$$

where n_{hr} is the number of respondents in stratum h.

For example, according to the Register, in Baghdad, there are 120 telecommunication firms of at least 10 employees of which 97 were selected to be sampled. Of these 97, 23 responded and were interviewed for the survey. Therefore, the weight for this stratum was calculated as:

$$\left(\frac{120}{97}\right) \times \left(\frac{97}{23}\right) = 5.22$$

Across all strata the average sample weight was 2.96.

The above weights are based on the Register from 2009 and are therefore subject to bias if the true population has changed significantly since then. Given this potential problem, the survey data is analysed both with and without weighting and the primary report includes only the unweighted data, as this is deemed less likely to introduce significant bias. As a result, inferencing is limited because of cases where, for example, there could be a high range of variation in responses and reliable conclusions cannot be drawn. Some cases include:

- Cross strata (e.g. technical workers are paid more in Governorate A than Governorate B)
- Aggregation across strata (e.g. how important are technical skills in the construction sector? That is, aggregation across all the construction subsectors).

For the firms of size 5-9, sample weights should be used with extreme care as the population strata sizes in the Register are quite large, and the sample sizes are quite small. Using sampling weights as outlined above could lead to situations in which 1-2 sampled firms are weighted to represent 100 or more firms in that stratum. Given these concerns, weights are not computed for the size 5-9 firms and only unweighted data is displayed.

Limitations and potential bias. There are several limitations in the interpretation of the survey results, many of which are a result of the lack of up to date population of firms to draw the sample from.

As previously mentioned, the Register was last updated in 2009 for small- and medium-sized and non-manufacturing large firms. Given the change in economic and societal conditions in Iraq during this time, it is unlikely that the Register provides an accurate representation of the population of firms in the 8 selected governorates. This potential weakness was identified prior to the survey, but given that the Register was the only national reference of firms available, it was determined that it was the best possible reference population.

This discrepancy between the Register and the true population of firms on the ground led to many cases where those firms selected for the sample were no longer operating. Therefore, CSO used the replacement strategy, outlined previously in Chapter 1, to attempt to maintain the needed stratum sizes. Since the firms selected as replacements were not from a national register and were the result of field knowledge from local CSO offices, there is the potential that these replacement firms do not constitute a random sample of the population. Therefore, depending on the true populations of the stratum, this replacement strategy may introduce bias towards those firms known to CSO and possibly larger firms.

Furthermore, in cases where there were insufficient number of firms of size 10 or more the inclusion criteria were reduced to include firms of 7 or more employees, and in some stratum 5 or more employees. There is a total of 643 such firms. Given that the sample was created based on those firms in the Register with 10 or more employees, these firms of smaller size are not representative of the population sampled from. Therefore, these 643 firms of size less than 10 have not be used in the primary analyses referring to firms of larger size.

In principle, these 643 smaller firms could be used to attempt to make inference about the population of firms sized 5-9, although this has several limitations. Most importantly, this sample size is too small to accurately represent the 12,952 firms of size 5-9 in the Register at the subsector level in each governorate.

Moreover, the selection of these 643 firms was non-randomly drawn from the 12,952 firms in the Register and their selection was highly dependent on stratum (as this replacement strategy was only used in strata where not enough larger firms were available). Nonetheless, these 643 firms may be used to provide a snapshot of possible needs of smaller firms, and the data resulting from them are presented in Chapter 5. No strong conclusions should be drawn from them, but the data may help inform future areas of research.

Despite these replacement strategies, the overall sample size (2,010 firms of 10 or employees, 643 of size 5-9) is still potentially low for making inference at the strata level. Therefore, the margin of errors within the strata may be higher than the pre-specified 5%. These margin of errors within the strata depend on both the number of firms sampled within strata, and the variability in the answers given and therefore are difficult to predict prior to analysis. In general, those strata where the sample sizes are lower will likely yield higher margin of errors.

Finally, as mentioned previously, the discrepancy between the Register and the true number of firms in operation makes the calculation of sampling weights problematic. As outlined in Chapter 1, the strata weights are based primarily on the probability of a firm being sampled from the Register. Therefore, since the Register is out of date and some firms were sampled (via replacement) that were not part of the 2009 Register, it is likely that the sampling weights are not calibrated to the true population. Nonetheless, they constitute the best available given the available information, but any analysis involving them should be interpreted with care.

Chapter 2: Introduction to the context for skills development

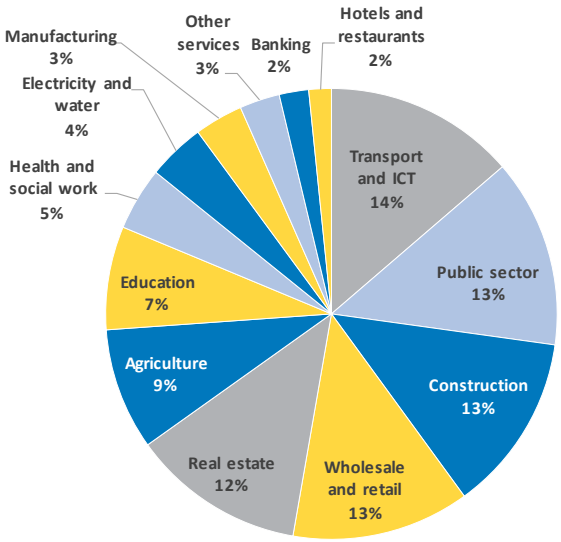
2.1 Overview of the economic sectors in Iraq and KR-I

Within the Middle East region, Iraq is a medium-sized economy, with a GDP of 574 billion USD in 2015, which is less than a third of the GDP of Turkey or Saudi Arabia and around half of Iran's or Egypt's, but much larger than the GDP of Jordan or Lebanon. The Iraqi population of around 38 million represents less than half of the population of Egypt, Iran or Turkey, similar to that of Saudi Arabia but much larger than Jordan or Lebanon. Standards of living are lower than the MENA average, with an income per capita of 15,780 USD in 2015, much lower than that of Gulf States, behind that of Turkey or Iran, but higher than Lebanon, Egypt or Jordan.

Business conditions are very low compared to the region, with Iraq ranking 165th, much lower than Gulf States or Turkey (69th), Jordan (118th), Iran (120th), Egypt (122nd) or Lebanon (126th). Iraq receives significant FDI, mainly in the oil sector, comparable in the past five years to that of Iran or Egypt, lower than that of Turkey or Gulf States but higher than Jordan or Lebanon. Life expectancy, at around 70 years, and literacy at around 80%, are far below those of neighbouring countries.

Like many large oil-exporters, the Iraqi economy is not very diversified and the government plays a key role in the economy. Indeed, oil activities represented between 45 and 55% of Iraqi GDP between 2010 and 2014, while oil accounts for over 90% of government revenues. In 2014, the largest non-oil economic sectors are transport, storage, information and communication (14% of non-oil GDP), the public sector (13%), construction (13%), wholesale and retail (13%) and real estate (12%).

Figure 9: Contribution to Iraqi GDP (non-oil economic sectors), 2014



The public sector accounts for over 60% of Iraq's production, both because of the size of public administration and of its control of large activities: oil, mines, electricity and water. In addition, two-thirds of the banking sector and one-third of the manufacturing sector are run by the state, and it finances most of the construction projects.

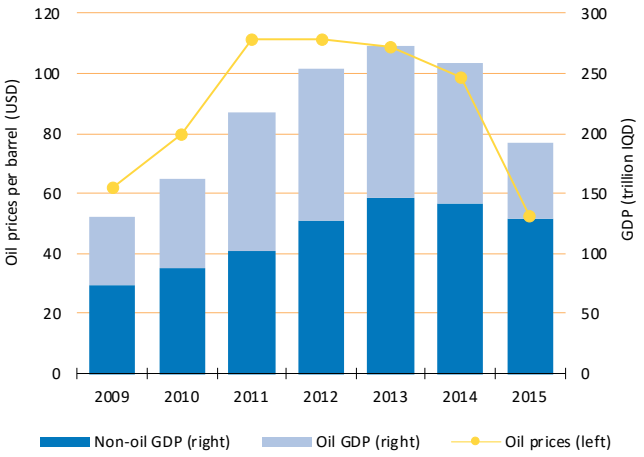
The government also has a monopoly on the purchase, sale and import of several agricultural and industrial goods, and it subsidizes consumption and investment of many goods.

KR-I represents around 11% of Iraqi non-oil GDP. The public sector is as important as in the rest of the country, representing 28% of the region's non-oil GDP, and construction accounts for nearly 20%. In parallel, the private sector plays a larger role in other business sectors.

Iraq relies very much on imports, importing over 15% of its GDP in most recent years. Iraq's main imports are machinery and mechanics, as well as electrical and electronic equipment, both accounting for 10-12% of total imports. China, Turkey and the UAE are its main suppliers. On the other hand, KR-I was responsible for 40% of Iraqi imports in 2014, purchasing mainly from Turkish, Iranian, Chinese and American suppliers.

2014 marked a turning point. The ISIL/Da'esh insurgency in mid-2014 caused significant economic damage. Trade routes were closed, economic activities in the northern regions were held hostage, most notably the agricultural production of the largest Iraqi crops, wheat and barley, which severely declined. Military expenditure also increased substantially. Simultaneously, in 2014, oil prices were halved on international markets, drying up the government's main source of revenues and foreign currency. As a result, the government fiscal deficit more than doubled, from 5.6% of Iraqi GDP in 2014 to 13.7% in 2015.

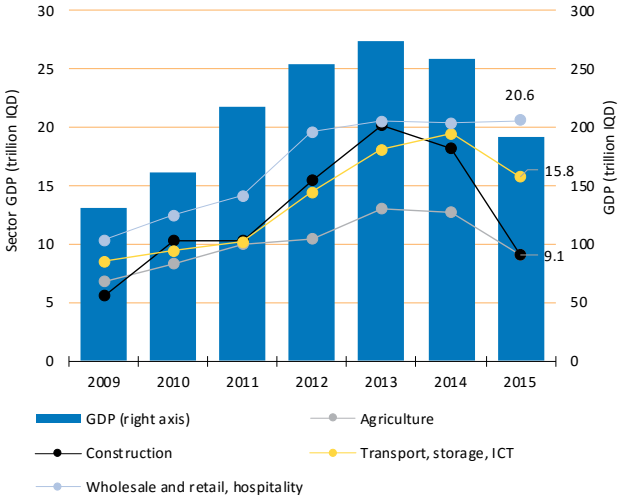
Figure 10: Oil GDP, non-oil GDP and oil prices, 2009-2015



Meanwhile, the economic and political turmoil drove away tourism and foreign investment, which fell by around 30%.

Iraq's real GDP fell modestly in 2014. In 2015, it grew by 2.4% because of a significant increase in oil production but the sharp fall in the value of that production caused Iraqi nominal GDP to fall by around 30% in 2015, triggering a severe economic recession across economic activities. Sectors in ISIL-held areas were more severely hit, as were sectors that relied extensively on public financing such as construction. Indeed, the sector lost half of its value in 2015, while other more resilient sectors, such as wholesale and retail, fared better. In 2016, growth resumed, with an estimated 11% increase in real GDP.

Figure 11: Selected sectorial GDP, 2009-2015



Upon normalization of the political situation, the country still faces a number of important challenges including economic diversification away from oil-related activities, fighting corruption, training and integrating youth and women in the labour force, building institutional capacity and reducing the size of the informal sector.

2.2 Overview of the demographics and the labour market in Iraq and KR-I

Table 3: Key demographic and labour market statistics

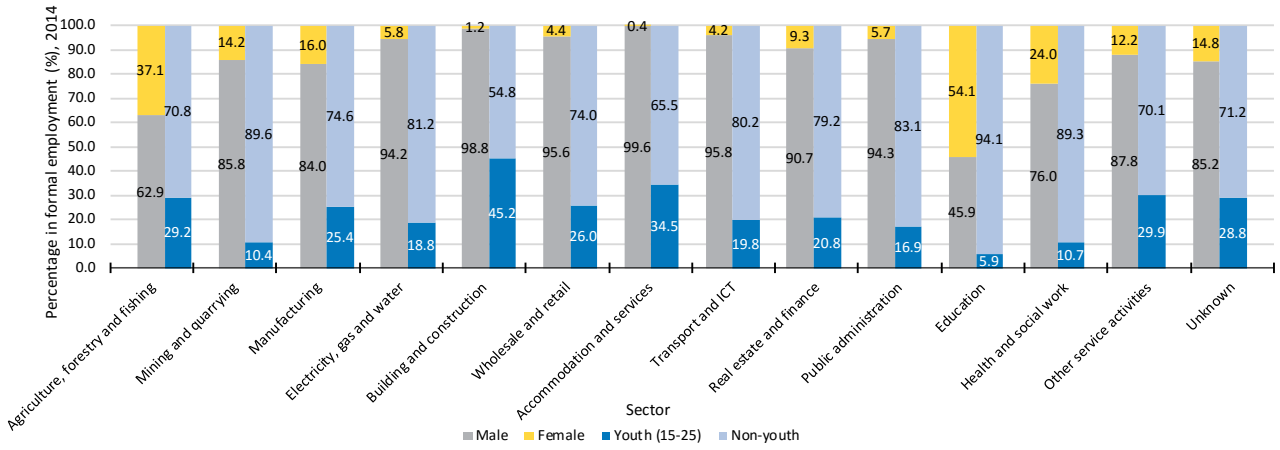
Population	• Estimated at approximately 38 million in 2016[4] • Growth rate estimated at 3.3%[5]
Age of the population	• Estimated 40.2% are under 15 years • Only 3.2% are over 65[6]
Gender of the population	Approximately 49% are female
Education level of the population	• In 2011 38% had no education[7] • Approximately 50% had primary and intermediate schooling. 11% had a diploma or above
Location of the population	Approximately 70% urban and 30% rural[8]
Working age population	21.5 million[9]
Economically active and inactive	• 42% of working age population was economically active in 2011[10] • National labour force: Estimated at 8 million (2011) to 10.5 million (2017)[11] • In 2014 76.2% of the economically inactive were female, 23.8% were male youth (15-25) represented 42.2% of the economically inactive[12] • In 2014 the formally employed labour force consists of 86.1% males, 13.9% females (12% in KR-I in 2012[13]). Youth (15-25) represented 24.5% of the formally employed[14]
Unemployment	• In 2014 67% of unemployed were males and 33% were females. 51.7% of unemployed were youth[15] • **National:** 34.1% of 15-19 year olds available for and actively seeking work are unemployed[16] • **KR-I:** in 2012 the unemployment rate for female youth was exceptionally high, at 48.3%, compared to 13.4% for young men[17]
Public Sector employment	• **National**: the government provides 40% of all jobs[18] and employs 60% of female workers • **KR-I:** in 2014 the public sector employed 80% of all employed women and 45% of all employed men[19]
Private sector employment	60-70% of jobs in formal and informal private sector employment
Oil employment	Oil accounts for 32% of GDP[20] and over 90% of government revenue, but only 1% of employment[21]

The population of Iraq is approximately 38 million, of which 70% live in urban areas. Around 40% of the population are children under 15 years, and the population is growing at a rate of 3.3% on average. Less than half of the working age population is economically active (i.e. working or looking for work).

[4] CSO
[5] UN Statistics Division
[6] CSO
[7] CSO; UN
[8] CSO
[9] CSO
[10] UN
[11] ILO
[12] CSO
[13] Save the Children Assessment of Youth Labour Market and Entrepreneurship Opportunities in the KRG (2014)
[14] CSO
[15] CSO
[16] CSO
[17] Save the Children Assessment of Youth Labour Market and Entrepreneurship Opportunities in the KRG (2014)
[18] UNDP
[19] Save the Children Assessment of Youth Labour Market and Entrepreneurship Opportunities in the KRG (2014)
[20] CSO
[21] UNDP

Figure 12 shows employment of male, female and youth workers by economic sector. The education and agriculture sectors have the biggest proportion of women in their workforce, followed by health & social work. Traditional male domains (such as construction) and public facing sectors such as accommodation & services, and wholesale & retail employ a very small proportion of women. Building & construction, and accommodation & services employ the largest proportion of youth (15-25), followed by agriculture, wholesale & retail, and other service services.

Figure 12: Formal employment in Iraq by economic sector and worker profile, 2014



Source: CSO

2.2.1 Public sector employment

For most MENA countries, including Iraq, the public sector is the largest formal employer. Typically, in these countries, the civil service has grown disproportionately large as a result of a social contract in the 1970s and 80s which effectively offered employment to all university and TVET graduates. Even though the public sector is no longer able to absorb growing numbers of these graduates, the public sector is by far the most preferred employer and almost all formal employment is still in the public sector. In some MENA countries (e.g. Jordan), there is a waiting list for public sector positions, and the informal sector is seen as a transition zone where young people wait for public sector administration jobs to be offered. In both Iraq and KR-I there are now measures in place to reduce the size of the public sector.

According to a Save the Children Assessment[22], the public sector in KR-I employs a larger percentage of the workforce, and a much larger proportion of working women than the national average shown in Table 3. Reportedly more than half of all employed people in KR-I work for the government. This number includes people who work directly for the government, a small number who work for state-owned enterprises, and a small number who work in mixed public-private enterprises. According to KRSO, approximately 80% of all employed women and 45% of all employed men work for the government.

The planned downsizing of the public sector in Iraq and KR-I has implications for the informal sector, since the private sector remains underdeveloped, and primarily informal in its operation. The private sector in Iraq consists largely of informal trade. The formal private sector is not ready to absorb the excess of the public sector as well as an estimated million new entrants to the labour market every year.

[22] Save the Children *Assessment of Youth Labour Market and Entrepreneurship Opportunities in the KRG* (2014)

2.2.2 Women in employment

87% of women in Iraq are economically inactive (not working or looking for work) and 78% are housewives.[23] In KR-I, only 12% of women are economically active. Of those who are economically active (working or looking for work) in Iraq, 13% are unemployed. In 2014 only 13.9% of all citizens who were formally employed were women.

Traditional societal norms cast women as mothers.[24] The working hours of other types of work, that might keep them out of the house after dark, or roles that require them to work with males not in their families, are barriers that contribute to females in Iraq and KR-I not working. However, the UN reported a change in attitudes, noting that 66% of youth, compared to 42% of older people, support women's right to work outside the home.[25] Nationally 60% of all female workers are employed by the government. In KR-I this number is reportedly closer to 80%. In 2011 only 2% of all private sector workers were women.[26] Female unemployment is reportedly lower in rural areas due to high female employment in agriculture.

2.2.3 Foreign workers in employment

Although, according to the Labour Law (under revision) there is no specific requirement for at least 50% of employees of companies to be Iraqi, this condition is part of the Investment Law. In both Iraq and KR-I, the Investment Law states that the investor may employ local and foreign manpower but should give priority to local manpower with an equal skill set.[27] In recent years, however, the government has stopped the granting of work permits for Arab and non-Arab expatriates workers in several instances.[28]

It is difficult for MoLSA to control the number of foreign workers since reportedly *Recommendation 46 (2012)* allows for employers to employ 50% foreign labour, and *Law 80 (2013)* allows foreign companies with government contracts to bring in their own labour without approval for one month. Some of these unregistered workers do not register, or return to their home country, and become illegal immigrants.

MoLSA in Iraq and KR-I issue work permits for 'domestic' and 'project' foreign workers. The cost to the applicant of obtaining a permit is insubstantial, and no disincentive. MoLSA does not have records of technical or professional level foreign workers. There is no complete record of the technical skills or qualifications of foreign workers. Classification and quantification of the skills of foreign workers would be a strong indicator of skills needed in Iraq and KR-I. Information from MoLSA KR-I shows that just over 10,000 foreign workers got permits for project and domestic work in 2015. Foreign workers originate mainly from many countries. In 2015 the largest numbers came from Nepal, Indonesia, India, Ghana, Georgia and Pakistan. Others have come from Iran, Syria, Turkey, the Philippines, Somalia, Ethiopia and Bangladesh. Positions as maids and nannies are often given to women from Bangladesh and Ethiopia.

Foreign labour can be found in all sectors of the economy, in both skilled and unskilled roles. In some sectors, foreign workers are preferred, for example in the hotel and construction industries. The HR

[23] CSO

[24] Save the Children *Assessment of Youth Labour Market and Entrepreneurship Opportunities in the KRG (2014)*

[25] UN Women in Iraq. Factsheet – CSO/KRSO/UNFPA/Pan Arab Project for Family Health, Iraqi Women Integrated Social and Health Survey (I-WISH 2011), 2012

[26] UN Women in Iraq. Factsheet (CSO/KRSO/UN) Iraq Knowledge Network, 2011

[27] Law No. 4/2006. Investment Law in the Iraqi Kurdistan Region

[28] http://www.tamimi.com/en/magazine/law-update/section-6/march-5/employment-of-expatriate-workers-in-iraq.html

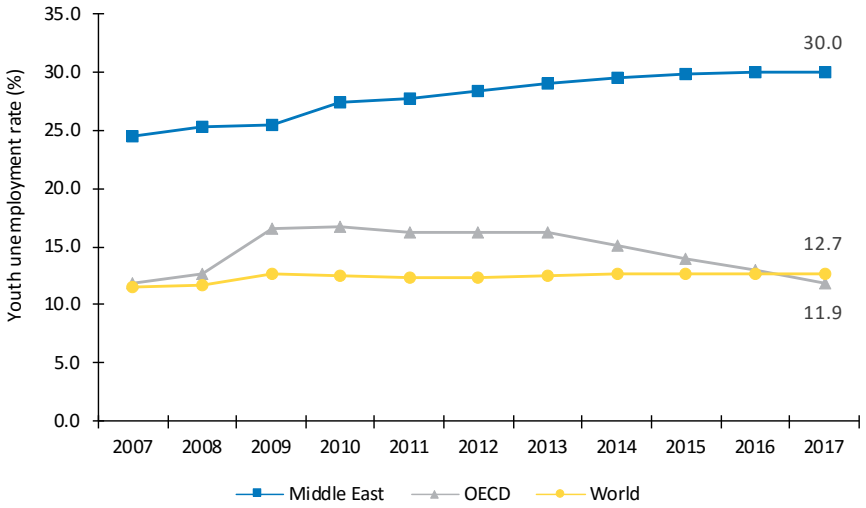
manager of a five-star hotel in Erbil reported in 2014 that of a staff of 303, only 55 were Iraqi Kurds, because Iraqi Kurds do not have the market-relevant skills needed and they lack the necessary command of English and Arabic.[29] Employers and policy makers who were interviewed for this report generally agreed that graduates of the TVET system in Iraq do not have enough practical experience to be useful on the job.

There is a perception amongst employers that foreign workers will work harder and for longer hours, for less money[30] , and make fewer demands on their employers. The typical transaction type described by a foreign labour recruitment agency is 'no questions asked' in exchange for low rates of pay. In 2014, it was reported that foreign labour will work for two-thirds the wage expected by Iraqi youth. Refugees will apparently accept even less than foreign labour. Because exchange rates have changed.

2.2.4 Youth unemployment in Iraq

According to the ILO, the Middle East region has the highest youth unemployment rate in the world at a level of 30% in 2017 (Figure 13). The youth unemployment rate for the Middle East has been more than twice the global and OECD youth unemployment rate since 2014. The OECD youth unemployment rate is reported at 12%, but some individual OECD countries (e.g. Spain, Italy and Greece) have higher youth unemployment rates than the regional rate for the Middle East.[31]

Figure 13: Youth unemployment rates for the Middle East, OECD and world, 2007-2017



Sustainable development indicators for decent work and economic development include substantially reducing the proportion of youth not in employment, education or training (NEET). Very high unemployment of youth is associated with poverty and social unrest.

The Save the Children Assessment of the Labour Market (2014) states that at the start of 2010, Iraq had the highest rates of unemployment in the Middle East: more than half of the country's young urban males were unemployed as well as the large majority of young women. The official national unemployment rate in Iraq is 11%[32] , youth unemployment stands at 18%, while female youth unemployment reaches 27%, against 17% for males.[33] Youth unemployment rates for KR-I are reported as 48.3% for young women and 13.4% for young men.

[29] Save the Children *Assessment of Youth Labour Market and Entrepreneurship Opportunities in the KRG (2014)*
[30] Ibid
[31] OECD
[32] UNDP
[33] CSO. Labour Force Factsheet (2011)

The youthfulness of the Iraqi population (40.2% are under 15 years) has implications as millions of new workers will enter the labour force in the next 20 years. In KR-I alone it is estimated that over the next 20 years between 850,000 and 1.1 million new workers will enter the labour market.[34] No comparable data was available for the whole of Iraq.

2.3 Overview of the skills supply in Iraq and KR-I

2.3.1 Planning for TVET

The National Development Plan (NDP) for Iraq 2013-2017 has been replaced with the new NDP 2018-2022. The NDPs include some objectives relevant to TVET reform. Other planning for TVET (vocational schools) is included in the National Strategy for Education and Higher Education in Iraq for 2012-2022. There is also a TVET Strategy (2014-2023) for Iraq and KR-I, which is a ten-year strategic plan developed by an inter-ministerial group with funding from the EU and support from the British Council. The TVET Strategy provides analysis of the challenges and opportunities and sets out objectives for eight axes which include these focus areas:

1. Legal and governance framework
2. Infrastructure and equipment
3. Enrolment and private sector participation
4. Quality of staff and recognition of graduates' skills (including NQF)
5. Labour market observatory and occupational standards
6. Research and innovation
7. Quality and accreditation
8. Funding.

In both Iraq and KR-I, the Ministries of Planning are at the centre of planning activities. The identified needs of districts and governorates filter upwards, through municipalities and governorates and other ministries to the Ministry of Planning. The Ministries of Planning work with development partners; commissioning and receiving studies; and co-ordinating and developing overarching planning agenda, in collaboration with the Ministry of Finance. Therefore, planning is an iterative process, which synthesises information from many sources, including 'bottom up' information from all parts of the country, and 'top down' information which is responsive to international developments and country and sector-wide analysis.

Some ministries have quantitative human resource development information which can feed straight into skills training and Human Resource Development planning (HRD). For example, the Ministry of Health in KR-I has produced detailed analysis of over- and undersupply (based on established norms of number of inhabitants per health professional) of all types of health personnel.

The development of a labour market information system has long been suggested and planned, and even attempted, but so far without significant advancement until the implementation of this UNESCO programme. Lack of labour market information has been a major inhibitor to any kind of structured HRD planning.

[34] Save the Children *Assessment of Youth Labour Market and Entrepreneurship Opportunities in the KRG (2014)*

CSO and KRSO (attached to the two Ministries of Planning) conduct surveys periodically. The last Household Survey was in 2011-12 with an update in 2014. The last Employment and Unemployment Survey was in 2008. Other surveys reviewed for this Sector Skills Analysis project include, for example:

- CSO Hotel and Tourist Accommodation Survey 2012
- CSO Survey of Household Industries 2012
- CSO Repair of Machinery, Equipment and Appliances Services Survey for 2012
- CSO Report on University Education 2013-2014
- CSO Report on Vocational Education 2014-15
- CSO/KRSO Survey of Street Vendors 2015.

Both CSO and KRSO periodically collect and publish data on the productive sectors of the economy, such as crops in agriculture, building and construction, manufacturing and trade. Typically, CSO and KRSO reporting on survey data is descriptive but not analytical. The reader must derive the meaning from the data provided in the tables. The data does not seem to be collected to satisfy specific lines of enquiry, relevant to planning and decision making.

From the interviews conducted for this Sector Skills Analysis Project it does not appear that CSO and KRSO work plans are based on the commissioning of specific surveys and reports by the Ministry of Planning or by other ministries specifically to inform planning. CSO and KRSO operations are based on commitment to updating existing information; so that planners can help themselves to statistical data which exist, as it seems relevant to their purposes.

2.3.2 Financing TVET

Interviews held in Iraq and KR-I suggested that specific budget allocations for education and training are subsumed within the overall budget for ministries' running costs.

Each ministry negotiates its annual budget based on its own perceived short term operating and capital development needs, within parameters which are based on previous budget usage. The MoHESR, for example, will negotiate for a budget slightly larger than the previous budget, irrespective of the development plans of other ministries, which may have implications for HRD.

Ministries (such as MoE, MoHESR and MoLSA) have a budget for the delivery of their core business services, irrespective of the number of students trained. Interviews in Iraq and KR-I suggested that the allocation of funding from the ministries to their education and training institutions is based on historical operating costs, with no mechanisms which enables budgetary consideration to be given to changes in the number of students, or running cost implications of delivering new or amended programmes. There is no per full-time-equivalent student cost formula which provides a baseline for different types and specialisations and levels of education and training.

There is no TVET levy fund in Iraq or KR-I. In many countries education and training is partially funded by a levy on private sector business. Different countries have developed different approaches, and the levy can be based on a percentage of taxable income, payroll or work permits. Contributors to the levy fund also have access to education and training for their local staff.

Education and training at all levels is fully subsidised by the state for those students who meet the required academic entry criteria. Students receive living allowances and other subsidies.

Many countries have found full state-funding of all tertiary education unsustainable in the context of the ”massification” of tertiary education, and have introduced various cost sharing schemes. Full government subsidy of all students does not discriminate between those that need financial assistance and those who could afford to contribute to their own education and training. In some countries where all the living expenses of students are fully funded by the government, students prefer to remain enrolled for as long as possible, since study with benefits is preferable to unemployment.

MoHESR is able (by decision of the Council of Ministers) to supplement the state budget allocation through the ‘parallel system’ of fee-paying students who did not quite meet the criteria for state sponsorship. This provides another source of income for polytechnic and technical universities. Separate streams of government funded students (who got good grades at school) and privately funded students (who did not get good enough grades to meet the entry requirement) are common in some post-Soviet countries. This practice is associated with some risks such as compromising the quality of the qualification by lowering the entry requirement, and institutions may be tempted to raise the official entry requirement for the purpose of generating more income. There may be other ways for institutions to generate income (such as education with production) which are less discriminatory and less compromising.

The mandate of MoLSA is to provide training to people who are registered umemployed. Nevertheless, there is some evidence of private sector companies requesting professional development training for their employees on a per-student fee basis from MoLSA training centres, such as the Swedish Academy in Erbil. Engagement of the private sector in requesting and paying for training seems to be uncommon. In general, social demand, rather than labour market demand, is the driver of enrolment. Numbers of students enrolled are only constrained by space in the classrooms.

2.3.3 Demand for TVET

Social demand for education and training is largely dictated by society values and beliefs. Within such values and belief systems, in many developing countries including Iraq, there may be a strong belief in a hierarchy of occupational status, in which young people with the “best” results should become doctors, and those with the next best grades should, for example, become lawyers or engineers. This is reinforced by the post-secondary admission system that limits entry into programmes which lead to such occupations. In this way, many young people train for the highest status occupation for which they can meet the entry requirement, rather than the occupation which suits them in terms of their aptitude or the occupation for which there is labour market demand.

Another factor which determines enrolment behaviour in Iraq, and in many other developing countries, is the historical legacy of public service employment, which was permanent and pensionable with many benefits. Even though the governments of Iraq and KR-I no longer absorb all graduates, and plan for mandatory downsizing of the public service, the idea of being qualified to work in the public service is still a very compelling option for young people and their families.

Certain occupations are very low down in the occupation hierarchy, such as hospitality services, and ‘dirty jobs’ such as blue-collar jobs in construction. Working in the private sector is unattractive, since it is believed that the work in the private sector offers lower pay, less job security and little or no social security. The private sector is very small as well as underdeveloped (mostly informal), and therefore offers less opportunities than the public sector.

2.3.4 Employment of graduates

As a result of these dynamics of preference, there may be a surplus of graduates for high status occupations such as engineers, and "white-collar, high security" jobs such as administrators, bankers and statisticians, and these graduates may be more likely to face unemployment than their peers. However, since there is no practice, in any of the education and training providers, of systematically following up TVET graduates (tracer studies) to find out how well their training prepares them to enter the workforce or pursue further study, there is only anecdotal evidence about employment and unemployment of graduates in each field of work.

Interviews with the Vice President and the Career Development Advisor of a Polytechnic University in KR-I, and with MoHESR and MoLSA in Iraq and KR-I, confirmed that there is no surveying of graduates (tracer studies), and despite the strong direction in the TVET strategy, there is still very little meaningful interaction between employers and training institutions.

Many countries which have experienced extreme regime changes (like post-Soviet countries), seem in some respects, to have "thrown out the baby with the bathwater" in their drive to distance themselves from the past. In Iraq, there is sense that some of the systems of the past had merit and should not have been discontinued without anything to replace them.

One example of a discontinued good practice from the past is the practice of surveying graduates. Even though the intention to survey graduates is still current and even recently renewed, it was not possible, over the course of several interviews, to locate a single example of a past or current graduate survey instrument.

2.3.5 Relationships between TVET providers and employers

Good practices of the past which were impacted negatively, and even completely disrupted, by political and social upheaval include the practices of close relationship between training providers and (often adjacent) production sites including factories, farms and service providers. These relationships offered easy access to work-based practice experiences, continuous employer feedback on student and graduate skills, and employment opportunities for graduates.

Another loss is the practice of "training-with-production," which includes actual production of goods and services for sale (revenue steam for the institution and the 'workers') and actual work experience for trainees, within the concept of training. More recently there is a small resurrection of this concept in the form of 14 "experimental" agriculture "training-with-production" programmes (MoE Iraq) with financial benefits for all parties, including trainees.

Many of the interviewees and pilot Sector Council participants, in both Iraq and KR-I, made the point that the training in technical fields which is currently offered in the institutes and colleges of MoHESR is very theoretical in nature, and is designed to prepare people for desk jobs in ministries. This is reportedly true of most fields of training, including those which would be expected to lead to practical work, such as agriculture and highway engineering. The Contractors Union reported that despite the availability of graduates in construction trades, the standard practice of building contractors is to hire unqualified labour or unskilled labour, and train them on the job.

The concept of 'summer training' which is intended to provide work experience for TVET students during 'vacation' periods is an example of a potential enhancement of the training to increase the practical skills and employability of graduates. The fact that educators are not paid to supervise

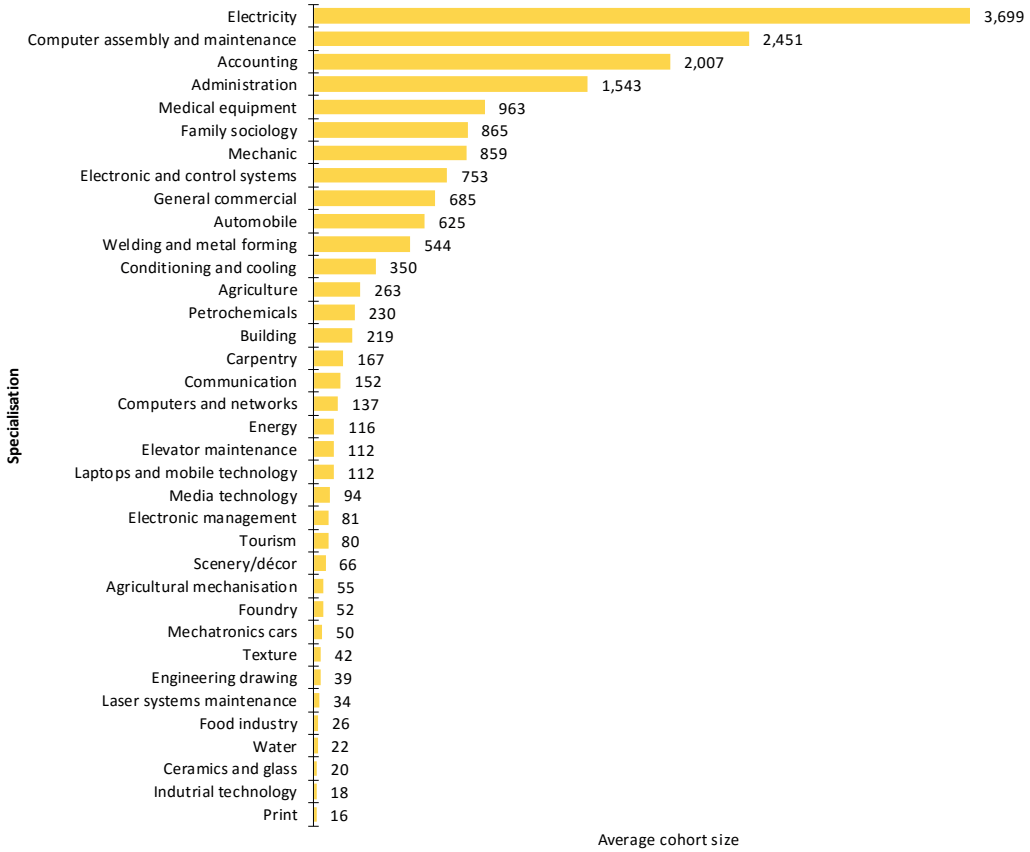
summer training is certainly a contributing factor to the failure of the concept to provide meaningful work experiences for learners. Supervision of work-place-based work experiences should be part of the assigned workload of educators and trainers. Work experiences need to be designed with close alignment to the competencies (learning outcomes) to be achieved, and closely supervised and monitored to ensure that learners have sufficient range of opportunities to practice and demonstrate their competence. Work experience should be a meaningful and worthwhile experience which is valued by learners, as well as a 'credit-bearing' component of the training programme.

An example of good practice for 'summer training' was provided by the Ministry of Transport (MoT) which offers 'summer training' to over 750 students each year. Experience with public universities is not positive (students don't show up), but MoT has good experience with some private universities (e.g. Al Mansour). Their students are supervised by University staff and can be sent to the field (i.e. they have useful skills) and the University requests a report on each student. This successful experience can provide a model of good practice.

2.3.6 Provision of vocational preparatory education by MoE

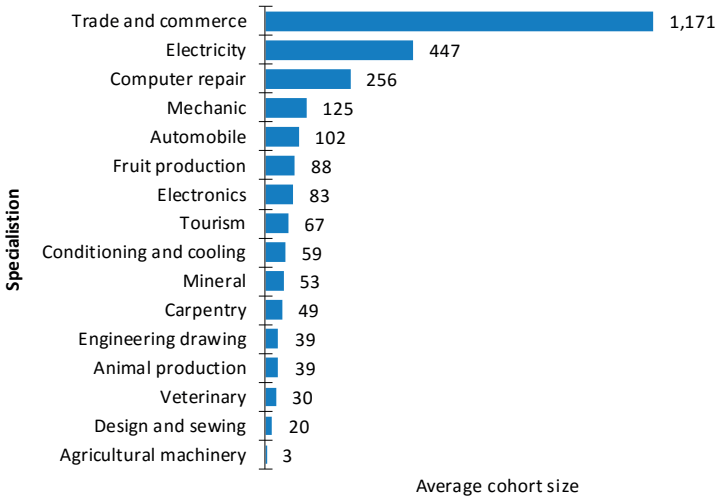
Vocational preparatory education consists of 3-year programmes (equivalent to Years 10, 11 and 12) in vocational schools and institutes. Over 400 schools and institutes offer these programmes in Iraq and KR-I with a total enrolment of just under 60,000 students (over 50,000 in Iraq and around 8,000 in KR-I). More specialisations are offered in the governorates of Iraq than in KR-I (as shown in Figures 14 and 15). In Iraq, electricity and computer maintenance are the most popular vocational specialisations. In KR-I, student enrolment in trade and commerce programmes (accounting, administration, and commercial and tourism management) account for approximately half of all MoE vocational education enrolment.

Figure 14: Vocational education average cohort size by specialisation in Iraq, 2015-2017



Source: Author compiled from tables provided by MoE Directorate of Vocational Education, February 2017

Figure 15: Vocational education average cohort size by specialisation in KR-I, 2015-2016



Source: Author compiled from tables provided by MoE Directorate of Vocational Education, January 2017

2.3.7 Provision of technical education by MoHESR

TTVET programmes are offered in institutes and colleges. Institute programmes are 2-year programmes leading to diploma qualifications and college programmes are four years long, leading to bachelor degree qualifications.

In Iraq, there are 4 technical universities with 29 institutes and 16 colleges (total 45 institutions). Data received from MoHESR for this report are insufficient to estimate an average cohort size, and numbers are affected by closure of some institutes and colleges in areas which were under ISIL/ Da'esh control.

Table 4: Total enrolment in Iraq technical universities, 2014-2015

Technical university	Total enrolment 2014-2015	New intake 2014-2015
Northern Technology University	8,708	2,870
Central Technology University	40,169	12,200
Middle Euphrates Technology University	27,323	9,227
South Technical University	21,360	5,606
Total	**97,560**	**29,903**

In KR-I, there are 3 polytechnic universities with a total of 36 institutes and colleges, and total estimated enrolment of 12,341 students each year.

Table 5: Total enrolment in KR-I polytechnic universities, 2013-2016

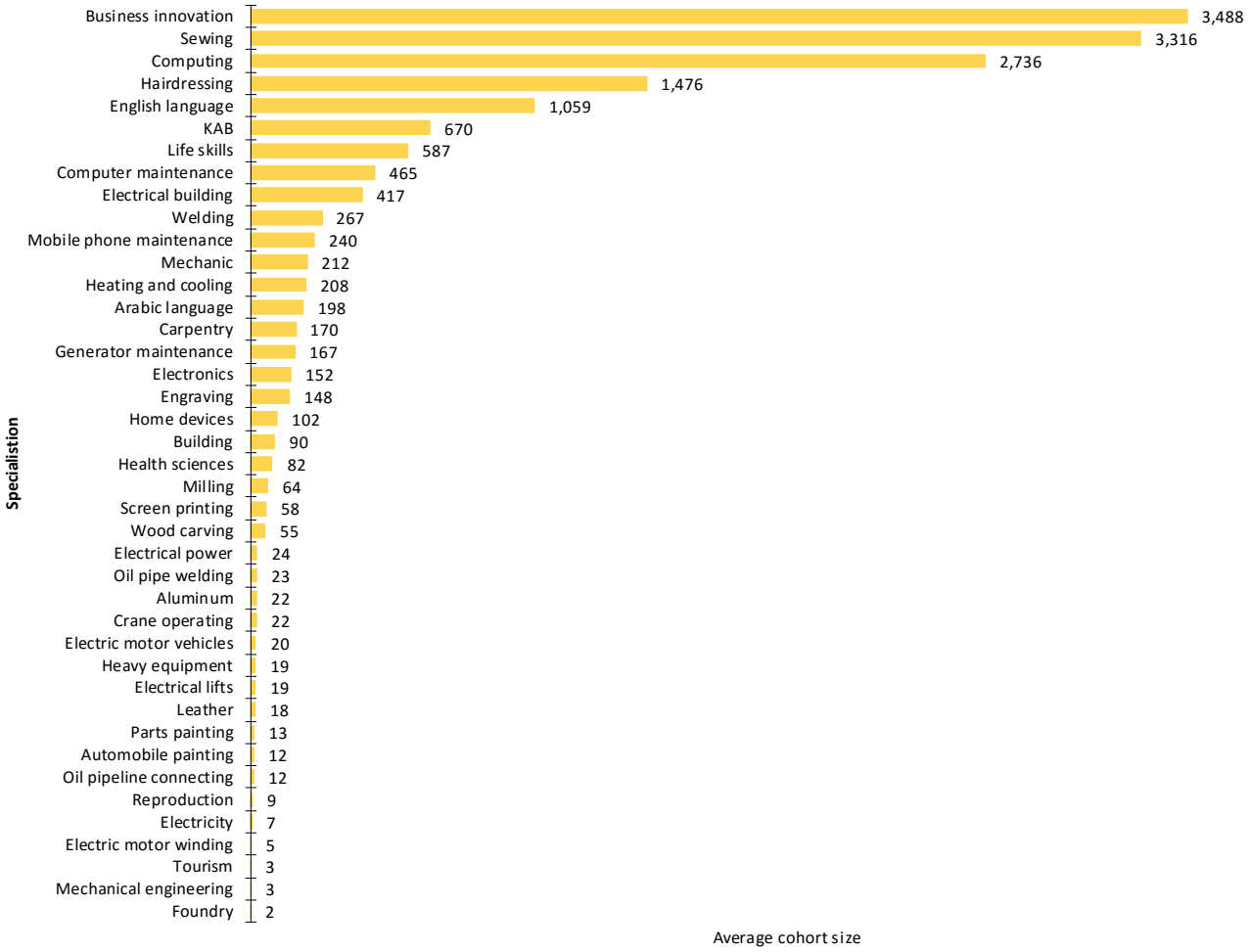
Polytechnic university	Total enrolment over the period 2013-2016	Average cohort size per year
Duhok Polytechnic University	9,648	3,216
Erbil Polytechnic University*	14,295*	4,765
Sulaymaniyah Polytechnic University	13,082	4,360
Total	**37,025**	**12,341**

*One of EPU's submission had an incorrect total of 13,981

2.3.8 Provision of vocational training by MoLSA

In Iraq, there are 38 MoLSA training centres with an average annual MoLSA cohort size of 16,659. Students are 66% female. The largest enrolment in this group is in business innovation (which may be linked to small loans) and is followed by the next four largest specialisations of sewing, computing, hairdressing, and English language. These top 5 specialisations make up over 70% of total enrolment (Figure 16).

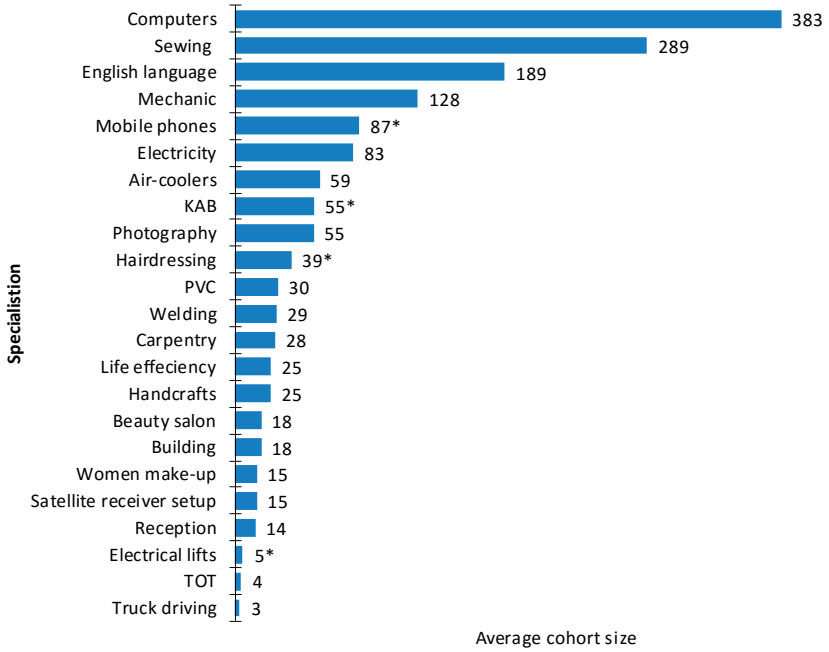
Figure 16: MoLSA Iraq vocational training average cohort size by specialisation, 2013-2015



Source MoLSA Iraq

In KR-I there are 7 MoLSA training centres. Total enrolment was 1,504 in 2014 and 1,414 in 2016. The data from MoLSA KR-I shown in Figure 17 below is an amalgamation of three data sets with data cleaning modifications. Computer, sewing and English language courses have the biggest share of enrolment (over 50%). MoLSA KR-I students are 55% male and 45% female. Dahuk has by far the largest share of MoLSA enrolment in KR-I (34% of enrolment) and Erbil has the second highest share (18%).

Figure 17: MoLSA KR-I vocational training average cohort size by specialisation, 2014-2016



Source: MoLSA KR-I, and Swedish Academy enrolment for 2015

*Note: * represents adjusted figures*

2.3.9 Provision of technical and vocational training by other ministries

Tourism and Hospitality

The nine tourism and hospitality institutes in Iraq provide pre-service training in four programmes each of three years duration with a total enrolment of 756 students in 2015-2016. The institutes are as follows:

- Baghdad Center for Tourism & Hospitality, Rasafah (3 branches)
- Najaf Center for Tourism & Hospitality
- Karbala Center for Tourism & Hospitality
- Ninive Center for Tourism & Hospitality
- Dkar Center for Tourism & Hospitality
- Basra Center for Tourism & Hospitality
- Muthana Center for Tourism & Hospitality.

Data from the Board of Tourism Iraq includes both enrolment and graduation rates but it is not possible to extrapolate a sensible graduation rate from these data (graduate cohorts appear to be more than 100% of the relevant enrolment cohort which may indicate a high repetition rate). What is clear from both enrolment and graduation data is that numbers of enrolment have more than doubled since 2012 and the number of graduates is nearly four times the number in 2012.

Four specialities (cooking, hotel management, accommodation, and reception) are offered in 3-year programmes. The three years of training are organized as follows: two years of theoretical and practical training and a year of internship in a reputable touristic establishment (public or private).

Information on new enrolments in 2015-2016[35] (189 for accommodation and 202 for reception) suggests that in the future there will be more graduates in these two areas, whereas enrolment for cooking (182) and hotel management (183) suggest little expected growth in skills supply in those two areas.

The KR-I Tourism Training Centre has a training and production kitchen, restaurant, canteen and hotel rooms. However, currently the facility is substantially used by the Ministry of Municipality and Tourism for office space, since the delivery of programmes is not expected to start until a future date.

Agriculture

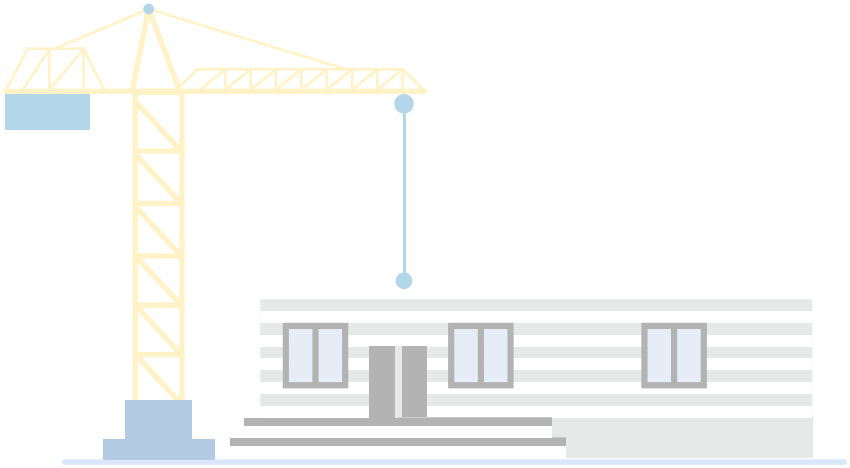
The Ministry of Agriculture Iraq has 78 training centres all over the country for professional development of farmers and Ministry staff. Specialised training includes focus on rural women and rural youth.

Communication

The Ministry of Communications (MoC) Iraq offers training through its Higher Institute for Communications and Post.

Transport

The Ministry of Transport's Department of Training and Development coordinates three existing training centres for civil aviation (two campuses), sea port and railways, which are partially operational.



[35] Board of Tourism Iraq

Chapter 3: The construction sector in Iraq and KR-I

3.1 Key statistics and overview of the sector

Table 6: Key statistics of the construction sector

Size of sector	9.1 billion IQD in 2015
Importance of sector	• 7% of non-oil GDP in 2014 • 3rd largest non-oil sector in 2014
Employment	• Employment is 99% male • Employment is 45% youth (15-25 years old)
Share of the private sector	98%
Largest subsectors	• Construction of dwellings • Construction of primary schools, government offices • Construction of water and electricity networks
Main governorates active	Baghdad
Current conjuncture	• Boom between 2009 and 2013 (average growth of 17.6% per annum) • In crisis between 2013 and 2015 (average decline of -16.3% per annum)
Main challenges	• Public finance • Corruption

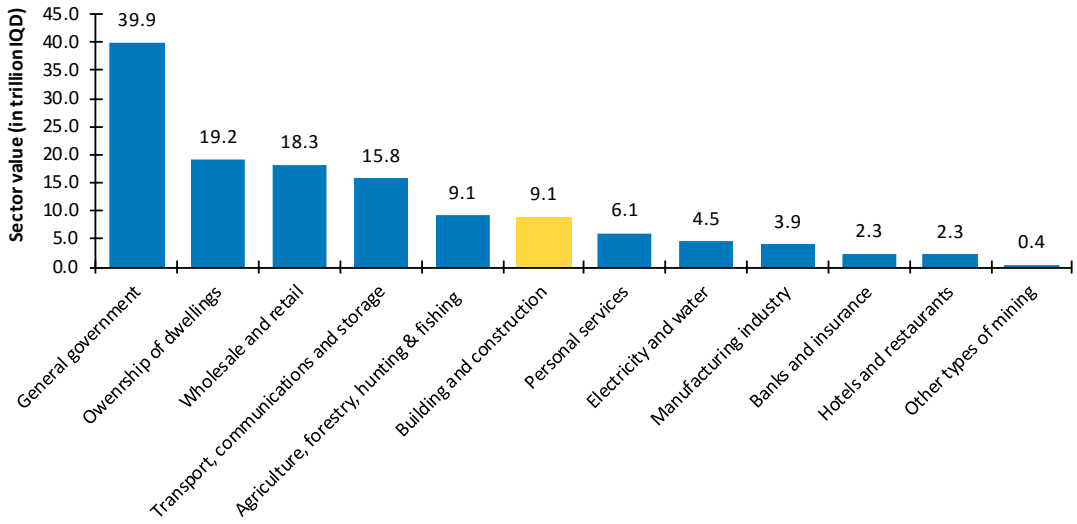
The construction industry is a crucial sector because of its economic, political and social importance. As a large and labour-intensive economic activity, it is central to any national employment and training strategy. Construction is a highly salient political issue and a government priority. The sector's development has wide social implications (social housing, transport networks, infrastructure development etc.) and the public sector plays a key role.

Construction is a very volatile sector, which can experience large swings in activity. Currently, the construction sector is undergoing a real crisis in Iraq. Pre-2013, the construction industry was operating below its potential due to the uncertain economic, legal and policy environment, the lack of access to financing, and delays in obtaining construction licenses. After registering strong growth between 2009 and 2012, and reaching a peak in 2013, it suffered immensely from the double shock of the ISIL/Da'esh campaign and the simultaneous fall in oil prices in 2014. Most of the investment in construction comes from public funds, and those shocks sharply deteriorated governmental fiscal balance by decreasing government revenues and increasing its expenditures.

The sector contracted sharply in 2014 and again in 2015. Estimated at around 20.2 trillion IQD in 2013, the sector's value fell to 18.2 trillion IQD in 2014 (-10%), and then was halved to 9.1 trillion IQD in 2015 (-50.2%) (Figure 18). At its 2013 peak, it represented 13.7% of non-oil GDP. In 2015, that share had fallen to 7%. It went from being the third largest sector in 2014 to the sixth largest in 2015.[36]

[36] CSO

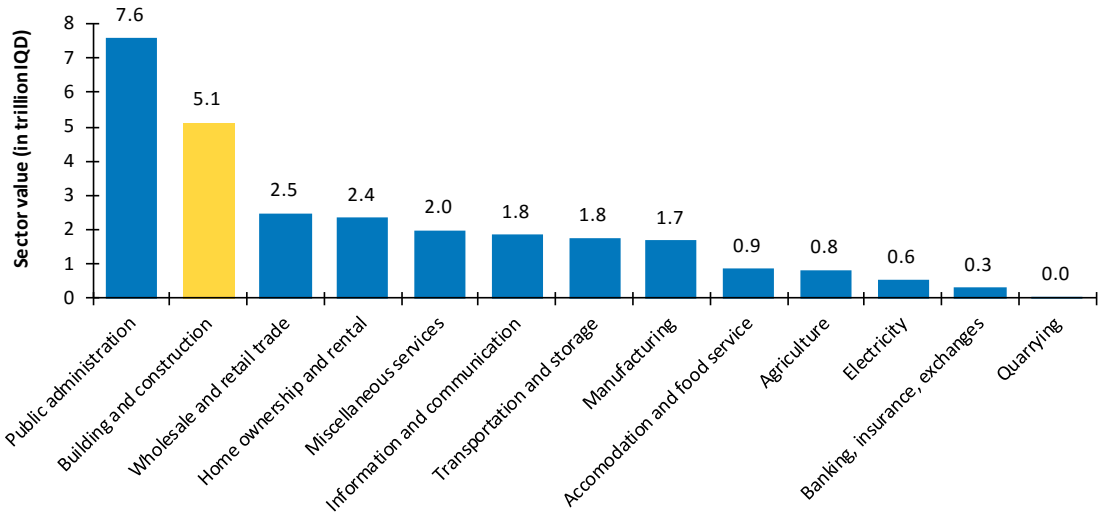
Figure 18: Components of non-oil GDP in Iraq including KR-I, 2015 (current prices)



Source: CSO

In KR-I, the construction sector had an estimated value added of 5.1 trillion IQD in 2012 (Figure 19), representing a third of total Iraqi construction that year. The sector represented 18.7% of non-oil GDP[37] in KR-I, a higher share than in the rest of Iraq. Construction was the second largest sector in KR-I after public administration in 2012.

Figure 19: Components of non-oil GDP in KR-I, 2012 (current prices)

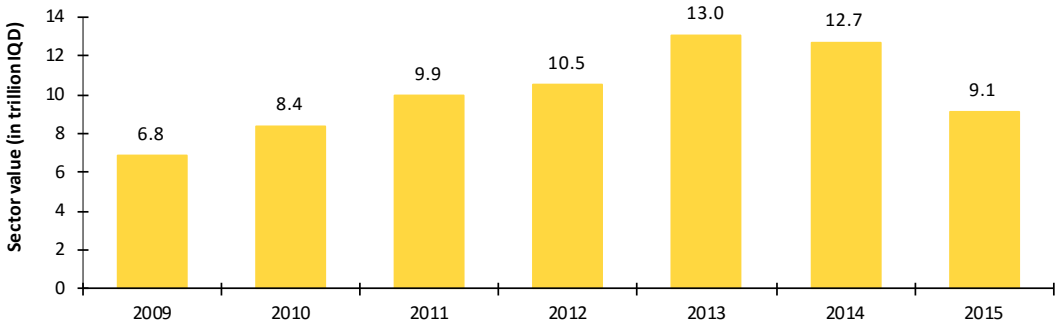


Source: Abramzon et al.

Despite experiencing high growth through 2013 (average growth of 17.6% per annum), military campaigns and the fall in oil revenues, among other reasons, put a stop to the growth of the sector (Figure 20).

[37] Abramzon et al. "Calculating the GDP of the KR-I," 2016

Figure 20: Evolution of the construction sector in Iraq including KR-I, 2009-2015 (current prices)



Source: CSO

The construction sector generally receives a large share of Iraqi public and private investment, as well as international investment. In KR-I, the sector is the first destination for private investment. According to the Board of Investment, 40% of the projects submitted are in the construction sector.[38]

In the short term, the following factors are expected to contribute to the sector's recovery: the normalisation of the security situation; reduction of political uncertainty; improvement in the fiscal balance due to the partial recovery in oil prices and reduced military expenditures; the need for reconstruction; the return of historically large domestic and foreign investment in the sector and the increase in domestic demand with the return of growth.

In the longer term, the construction sector should contribute significantly to the economy. As an energy producer, Iraq has a comparative advantage in energy-intensive activities such as the production of construction material (cement, brick, etc.) as well as in transport activities. Its growing population (2.8% per year) and large share of youth (40% under the age of 15), large territory, urban development and the need for construction to alleviate the long-lasting housing deficit, present important opportunities for domestic and foreign investment in the sector.

Moreover, construction has been identified as a public policy priority. The National Development Plan has a committee dedicated to the construction sector and the Ministry of Planning has set a goal of directing 29% of all investment toward the building and services sector, second in importance after the industrial sector (38%) and before the agricultural sector (13%) and the education sector (10%).

The sector's impact on the Iraqi economy is not limited to construction services. It has large spill-overs upstream and downstream in manufacturing, real estate and general production capacity.

- Over Iraq's estimated 17,500 manufacturing production facilities, 36% produce construction materials and 20% specialise in metal processing, partly destined for construction projects. Cement, iron and steel production are highly reliant on construction activity[39]
- In 2015, real estate, renting and business activities accounted for around 15% of non-oil GDP
- Infrastructure development is a major bottleneck to all types of economic activity (transport, storage, energy, water, wholesale, etc.). Adding to the stock of infrastructure will help unleash other sources of growth.

[38] Meeting with the Board of Investment of KR-I, 2017
[39] CSO

The construction sector is labour intensive and its effect on employment goes beyond what its value added suggests. It is a large employer and a large share of the value of construction activities accrues to workers.

According to CSO, the total compensation of employees was 8.3 trillion IQD or 26% of the total output. A RAND study suggests that the construction sector is the sector with a substantial share of employment that is the most likely to be the leading sector for employment growth in emerging economies.[40]

3.2 Structure of the sector and types of enterprise

A construction project can emanate from the public or the private sector.

Public projects. First, a public body proposes a project (ministry, governorate, etc.), then the Ministry of Planning and the Ministry of Finance accept the proposal and allocate the financial resources, which are to be provided by the Ministry of Finance. Ultimately, the contract is awarded to a state-owned company (SOC) or to a private contractor. Each administration monitors its own construction projects – i.e. Ministry of Housing and Roads for housing, roads, bridges etc., the Ministry of Education for schools and universities, the Ministry of Health for hospitals and clinics, the Ministry of Municipalities and Public works for drinkable water, waste water treatment, municipal roads networks, etc.

Private projects. First, the private actor (firm, household, etc.) requests a license from the National Investment Commission (Iraq) or National Investment Board (KR-I), which decides to grant it or not. The local branch of the Ministry of Municipalities and Public works allocates the land, and the contractor can move forward with the project.

The major stakeholders from the public sector in centrally administered Iraq are:

- Ministry of Planning
- Ministry of Finance
- Ministry of Governorate Affairs
- Ministry of Municipalities and Public Works
- Ministry of Construction and Housing, incorporating:
    - State Commission for Housing
    - State Commission for Building
    - State Commission for Road and Bridges
- National Investment Authority.

In KR-I, the major stakeholders from the public sector are:

- Ministry of Planning
- Ministry of Finance
- Ministry for Housing and Reconstruction
- National Investment Board.

[40] Shatz et al. "An Assessment of the Present and Future Labor Market in the KR-I," 2014

In the Iraqi private sector, the main actors include the Federation of Iraqi Chambers of Commerce, whose role is to represent the interests of the Iraqi private sector in Iraq and abroad, monitor national trade conditions, help develop private economic activity and coordinate the governorate chambers of commerce.

The Iraqi Businessmen Association represents Iraqi businessmen in Iraq and abroad, seeks to defend their interests in policy-making as well as promote existing economic opportunities available to them.[41] The Contractors Association and their branches in the governorates represent the interests of the businesses taking on government contracts, with a large share of their members active in construction.

In KR-I, the Ministry of Housing and Reconstruction is responsible for the sector. The Chamber of Commerce and Industry, the Businessmen's Union and the Contractors Union are the major private stakeholders.

There are several large conglomerates active in construction along with large construction companies. The construction sector, however, is dominated by small businesses, a majority being individual businesses, and most of the remainder being partnerships.

In 2014, private firms were responsible for more than 98% of the value of construction activities, on their own behalf or contracted by the public sector.[42] The remaining 2% should correspond to the value created by state-owned companies (SOC).[43] There are two SOCs for roads, two for bridges and four state-owned enterprises for housing and buildings. State-owned enterprises do not operate in KR-I where either firms or households carry out construction activities. SOCs are relatively unproductive in comparison with private firms.

Firms active in the construction sector can be vertically subdivided into four groups[44]:

- Construction companies
- Contractors
- Subcontractors
- Informal / self-built.

Construction companies typically work for larger clients, such as businesses, institutions, and government. Discussions with staff from KRSO suggest that, in some cases, higher-income households may hire construction firms to perform new construction or renovation. They generally employ administrative staff, engineers, as well as skilled and semi-skilled workers.

There are many large foreign construction companies in Iraq, such as KBR Inc. (USA), Samsung Engineering (South Korea), Hanwha Engineering & Construction (South Korea) – who was awarded the contract for the construction of the "Bismayah New City", and Daewoo Engineering and Construction (South Korea). Many of the foreign construction companies are oil companies who undertake construction activities which include firms such as ENI (Italy), BP (UK), Shell (USA) or Lukoil (Russia).

[41] Iraq Trade Information Center. "Federations and Vocational Organizations," 2011
[42] CSO
[43] While 2% seems like a vast underestimate of the activity of SOCs, the latter subcontract most of the value of their work to private contractors and sub-contractors, which explains why, ultimately, the private sector undertakes nearly all construction work
[44] Danish Refugee Council. "Construction and Service-sector Labour Market Systems Mapping and Analysis, KR-I," 2014. In reality, the line between construction companies and contractors is blurred

Construction companies often have sectoral specialties, for instance:

- 77 Construction and Trading Company (Iraq) is specialised in building roads, road junctures or bridges, and takes contracts mainly from the government
- Ranj Company (KR-I) is a construction company that builds and develops residential and commercial complexes, apartments, schools, clinics, etc.
- KBR Inc. (USA) builds oil refineries and oil fields.

Contractors are those firms who work for smaller clients (50 to 500 million IQD projects) and employ all types of labour required to undertake construction projects: administrative, engineers, and employees at all skill levels.

Sub-contractors are entrusted with realizing specific parts of a construction project. They typically don't employ administrative staff, engineers or skilled workers, only semi-skilled and unskilled workers. The projects they complete range from 20 to 50 million IQD.

Smaller firms that are active in construction are mostly local sub-contractors. According to KRSO, around 86% of construction companies in KR-I are local. There were 2,644 local and 416 foreign construction companies in KR-I at the end of 2012, for a total of 3,060, of which approximately 2,850 were operating.[45]

A large part of the economy operates informally, informality being encouraged by war and a weakened public administration, and other factors. While estimates for the construction sector alone are not available, according to a 2012 study, 99% of the Iraqi private sector employment is informal.[46] Households who undertake these activities on their own conduct the remainder of construction activities. They buy their own material and hire labour.

Table 7 below summarizes the average project size and the employment type with respect to the types of firms in the construction sector.[47]

Table 7: Firm type, project size and employment

Type of firm	Average project size (IQD)	Administrative staff	Engineers	Skilled workers	Semi-skilled workers	Unskilled workers
Companies	100 million – 10 billion	✓	✓	✓	✓	×
Contractors	50 – 500 million	✓	✓	✓	✓	✓
Subcontractors	20 – 50 million	×	×	×	✓	✓

Source: Danish Refugee Council

3.3 Types and distribution of products and services

3.3.1 Categories of construction activity

Following the ISIC-4 definition, the construction sector comprises of the construction of buildings (residential, commercial, industrial, institutional, etc.), civil engineering (road, railways, utilities, etc.) and specialised construction activities such as demolition, plumbing, painting, electricity etc. (see Table 8).[48]

[45] KRSO
[46] Angel-Urdinola and Tanabe: "Micro-determinants of Informal Employment in the Middle East and North Africa Region," 2012
[47] Ibid
[48] This class excludes architectural and engineering activities

Table 8: ISIC-4 Classification of activities in construction

Section: F (Construction)		
41	**Building construction**	
42	**Civil engineering**	
	421	Construction of roads and railways
	422	Construction of utility projects
	429	Construction of other civil engineering projects
43	**Specialised construction activities**	
	431	Demolition and site preparation
	432	Electrical, plumbing, and other construction installations
	433	Building completion and finishing
	439	Other specialised construction activities

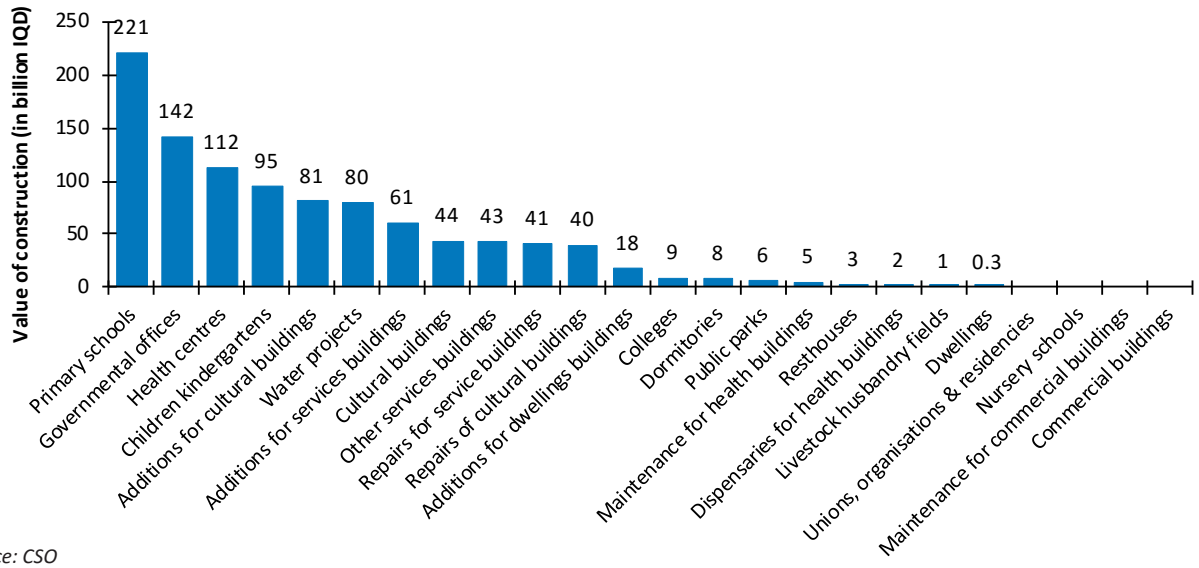
Building construction

The "building construction" category includes the construction of:

- Residential buildings: single-family house and multi-family buildings
- Non-residential buildings: for industrial production, hospitals, schools, offices, hotels, stores, shopping malls, restaurant, airports, sport facilities, parking garages, warehouses, religious buildings
- Assembly and erection of pre-fabricated construction
- Remodelling and renovating existing structures.

According to CSO, the Iraqi public sector completed about 1 trillion IQD of projects in buildings in in 2014 (excluding KR-I), through contracts awarded to the private sector and its SOCs. Most public contracts were directed to the construction of primary schools (221 billion IQD), governmental offices (142 billion IQD), health centres (112 billion IQD) and kindergartens (95 billion IQD), although there was also significant investment in cultural buildings (including mosques), water projects or service buildings (Figure 21).

Figure 21: Value of completed public buildings in Iraq (excluding KR-I) by building type, 2014



Source: CSO

On the other hand, the private sector completed 869 billion IQD in building construction projects in 2014 in Iraq (excluding KR-I), with over 93% of them devoted to the construction of dwellings[49]:

- Dwellings building construction amounted to 812 billion IQD: 672 billion IQD in new dwellings and 140 billion IQD in additions to existing dwellings
- Commercial building construction amounted to 53 billion IQD. Of this amount, new buildings represented 50 billion IQD and additions 3 billion IQD. This investment was spread out across four restaurants, eight hotels, sixteen shops, and four other commercial buildings while there were additions to three hotels and three shops
- Other residential building construction amounted to 2 billion IQD, corresponding to the construction of eight new buildings
- Industrial building construction amounted to below 2 billion IQD, corresponding to thirteen new factories, two new workshops, and three other industrial buildings.

Civil engineering

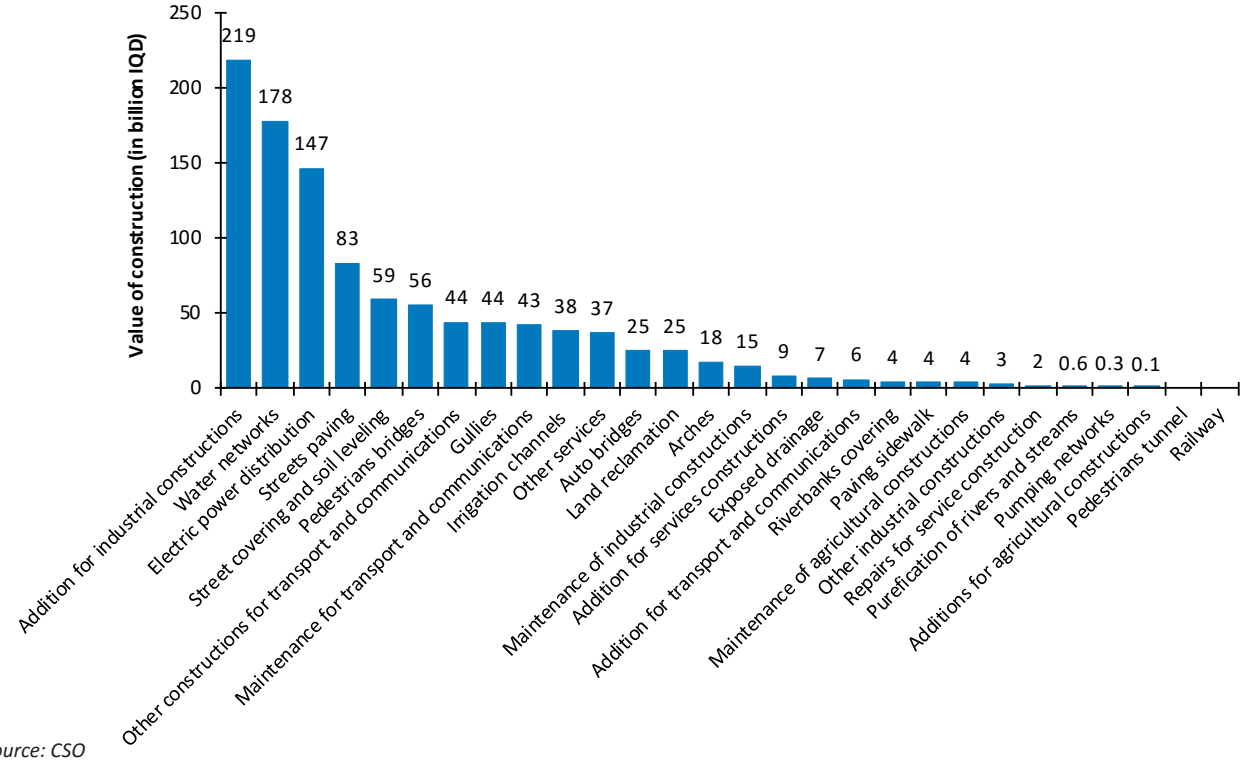
The 'civil engineering' category includes the construction of:

- Roads and railways such as motorways, roads, pedestrian ways, bridges or tunnels, traffic signs, bridges, tunnels, railways or subways
- Utility projects such as long-distance pipelines, communication and power lines, water main and line construction, irrigation systems (canals), sewer systems or power plants
- Construction of other civil engineering projects such as industrial facilities (except buildings) such as refineries, chemical plants, or waterways, harbour works, pleasure ports, dams and dykes, waterways or outdoor sports facilities.

Civil engineering works are at the initiative of the public sector, and the contracts awarded to SOCs or the private sector. Completed civil engineering work reached 1.1 trillion IQD in 2014 in Iraq (excluding KR-I). The largest costs were incurred for the addition to industrial constructions (219 billion IQD), construction of water networks (178 billion IQD), electric power distribution (147 billion IQD), street paving (84 billion IQD) and street covering/soil levelling (59 billion IQD) (Figure 22).

[49] CSO

Figure 22: Value of completed public civil engineering work in Iraq (excluding KR-I) by work type, 2014



Source: CSO

Specialised construction activities

The "specialised construction activities" category includes:

- Demolition and site preparation such as demolition, earth moving, drilling, preparation for mining, overburden removal or drainage
- Electrical, plumbing and other construction installation activities such as the installation of electrical or telecommunications wiring, computer network and cable television wiring, satellite dishes, lighting systems, fire or burglar alarm systems, street lighting and electrical signals, plumbing or heat and air-conditioning installation, elevators or escalators
- Building completion and finishing
- Other specialised construction activities.

It is not possible to isolate category 'specialised construction activities' within the CSO data available. Those activities are partly accounted for in building construction and partly in civil engineering.

Public and private construction activity

Both the public and the private sector initiate building construction projects, while only the public-sector initiates civil engineering projects, although they can contract a private firm to implement.

Public sector. The number of public sector projects has sharply diminished. The number of public building construction projects, and civil engineering projects[50] followed a similar trajectory as overall construction activity. From a peak of 2,000 building contracts and 2,600 construction contracts in 2008, they fell to between 1,000 and 1,500 contracts each in 2010, before reaching a new peak at around 2,000 projects each in 2013, and collapsing thereafter.

[50] CSO uses the term "construction" to refer to non-building construction

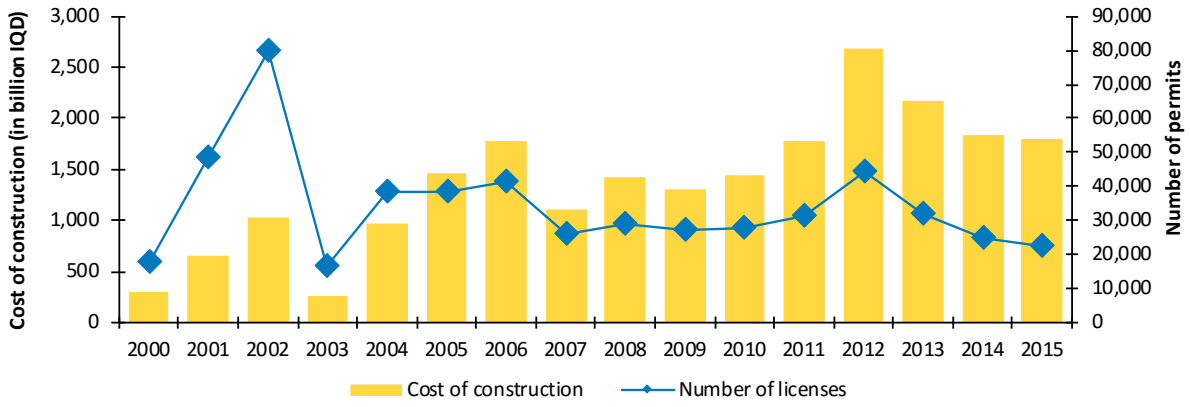
In 2015, there were 406 building contracts and 523 civil engineering contracts. The value of those projects fell by 69% in two years, from 10.9 trillion IQD in 2013 to 3.4 trillion IQD in 2015. Building construction (-78%) and civil engineering (-58%) both sharply diminished.

Moreover, an important share of the accepted contracts, for which funding is allocated, was not ultimately executed. In 2014, the Iraqi public sector committed 4.4 trillion IQD in contract value: 2.3 trillion IQD in building construction and 2.1 trillion IQD in civil engineering. However only 2.1 trillion IQD of overall construction projects were completed, with about half in building construction and the other half in civil engineering.

Contractors in centrally-administered Iraq and in KR-I report not being paid by their respective governments for their services, which brought most projects to a halt. Unexecuted contracts can be implemented when conditions change, but outstanding debts to the contractors will need to be paid before work resumes. In addition, and according to an industry specialist quoted by the press, corruption resulted in (i) awarding of public contracts to fictional enterprises, (ii) contractors fleeing the country after receiving public money, and (iii) contracts being stopped because construction works proved to be of poor quality.[51]

Private sector. Private sector projects also decreased significantly. As was the case with public construction and overall construction activity, the number of private licenses granted increased between 2008 and 2012 in Iraq, reaching nearly 45,000 in 2012, and was cut in half between 2012 and 2014, reaching 31,892 in 2013, 24,537 in 2014 (-23%) and 22,716 licenses in 2015 (-7.4%) (Figure 23).

Figure 23: Construction licences and estimated cost of construction in Iraq, 2000-2015



Source: CSO

3.3.2 Geographical distribution of construction

In 2015, CSO projected that five governorates would represent the bulk of the public construction activity, namely Baghdad, Basrah, Babylon, Kerbala and Wasit. These are all the governorates next to Baghdad, with the exception of the Basrah governorate (Figure 24).

Most building construction activity is centered on urban areas. In 2015, Basrah had the highest value of contracts (383 billion IQD), followed by Baghdad (365 billion IQD), and Kerbala (335 billion IQD). While Babylon and Wasit were also expected to receive building construction investment, the remaining governorates would receive virtually none (Figure 25).

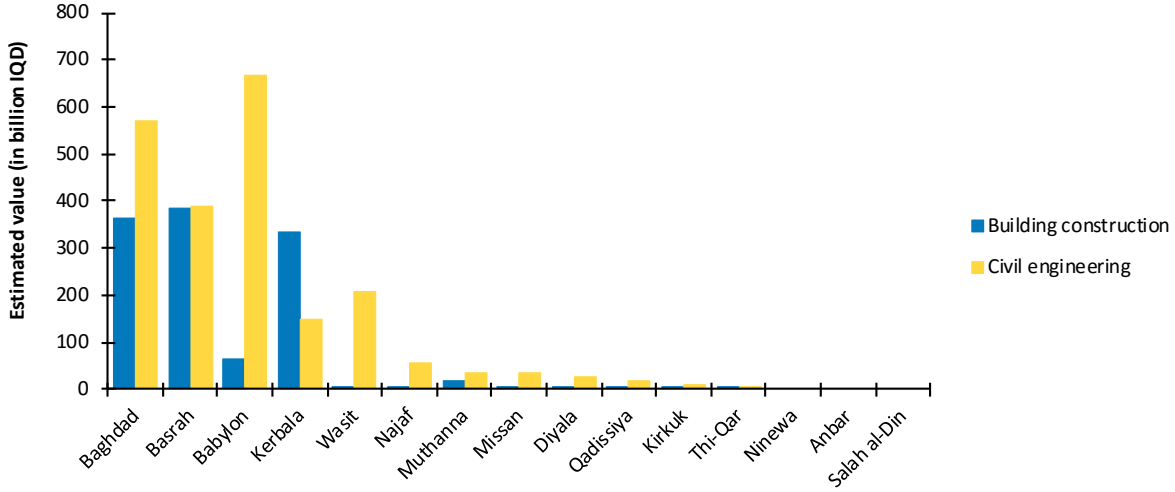
[51] Bassem, W. "Iraq's failing construction projects," Al-Monitor, October 5, 2015

Figure 24: Governorates by projected construction activity in Iraq (excluding KR-I), 2015

Source: CSO

Non-building construction (i.e. civil engineering) contracts were intended for the same five governorates: Babylon (668 billion IQD), Baghdad (568 billion IQD), Basrah (389 billion IQD), Wasit (207 billion IQD) and Kerbala (148 billion IQD). No other governorate was expected to receive more than 50 billion IQD (Figure 25).

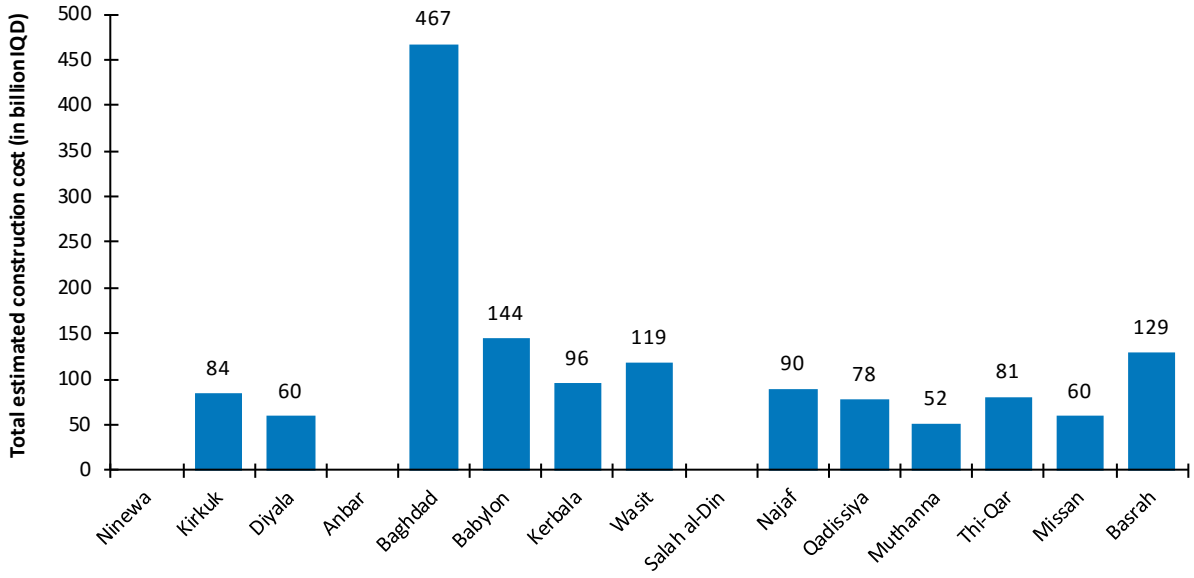
Figure 25: Building and civil engineering activity by governorate (excluding KR-I), 2015



Source: CSO

Baghdad governorate is by far the largest recipient of construction licenses (Figure 26). In 2015, the governorate received 24% of all licenses for a total estimated construction cost of 467 billion IQD. Otherwise, the governorates close to Baghdad – Babylon (144 billion IQD), Wasit (119 billion IQD) and Kerbala (96 billion IQD) – receive the most licenses, as well as the populous Basrah governorate (129 billion IQD).

Figure 26: Distribution of construction licenses in Iraq (excluding KR-I) by governorate, 2015



Source: CSO

Private construction activity seems evenly spread out in KR-I, with Dahuk, Sulaymaniyah and Erbil all receiving between 650 and 800 million IQD in authorized construction projects. In 2012, 11,170 licenses were issued for construction in the Erbil governorate, resulting in a construction cost of 651 million IQD. In the Sulaymaniyah governorate, 11,748 licenses were issued, for a construction cost of 703 million IQD.[52]

Table 9: Licenses and estimated construction cost per governorate in KR-I, 2012

Governorate	Issued licenses	Total built area (m2)	Construction cost (in million IQD)
Sulaymaniyah	11,748	3,175,321	702.8
Erbil	11,170	2,949,252	650.5
Dahuk	6,084	2,609,627	786.1

Source: KRSO

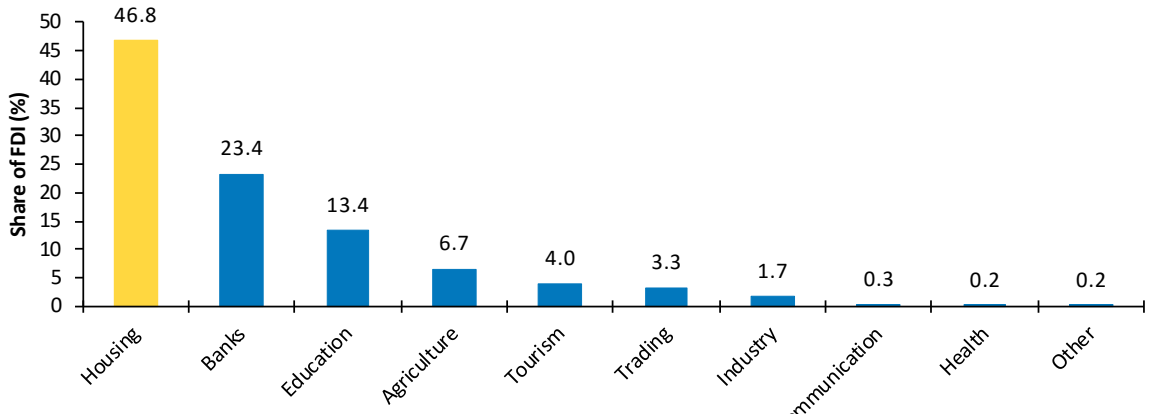
3.4 International trade and investment

Iraqi construction enterprises can expand internationally and export their services by participating in international tenders, establishing branches, joint-ventures or acquiring operators in foreign countries. However, the high presence of foreign firms currently in the country suggests the opposite is true. Foreign and joint-venture firms are very active in the Iraqi construction industry (Turkish, American, South Korean, Romanian, etc.), while there are very few examples of Iraqi construction firms being active beyond the country's border. As a result, Iraq is a net importer of construction services.

The construction sector traditionally attracts a large share of foreign direct investment (FDI). While no information was available for Iraq during the research period, in KR-I housing attracted 47% of total FDI into the region between 2006 and 2011, as shown in Figure 27 below:

[52] KRSO

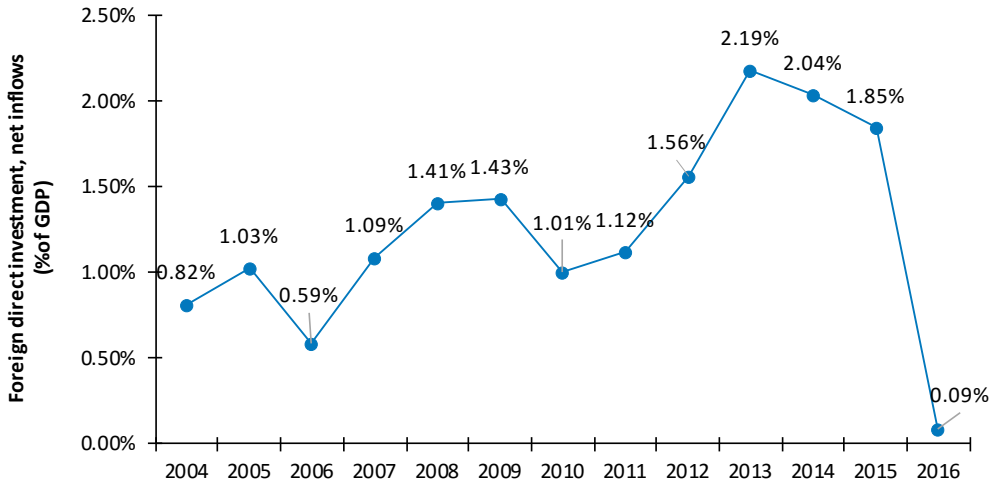
Figure 27: Distribution of FDI in KR-I, 2006-2011



Source: Hansen et al. "Strategies for Private Sector Development," 2014

The sector has shared the recent downturn in FDI for the entire country. Between 2013 and 2016, FDI in Iraq as part of GDP had fallen from 2.19% to 0.09%.[53]

Figure 28: Foreign direct investment (% of GDP), 2004-2016



Source: World Bank

In the future, resumption of growth in Iraq will benefit the construction sector. Iraqi has a large and growing population, with 40% under the age of 15, who will seek to acquire real estate in the future. Iraqi construction companies could take advantage of the expected domestic construction boom to expand domestically, and eventually export their know-how in neighbouring countries.

3.5 Employment in the sector

According to official figures, in 2014 there were around 63,000 construction workers in the Iraqi construction sector. The private sector employs 72% of construction workers. Official records show there were around 36,000 workers active in private construction and 27,000 public sector employees in building and construction.[54]

[53] World Bank
[54] CSO

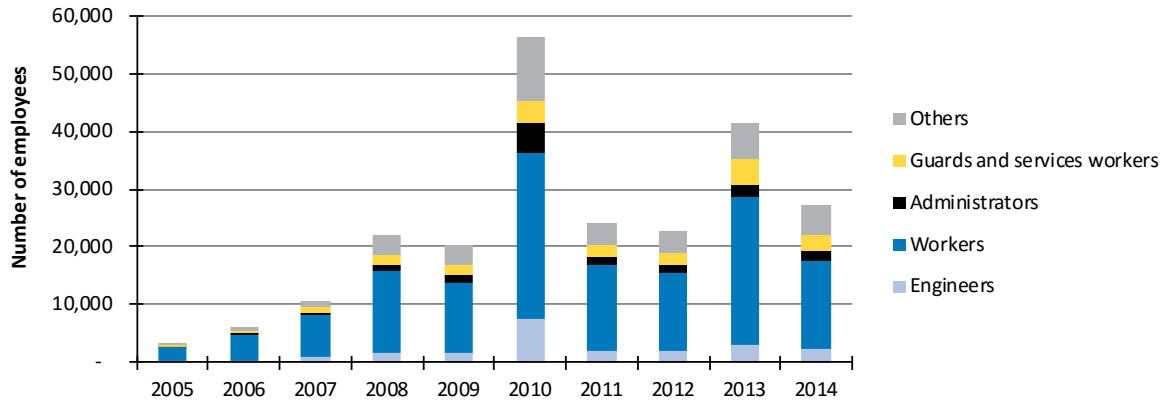
However, private sector employment and total employment is likely to be significantly underestimated, as informal employment is very common in the private sector. Semi-skilled and unskilled labourers often work without a contract, on a daily or weekly basis.

In 2011 in Iraq, the sector employed nearly 20% of all economically active males, making it the third largest employer of men after the services sector (25 to 30%), and public administration, defence and social security (over 20%).[55] It employs, however, virtually no women: 99% of construction workers are men. It is the youngest economic sector in Iraq, as approximately 45% of workers are under the age of 25.[56]

In KR-I, according to the 2012 labour force survey, 13% of employees were working in the construction sector, making it the second largest employer after the government (51%). A smaller share (10.6%) worked directly on construction and development sites - 12.3% of active males, against 0.1% of active women. The share of active males on "construction and development" sites[57], is higher in the Sulaymaniyah governorate (15.6%), followed by the Dahuk governorate (10.7%) and the Erbil governorate (9.6%).

Public sector employment in construction has followed the industry's cycles. After a high peak of employment in 2010, it fell in 2011 and 2012 before recovering partially in 2013 and decreasing again in 2014 to about 27,000 employees (Figure 29). Generally, skilled and unskilled workers form the majority of public employment in the construction sector.[58]

Figure 29: Evolution of public sector employment in construction, 2005-2014



Source: CSO

Practical experience is often valued more highly than educational attainment in the construction industry. According to a RAND study, in KR-I 9% of all jobs in construction require tertiary education, while 64% require at least secondary education, and 27% do not require any level of education (elementary occupations).[59] On the other hand, surveyed employers showed that construction companies are interested in workers with direct experience in construction.

All skill levels of construction workers saw their average wage increase in 2014, only to fall again in 2015. Only skilled workers had a higher salary in 2015 than they did in 2013. Available data suggests that construction wages may be higher on average in KR-I than in the rest of Iraq.

The wage elasticity to labour demand is high. Employment in the construction industry is often project-based and therefore employers can easily adjust employment when activity changes.

[55] Iraq Knowledge Network
[56] CSO
[57] KRSO
[58] CSO
[59] RAND (2014)

Indeed, the 2014 rise in wage levels reflects the 2013 peak of activity in the construction sector, and the subsequent fall in 2015 comes one year after the fall in activity witnessed in 2014. It is therefore likely that wages fell further in 2016, although data was not available at the time of writing.

Employment in the construction sector is intermittent and precarious. It does not result in long-term employment generation, nor does it result in long-term presence of foreign companies. This reinforces the need for a diversified skilled set and adequate safety nets for workers who are vulnerable to shocks. The same can be said of the effect of migration on wage levels and employment. For a constant level of jobs, migration will decrease wages at a quick pace, since wages can be adjusted from one project to another. Moreover, private sector employers do not strictly follow labour laws, particularly at the semi-skilled and unskilled level, where workers do not have a contract.

The use of foreign workers is frequent, not because locals do not have skills but because Iraqis are reportedly not willing to work long hours for below minimum wage and prefer public sector employment. The Board of Investment limits the composition of a firm's labour pool at 50% of foreign workers for certain investment projects, unless it can be shown that those skills are unavailable domestically. This rule, however, is not implemented consistently in practice. Syrian workers and IDPs are often willing to work under the minimum wage. In KR-I, the arrival of Syrian workers and IDPs has greatly impacted employment and lowered wages in the sector.[60]

In KR-I in 2013, it was estimated that 75% of the labour employed in construction was foreign, and local staff was nearly absent in skilled, semi-skilled and unskilled labour, showing that there is ample opportunity for employment of local population. While administrative staff is mainly local, the majority of engineers and skilled workers were foreign, and most semi-skilled and unskilled workers were Syrian refugees. At the height of the construction boom, employers in construction had to bring in labour from outside the KR-I to fill a number of skilled and technical positions.[61]

3.6 Classifications of occupations in the sector

In this Sector Skills Analysis report several classification systems for occupations and education are relevant. Table 10 provides a schematic illustration of how the levels of these different systems are related to each other. It also provides the context in which the classifications of ISCO (International Standard Classification of Occupations) and ASCO (Arab Standard Classification of Occupations) specific to construction (Table 11) can be understood.

Table 10: Relationships between different classification and levelling systems

<table>
<tr><th>ISCO</th><th colspan="2">ISIC</th><th>ISCED</th><th>ASCO</th><th>EQF</th><th>Example qualifications</th></tr>
<tr><td>3-4</td><td>01</td><td>Managers</td><td>5 and 6</td><td rowspan="2">1 Professional</td><td>8
7
6</td><td>PhD
Masters
Bachelor</td></tr>
<tr><td>4</td><td>02</td><td>Professionals</td><td>5a and 6</td></tr>
<tr><td>3</td><td>03</td><td>Technicians</td><td>5b</td><td>2 Technician</td><td>5</td><td>Diploma</td></tr>
<tr><td rowspan="5">2</td><td>04</td><td>Clerical workers</td><td rowspan="5">4
3
2</td><td rowspan="5">3 Craftsman
4 Skilled worker
5 Semi skilled</td><td rowspan="5">4
3
2</td><td rowspan="5">Certificates
Preparatory School Cert.
Certificates</td></tr>
<tr><td>05</td><td>Service and sales workers</td></tr>
<tr><td>06</td><td>Agriculture and Fisheries workers</td></tr>
<tr><td>07</td><td>Craft and related trade workers</td></tr>
<tr><td>08</td><td>Plant and machine operators</td></tr>
<tr><td>1</td><td>09</td><td>Elementary occupations</td><td>1</td><td>Foundation skills</td><td>1</td><td>Basic Education</td></tr>
</table>

[60] Danish Refugee Council (2014)
[61] Ibid

Table 11 shows the potential range of specialised occupations in the subsector, as classified in the ISCO, with cross referencing to ASCO.

Table 11: Occupations and ISCO/ASCO classifications

Level	ISCO classification and name	ASCO classification	ASCO description
1 Managers	1323 Construction managers	1322	مديرو الإنتاج والعمليات الإنشائية
2 Professionals	2142 Civil engineers	2142	المهندسون المدنيون
	2151 Electrical engineers	2151	المهندسون الكهربائيون
	2161 Building architects	2161	المهندسون المعماريون
	2162 Landscape architects	2162	مهندسو المناظر
	2164 Town and traffic planners	2164	مهندسو تخطيط المدن والمرور
3 Technicians and Associate Professionals	3112 Civil engineering technicians	3112	فنيو الهندسة المعمارية والمدنية
	3113 Electrical engineering technicians	3113	فنيو الهندسة الكهربائية
	3118 Draughtspersons	3118	الرسامون
	3123 Construction supervisors	1513	الناظرون (لمشرفون) في الإنشاءات
7 Craft and related trade workers	7111 House builders	7121	البناؤون التقليديون
	7112 Bricklayers and related workers	7122	بناؤو الحجر والطوب (الطابوق)
	7113 Stonemasons, stone cutters, splitters and carvers	7113	بناؤو الحجر والطوب (الطابوق)
	7114 Concrete placers, concrete finishers and related workers	7123	بناؤو الهياكل الخرسانية وما يرتبط بهم
	7115 Carpenters and joiners	7421, 7422	نجارو المباني نجارو الأثاث
	7121 Roofers	7426	مركبو الستائر والموكيت وورق الجدران والأسقف الاصطناعية
	7122 Floor layers and tile setters	7132	عمال التبليط
	7123 Plasterers	7133	عمال القصارة
	7124 Insulation workers	7234	عمال عزل المباني
	7125 Glaziers	7135	الزجاجون
	7126 Plumbers and pipe fitters	7262,7263	ميكانيكيو التمديدات الصحية ميكانيكيو التدفئة المركزية
	7127 Air conditioning and refrigeration mechanics	7261	ميكانيكيو التكييف والتبريد
	7131 Painters and related workers	7141	دهانو المباني
	7132 Spray painters and varnishers	7141	دهانو المباني
	7133 Building structure cleaners	7142	منظفو المباني
	7212 Welders and flame cutters	7212	العاملون في اللحام بالقوس الكهربائي والأكسي أستلين
	7213 Sheet-metal workers	7213	العاملون في أشغال الصفيح
	7214 Structural-metal preparers and erectors	7214	العاملون في الإنشاءات المعدنية العاملون في حدادة المباني (أبواب وشبابيك معدنية)
	7215 Riggers and cable splicers	7238	ميكانيكيو الآلات والمعدات الصناعية
	7411 Building and related electricians	7244	كهربائيو التمديدات الكهربائية
	7412 Electrical mechanics and fitters	7245	كهربائيو الآلات والقواطع الكهربائية
	7413 Electrical line installers and repairers	7242	كهربائيو نقل وتوزيع الطاقة الكهربائية
	7521 Wood treaters	8141	مشغلو مصانع الخشب
8 Plant and machinery operators and assemblers	8342 Earthmoving and related plant operators	8341	سائقو الآليات الثقيلة
	8343 Crane, hoist and related plant operators	8342	سائقو معدات توليد الطاقة المتنقلة ومعدات السفلتة والروافع
9 Elementary occupations	9312 Civil engineering labourers	9312	عمال إنشاء الطرق
	9313 Building construction labourers	9313	عمال إنشاء المباني

3.7 Factors impacting on the growth and development of the sector

3.7.1 Political factors

Domestic politics, institutional dynamics and political uncertainty can have a strong impact on the construction sector, as most of the funds used for construction are public funds.

Military hostilities and the fight against ISIL/Da'esh deterred all economic activities in affected areas. It also influenced domestic and international investment in all sectors because of the economic uncertainty it created.

The destruction of part of the housing stock that took place during the military invasion and ISIL/Da'esh insurrection has generated a future need for reconstruction.

Trade policy (the imposition of tariffs or non-tariff barriers) can have a strong impact on the sector's development, to the extent that Iraq imports a large share of construction materials that are used domestically. Iraq is not a member of the World Trade Organization but is part of the League of Arab States and the Great Arab Free Trade Agreement (GAFTA). It also ratified a Trade and Investment Framework Agreement (TIFA) and Partnership and Cooperation Agreement with the European Union in 2012. Government purchases are substantial in Iraq, as the government has a monopoly on the import of construction materials, and the dedicated SOC is also the main trader of the same domestic products. This gives the government strong control over construction sub-sectors as it chooses the suppliers and consequently the cost and quality of the goods to be sold.

Corruption is a strong hindrance to the sector's development. It discourages economic activity, as well as increase the final price paid by the customer. Transparency International ranks Iraq 166th out 176 countries in its Corruption Perception Index. Press reports quoting sector specialists mention several issues. Projects are given to companies that are not always up to standard but are run by contractors connected to corrupt officials and politicians. Consequences include the poor quality of completed projects, the non-completion of others, while some important projects are ignored. According to the World Bank Enterprise Survey, 29.1% of firms in Iraq expected to give bribes to obtain construction permits (compared to a MENA average of 25.1%). This number increases to 70% for medium-sized firms and 100% for large firms.[62]

The institutional arrangement for implementation of construction projects is not optimal, according to sector specialists cited in the media. The latter contend that the provinces are not given the powers that facilitate the direct implementation of projects. In 2015, the Ministry of Municipalities announced the implementation of the 2008 Law (No. 21) transferring the powers of eight federal ministries to local governments in the coming two years.[63]

3.7.2 Economic factors

Public finance difficulties have hindered and continue to hinder the development of the sector, with an estimated fiscal deficit of 13.5% of GDP in 2015. Private sector contractors report not having been paid and do not trust that the government will do so, so work has stopped with a corresponding loss in construction jobs.

[62] Danish Refugee Council (2014)
[63] Ibid

The construction sector is highly dependent on the dynamics in the real estate and manufacturing sector, as well as on general economic activity. As a result, the factors affecting these sectors are also to be taken into account, such as real estate prices, the price of construction material and the overall level of activity.

- Real estate prices impact the viability of private construction projects
- Construction materials are mostly imported. Transportation costs, trade policy, as well as exchange rate movements, will impact the cost of inputs for the construction sector
- Growth in economic activity raises the need for building and construction, while customer purchasing power and their ability to purchase or rent real estate is one of the key drivers of activity in the construction sector.

3.7.3 Social factors

Migration has a great impact on construction activities. The arrival of Syrian refugees, mainly into KR-I, and of IDPs, have increased the labour supply for semi-skilled and unskilled employment and has substantially lowered wages in some sectors. The partial return of IDPs and Syrian refugees will have the opposite effect.

The age structure of Iraq will favour the development of the sector. Half of the population is under the age of 20 years old, 40% under the age of 15. This segment of the population will increase the demand for housing and increase the pool of labour available.

Gender matters, as the construction sector employs virtually no women. There is a cultural disinclination for females to work (they represent 13% of the total labour force), which is even more acute in manual and physical occupations such as most construction occupations.

There exists a cultural bias against working in the private sector or in low-skilled occupations such as a large share of construction employment, as well as against undertaking vocational education and training.

3.7.4 Technological factors

The availability of services and facilities for new construction e.g. sewage and water treatment systems, connection to the electricity network and connection to transport networks are enabling factors for many types of construction. According to the World Bank Doing Business (WBDB) report, it takes 5 procedures and 47 days to get electricity connected in Iraq. Iraq ranks 133rd of 180 countries for the ease of getting electricity according to the WBDB Survey. Neighbouring countries rank higher, such as Egypt (88th), Iran (94th) or Jordan (48th). These countries have a comparable number of procedures and they take approximately the same time to complete;

and getting electricity in Iraq is cheaper than in Iran or Jordan; but in terms of the reliability of supply and the transparency of tariffs, Iraq is awarded a score of zero.

Technological innovations in construction techniques and the manufacture of construction materials affect the price of construction and the quality of construction.

3.7.5 Environmental factors

The availability of land for construction poses some challenges to construction in urban areas, particularly in Baghdad.

The use and sale of environmentally-friendly construction products can benefit the environment while opening new markets. According to private sector representatives, there is not enough financial incentives for the import and production of green materials, while the production of cement and other construction materials are highly pollutant.

The construction of environmentally-friendly buildings can benefit the environment and create new markets. These buildings would use improved insulation materials to save electricity and use electricity from green sources such as solar, wind and hydro-electrical power.

3.7.6 Legal factors

Procedures for allocating land, registering property and obtaining construction licenses are burdensome and, according to private sector representative, hindered by heavy bureaucracy. More specifically:

- Land allocation procedures, for which the Ministry of Municipalities and Public Works is responsible, are long and complicated
- The time needed to register property, according to the WBDB Survey, is estimated as five procedures and takes 51 days on average
- The process to obtain construction licenses is complicated, time consuming and expensive, also because of the necessity to pay bribes.

The legal framework for contracting private firms needs to be revised. According to private sector representatives, provisions for 'force majeure' are not consistently included in contracts between contractors and government.

Safety standards (technical, health & safety, environmental) are high, and reportedly higher than those of neighbouring countries, and challenging to meet, according to the Iraqi Chamber of Industry. The current requirements are based on ISO standards, with quality assurance from the Central Organisation for Standards and Quality Control. However, according to private sector representatives, the 2012-2013 boom in construction activity came at the expense of the quality of projects.

Access to financing for businesses is quasi-impossible, Iraq ranking 180th in the WBDB Survey, down from 174th in 2012. Entrepreneur investors face burdensome reporting and compliance requirements and difficulties in providing acceptable guarantees. Access to customer finance is of particular importance for the construction sector, the availability of financing for the purchase of

real estate could increase demand and construction.

The Labour Law number 37/2015 replaced the old Labour Law. The law protects the rights of workers, specifying a minimum wage of 250,000 IQD, with a proposal to raise this to 350,000 IQD according MoLSA. Further changes and the extent of its application can affect the sector's ability to recruit.

With respect to foreign labour, the Labour Law specifies that a work permit is required for foreign workers, and article 33 states that *"The Minister may issue special instructions governing the recruitment and employment of foreign workers in Iraq"*, without specifying a limit. Private sector representatives report that the law is understood as limiting the share of foreign workers at 75%.

The Law on Investment number 4/2006 provides strong incentives for foreign direct investment, but in practice the processes to implement the law (e.g. allocation of land) cross organisational ministerial boundaries and are difficult to control. There is a proposal that the Board of Investment should become a 'one-stop-shop' with additional powers to allocate land.

With respect to the use of foreign workers by foreign investors, the Investment Law states that: *The investor may employ the necessary local and foreign manpower for the project, while giving priority to local manpower in accordance with the existing laws in the region.* Reportedly, foreign construction companies usually seek to bring their own workforce into Iraqi projects.

Chapter 4: Skills supply to the construction sector

4.1 Skills supply to the construction sector

In this analysis of skills supply to the construction labour market, the estimated cohort size is a proxy for the number of new entrants to the labour market with the skills relevant to work in the economic sector.

This is only a rough indicator since skills supply for construction offered through relevant training by employers, Contractors Union or private providers is not included.

In the following tables skills supply is organised by skill area, irrespective of the level or duration of education and training.

- MoLSA courses are short duration training offered at lower levels. These do not currently lead to the award of any recognised qualification
- MoE Vocational Preparatory School is three years in duration
- Diplomas awarded after successful completion of a two-year programme by institutes (referred to as 'technical' in the tables)
- Bachelors are awarded after successful completion of a 4/5-year programme by colleges.

Construction skills are organised follows:

- Building and architecture skills
- Electricity skills
- Metal skills
- Engineering drawing
- Surveying
- Civil technologies/civil engineering (excluding transport specialisations)[64]
- Other.[65]

Table 12: Construction skills in Iraq

Institution	Name of specialisation	Estimated cohort size (or last known intake*)
Building and architecture		
MoE Vocational Schools	Building	219
MoLSA	Building	90
Technical / Najaf	Architectural design and decoration	26*
STU Technical	Building and construction techniques	62*
Applied Arts / Baghdad	Architectural design and decoration	88*
Electricity skills		
MoE Vocational Schools	Electricity	3699
MoLSA	Electrical building	417
	Electricity	7
Technical / Qurna	Electricity	108*

[64] Note that Civil Engineering techniques are also included in the report on Transport and Storage
[65] Note that Air conditioning and refrigeration are not included in this report, but included in the report on Transport and Storage

Institution	Name of specialisation	Estimated cohort size (or last known intake*)
Technical / Hawija	Electrical techniques	67*
Technical / Kirkuk	Electrical techniques	263*
Preparation of technical trainers	Electrical techniques	120*
Technical / Baquba	Electrical techniques	395*
Technical / Kut	Electrical techniques	111*
Technical / Essaouira	Electrical techniques	142*
Technical / Kufa	Electrical techniques	75*
Technology / Baghdad	Electrical techniques	213*
Technical / Anbar	Electrical techniques	0*
Technical / Najaf	Electrical techniques	69*
Technical / Musayyib	Electrical engineering	153*
College of Technology / Musayyib	Electrical power engineering techniques	43*
Technical / Karbala	Electrical engineering	155*
Technical / Samawa	Electrical engineering	145*
Technical / Basra	Electrical techniques	324*
Technical / Architecture	Electrical engineering	25*
Technical	Electrical engineering	44*
Technical / Nasiriyah	Electrical engineering	140*
Technical / Qurna	Electricity	108*
Metal		
MoE Vocational Schools	Welding and metal forming	544
	Foundries	52
MoLSA	Welding	267
	Foundries	2
Engineering drawing		
Vocational schools	Engineering drawing	39
Surveying technology and techniques		
College of Technology / Kirkuk	Engineering of surveying techniques	27*
Technical / Kirkuk	Surveying techniques	89*
Baghdad Technical College	Engineering of surveying techniques	38*
Technical / Mosul	Surveying techniques	0*
Technology / Baghdad	Surveying techniques	68*
Technical / Baquba	Surveying techniques	90*
Technical / Kut	Surveying techniques	59*
Technical / Samawa	Surveying technology	100*
Technical / Basrah	Surveying technology	154*
Technical / Architecture	Surveying technology	29*
STU Technical	Surveying technology	49*
Civil engineering		
College of Technology / Mosul	Engineering of construction and construction techniques	0*
Technical / Mosul	Civil Techniques	0*
Technical / Kirkuk	Civilian techniques	125*
Technology / Baghdad	Civilian techniques	140*
Technical / Najaf	Civil techniques	88*
Technical / Musayyib	Civilian technologies	82*
Technical / Karbala	Civil techniques	64*
Technical / Babylon	Civil techniques	99*
Technical / Basrah	Civil techniques	132*
Technical / Nasiriyah	Civilian techniques	46*
Technical / Anbar	Civil techniques	0*
Technical / Architecture	Civil techniques	35*
Other		
MoE Vocational Schools	Ceramics and glass	20
	Maintenance of elevators	112
MoLSA	Crane operator	22
	Electrical lifts	19
Applied Arts / Baghdad	Ceramic techniques	30*

Baghdad Technical College	Engineering of moulding and numbering techniques	40*
Baghdad Technical College	Engineering welding techniques	40*

Table 13: Construction skills in KR-I

Institution	Name of the Specialisation	Estimated cohort size
Building skills		
MoE Vocational School	Carpentry	49
Dahuk Technical Institute	Building & Construction	67
Erbil Technology Institute	Construction technology	92
Shaqlawa Technical Institute	Construction technology	61
MoLSA KR-I	Carpentry	28
	Welding	29
	PVC	30
	Elevators	5
Surveying skills		
Darbandikahn Technical Institute	Surveying	197
Kalar Technical Institute	Surveying	173
Sulaymaniyah Technical Institute	Surveying	145
Akre Technical Institute	Surveying	83
Zaxo Technical Institute	Surveying	86
Electricity skills		
MoE Vocational School	Electrical installation	449
Darbandikahn Technical Institute	Electricity	145
Chamchamal Technical Institute	Electricity	228
Kalar Technical Institute	Electricity	211
Sulaymaniyah Technical Institute	Electricity	141
Erbil Technology Institute	Electricity technology	80
Zaxo Technical institute	Electrical	63
MoLSA KR-I	Electricity	83
Engineering drawing		
MoE Vocational School	Engineering drawing	39
Sulaymaniyah Technical Institute	Engineering drawing	150
Shaqlawa Technical Institute	Engineering drawing technology	44
Civil engineering (excluding transport)		
SPU Technical College of Engineering	City planning engineering	173
EPU Technical College of Engineering	Civil engineering	43

4.2 Implications of the data

This may be the first thematic study of the provision of technical and vocational programmes in the country which looks at common and differentiated offerings of the providers. As shown in the previous tables above, for example, there is clearly a need for rationalisation in some areas to reduce duplication and gain economies of scale. The recommendations in Chapter 6 may influence decision-makers to rationalise the programmes currently being offered i.e. reduce or discontinue provision in some fields and develop and/or increase in others. In many countries rationalisation has been guided by the desire to differentiate provision and create 'centres of excellence'. An advantage of increased specialisation is concentration of expertise and expensive equipment and other resources. A disadvantage is that students need to travel away from their home town in order to pursue specialised training. Information on the provision of programmes (skills supply) is indicative and should be used to supplement the qualitative and quantitative information on the demand for skills which is presented in Chapter 5.

Chapter 5: Demand for skills in the construction sector

Information on the demand for skills comes from two main sources: the meeting of the pilot Sector Council and the Enterprise Survey. The outcomes of the pilot Sector Council meeting and Enterprise Survey provide this information in the form of qualitative and quantitative data, respectively, and is presented in the following sections.

5.1 Outcomes of the Construction Sector Council meeting

The pilot Sector Council, representing the leadership of the sector, was established by nominations based on information gathered in fieldwork interviews and during desk research, and drawing on professional networks and databases.

A demand-led TVET system requires that the leadership of the sectors is organised into representative bodies to advise on the training needs of their sector. Thus, in the future, permanent sector councils will need to be formally established through legislation.[66] The membership of formally and legally established sector councils will need to be decided by the sector itself, probably in consultation with the members of the original pilot Sector Council.

The pilot Construction Sector Council meeting was held in Erbil on 21-22 May 2017. The meeting was attended by public and private representatives of the sector from Iraq and KR-I.

5.1.1 Challenges of the construction sector

The broad business context described by the pilot Sector Council is over-dependence on oil, and on imported goods, and not enough exploitation of local resources, such as other sources of energy (solar, wind, hydro); and tourism and agriculture potential; and not enough support for private sector development.

Manufacture of local construction materials has significantly decreased, causing unemployment and increased imports, which are often poorer quality than local products. Implementation of product standards and government support for local construction product factories are needed to properly exploit local resources.

In many countries, the construction industry is led by the private sector, but in Iraq there is the perception that the government is disempowering the private sector. The pilot Sector Council expressed the view that bureaucracy, old laws and poor planning are paralysing the sector in general. The relationship between the construction sector and the government is not a trusting relationship. The public sector is blamed for the demise of many private companies. Private sector contractors do not trust that the government will pay them, so work stops; and people lose their jobs. There are no guarantees built into contracts to give the private sector confidence.

According to the pilot Sector Council, government strategic planning does not necessarily make best use of government finances, and does not prioritise well, or coordinate/harmonise the plans for each sector. Most private investment projects are construction projects (especially residential). Although it appears that the construction sector was doing well in 2012, and the numbers of projects increased, the quality of the end products decreased, especially due to lack of services to

[66] In the document 'Government Restructuring for the TVET Sector in Iraq', developed under the UNESCO TVET Reform Programme for Iraq and KR-I, 'Sector Council' is referred to as 'Sector Skills Advisory Coordination Services (SACS)' bodies as their role includes the development and validation of respective sector national occupational skills standards and qualifications

new residential areas e.g. schools and hospitals as well as utilities sewerage, water etc. which could not keep pace with the construction boom.

In KR-I in particular, it is thought that construction activity moved far too fast for services (e.g. electricity, water, sewerage) to keep up. Planning should be more realistic. New residential areas also need schools, hospitals etc., so this needs to be considered in relation to plans for new residences. Furthermore, most construction projects are horizontal, whereas vertical developments would create more green spaces in cities, however Iraqis do not favour vertical residential arrangements, and the government does not seem to have a master plan for urban development.

Laws are not implemented consistently or equitably, and activity which is not legal is not investigated by auditors in a timely and efficient manner. Legal provisions and contracting for construction projects in 2012 did not consider 'force majeure'. As stated previously, provision for force majeure is not consistently included in contracts between contractors and government, so contractors are not necessarily compensated when project fail due to issues beyond their control.

Start-ups are not supported. Newly established construction companies take a while to get their first contracts, but still have expenses, whether they have contracts or not, and this may cause them to become bankrupt, even before they become operational. The pilot Sector Council felt that there should be loans or tax exemptions for start-ups, to give them a chance to find their feet.

Bank requirements make it very difficult for construction companies to get loans from private banks. In many other countries, the banking sector uses the evidence of feasibility studies for new construction ventures to assess risk, and the project itself can be used as the guarantee. In Iraq, it is very difficult to get loans or letters of credit from private banks to facilitate business growth. There is lack of trust between the construction sector and financial institutions, with not enough legal protection for either party, and no specialised banking services which meet the needs of the construction sector.

The pilot Sector Council members believe the skill level of workers and engineers is much lower now than it was in the 1970s and 80s. Skilled people have died or left the country, and the new generation does not have such good skills or credible qualifications.

Foreign workers are often preferred. This is generally thought to be because foreign workers will work for lower wages. However, not all foreign workers are cheaper than local workers e.g. Turkish engineers expect higher fees than locals. Local employers say that they find foreign workers are more loyal and more productive than local workers. Often, foreign companies want to bring their own workers with them. Investment law limits the proportion of foreign workers. The rule is varied if the employer can show that the professions needed are not available locally. The actual proportion allowed is specified in each investment contract (30-75%).

There are too few research centres as well as a lack of coordination between research centres and TVET institutions. Because of insufficient research, 'brain drain' and low productivity TVET has lost direction. There is no systematic labour market information or monitoring of the skills of foreign workers or the destinations of graduates. It is essential to establish the size and shape of the skills gap in order to develop relevant programmes.

The pilot Sector Council believes that human resource potential is wasted by nepotistic practices which offer people jobs for which they are not qualified; and lack of planning to assist graduates to get jobs in their field of specialisation. Public sector salaries are apparently not based on merit (i.e. appropriate qualifications) or productivity.

Although salaries may be lower in the public sector, the availability of benefits, especially pension, is attractive. Graduates all want to work in the public sector. Social security and pension benefits should be equalized for public or private sector employment. The participants believed that law change is needed to make the private sector more attractive with social security and a pension fund. It is understood that such revisions are in progress, but the main barrier to increased equity may be that employers already feel burdened by tax requirements and may not be willing to pay social security contributions.

5.1.2 Opportunities identified by the Construction Sector Council

- Introduce new technologies and revised standards and implement better ways of controlling the quality of products
- Promote jobs which are suitable for women and encourage employers to hire women for jobs in the construction sector which are suitable (e.g. draughtsman, interior design)
- Educate contractors to find ways to create 'team spirit' to overcome routine and encourage more loyalty and productivity
- Train managers to be better administrators and to recruit people based on their skills
- Introduce new initiatives to make better use of existing skilled human resources
- Adopt international good practices for transporting goods by river and by sea
- Invest in minerals other than oil e.g. phosphate
- Invest in exploitation of other natural resources for the production of construction materials e.g. ceramics and glass
- Develop research programmes to investigate better use of existing resources such as gas, water (including dams), and sun
- Use green sources for building e.g. solar, wind and hydro-electrical power plants
- Find new ways to use insulation material to save electricity, for example recycled materials (recyclable material should be collected and sorted and processed so they can be used for building projects)
- Create new public transport systems e.g. underground systems
- Apply high taxes to imported products which are similar to products that can be produced locally
- Expand the centres that offer training courses to develop new ways of gathering relevant information, and collecting and using scientific data
- Increase coordination and exchange of expertise and experiences between local and international organisations and institutions with interest in the construction sector
- Arrange training and symposiums to inform educators and trainers about the needs of the labour market (survey results)
- Recruit foreign experts to fill any training gaps, and upgrade local education and training staff
- Use media and websites to inform people about the needs and opportunities of the labour market

- Introduce career guidance services to use labour market information to guide young peoples career choices
- Update and develop new TVET curricula based on labour market information on skills gaps, and include communication, life skills and knowledge of workers rights in new training programmes.

5.1.3 Goals of the Construction Sector Council

1. Develop a legal framework to encourage the establishment of joint-venture projects with foreign firms in order to secure financing, share expertise and integrate new processes

2. Identify, activate, and unify engineering standards in construction, as a reference for all construction projects to avoid the disparity in quality and prices

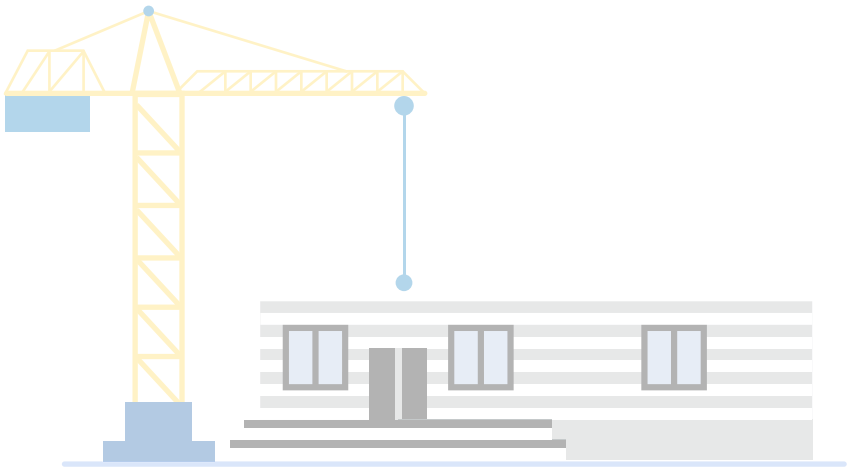
3. Encourage the government and contractors to use engineering software programs such as Primavera, Oracle, BIM (Revit), etc.

4. Establish new manufacturing factories to produce modern construction material using best and efficient production technologies

5. Improve the cnstruction sector by identifying the skill gaps and developing occupations for construction-related handicrafts for disadvantaged groups such as women, youth, disabled people, etc.

6. Engage the disadvantaged groups and develop their skills and abilities though rehabilitation and training for construction occupations

7. Direct the government and universities to design and build green and environmental-friendly buildings.



5.1.4 In-demand occupations identified by the Construction Sector Council

Table 14: In-demand occupations identified by the Construction Sector Council

ISCO	ASCO	Occupation	Comment
1323	1322	Construction managers	Skill gap
2142*	2142	Civil engineers	Especially: • 21422141 (sanitary design) • 2142151 (sanitary execution and operation)
2144*	2144	Mechanical engineers	Especially: • 2144061 (engineer, mechanical/plumbing and central heating-design and supervision) • 2144081 (air-conditioning and refrigeration)
2151*	2151	Electrical engineers	Skill gap Especially: • 2151081 (engineer, electrical/electro mechanics)
2161	2161	Building architects	Shortage
2162	2162	Landscape architects	Shortage
2164	2164	Town and traffic planners	Shortage
3113	3113	Electrical engineering technicians	• Selected by two groups • Skill gap
3123	1513	Construction supervisors	Shortage and skill gap
7112	7122	Bricklayers and stonemasons	Skill gap
7113	7113	Stonemasons, stone cutters, splitters and carvers	• Selected by two groups • Shortage and skill gap
7114	7123	Concrete workers, concrete finishers and related workers	Shortage and skill gap
7124	7134	Insulation workers	Selected by two groups
7125	7135	Glaziers	
7127	7261	Air conditioning and refrigeration mechanics	Shortage and skill gap
7212	7212	Welders and flame cutters	
7214	7214	Structural-steel workers and erectors	Shortage (good skills in Japan)
7215	7238	Riggers and cable splicers	Shortage (good skills in Lebanon)
7412	7245*	Electricians (electrical machines and electric circuit breaking)	Especially: • Electrician, elevators/installation
8343	8342	Crane, hoist and related plant operators	Shortage and skill gap

*These were added to the pre-prepared list of relevant occupations by the members of the Sector Council

- Area engineer
- False ceiling installer
- Security camera installer
- Fire alarm installer
- Building cladding
- Workers on prefab buildings – electricians, plumbers, structures

5.2 Results of the Enterprise Survey for the construction sector

The following sections provide both top-level and in-depth information into the labour market outlook and educational/training needs of medium- (10-29 employees) and large-sized (30+ employees) firms across the selected six governorates in Iraq and two in KR-I.

Firms were drawn in a stratified manner (by governorate and subsector) from CSO's 2009 Business Register and in some cases based on CSO field offices' knowledge of the labour market. Given the outdated Register and the significant changes in the country during the years since 2009, the Register is not thought to accurately represent the current labour market. Therefore, in all proceeding analyses, the data is not weighted according to the Register, and instead the raw results are presented. In cases where firms' responses are quite varied by strata, this approach may lead to some strata being under- or over-represented in the total counts, but nonetheless characterises a more reliable presentation of the survey results.

5.2.1 General overview of the sampled firms from the Enterprise Survey

In total, 156 firms were sampled from the construction sector. The majority (71.8%) of the sampled firms were comprised of those involved in the construction of buildings, while the remaining were split between civil engineering and specialised construction activities (Table 15). The firms were evenly divided between Iraq and KR-I, with 78 in each of the regions. The majority of firms focused on civil engineering (75.0%) and specialised construction (68.8%) were located in KR-I, with the majority in Sulaymaniyah. Sulaymaniyah was also the largest in the sample with 56 total firms, while the smallest governorate (in terms of construction) was Kirkuk which contributed 0.

The numbers in brackets in Table 15 indicate the number of medium (10-29 employees) and large-sized firms (30+ employees), respectively. In total, 74% of firms were of medium size. The subsequent sections do not disaggregate the results into medium- and large-sized firms, as the responses between these groups did not differ significantly.

Table 15: Number of construction firms sampled by governorate and subsector

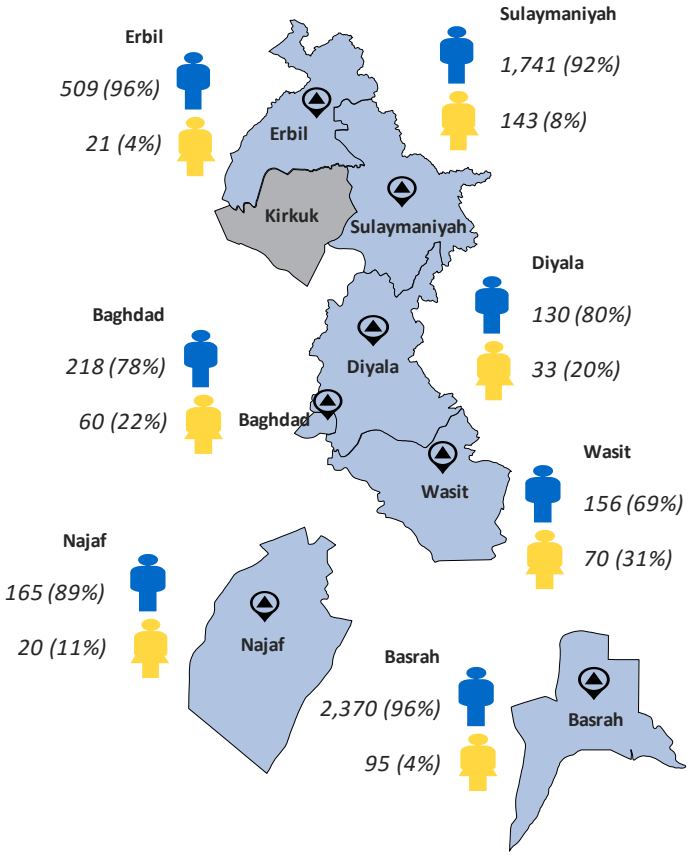
Subsector	Baghdad	Basrah	Diyala	Erbil	Kirkuk	Najaf	Sulaymaniyah	Wasit	Total
Building construction	18 (17 medium, 1 large)	32 (24,8)	2 (1,1)	16 (11,5)	0	8 (6,2)	30 (19,11)	6 (3,3)	112 (83,29)
Civil engineering	1 (1,0)	5 (2,3)	1 (0,1)	6 (5,1)	0	0	15 (12,3)	0	28 (20,8)
Specialised construction activities	1 (1,0)	3 (3,0)	0	0	0	0	11 (7,4)	1 (1,0)	16 (12,4)
Total	20 (19,1)	40 (29,11)	3 (2,1)	22 (16,6)	0	8 (6,2)	56 (42,14)	7 (4,3)	156 (115,41)

Of the 156 firms sampled, the main economic activity of 117 firms (75.0%) was in services, 20 (12.8%) mainly produced goods, and 19 (12.2%) were involved in both. Of the 20 primarily goods producing firms, 13 were situated in KR-I. The firms varied in size from 10 to 1,338 employees, with a median size of 17.5. The total number of employees across the 156 firms was 5,731, and the majority of which were permanent, male employees (see Table 16). The predominance of males was consistent across all governorates but ranged from a low of 69% in Wasit to a high of 96% in Basrah and Erbil (see Figure 30).

Table 16: Employee type by gender

Type	Male	Female	Total
Permanent	3,832 (93%)	290 (7%)	4,122
Temporary	969 (92%)	79 (8%)	1,048
Daily	488 (87%)	73 (13%)	561
Total	5,289 (92%)	442 (8%)	5,731

Figure 30: Number of employees by gender in selected governorates

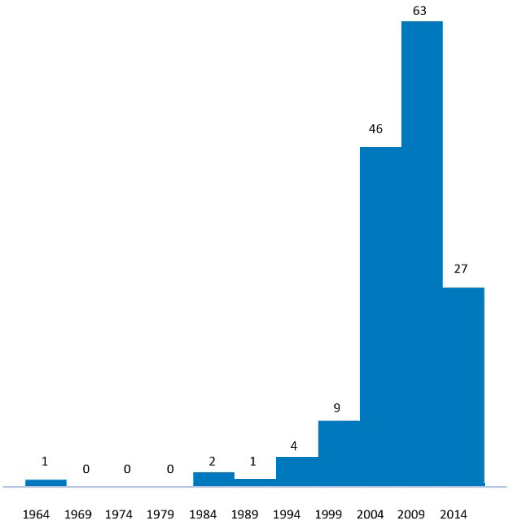


The legal status of firms varied somewhat by subsector. Across all the construction subsectors, the majority of firms were individually owned. Limited companies were most common in the building construction subsector (Table 17). Finally, the establishment of firms started to increase beginning with the 2003 Iraq invasion and continued to do so until the beginning of the 2014 ISIL/Da'esh conflict which resulted in a dramatic decrease (Figure 31).

Table 17: Legal status of firms

Subsector	Individual ownership	Limited company	Joint stock company	Not stated
Building construction	69 (61.6%)	37 (33%)	2 (1.8%)	4 (3.6%)
Civil engineering	20 (71.4%)	3 (10.7%)	1 (3.6%)	4 (14.3%)
Specialised construction activities	8 (50%)	4 (25%)	3 (18.8%)	1 (6.2%)

Figure 31: Firms starting year of operation



5.2.2 Analysis of occupations in the construction sector

Each company was asked to list the top 7 occupations (based on frequency) in their workforce as well the qualification levels of people in the occupations. The classification of qualification levels are based on these descriptions:

- Basic-skilled Worker (no diploma or a certificate for primary or middle education)
- Semi-skilled Worker (has followed some vocational training)
- Skilled Worker (professional secondary education/vocational training certificate)
- Professional Technician (diploma from a technical institute)
- Professional Academic (diploma from a higher education institute)
- Technical Specialist (bachelor degree from a technical faculty/university)
- Academic Specialist (bachelor degree from a faculty/university)
- Higher Technical Specialist (technical master degree or equivalent)
- Specialist Technical Expert (technical doctorate degree or equivalent)
- Specialist Academic Expert (doctorate degree or equivalent).

The qualification levels of employees in construction-related occupations varied considerably across the different subsectors. As expected, the majority of 'B' level occupations (basic-skilled, semi-skilled and skilled) are associated with lower qualifications with a few exceptions, while in 'A' level occupations (professional and technical) nearly 80% have bachelor degree qualifications or higher (Table 18). There were very few occupations with post-graduate level qualifications.

Table 18: Occupation level by qualification

Occupation level	Basic-skilled	Semi-skilled	Skilled	Prof. Technician	Prof. Academic	Tech. Specialist	Acad. Specialist	Higher Tech. Specialist	Specialist Tech. Expert	Specialist Acad. Expert
'A' level	3 (1%)	3 (1%)	30 (8%)	35 (10%)	6 (2%)	108 (29%)	165 (45%)	6 (2%)	6 (2%)	1 (>1%)
'B' Level	54 (34%)	26 (16%)	61 (38%)	9 (6%)	4 (3%)	2 (1%)	3 (2%)	0 (0%)	0 (0%)	0 (0%)

Table 19 below shows the top ten construction-related occupations found in the survey (in order) in 2017 in employment across the sector in Iraq and KR-I, respectively. Five of the top ten occupations appeared in both Iraq and KR-I:

- Civil engineers
- Construction managers
- Electrical engineers
- Cartographers
- Building construction labourers.

Table 19: Top ten most frequent construction-related occupations in employment by region

Rank	1	2	3	4	5	6	7	8	9	10
Iraq	Civil engineers	Construction managers	Mechanical engineering technicians	Bricklayers and stonemasons	Building construction labourers	Heavy truck and lorry drivers	Earthmoving and related plant operators	Electric engineers	Carpenters and joiners	Tied: Carto-graphers and surveyors & Concrete workers
KR-I	Civil engineers	Electric engineers	Building architects	Mechanical engineers	Electrical engineering technicians	Carto-graphers and surveyors	Construction supervisors	Physical and engineering science technicians	Construction managers	Tied: Building construction labourers & Mechanical engineering technicians

The top construction occupations in employment in Iraq, at the time of the survey in 2017, include six artisan, 'B' level occupations (Rank #4, #5, #6, #7, #9 plus #10-concrete workers) whereas the top occupations in employment in KR-I in 2017 are mostly higher, 'A' level occupations (with only #10 being 'B' level). Since, in construction, for every individual architect or civil engineer, one would expect to have several hundred workers, this result suggests that during economic downturn lower level workers were laid off (especially in KR-I) and higher level professionals were retained.

5.2.3 Analysis of job skills in the construction sector

One of the main purposes of the survey was to assess the skills that employers value, and need more of in their firms. To assess this, each firm was asked to provide the following for 12 key job skills (description of skills can be found in Appendix 5):

- Importance (not, somewhat or very important)
- Satisfaction (not, somewhat or very satisfied).

These questions were answered by each firm for each of their seven most common occupations. In order to better understand the gaps in skills in the relevant construction-related occupations we focus our analysis on the gap between how important a skill is thought to be, and how satisfied employers are of their workers in having this skill.

To assess the overall response to these questions, the average answer of importance and satisfaction were calculated for each construction-related occupation. These values were then placed via side-by-side boxplots in Figures 32 (Iraq) and 33 (KR-I). A value of '1' on the y-axis indicates perceived low importance or satisfaction, while 3 indicates high importance or satisfaction. The horizontal black line in each box indicates the median value, while the bottom and top of the box indicate the 25th and 75th percentile, respectively. Black dots indicate outliers (in this case occupations with exceptionally low scores). This representation allows both the overall patterns in response and the identification of potential gaps between importance and satisfaction from a high-level of the sector. This view is only indicative for the sector as a whole, and not specific occupations.

In terms of discrepancies, in Iraq it appears that although there is no difference in the median values for importance and satisfaction for general knowledge and teamwork skills, there is a greater number of lower average answers for satisfaction. This indicates that in these two categories there is a potential gap between the importance employers place on these skills and the satisfaction they have with their current employee's capabilities. This pattern is not as evident in KR-I, although there is a potential marginal gap between importance and satisfaction in the advanced knowledge skillset.

Figure 32: Side-by-side boxplots of the average importance and satisfaction of 12 key skills for construction-related occupations in Iraq

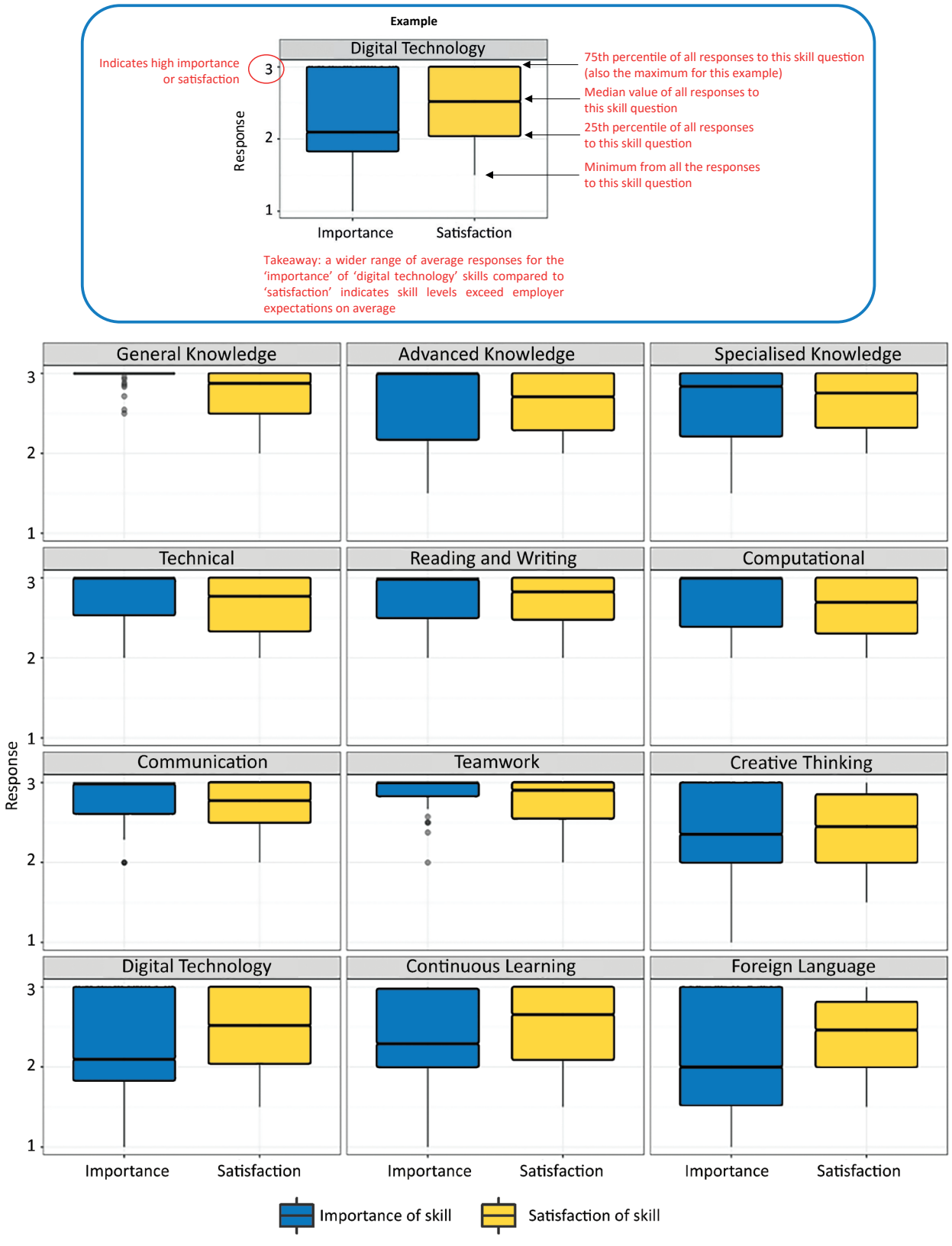
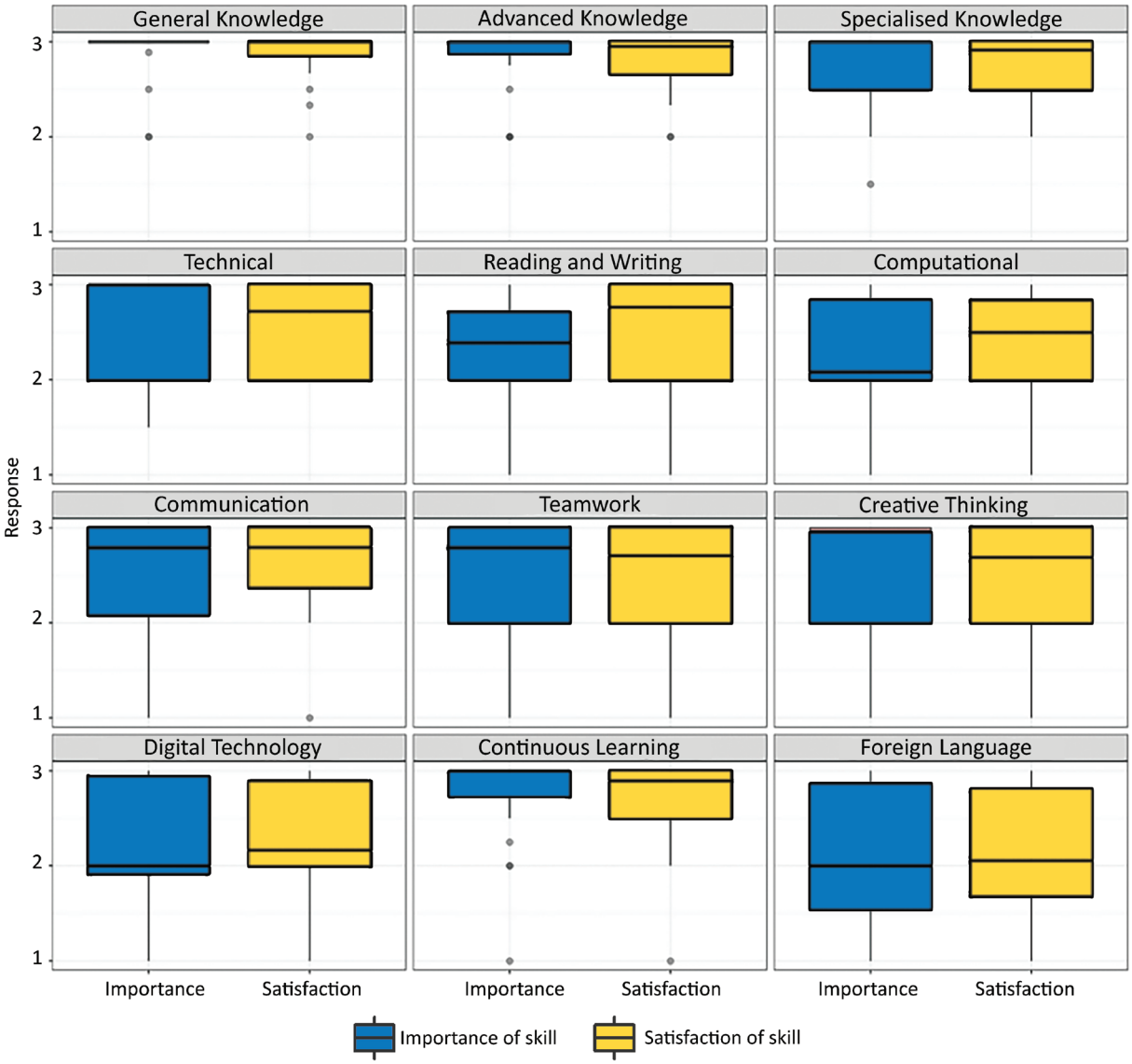


Figure 33: Side-by-side boxplots of the average importance and satisfaction of 12 key skills for construction-related occupations in KR-I



To understand potential significant skill gaps in a more granular way, we restrict our analysis to the top ten construction-related occupations in the sector reported in Table 19 above and plot the average differences between importance and satisfaction (Figure 34 and 35). A complete list of construction-related occupations and their average levels of importance and satisfaction are presented in Appendix 6, including construction-related occupations found in other sectors as part of this Sector Skills Analysis (SSA) Project.

A score of zero (no bar) shows no gap between importance and satisfaction. The bar shows the size of the gap between importance and satisfaction for each skill. A positive bar (above the horizontal axis) means there is a gap, and the height of the bar shows how big the gap is. A negative bar (below the horizontal axis) means that the skill level exceeds employers' expectations (i.e. the workers have skills beyond what is thought to be important for the occupation).

In Iraq, there appears to be potential gaps for bricklayers and stonemasons, carpenters and joiners, and concrete workers across nearly all skills. This is similar, but with just marginal differences for cartographers and surveyors, construction managers, and mechanical engineering technicians. In KR-I, there are less visible gaps, and more often the satisfaction is actually higher than the importance. The only exception is with the occupations of 'physical engineering science technicians not elsewhere classified', where there appears to be only small gaps in most skills.

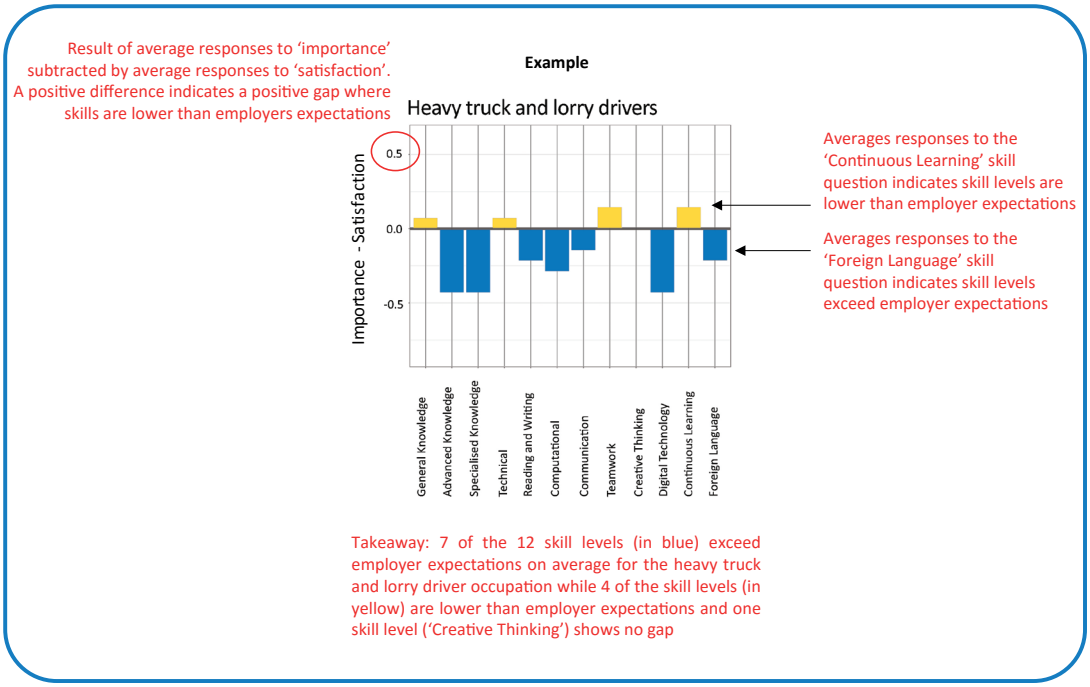
The most significant difference between Iraq and KR-I is that in Iraq most occupations have a gap for reading and writing, whilst in KR-I no occupations have this gap.

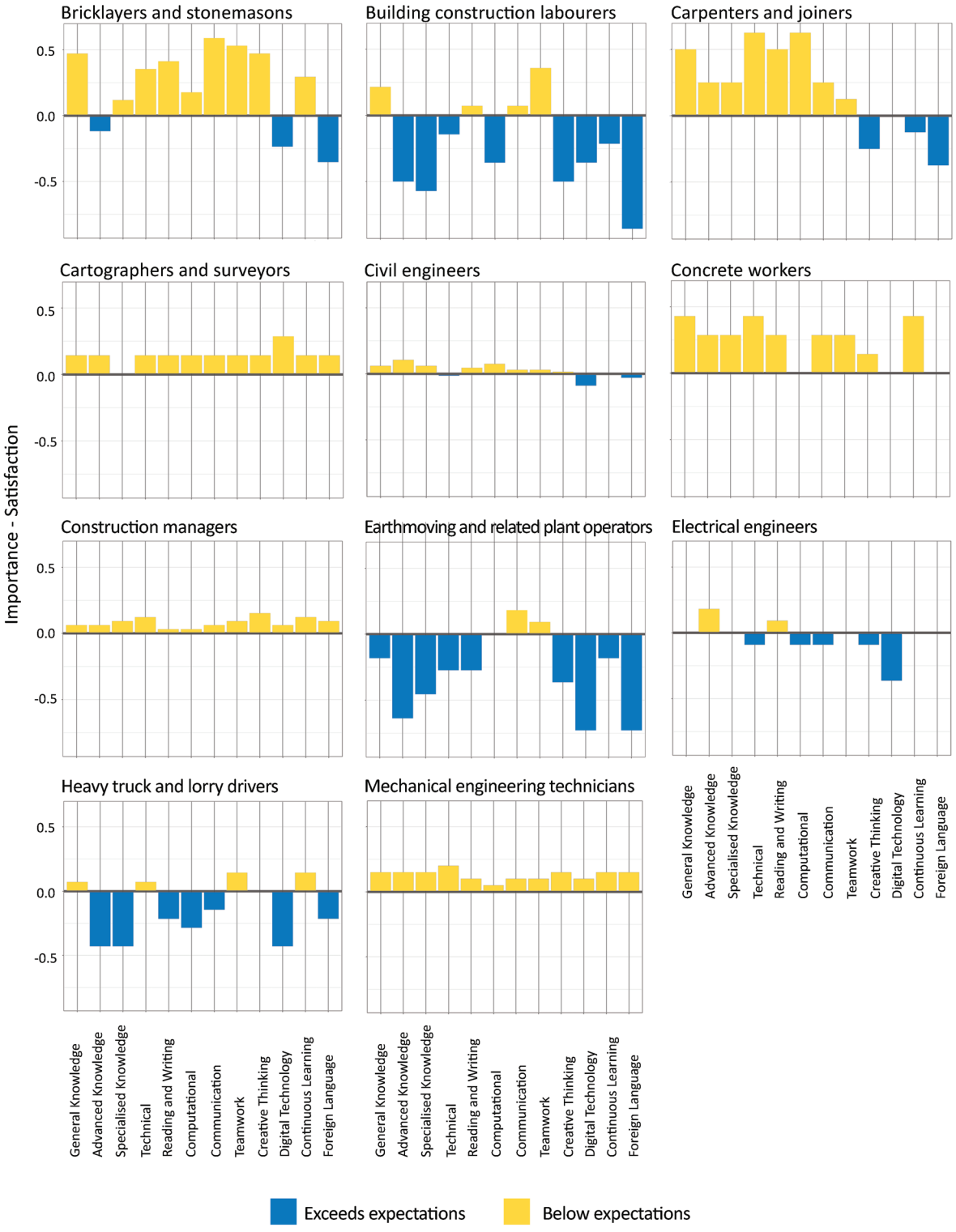
In Iraq, most occupations have gaps for the 'soft skills': communication and teamwork, whereas in KR-I only three of the higher-level occupations (building architects, civil engineers and electrical engineers) have these gaps. This suggests that all education and training in Iraq, and tertiary-level education and training in KR-I, should include more soft skills.

Foreign languages and digital technology skills are skills gaps for many of the higher-level occupations in both Iraq and KR-I. No gap in these areas for most of the lower-level occupations may mean that foreign languages and digital technology skills are not considered important by employers for these occupations. However foreign languages and digital technologies are important for portability of skills and advancement of individual learners in the modern world.

In Iraq, eight of the top 10 occupations (including 4 artisan and 4 higher-level professions) have gaps for technical skills, whereas in KR-I only the higher-level occupations have (small) skills gaps for technical skills.

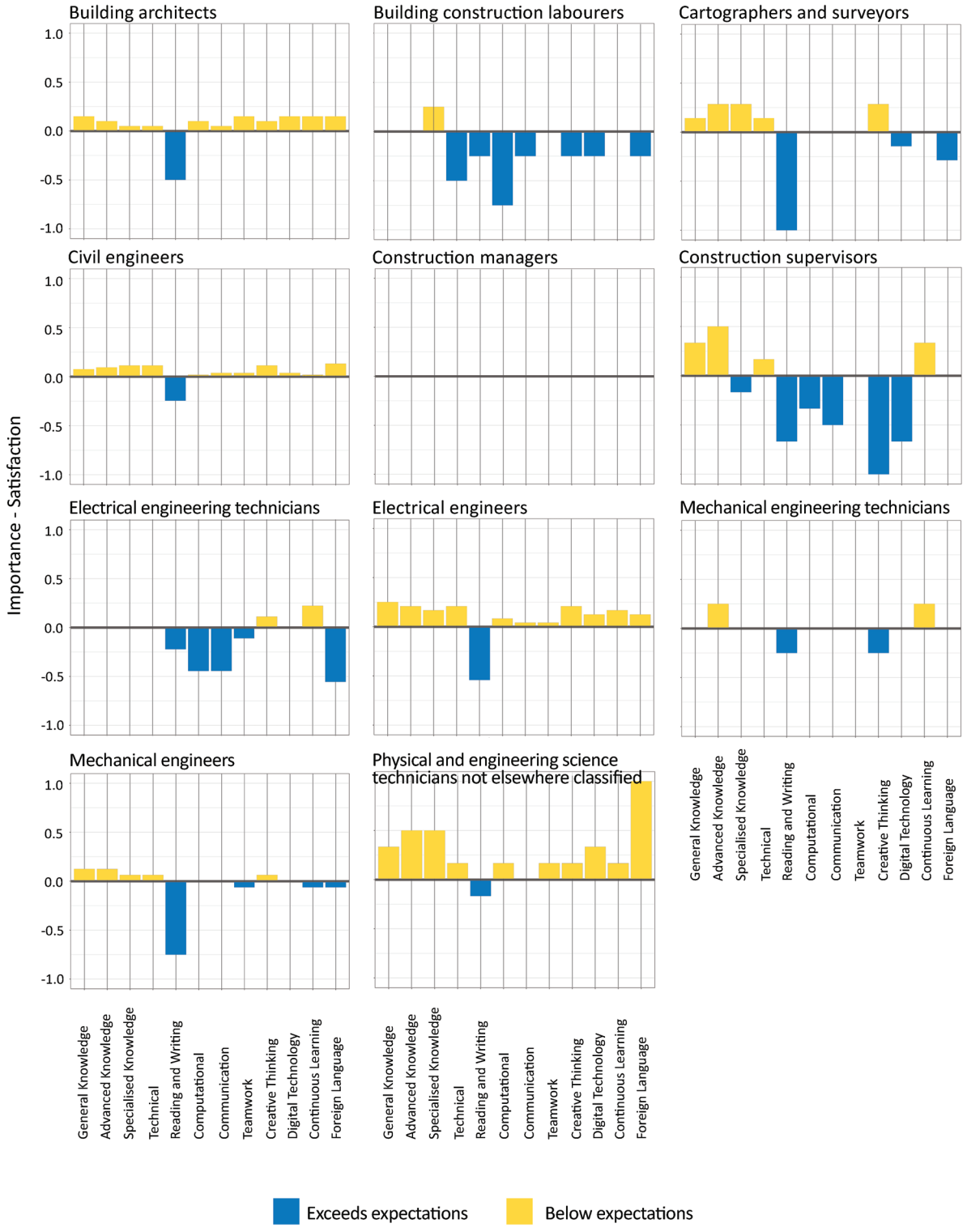
Figure 34: Gap between average importance and satisfaction of 12 key skills for the top ten most frequent construction-related occupations in Iraq




Bricklayers and stonemasons
Building construction labourers
Carpenters and joiners
Cartographers and surveyors
Civil engineers
Concrete workers
Construction managers
Earthmoving and related plant operators
Electrical engineers
Heavy truck and lorry drivers
Mechanical engineering technicians
Importance - Satisfaction
0.5
0.0
-0.5
General Knowledge
Advanced Knowledge
Specialised Knowledge
Technical
Reading and Writing
Computational
Communication
Teamwork
Creative Thinking
Digital Technology
Continuous Learning
Foreign Language
Exceeds expectations
Below expectations

Occupation	Gap analysis
Bricklayers and stonemasons	Skills gaps in most areas, especially in communication and teamwork skills. Gaps in specialist knowledge, technical skills and reading and writing should be addressed in design of training programmes
Building construction labourers	The gaps are in general knowledge, reading and writing and 'soft skills' communication and team work
Carpenters and joiners	Skills gaps in knowledge and skills areas, with the main gaps in general knowledge, technical skills, reading and writing and calculating
Cartographers and surveyors	Small skills gaps in all areas except specialist knowledge
Civil engineers	Very small skills gaps in most areas
Concrete workers	Skills gaps in all areas except calculations, digital skills and foreign languages
Construction managers	Very small skills gaps in all areas
Earth moving and related plant operators	Communication and teamwork are the only gaps
Electrical engineers	Skills gaps in advanced knowledge and reading and writing skills. This means that the level of reading and writing does not satisfy employers in some cases
Heavy truck and lorry drivers	Skills gaps in general knowledge, technical skills, teamwork and continuous learning
Mechanical engineering technicians	Small skills gaps in all areas

Figure 35: Gap between average importance and satisfaction of 12 key skills for the top ten most frequent construction-related occupations in KR-I



Occupation	Gap analysis
Building architects	Small gaps in all areas except reading and writing
Building construction labourers	Gap in specialised knowledge
Cartographers and surveyors	Small gaps in all three knowledge areas, technical skills, and creative thinking
Civil engineers	Small gaps in all areas except reading and writing
Construction managers	No gaps
Construction supervisors	Skills gaps in all areas except calculations, digital skills and foreign languages
Electrical engineering technicians	Very small skills gaps in all areas
Electrical engineers	Communication and teamwork are the only gaps
Mechanical engineering technicians	Skills gaps in advanced knowledge and reading and writing skills. This means that the level of reading and writing does not satisfy employers in some cases
Mechanical engineers	Skills gaps in general knowledge, technical skills, teamwork and continuous learning
Physical and engineering science technicians not elsewhere classified	Small skills gaps in all areas

5.2.4 Analysis of training, recruitment and future growth of the construction sector

Across all the surveyed firms, 37% have provided training courses for their employees over the past 5 years. This figure is especially high in civil engineering firms, where training has occurred in 61% of them and therefore appears to be a priority (Table 20). Perhaps the reason for the overall low amount of training is that only 16 (10%) of all the construction firms in the survey (156) have a relationship with an educational or training institute (Table 21). This is further illustrated by the fact that of these 16 firms with a relationship to a training provider, 13 have participated in training, indicating that having these relationships may increase the chance of providing employee training. The lack of relationships does not seem to be due to having difficulty in finding relevant courses or competent trainers (see Table 22), although this may be attributed to other factors such as cost. By bridging the gap between the construction firms and the training institutes, it is possible that more employees would have access to professional development training opportunities. The small number of companies with relationships to training providers is surprising in view of the fact that higher education TVET programmes reportedly have a compulsory 'summer training' component, where learners are required to work in companies.

Table 20: Number of firms who have organised employee training courses in the last five years

Subsector	Baghdad	Basrah	Diyala	Erbil	Kirkuk	Najaf	Sulaymaniyah	Wasit	Total
Building construction	6/18 (33%)	13/32 (41%)	1/2 (50%)	4/16 (25%)	0/0	0/8 (0%)	9/30 (30%)	0/6 (0%)	33/112 (29.5%)
Civil engineering	1/1 (100%)	3/5 (60%)	1/1 (100%)	6/6 (17%)	0/0	0/0	6/15 (20%)	0/0	17/28 (61%)
Specialised construction activities	0/1 (0%)	3/3 (100%)	0/0	0/0	0/0	0/0	4/11 (18%)	0/1 (0%)	7/16 (44%)
Total	7/20 (35%)	19/40 (48%)	1/3 (33%)	10/22 (45%)	0/0	0/8 (0%)	19/56 (34%)	0/7 (0%)	57/156 (37%)

Table 21: Number of firms who have a relationship with a training institution

Subsector	Baghdad	Basrah	Diyala	Erbil	Kirkuk	Najaf	Sulaymaniyah	Wasit	Total
Building construction	1/18 (6%)	4/32 (13%)	0/2 (0%)	1/16 (6%)	0/0	0/8 (0%)	1/30 (3%)	0/6 (0%)	7/112 (6%)
Civil engineering	0/1 (0%)	2/5 (40%)	1/1 (100%)	1/6 (17%)	0/0	0/0	3/15 (20%)	0/0	7/28 (25%)
Specialised construction activities	0/1 (0%)	0/3 (0%)	0/0	0/0	0/0	0/0	2/11 (18%)	0/1 (0%)	2/16 (13%)
Total	1/20 (5%)	6/40 (15%)	1/3 (33%)	2/22 (9%)	0/0	0/8 (0%)	6/56 (11%)	0/7 (0%)	16/156 (10%)

Table 22: Number of firms who have difficulty finding relevant training and trainers

	Difficulty finding relevant training courses	Difficulty finding competent trainers
Baghdad	1/20 (5%)	1/20 (5%)
Basrah	3/40 (8%)	2/40 (5%)
Diyala	0/3 (0%)	1/3 (33%)
Erbil	0/22 (0%)	0/22 (0%)
Kirkuk	0/0	0/0
Najaf	0/8 (0%)	0/8 (0%)
Sulaymaniyah	4/56 (7%)	3/56 (5%)
Wasit	0/7 (0%)	0/7 (0%)

When hiring new employees, the firms from different governorates tend to have different priorities. Table 23 indicates a weighted average of the top 5 most important factors when firms are hiring new employees. Specifically, each firm was asked from a list of 11 factors to rank the top 5 most important when hiring a new employee. To determine the aggregated rankings by governorate, a simple scoring system was used. Whenever a factor was listed as the most important by the employer it is given a score of 5. The second most important factor is given a score of 4 and so forth until the 5th most important is given a score of 1. These scores are tallied for each of the 11 factors and the top 5 based on score (for each governorate) are listed in the table.

Across all governorates, age is considered to be of high priority (no lower than 3rd most important). On average, qualifications and practical experience of the applicant fall lower on the overall importance when compared to demographic factors and social behaviours (i.e. age, gender, interview behaviour). This seems to confirm an enduring theme of interviews i.e. that hiring is not based on merit (qualifications and experience) which would ensure 'the right person in the right place, but on other preference factors of the hiring manager. Furthermore, in 5 of the 8 governorates internal advancement was not listed in the top 5 considerations. This might indicate lack of internal qualified candidates in the firms of these governorates, but it may be evidence that promotion practices are not fair, as indicated in qualitative data collected for this study. In KR-I, there was relative agreement between Erbil and Sulaymaniyah in hiring practices, as both governorates prioritise interview behaviour, age, and practical experience in the field.

Of the top ranked factors which influence hiring decisions only a few (qualifications, practical experience, interview behaviour, references) can be influenced by the training provider. It is important for training providers to note the importance of practical experience and references. 'Summer training' as it is currently experienced by most learners is generally thought to be ineffective. However, a well organised and well documented work-place learning experience has potential to provide evidence of relevant practical experience; and evaluation of the learners' demonstrated skills and behaviour by the work-place learning employer. Interview behaviour can also be enhanced through training.

Summer training should be reformed into a relevant and meaningful work-placement component, with an evaluation or letter of reference from the 'employer' and training for job interviews should be prioritised as these can make a significant difference to the employment of graduates.

Table 23: Rank of hiring factors

Rank	1st	2nd	3rd	4th	5th
Baghdad	Age	Interview behaviour	Practical experience	Gender	Qualifications
Basrah	References	Age	Nationality	Practical experience	Interview behaviour
Diyala	Practical experience	Interview behaviour	Age	Qualifications	References
Erbil	Interview behaviour	Age	Internal advancement	Practical experience	Gender
Kirkuk	Age	Gender	Internal advancement	Interview behaviour	Nationality
Najaf	Age	Interview behaviour	Nationality	Practical experience	Qualifications
Sulaymaniyah	Interview behaviour	Age	Practical experience	Qualifications	Social relations
Wasit	Gender	Interview behaviour	Age	Qualifications	Internal advancement

Table 24 indicates the proportion of firms across governorates who plan to hire new employees in the next five years. The overall percentage of firms planning to hire is only 29%, but is relatively variable between strata. In many strata, no (or few) firms indicate a plan to hire. KR-I is not significantly different from the overall, as only 33% of firms intend to hire. Some of this can be explained by the five year outlooks of the firms in the sector (Table 25). In most governorates the majority of firms are either unsure, or negative in their five year outlooks.

Table 24: Number of firms planning to hire in the next five years by subsector and governorate

Subsector	Baghdad	Basrah	Diyala	Erbil	Kirkuk	Najaf	Sulaymaniyah	Wasit	Total
Building construction	2/18 (11%)	13/32 (40%)	2/2 (100%)	7/16 (44%)	0/0	0/8 (0%)	6/30 (20%)	0/6 (0%)	30/112 (27%)
Civil engineering	1/1 (100%)	0/5 (0%)	0/1 (0%)	4/6 (67%)	0/0	0/0	6/15 (40%)	0/0	11/28 (39%)
Specialised construction activities	0/1 (0%)	1/3 (33%)	0/0	0/0	0/0	0/0	3/11 (27%)	0/1 (0%)	4/16 (25%)
Total	3/20 (15%)	14/40 (35%)	2/3 (67%)	11/22 (50%)	0/0	0/8 (0%)	15/56 (27%)	0/7 (0%)	45/156 (29%)

Table 25: Five-year outlook by governorate

Outlook	Baghdad	Basrah	Diyala	Erbil	Kirkuk	Najaf	Sulaymaniyah	Wasit	Total
Negative	4/20 (20%)	16/40 (40%)	0/3 (0%)	2/22 (9%)	0/0	0/8 (0%)	10/56 (18%)	3/7 (43%)	35/156 (22%)
Positive	4/20 (20%)	21/40 (53.5%)	1/3 (33%)	12/22 (55%)	0/0	1/8 (12.5%)	25/56 (44.5%)	0/7 (0%)	64/156 (41%)
Unsure	12/20 (60%)	3/40 (7.5%)	2/3 (67%)	8/22 (36%)	0/0	7/8 (87.5%)	21/56 (37.5%)	4/7 (57%)	57/156 (37%)

The low hiring rates do not seem to be due to a lack of satisfaction with applicant skills. Tables 26 and 27 indicate the satisfaction of the firms with applicants' basic and operational skills (i.e. problem-solving, communication), and technical (i.e. practical) skills over the last five years. In both tables, the majority of firms are at least somewhat satisfied with the skills the applicants have. In most governorates, 5% or less of companies indicate they are not satisfied.

Table 26: Level of satisfaction with basic and operational skills of applicants over the past five years

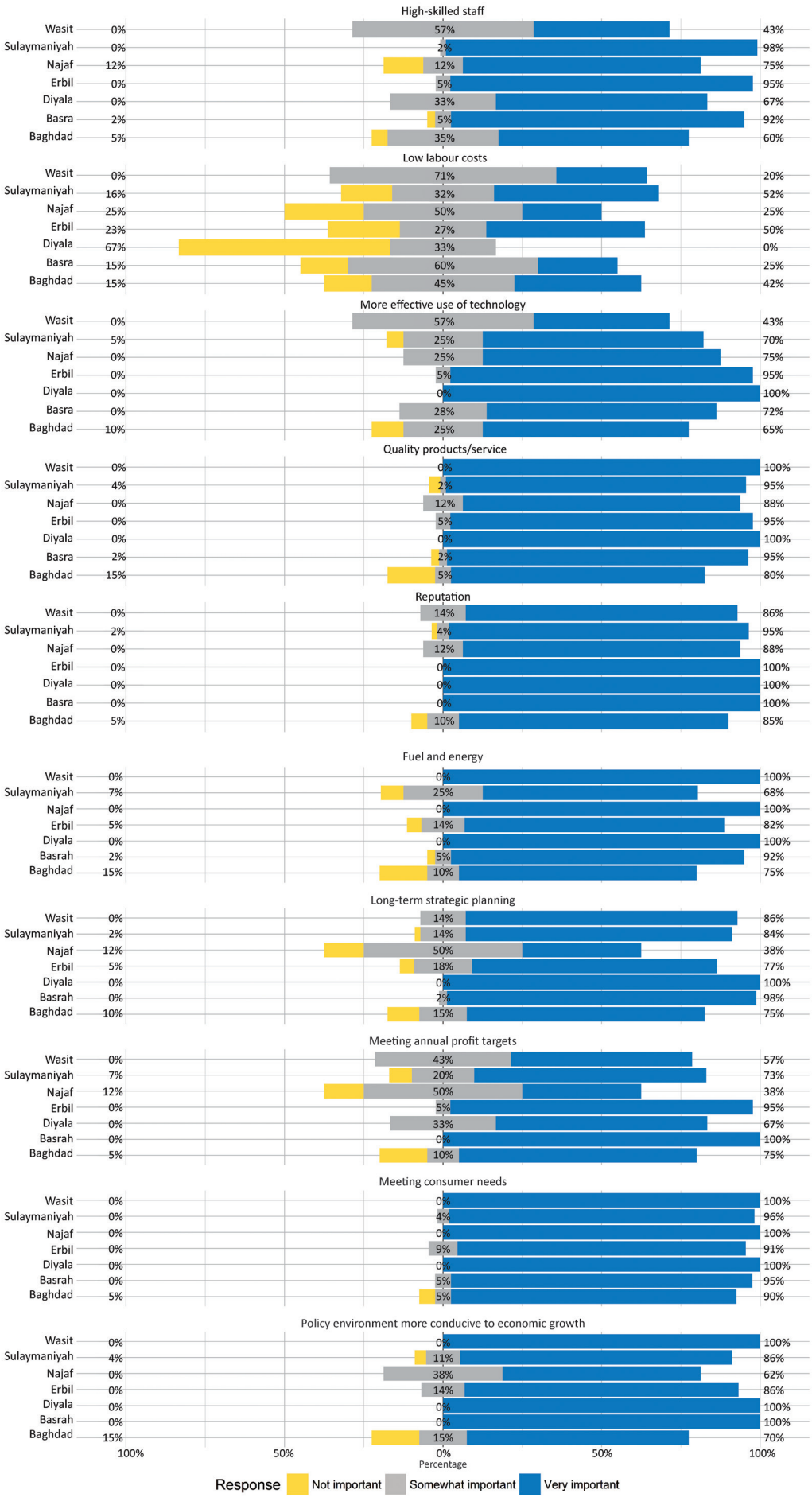
Satisfaction	Baghdad	Basrah	Diyala	Erbil	Kirkuk	Najaf	Sulaymaniyah	Wasit	Total
Completely statsfied	6/20 (30%)	24/40 (60%)	1/3 (33%)	17/22 (77%)	0/0	4/8 (50%)	36/56 (64%)	3/7 (43%)	91/156 (58%)
Somewhat satisfied	10/20 (50%)	8/40 (20%)	0/3 (0%)	3/22 (14%)	0/0	4/8 (50%)	14/56 (25%)	3/7 (43%)	42/156 (27%)
Not satisfied	1/20 (5%)	1/40 (2.5%)	0/3 (0%)	1/22 (4.5%)	0/0	0/8 (0%)	3/56 (5.5%)	0/7 (0%)	6/156 (4%)
Unsure	3/20 (15%)	7/40 (17.5%)	2/3 (67%)	1/22 (4.5%)	0/0	0/8 (0%)	3/56 (5.5%)	1/7 (14%)	17/156 (11%)

Table 27: Level of satisfaction with technical skills of applicants over the past five years

Satisfaction	Baghdad	Basrah	Diyala	Erbil	Kirkuk	Najaf	Sulaymaniyah	Wasit	Total
Completely statsfied	7/20 (35%)	23/40 (57.5%)	1/3 (33%)	11/22 (50%)	0/0	4/8 (50%)	32/56 (57%)	2/7 (29%)	80/156 (51%)
Somewhat satisfied	7/20 (35%)	10/40 (25%)	0/3 (0%)	9/22 (41%)	0/0	4/8 (50%)	17/56 (30.5%)	4/7 (57%)	51/156 (33%)
Not satisfied	1/20 (5%)	0/40 (0%)	0/3 (0%)	1/22 (4.5%)	0/0	0/8 (0%)	3/56 (5.5%)	0/7 (0%)	5/156 (3%)
Unsure	5/20 (25%)	7/40 (17.5%)	2/3 (67%)	1/22 (4.5%)	0/0	0/8 (0%)	4/56 (7%)	1/7 (14%)	20/156 (13%)

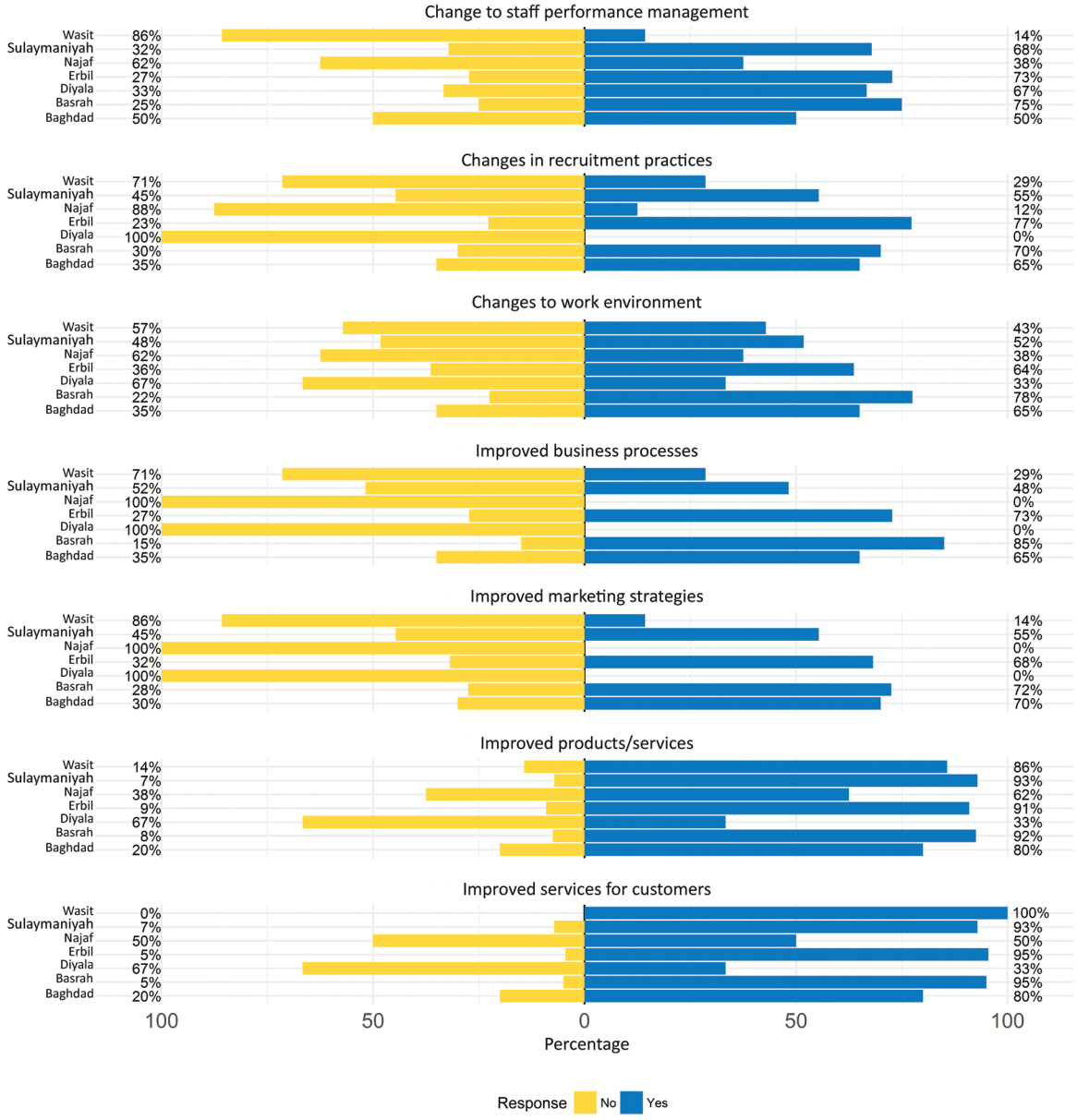
Given the overall negative outlook and its effect on hiring plans, it is important to understand what areas the firms consider to be important for the future growth of their businesses. Figure 36 indicates a variety of factors the firms surveyed indicated as not, somewhat or very important for future business growth. Across all governorates, there is high importance placed on all areas except low labour costs, where the split is more even between not and very important. Overall this is unsurprising as many of these questions illustrate core business priorities. The discrepancy in the importance of low labour costs may be due to low worker skills or competence being associated with lower costs. For training providers, the perceived importance of highly skilled staff and effective use of technologies and service/product quality should be noted.

Figure 36: Factors impacting future business growth



Based on these clear trends in areas that are identified as important to future business growth, it is interesting to see what business improvements have actually been implemented in the past few years (Figure 37). There is relatively even distribution of firms which have or not have implemented various changes to their business practices in the past few years and the variability between governorates is large. In Sulaymaniyah, Erbil, Baghdad and Basrah there is a much larger percentage of firm improvement compared to the other four governorates. Improved products and services, and improvement for customers are the two areas in which nearly all firms have attempted to implement. The fact that not all firms have attempted to improve or make changes is likely to indicate a combination of inability or lack of certainty around what changes to make, and perception that businesses that do not require change as they are functioning well.

Figure 37: Changes and innovations firms have implemented in the past few years, by governorate

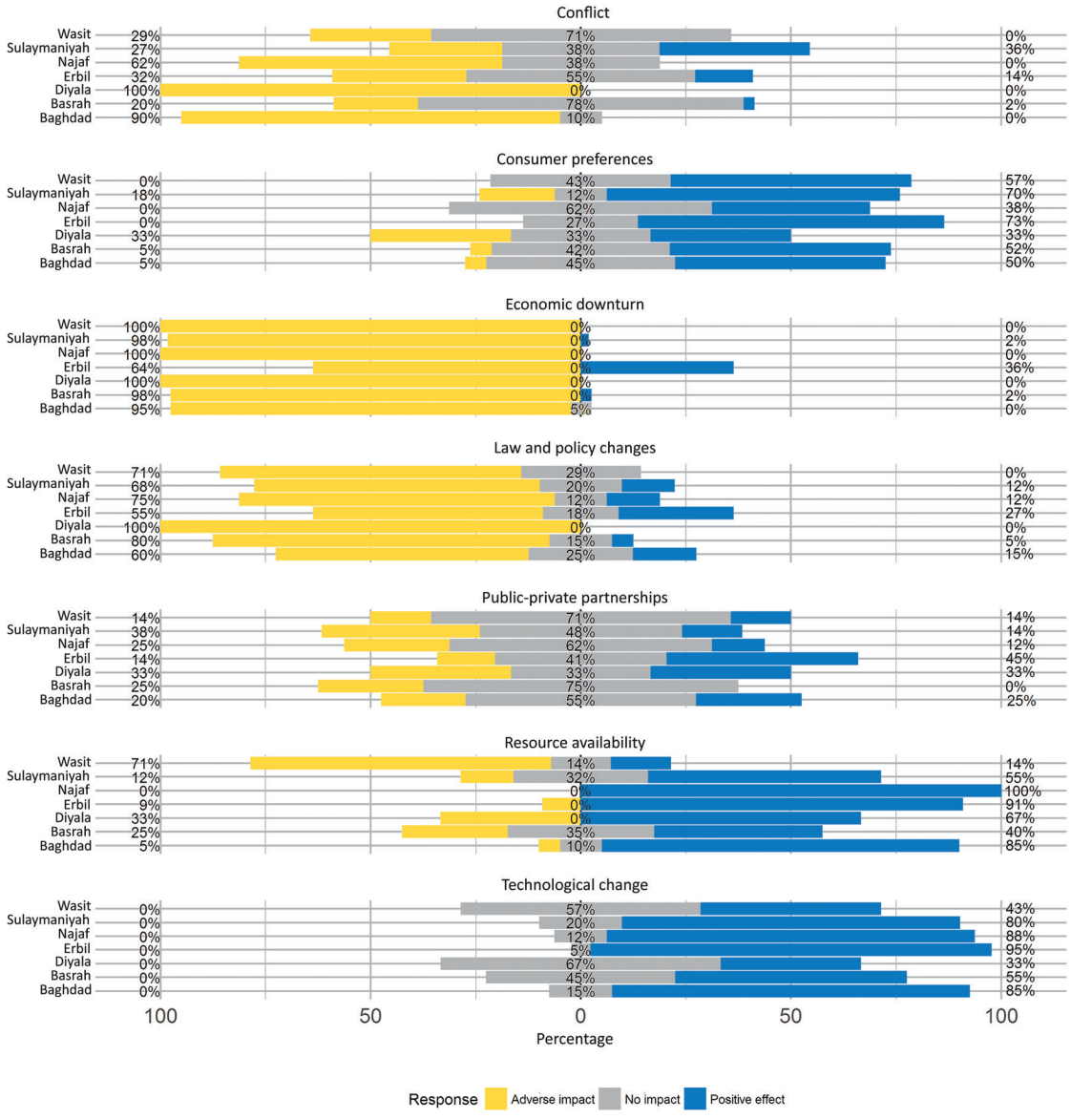


To further understand the factors that may contribute to business success, the firms were asked what external factors have contributed positively and negatively to their recent performance. Figure 38 indicates these various factors that have had positive and negative influences on the firms over the last few years. Conflict, economic downturn, and law and policy changes stand out as major negative influences on business performance.

Although, paradoxically, in Erbil the economic downturn is indicated as positive in 38% of firms, and in Sulaymaniyah and Erbil some firms have indicated that conflict has had a positive effect for their businesses. One possible explanation is that if many companies went out of business, remaining companies got a larger market share. There may have been a positive effect on the construction sector of very large numbers of refugees and internally displaced people needing accommodation. It is possible that companies responded to the crisis by diversifying their business, and this has had an overall positive effect.

In terms of positive drivers for businesses: technological change, resource availability and consumer preference seem to be overwhelmingly positive across all governorates, with the exception of resource availability in Wasit. Results from Wasit may be biased by the small number of firms in the sample (4.5% in total); but the general negative outlook in Wasit (Table 25) is surprising in the light of the discussion in Section 3.3.2 about CSO projections in 2015 for the growth of the construction sector in Wasit, which was named as one of the top five for public construction projects, and the expectation in 2015 that Wasit would receive significant investment in construction. Public-private partnerships are indicated to have more or less a neutral impact, perhaps due to the infancy of these arrangements.

Figure 38: External drivers impacting business performance during the past few years, by governorate



5.2.5 Analysis of small-sized firms in the construction sector

The main analysis of the construction sector focuses on firms of at least 10 employees. This is done in order to ensure that responses refer to occupations and not to specific employees. That being said, some data was collected on firms of less than 10 employees. In total, 40 of these smaller firms across 3 governorates were surveyed. The majority (22, 55%) of these firms were from Baghdad, while the remaining 18 were from Basrah and Erbil.

Given that only there were responses for smaller firms from only three of the governorates, comparisons at the governorate level (to the larger firms) is not possible. However, the survey results are very similar for small firms when compared to the larger firms. The top ten most common occupations were almost the same.

Answers to the importance and satisfaction of the 12 key skills were nearly indistinguishable from the larger firms, although with slightly more variability (likely due to the issue of answering questions relating to one employee, as mentioned above).

The responses relating to hiring practices, plans and recent firm improvements were similar to the larger firms. The same factors were considered positive/negatives for the smaller firms over the past few years, and the hiring practices were similar.

These comparisons indicate that where data is available, the small-sized firms have similar preferences, needs and business practices as the larger firms. Nonetheless, given the unbalanced sample and selection process of the small-sized firms, no inferences are drawn.

5.2.6 Conclusion and limitations of the results from the Enterprise Survey

Based on the proceeding sections, it is evident that overall the firms in the construction sector are mostly satisfied with the vast majority of their workers' skills. These patterns hold true both for the overall sector, as well as for the most common occupations, although there are some differences between higher skill and lower skill jobs and between Iraq and KR-I.

The five-year outlooks of firms tended to be slightly more negative than positive, and a large proportion of the firms do not intend to hire additional staff. This likely indicates general pessimism about the economic situation and doubt about the individual firm's ability to grow in the context of economic downturn. That being said, consumer preference, resource availability and technology are identified as overwhelmingly positive for business performance and around half of firms have implemented changes or innovations in the last few years to improve their business. Further analysis of the specifics of innovations that have proved beneficial may help to inform policies that would support the resilience of the sector as a whole.

Predictably, conflict and economic downturn have had a strong negative impact on parts of the sector, indicating that stability in the region would likely improve performance. Many firms indicated law and policy as areas that have hurt their performance. This confirms the main complaints of the pilot Sector Council members who feel that the laws and policies and finance system hinder rather than support their businesses.

Overall, the survey data provides a relatively clear depiction of the construction sector's needs and overall outlook. The occupation data provides insight into the top occupations in employment in the sector and the perceived skills gaps within those occupations. Differences between Iraq and KR-I and between perceived skills gaps of professional and artisan occupations are informative.

The firm level data gives insight into the factors that firms consider important for their business success; the challenges the sector faces; and as the issues thought to impact growth, thus providing useful information for policy purposes.

Finally, there are a variety of limitations in the above data that are important to note when interpreting results. As identified in the opening paragraphs, the Register from which the data were drawn is from 2009. Given the changes in Iraq during that time, this sample frame is not considered reliable for the current labour market and therefore the data was not weighted as is typically done. Where possible, this has been mitigated by providing data at the governorate and subsector level. Furthermore, some governorates provided far less frames to the sample. This may be due to both underrepresentation and lack of economic activity in these governorates.

Chapter 6: Recommendations for skills development in the construction sector

6.1 General observations

The top ten occupations identified in the survey provide a snapshot of employment in construction during a period of economic crisis and conflict. As stated previously, it seems likely, particularly in KR-I, that the top ten occupations represent the occupations least likely to be laid off during stagnation of the sector, with over-representation of high-level professionals, and under-representation of semi-skilled and skilled workers.

Similarly, the issues and challenges identified by the pilot Construction Sector Council and by companies which took part in the survey in 2017 are likely to reflect the uncertainty and doubts and general pessimism of people who have suffered hardship for many years, and business which have been severely impacted by factors beyond their control.

Since then, oil prices have increased, conflicts have been largely resolved and there is significant international support for the re-building of destroyed cities and shattered lives. These changes will support the recovery of the construction sector.

Some of the issues identified in this report will be resolved as the economy recovers, but some issues, such as the negative impact of the legal and policy framework and financial systems, will not be resolved, and may even be become more pronounced, by increased demand for construction services. Policy makers need to ensure that the identified barriers to the growth and development of construction sector are addressed, and that companies are supported to seize the opportunities for technological advancement, innovation and further development of the sector.

6.2 Skills supply in relation to demand

Despite the likely over-representation of high level professional occupations in the survey data, six of the total of 16 occupations (5 in common occupations are all higher-level) on the list of the top occupations in employment are artisan (MoLSA and MoE) occupations (Table 28).

Table 28: Top ten most frequent construction-related occupations in employment by region

Rank	1	2	3	4	5	6	7	8	9	10
Iraq	Civil engineers	Construction managers	Mechanical engineering technicians	Bricklayers and stonemasons	Building construction labourers	Heavy truck and lorry drivers	Earthmoving and related plant operators	Electric engineers	Carpenters and joiners	Tied: Carto-graphers and surveyors & Concrete workers
KR-I	Civil engineers	Electric engineers	Building architects	Mechanical engineers	Electrical engineering technicians	Carto-graphers and surveyors	Construction supervisors	Physical and engineering science technicians	Construction managers	Tied: Building construction labourers & Mechanical engineering technicians

Amongst the top ten occupations for Iraq are bricklayers and stonemasons, building construction labourers, heavy truck and lorry drivers, carpenter and joiners, and concrete workers. The skills supply data provided in this report indicates that training is not offered for any of these artisan occupations in Iraq; however, carpentry is offered in KR-I.

In both Iraq and KR-I the majority of artisan level construction-related training (MoLSA and MoE) is in electrical installation, and overall, two thirds of all construction-related graduates (at all levels) in Iraq and half of all construction-related graduates (at all levels) in KR-I are specialists in electrical fields. In Iraq metal work (welding and foundries), civil engineering and surveying are the next biggest areas for training, and the second largest field of training for construction occupations in KR-I is surveying.

The range of skilled workers and craftsmen needed for most construction projects include (and are not limited to) bricklayers, masons, concrete workers, carpenters, roofers, tilers, plumbers, painters, heavy vehicle drivers, earthmoving and heavy plant operators, foremen and supervisors. These occupations are needed in much bigger numbers than architects, surveyors, engineers and managers.

In view of the expectation of significant construction activity in the foreseeable future, it is recommended that training for a much wider range of construction occupations should be developed and offered. Planning should take into consideration the hierarchies of manpower on a building site. Each building project requires the expertise of a few high-level professionals, many craftsmen and a larger number of semi-skilled labourers. Of the 20 occupations listed as shortages or skills gaps by the pilot Construction Sector Council, 12 are artisan occupations (see Section 5.1.4).

The UNESCO Office for Iraq, under the TVET Reform Programme, has developed competency-based training for bricklayers, concrete workers, and carpenters (construction hand, construction labourer, skilled worker and supervisor). All three streams include training for building construction labourers, which appear on both top ten lists for Iraq and KR-I. UNESCO was guided in its selection of these occupations by shortages and skills gaps identified by the pilot Construction Sector Council in 2017, including bricklayers, concrete workers and construction supervisors. Based on the results of the survey it appears that these occupations were well chosen to fill the training gaps.

Global analysis of the skills gaps by occupation identified in the survey highlights several common weaknesses already being addressed in the development of new TVET programmes by UNESCO, with specific modules designed to develop:

- Technical (i.e. practical) skills
- Reading and writing
- Continuous learning, communication and teamwork
- Foreign language skills (for higher level professionals).

To address the factors which influence hiring decisions, each UNESCO programme includes preparation for employment, job search skills (including interview behaviour) and work-place based learning. Work-place based learning includes a detailed record of task performed in relation to the learning outcomes, with employer comments, showing evidence of practical experience; and overall evaluation by the employer, which can be used as a reference document.

It is recommended that these benchmarked competency-based programmes, based on occupational standards are used as a model to develop other artisan training programmes for construction occupations such as plumber, roofer, plasterer, tiler, painter, welder, heavy vehicle driver etc., in order to meet the expected demand for construction skills to support the rebuilding of destroyed cities and the resumption of delayed projects.

Based on the results of the survey, recommendations for the further development of higher-education programmes for management, engineering, technician and other professional roles in the construction sector are to increase the development of practical work-related skills and experiences; and increase training for communication and teamwork, digital technologies and foreign languages. All graduates should be trained in job-interview techniques and have a written record of their practical experience during work-placement, with reference from the employer.

Higher education providers should consider whether there may be an oversupply of graduates in electrical fields. Furthermore, the production of surveying and civil engineering graduates (possibly more than 1,000 of each per year in Iraq and KR-I combined, based on skills supply data) may be excessive, and further diversification of provision of construction-related higher education may better support the sector and the employment of graduates.

Appendix

Appendix 1 Population frame

CSO Business Register ('Population Frame')

Type of Economic Activity		No. of Employees									
		1-4	5-9	10-49	50-99	100-499	500-999	1000 +	Not Stated	Total
Agriculture, Forestry and Fishing	01 - Crop and animal production, hunting and related service activities	187,854	4,625	772	48	25	0	0	1,238	194,562
	03 - Fishing and aquaculture	990	30	14	0	1	0	0	9	1,044
	Subtotal	188,844	4,655	786	48	26	0	0	1,247	195,606
Manufacturing	10 - Manufacture of food products	13,375	2,965	593	48	20	3	2	366	17,372
	11 - Manufacture of beverages	182	92	95	11	8	2	0	16	406
	19 - Manufacture of coke and refined petroleum products	135	113	175	14	12	1	0	27	477
	20 - Manufacture of chemicals and chemical products	476	135	102	3	7	0	3	56	782
	21 - Manufacture of basic pharmaceutical products and pharmaceutical preparations	80	4	12	4	3	0	2	4	109
	22 - Manufacture of rubber and plastics products	1,011	185	71	2	2	3	2	37	1,313
	23 - Manufacture of other non-metallic mineral products	4,515	2,719	1,480	124	36	9	9	142	9,034
	24 - Manufacture of basic metals	1,144	111	23	4	1	0	2	37	1,322
	25 - Manufacture of fabricated metal products, except machinery and equipment	29,735	1,227	187	12	4	0	0	226	31,391
	26 - Manufacture of computer, electronic and optical products	346	15	8	2	1	0	0	7	379
	27 - Manufacture of electrical equipment	312	73	34	3	10	4	3	10	449
	28 - Manufacture of machinery and equipment	512	55	39	4	1	0	0	10	621
	32 - Other manufacturing	708	21	5	1	0	0	0	7	742
	Subtotal	52,531	7,715	2,824	232	105	22	23	945	64,397
Construction	41 - Construction of buildings	2,501	434	335	30	18	3	2	97	3,420
	42 - Civil engineering	360	86	155	27	19	5	4	21	677
	43 - Specialized construction activities	4,049	96	77	14	10	0	0	34	4,280
	Subtotal	6,910	616	567	71	47	8	6	152	8,377
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	45 - Wholesale and retail trade and repair of motor vehicles and motorcycles	102,817	2,588	411	24	10	0	5	612	106,467
	Subtotal	102,817	2,588	411	24	10	0	5	612	106,467
Transportation and Storage	49 - Land transport and transport via pipelines	952	168	143	20	16	2	1	60	1,362
	52 - Warehousing and support activities for transportation	59,153	1,414	812	104	68	5	10	6,518	68,084
	53 - Postal and courier activities	76	59	161	16	10	1	0	7	330
	Subtotal	60,181	1,641	1,116	140	94	8	11	6,585	69,776
Accommodation and Food Service Activities	55 - Accommodation	2,487	524	432	40	19	1	0	327	3,830
	56 - Food and beverage service activities	33,504	2,466	735	20	6	1	1	261	36,994
	Subtotal	35,991	2,990	1,167	60	25	2	1	588	40,824
Information and Communication	61 - Telecommunications	3,089	355	371	54	31	2	1	41	3,944
	62 - Computer programming, consultancy and related activities	255	10	4	0	0	0	0	1	270
	63 - Information service activities	268	68	58	7	3	1	0	14	419
	Subtotal	3,612	433	433	61	34	3	1	56	4,633
Total		450,886	20,638	7,304	636	341	43	47	10,185	490,080

Appendix 2 Sample frame

Sample frame: 8 governorates, 27 subsectors, 10+ employee-sized firms

Type of Economic Activity		Governorate								
		Sulaymaniyah	Kirkuk	Erbil	Diyala	Baghdad	Wasit	Najaf	Basrah	Total
Agriculture, Forestry and Fishing	01 - Crop and animal production, hunting and related service activities	132	25	69	32	116	46	32	41	493
	03 - Fishing and aquaculture	1	0	1	0	0	3	0	6	11
	Subtotal	133	25	70	32	116	49	32	47	504
Manufacturing	10 - Manufacture of food products	28	26	31	29	211	15	32	36	408
	11 - Manufacture of beverages	8	9	5	5	33	2	5	4	71
	19 - Manufacture of coke and refined petroleum products	21	12	14	13	16	10	4	18	108
	20 - Manufacture of chemicals and chemical products	3	5	4	0	53	5	4	7	81
	21 - Manufacture of basic pharmaceutical products and pharmaceutical preparations	0	0	1	1	13	0	0	0	15
	22 - Manufacture of rubber and plastics products	9	6	14	0	18	0	3	5	55
	23 - Manufacture of other non-metallic mineral products	101	73	52	94	300	47	97	43	807
	24 - Manufacture of basic metals	1	2	0	0	13	0	1	4	21
	25 - Manufacture of fabricated metal products, except machinery and equipment	23	8	21	3	62	3	11	9	140
	26 - Manufacture of computer, electronic and optical products	0	1	1	0	2	1	1	0	6
	27 - Manufacture of electrical equipment	2	2	0	7	26	0	1	3	41
	28 - Manufacture of machinery and equipment	4	2	5	1	9	2	1	3	27
	32 - Other manufacturing	0	0	1	0	2	0	0	1	4
	Subtotal	200	146	149	153	758	85	160	133	1,784
Construction	41 - Construction of buildings	42	8	32	9	91	18	16	48	264
	42 - Civil engineering	26	12	18	6	28	7	6	18	121
	43 - Specialized construction activities	25	1	6	0	16	3	9	12	72
	Subtotal	93	21	56	15	135	28	31	78	457
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	45 - Wholesale and retail trade and repair of motor vehicles and motorcycles	39	13	50	9	140	11	17	29	308
	Subtotal	39	13	50	9	140	11	17	29	308
Transportation and Storage	49 - Land transport and transport via pipelines	10	13	11	3	50	3	6	22	118
	52 - Warehousing and support activities for transportation	94	29	53	29	290	28	28	88	639
	53 - Postal and courier activities	16	4	17	13	34	6	9	13	112
	Subtotal	120	46	81	45	374	37	43	123	869
Accommodation and Food Service Activities	55 - Accommodation	52	12	85	9	108	13	40	27	346
	56 - Food and beverage service activities	73	26	73	10	196	24	23	41	466
	Subtotal	125	38	158	19	304	37	63	68	812
Information and Communication	61 - Telecommunications	37	21	44	16	120	18	13	32	301
	62 - Computer programming, consultancy and related activities	0	0	0	0	1	0	0	2	3
	63 - Information service activities	12	2	12	6	13	0	2	6	53
	Subtotal	49	23	56	22	134	18	15	40	357
Total		759	312	620	295	1,961	265	361	518	5,091

Appendix 3 Target sample size

Target sample size: 8 governorates, 27 subsectors, 10+ employee-sized firms

Type of Economic Activity		Governorate								
		Sulaymaniyah	Kirkuk	Erbil	Diyala	Baghdad	Wasit	Najaf	Basrah	Total
Agriculture, Forestry and Fishing	01 - Crop and animal production, hunting and related service activities	104	25	62	32	94	44	32	39	432
	03 - Fishing and aquaculture	1	0	1	0	0	3	0	6	11
	Subtotal	105	25	63	32	94	47	32	45	443
Manufacturing	10 - Manufacture of food products	28	26	31	29	144	15	32	35	340
	11 - Manufacture of beverages	8	9	5	5	32	2	5	4	70
	19 - Manufacture of coke and refined petroleum products	21	12	14	13	16	10	4	18	108
	20 - Manufacture of chemicals and chemical products	3	5	4	0	50	5	4	7	78
	21 - Manufacture of basic pharmaceutical products and pharmaceutical preparations	0	0	1	1	13	0	0	0	15
	22 - Manufacture of rubber and plastics products	9	6	14	0	18	0	3	5	55
	23 - Manufacture of other non-metallic mineral products	85	65	49	80	178	45	82	41	625
	24 - Manufacture of basic metals	1	2	0	0	13	0	1	4	21
	25 - Manufacture of fabricated metal products, except machinery and equipment	23	8	21	3	57	3	11	9	135
	26 - Manufacture of computer, electronic and optical products	0	1	1	0	2	1	1	0	6
	27 - Manufacture of electrical equipment	2	2	0	7	26	0	1	3	41
	28 - Manufacture of machinery and equipment	4	2	5	1	9	2	1	3	27
	32 - Other manufacturing	0	0	1	0	2	0	0	1	4
	Subtotal	184	138	146	139	560	83	145	130	1,525
Construction	41 - Construction of buildings	40	8	32	9	78	18	16	45	246
	42 - Civil engineering	26	12	18	6	28	7	6	18	121
	43 - Specialized construction activities	25	1	6	0	16	3	9	12	72
	Subtotal	91	21	56	15	122	28	31	75	439
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	45 - Wholesale and retail trade and repair of motor vehicles and motorcycles	38	13	47	9	109	11	17	29	273
	Subtotal	38	13	47	9	109	11	17	29	273
Transportation and Storage	49 - Land transport and transport via pipelines	10	13	11	3	47	3	6	22	115
	52 - Warehousing and support activities for transportation	80	29	50	29	174	28	28	76	494
	53 - Postal and courier activities	16	4	17	13	33	6	9	13	111
	Subtotal	106	46	78	45	254	37	43	111	720
Accommodation and Food Service Activities	55 - Accommodation	49	12	74	9	89	13	39	27	312
	56 - Food and beverage service activities	65	26	65	10	137	24	23	39	389
	Subtotal	114	38	139	19	226	37	62	66	701
Information and Communication	61 - Telecommunications	36	21	42	16	97	18	13	32	275
	62 - Computer programming, consultancy and related activities	0	0	0	0	1	0	0	2	3
	63 - Information service activities	12	2	12	6	13	0	2	6	53
	Subtotal	48	23	54	22	111	18	15	40	331
Total		686	304	583	281	1,476	261	345	496	4,432

Appendix 4 Actual sample size

Actual sample size: 8 governorates, 25 subsectors, 10+ employee-sized firms

Type of Economic Activity		Governorate							
		Sulaymaniyah	Kirkuk	Erbil	Diyala	Baghdad	Wasit	Najaf	Basrah	Total
Agriculture, Forestry and Fishing	01 - Crop and animal production, hunting and related service activities	66	2	22	22	10	12	22	3	159
	03 - Fishing and aquaculture	0	0	0	0	0	1	0	0	1
	Subtotal	66	2	22	22	10	13	22	3	160
Manufacturing	10 - Manufacture of food products	20	11	23	27	81	8	57	25	252
	11 - Manufacture of beverages	7	11	4	5	12	1	6	5	51
	19 - Manufacture of coke and refined petroleum products	10	2	6	3	0	0	0	9	30
	20 - Manufacture of chemicals and chemical products	4	1	1	0	10	4	5	1	26
	21 - Manufacture of basic pharmaceutical products and pharmaceutical preparations	0	0	1	0	4	0	0	0	5
	22 - Manufacture of rubber and plastics products	9	4	5	0	10	0	7	3	38
	23 - Manufacture of other non-metallic mineral products	70	19	16	74	116	31	46	25	397
	24 - Manufacture of basic metals	1	1	0	0	1	0	2	1	6
	25 - Manufacture of fabricated metal products, except machinery and equipment	20	5	12	0	5	1	5	8	56
	26 - Manufacture of computer, electronic and optical products	0	0	0	0	0	0	1	0	1
	27 - Manufacture of electrical equipment	1	0	0	0	4	0	0	2	7
	28 - Manufacture of machinery and equipment	3	1	1	1	0	1	0	0	7
	32 - Other manufacturing	0	0	0	0	0	0	0	0	0
	Subtotal	145	55	69	110	243	46	129	79	876
Construction	41 - Construction of buildings	30	0	16	2	18	6	8	32	112
	42 - Civil engineering	15	0	6	1	1	0	0	5	28
	43 - Specialized construction activities	11	0	0	0	1	1	0	3	16
	Subtotal	56	0	22	3	20	7	8	40	156
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	45 - Wholesale and retail trade and repair of motor vehicles and motorcycles	32	2	22	6	43	7	14	14	140
	Subtotal	32	2	22	6	43	7	14	14	140
Transportation and Storage	49 - Land transport and transport via pipelines	6	4	9	1	0	0	8	12	40
	52 - Warehousing and support activities for transportation	46	0	15	6	11	4	1	28	111
	53 - Postal and courier activities	0	0	1	0	1	0	0	0	2
	Subtotal	52	4	25	7	12	4	9	40	153
Accommodation and Food Service Activities	55 - Accommodation	26	4	36	0	24	2	42	7	141
	56 - Food and beverage service activities	58	18	51	10	71	17	13	32	270
	Subtotal	84	22	87	10	95	19	55	39	411
Information and Communication	61 - Telecommunications	21	11	26	4	23	1	6	7	99
	62 - Computer programming, consultancy and related activities	0	0	0	0	0	0	0	0	0
	63 - Information service activities	8	0	7	0	0	0	0	0	15
	Subtotal	29	11	33	4	23	1	6	7	114
Total		464	96	280	162	446	97	243	222	2,010

Appendix 5 List and description of the 12 key job skills in the Survey

Skill	Definition
General Knowledge	Basic in the field of work
Advanced Knowledge	Including the understanding of theories in the field of work
Specialised Knowledge	As a basis for research in the field of work
Technical	Technical and professional skills including “specific technical know-how to perform their functions”
Literacy (Readivng & Writing)	Reading refers to the skills necessary to understand and apply information in sentences and paragraphs
	Writing refers to the skills necessary to create handwritten or printed text to communicate information and ideas
Computational	Computational skills indicate the necessary skills to understand, understand and apply mathematical concepts and information
Communication	Oral communication skills indicate the necessary skills to share information and ideas with others by speaking, listening, and using nonverbal signals and hints, such as body language
	At work, people use oral communication skills to talk to customers, discuss products with processors, explain work procedures for assistant employees, participate in virtual sales meetings with customers, or other activities that involve verbal exchanges
Teamwork (working with others)	Working with others means the necessary skills to interact with others (one or more people)
	In the workplace, people work with others in binary, small or large groups to coordinate tasks, share resources, plan, make decisions, negotiate, resolve disputes, or complete other activities that involve group work
Creative Thinking	Creative thinking refers to the necessary skills needed to solve problems, make decisions, think critically, plan, remember details, and find information
	At work, people use thinking skills to accomplish tasks, such as solving electronic equipment problems, assessing workplace safety, identifying people to be employed, planning meetings, memorising and remembering passwords, and finding the information needed to assess project costs
Digital Technology	Digital technology refers to the necessary skills needed to understand and use digital systems, tools and digital applications, and digital information processing
	At work, people use the skills of digital technology to access, analyse, organise, find and communicate information and ideas using computers, software, electronic sales equipment (credit card devices), e-mail, podcasts, internet applications, smartphones, and other digital means
Continuous Learning	Continuous learning refers to the necessary skills necessary to continuously develop and improve a person's skills and knowledge for effective action and adaptation to changes
	In the workplace, people use continuous learning skills to identify and develop the knowledge and skills they need to do a good job, build a career, and adapt to changes in processes, technology, instructions, and employer requirements
Foreign Language	Foreign language skills indicate the ability to communicate (oral and written in English, Arabic, or any language other than the person’s native language)

Appendix 6 List of construction-related occupations

Averages of importance and satisfaction across 12 key skills for construction-related occupations found in all the sectors as part of the Enterprise Survey

(I=importance, S=satisfaction)

ISCO code	Profession	No. of mployees	Iraqi	Foreign	Advanced Knowledge		Communication		Computational	
					I	S	I	S	I	S
7233	Agricultural machinery mechanics	9	9	0	3	3	3	3	3	3
7233	Agricultural machinery mechanics (from other sectors)	183	172	11	2.68	2.67	2.48	2.6	2.21	2.51
3112	Architectural civil engineering technicians	8	8	0	3	3	3	3	2.67	3
3112	Architectural civil engineering technicians (from other sectors)	17	17	0	2.25	2.75	2.75	2.75	2	2
7112	Bricklayers and stonemasons	61	58	3	2.22	2.33	2.61	2.06	2.33	2.17
2161	Building architects	56	56	0	3	2.91	2.86	2.77	2.86	2.77
9313	Building construction labourers	148	145	3	2	2.39	2.72	2.72	2.11	2.56
9313	Building construction labourers (from other sectors)	131	131	0	1.93	2.18	2.5	2.46	2	2.11
7115	Carpenters and joiners	28	28	0	2.62	2.38	2.5	2.25	2.75	2.12
2165	Cartographers and surveyors	19	19	0	3	2.79	2.93	2.86	3	2.93
2165	Cartographers and surveyors (from other sectors)	1	0	1	3	3	3	3	3	3
2142	Civil engineers	342	330	12	2.98	2.88	2.89	2.86	2.89	2.84
2142	Civil engineers (from other sectors)	23	23	0	3	3	2.93	2.93	2.93	2.93
7114	Concrete workers	28	28	0	2.57	2.29	2.29	2	2.14	2.14
7114	Concrete workers (from other sectors)	107	103	4	2.61	2.52	2.81	2.77	2.39	2.35
1323	Construction managers	50	47	3	3	2.95	2.97	2.92	2.97	2.95
1323	Construction managers (from other sectors)	26	25	1	3	2.75	3	2.75	3	3
3123	Construction supervisors	22	21	1	2.5	2.5	2.67	2.92	2.5	2.58
3123	Construction supervisors (from other sectors)	2	2	0	3	3	3	2.5	2	2
8343	Crane, hoist and related plant operators	37	37	0	2	2.8	3	2.8	2.8	2.6
8343	Crane, hoist and related plant operators (from other sectors)	356	353	3	2.14	2.46	2.71	2.63	2	2.29
3118	Draughtsmen	1	1	0	3	3	3	3	3	3
8342	Earthmoving and related plant operators	34	34	0	2.08	2.62	2.69	2.54	2.46	2.46
8342	Earthmoving and related plant operators (from other sectors)	544	535	9	2.33	2.56	2.6	2.49	2	2.21
8212	Electrical and electronic equipment assemblers	18	3	15	3	3	2	2	2	2
8212	Electrical and electronic equipment assemblers (from other sectors)	5	5	0	3	3	3	3	3	3
3113	Electrical engineering technicians	29	29	0	2.9	2.9	2.2	2.6	2.3	2.7
3113	Electrical engineering technicians (from other sectors)	522	508	14	2.77	2.68	2.62	2.49	2.53	2.53
2151	Electrical engineers	68	67	1	3	2.8	2.89	2.89	2.86	2.83
2151	Electrical engineers (from other sectors)	321	302	19	2.93	2.86	2.9	2.9	2.69	2.76
7413	Electricians (electric power transmission distribution)	2	2	0	2	2	2	2	2	2
7413	Electricians (electric power transmission distribution) (from other sectors)	25	20	5	3	2.43	2.57	2.57	2.36	2.36
7411	Electricians (electrical installation)	8	8	0	3	2.6	2.6	2.6	2	2
7411	Electricians (electrical installation) (from other sectors)	41	34	7	2.68	2.68	2.29	2.75	1.93	2.39
7412	Electricians (electrical machines and electric circuit breaking)	83	83	0	2.75	2.5	3	3	2.75	2.5
7412	Electricians (electrical machines and electric circuit breaking) (from other sectors)	88	62	26	2.81	2.81	2.71	2.58	2.61	2.55
2152	Electronic engineers	3	3	0	3	3	3	3	3	3

Continuous Learning		Creative Thinking		Digital Technology		Foreign Language		General Knowledge		Reading and Writing		Specialised Knowledge		Teamwork		Technical	
I	S	I	S	I	S	I	S	I	S	I	S	I	S	I	S	I	S
1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
2.47	2.53	2.48	2.56	2.2	2.41	1.9	2.36	2.95	2.81	2.41	2.58	2.54	2.64	2.75	2.64	2.86	2.7
3	3	3	3	3	3	2.67	3	3	3	2.67	3	3	3	3	3	3	3
2.5	2.5	2.5	2.5	1.75	2	2	2.25	3	3	2.5	2.75	2.5	2.5	3	3	3	2.75
2.28	2	2.33	1.89	1.83	2.06	1.56	1.89	2.89	2.44	2.67	2.28	2.39	2.28	2.83	2.33	2.44	2.11
3	2.86	3	2.86	3	2.86	2.95	2.77	3	2.86	2.5	2.95	3	2.95	3	2.86	3	2.95
2	2.17	1.72	2.17	1.67	2	1.56	2.28	2.89	2.72	2.39	2.39	2	2.39	2.94	2.67	2.22	2.44
1.93	2.21	1.75	2.21	1.43	2.04	1.29	2	2.79	2.64	2.04	2.14	1.54	2.11	2.75	2.54	2	2.36
2	2.12	2	2.25	2.12	2.12	1.75	2.12	3	2.5	2.75	2.25	2.75	2.5	2.38	2.25	3	2.38
2.93	2.86	2.93	2.71	2.93	2.86	2.79	2.86	3	2.86	2.5	2.93	2.93	2.79	2.93	2.86	3	2.86
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
2.85	2.84	2.86	2.8	2.72	2.75	2.77	2.73	2.98	2.91	2.77	2.86	2.9	2.82	2.93	2.9	2.88	2.83
2.87	2.73	2.93	2.67	3	2.93	2.53	2.47	3	3	3	3	3	3	2.93	2.93	2.93	2.93
2.57	2.14	2.14	2	1.86	1.86	1.86	1.86	2.71	2.29	2.43	2.14	2.57	2.29	2.57	2.29	2.71	2.29
2.06	2.06	2	2.16	1.74	2.1	1.39	1.94	2.94	2.68	2.39	2.29	2.23	2.32	2.84	2.84	2.81	2.52
2.97	2.87	3	2.87	2.95	2.89	2.92	2.84	3	2.95	2.92	2.89	2.97	2.89	2.95	2.87	2.97	2.87
3	3	3	2.75	2.75	2.75	2.75	2.75	3	3	2.25	2.25	3	2.75	3	2.75	3	3
2.42	2.33	1.83	2.33	1.75	2.08	2	1.92	2.92	2.67	2.58	2.92	2.17	2.33	2.92	2.83	2.5	2.42
3	2.5	3	2.5	1.5	1.5	1.5	1.5	3	3	2	2	1	1.5	2.5	2.5	2.5	2.5
2	2.6	2	2.6	2.2	2.8	2.2	2.8	2.8	3	2.6	2.4	2	2.8	3	2.8	2.6	2.8
1.9	2.13	1.95	2.12	1.7	2.09	1.28	1.97	2.94	2.73	2.16	2.33	1.94	2.35	2.86	2.7	2.73	2.51
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
2.23	2.38	2.15	2.46	1.77	2.38	1.46	2.08	2.62	2.77	2.38	2.62	2.15	2.54	2.69	2.62	2.15	2.38
2.21	2.25	2.13	2.2	1.73	2.02	1.28	1.76	2.93	2.76	2.23	2.34	2.22	2.45	2.75	2.58	2.77	2.53
3	3	3	3	2	2	2	2	3	3	2	2	3	3	3	3	2	2
2	3	2.5	3	2.5	3	2.5	3	3	3	3	3	3	3	3	3	3	3
2.9	2.7	2.8	2.7	2.5	2.5	1.7	2.2	2.9	2.9	2.6	2.8	2.9	2.9	2.6	2.7	2.8	2.8
2.75	2.54	2.72	2.51	2.48	2.44	2.28	2.23	2.93	2.74	2.78	2.63	2.79	2.62	2.75	2.59	2.84	2.59
2.91	2.8	2.86	2.74	2.69	2.71	2.86	2.77	3	2.83	2.51	2.86	2.83	2.71	2.91	2.89	2.86	2.74
3	2.9	3	2.86	2.86	2.86	2.48	2.76	3	2.97	2.9	2.76	2.93	2.83	2.86	2.86	3	2.9
3	2	2	2	1	1	2	1	2	2	3	2	2	2	2	2	3	2
2.86	2.71	2.64	2.43	2.29	2.14	2.29	2.07	2.93	2.5	2.64	2.29	3	2.21	2.79	2.57	3	2.57
3	2.8	2.6	2.4	2	2	1.6	2.2	3	2.6	2.4	2.6	3	2.6	2.8	2.6	3	2.8
2.32	2.46	2.32	2.54	2.32	2.43	1.86	2.29	2.68	2.71	1.96	2.43	2.36	2.54	2.32	2.82	2.29	2.36
2.25	2.75	2.75	2.75	2.5	2.5	2	2.5	3	3	2.75	2.5	2.75	2.75	3	3	3	3
2.77	2.61	2.84	2.55	2.29	2.48	2.26	2.35	2.97	2.87	2.61	2.61	2.68	2.55	2.87	2.65	2.9	2.68
3	3	3	2.67	3	3	3	2.33	3	3	3	3	3	3	2	2.33	3	3

ISCO code	Profession	No. of employees	Iraqi	Foreign	Advanced Knowledge		Communication		Computational	
					I	S	I	S	I	S
2152	Electronic engineers (from other sectors)	73	72	1	3	2.8	3	2.73	3	2.8
2143	Environmental engineers	4	4	0	3	3	3	3	3	3
2143	Environmental engineers (from other sectors)	30	28	2	3	3	3	3	3	2.33
7122	Floor layers and tile setters	12	12	0	2	2	2.5	2.5	2	3
2146	Geological, mining and metallurgical engineers	2	2	0	3	3	3	3	3	3
8332	Heavy truck and lorry drivers	84	84	0	2.27	2.67	2.4	2.53	2.2	2.47
8332	Heavy truck and lorry drivers (from other sectors)	400	389	11	1.69	2.6	2.85	2.82	2.24	2.56
3135	Industrial engineering technicians	30	30	0	3	3	3	3	3	3
3135	Industrial engineering technicians (from other sectors)	2	1	1	3	3	3	3	3	2
7121	Installers (floor, ceiling, etc.)	12	12	0	3	2.5	3	2.5	3	2
7121	Installers (floor, ceiling, etc.) (from other sectors)	2	2	0	3	3	3	3	3	3
7124	Insulation workers	6	6	0	2	2	2	2	2	2
2162	Landscape architects	4	2	2	3	2	3	2	3	2
3115	Mechanical engineering technicians	158	148	10	2.96	2.79	2.92	2.83	2.88	2.83
3115	Mechanical engineering technicians (from other sectors)	524	488	36	2.87	2.61	2.55	2.56	2.34	2.42
2144	Mechanical engineers	97	95	2	3	2.9	2.81	2.9	2.86	2.86
2144	Mechanical engineers (from other sectors)	181	158	23	2.95	2.84	2.79	2.72	2.79	2.72
7131	Painters and related workers	4	4	0	3	3	1	1	1	1
3119	Physical and engineering science technicians not elsewhere classified	31	31	0	3	2.64	2.73	2.64	2.91	2.73
3119	Physical and engineering science technicians not elsewhere classified (from other sectors)	1	1	0	3	3	3	2	3	3
7123	Plasterers	9	9	0	2.75	2.25	2.75	2	2.5	2.25
7123	Plasterers (from other sectors)	76	76	0	1.97	2.39	2.21	2.21	1.39	2.11
7126	Plumbers and pipe fitters	6	6	0	2.5	2.5	2.5	2.5	2.5	2
7126	Plumbers and pipe fitters (from other sectors)	3	3	0	3	3	3	3	2	2
3131	Power production plant operators	7	7	0	2.25	2.25	2.5	2.5	2	2.25
3131	Power production plant operators (from other sectors)	112	112	0	2.02	2.35	2.61	2.61	1.95	2.23
9312	Road construction labourers	30	28	2	2.5	2.5	2.25	2.25	1.75	2
8114	Stone and marble machine operators	6	6	0	2.67	2.33	2.67	2.67	2.33	2.33
8114	Stone and marble machine operators (from other sectors)	962	937	25	2.57	2.6	2.68	2.57	1.99	2.26
7113	Stone masons, stone cutters, splitters and carvers	16	16	0	3	3	3	3	3	3
7113	Stone masons, stone cutters, splitters and carvers (from other sectors)	115	115	0	2.99	2.97	2.99	2.98	2.99	2.97
7214	Structural steelworkers and erectors	4	4	0	3	2.5	2.5	2.5	2.5	2
7214	Structural steelworkers and erectors (from other sectors)	107	94	13	2.59	2.86	2.5	2.73	2.32	2.55
7212	Welders and flame cutters	16	16	0	2	3	3	3	3	3
7212	Welders and flame cutters (from other sectors)	108	82	26	2.52	2.57	2.74	2.78	2.26	2.39

Continuous Learning		Creative Thinking		Digital Technology		Foreign Language		General Knowledge		Reading and Writing		Specialised Knowledge		Teamwork		Technical	
I	S	I	S	I	S	I	S	I	S	I	S	I	S	I	S	I	S
3	2.67	2.87	2.67	3	2.73	2.47	2.47	3	2.8	2.87	2.67	3	2.8	3	2.73	3	2.8
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
3	3	3	2.67	2.67	2.33	2.33	2.33	3	3	2.33	3	3	2.33	3	3	3	3
1	1.5	1	1.5	1	1.5	1	1.5	3	2.5	2	3	2	2	2.5	2.5	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
2.6	2.47	2.4	2.4	2.07	2.47	2.13	2.33	2.93	2.87	2.2	2.4	2.27	2.67	2.73	2.6	2.6	2.53
1.88	2.4	1.85	2.38	1.68	2.31	1.64	2.3	2.89	2.84	2.25	2.56	1.6	2.52	2.88	2.84	2.51	2.65
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
3	3	3	3	2	2	2	3	3	3	2	2	3	3	3	3	3	3
1	2.5	2	3	1	3	1	2.5	3	2	2.5	2.5	3	3	3	2.5	3	2.5
2	3	2	3	2	3	1	3	3	3	3	3	2	3	3	3	3	3
2	2	2	2	2	2	1	2	3	2	3	3	2	2	3	3	3	2
2	2	2	2	3	2	2	2	3	2	3	2	3	3	3	2	3	3
2.96	2.79	2.83	2.75	2.83	2.75	2.71	2.58	3	2.88	2.92	2.88	2.92	2.79	2.96	2.88	3	2.83
2.83	2.57	2.78	2.51	2.34	2.3	2.2	2.13	2.9	2.75	2.55	2.53	2.87	2.56	2.78	2.71	2.87	2.66
2.9	2.95	2.9	2.86	2.81	2.81	2.71	2.76	3	2.9	2.29	2.86	3	2.95	2.95	2.95	3	2.95
2.91	2.76	2.88	2.71	2.74	2.71	2.53	2.52	3	2.91	2.67	2.67	2.9	2.74	2.79	2.74	2.98	2.81
1	1	1	1	1	1	1	1	3	3	2	2	3	3	1	1	2	2
2.73	2.55	2.55	2.36	2.82	2.55	2.73	2.09	3	2.82	2.91	2.91	3	2.55	2.91	2.82	2.82	2.55
3	2	2	2	2	2	2	2	3	3	3	3	3	2	3	2	3	2
2.5	2.25	2	2	1.25	2	1	1.75	3	2.75	2.5	2.5	2.75	2	2.5	2	2.5	2
1.95	2.03	1.89	2.05	1.32	1.97	1.08	1.95	2.95	2.66	1.68	2.08	1.66	2.18	2.84	2.5	2.24	2.29
2.5	2.5	2	2	2	2	1.5	1.5	3	3	3	2.5	2.5	3	2.5	2.5	2.5	2.5
2.5	2.5	3	3	1.5	1.5	1	1.5	3	3	1.5	2	1	2	3	3	3	3
2	2.25	2	2.25	1.75	2	2	2	2.75	2.25	2.75	2.75	2.25	2.25	2.5	2.5	2.5	2.25
1.92	2.2	1.94	2.05	1.8	2.2	1.45	2.02	2.74	2.53	2.12	2.3	2.03	2.26	2.77	2.58	2.56	2.44
2	2	1.75	1.75	1.5	1.75	1.5	1.75	2.75	2.75	2	2	2	2	2.25	2.5	1.75	2
1.67	2.33	1.67	2.33	1.67	2.33	1.67	2.33	3	2.33	2.33	2.33	2.67	2.33	2.67	2.67	2.33	2.33
2.18	2.16	2.25	2.2	1.91	2.06	1.27	1.74	2.95	2.78	2.2	2.27	2.45	2.48	2.88	2.67	2.87	2.61
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
2.95	2.95	2.97	2.97	2.91	2.92	2.68	2.78	2.99	2.97	2.99	2.94	2.97	2.97	2.99	2.96	2.99	2.98
2	2	2.5	2.5	1.5	1.5	2.5	2.5	3	2.5	2.5	2	3	2.5	2.5	2.5	3	2.5
2.27	2.5	2.27	2.64	1.77	2.32	1.41	2.23	2.95	2.95	2.23	2.55	2.27	2.68	2.82	2.82	2.68	2.77
1	3	3	3	2	3	1	3	3	3	3	3	2	3	3	3	3	3
2.09	2.39	2.13	2.39	1.87	2.22	1.43	1.91	3	2.91	2.39	2.39	2.3	2.52	2.83	2.74	2.74	2.65


UNESCO
United Nations
Educational, Scientific and
Cultural Organization
منظمة الأمم المتحدة
للتربية والعلم والثقافة
TVET
Reforming Technical and
Vocational Education and Training
in Iraq
إصلاح التعليم والتدريب
التقني والمهني
في العراق
Project funded by
the European Union
مشروع ممول من
الاتحاد الأوروبي
TVET
#SKILLS_BUILD_IRAQ
#المهارات_تبني_العراق


وزارة التخطيط
Ministry of Planning
جمهورية العراق
وزارة التخطيط - الجهاز المركزي للإحصاء
CSO
Central Statistical Organization IRAQ
KRSO