Empowered lives.
Resilient nations.

International Labour Organization

Skills Development in Sudan

The Formal and the Informal Reality

SEPTEMBER 2013

Skills Development in Sudan

The Formal and the Informal Reality

Thematic/ Policy Paper

Prepared by

Ibrahim Khalid Ibrahim

Abdel Moneim Hussein Mahmoud

Marcus Powell

Huyam Abdelrahim

First published 2014

English ed:
978-92-2-128626-4 (print)
978-92-2-128627-1 (web pdf)

Arabic ed:
978-92-2-628626-9 (print)
978-92-2-628627-6 (web pdf)

ILO publications and electronic products can be obtained through major booksellers or ILO local offices in many countries, or direct from ILO Publications, International Labour Office, CH-1211 Geneva 22, Switzerland or ILO Cairo Office, 9 Dr. Taha Hussein St., Zamalek, Cairo, Egypt. Catalogues or lists of new publications are available free of charge from the above address, or by email: pubvente@ilo.org

Visit our web site: www.ilo.org/publns; www.ilo.org/cairo
Printed in Egypt

Table of Contents

Abbreviations

CUBAS	Curriculum Based on Skills
EFA	Education for All
ESSP	Education Sector Strategic Plan
EU	European Union
FMOA	Federal Ministry of Agriculture
FMOL	Federal Ministry of Labour
FMOT	Federal Ministry of Transport
GDP	Gross Domestic Product
GER	Gross Enrolment Trade
HRD	Human Resources Development
ICT	Information and Computer Technology
ILO	International Labour Organization
KOICA	Korea International Cooperation Agency
MDG	Millennium Development Goals
NCTTE	National Council for Technical and Technological Education
NER	Net Enrolment Trade
PTA	Parent Teacher Associations
SMOE	State Ministry of Education
SE	Small Enterprises
SMOT	State Ministry of Transport
SMOY	State Ministry of Youth
SMSA	State Ministry of Social Affairs
SCVTA	Supreme Council for Vocational Training and Apprenticeship
TVET	Technical Vocational Education and Training
TOT	Training Of Trainers
UK	United Kingdom
UNICEF	United Nations Children Fund
UNIDO	United Nation for Industrial Development Organization
USD	United States Dollar
VTC	Vocational Training Centre

Executive Summary

The development challenges facing Sudan are enormous, but at the heart of the problem is how to continue and accelerate economic growth, and translate this into improved employment opportunities for the vast majority of the country's population. Employment creation and investments in skills represent one of the most efficient means of distributing incomes equitably in developing countries, and one of the most sustainable ways of fighting poverty. However, the process of human capital formation in Sudan is alarmingly low by regional and international standards, and provision of technical and vocational education and training (TVET) plays a marginal role compared to general and academic education.

This report provides the baseline information required to understand how young women and men, the unemployed and other vulnerable groups gain the skills needed for productive employment, leading to improved standards of living and ultimately decent work. It is paramount to understand the processes, institutions, and approaches that underpin skills development both in formal TVET and in the informal economy, in order to develop and improve systems in place, particularly in a relatively new nation.

The present publication was undertaken, drawing on previous work, interviews and discussions with those who work in the field of skills development in Sudan. There are two main parts of the study. The first part of the study presents a stock-take of the current TVET system. This was one of the first attempts to provide a comprehensive overview of the current TVET system and how it is organised, including details on the main providers and the numbers coming out of the system. Having understood the characteristic of the system, the section also analyses the main constraints facing the system, particularly around the lack of available funds, the management of the system, as well as the qualifications and employability of graduates.

The second part of the study turns to skills development in the informal economy and the country's informal apprenticeship system, whereby a young apprentice acquires the skills for a trade or craft in a micro or small enterprise by learning and working side by side with an experienced practitioner. This involves an analysis of the results from a survey of 144 micro and small enterprises that operate in Sudan. Amongst the issues tackled in the analysis are: the context in which skill development takes place, the characteristics of micro-enterprising supporting apprentices, the specific characteristics of master craftspersons and apprentices and also practices surrounding the apprenticeship process and skills development.

Finally, the publication turns to how we can move forward based on the existing evidence presented in this publication. The recommendations centre around the need to develop a national framework for skills development, encompassing TVET in the formal sector, the informal apprenticeship system and other systems involved in human resource development. Such an approach should be based on a number of guiding principles, but these would need to be discussed and agreed upon with government partners and other stakeholders. However, any reform for skills development must recognize the resource constraints that Sudan faces and future reform must centre on re-organisation and improved management, as opposed to

systemic reform that would require substantial resources. This would help to ensure sustainable building blocks for a more substantive reform when more resources become available or commitment is obtained from donor support.

1. Introduction and Background to Skills Development

Before the recent succession of the South the economy experienced significant growth rates due to the high global price of oil and the large flows of inward investment. However, following the succession of the South the country has lost 75% of its oil reserves and as a consequence faces a significant number of challenges owing to the lack of resources and the growing population levels. It is against this background that the government has implemented a three year austerity program aimed at cutting expenditure and servicing the country's debt requirements.

Under such circumstances it is expected that, over the next couple of years, a significant proportion of the country's population will continue to face poverty due to limited employment opportunities and their reliance on agriculture. The government is aware of these problems and is providing support for agricultural diversification, including incentives to expand cash crop production in new areas and the possibility of increasing live-stock production in the areas of sheep and camels. The country also has a small agricultural processing base and the government has been active in developing light industry, including the assembly of small trucks and automobiles. On a positive side, the country has one of the most developed infrastructures and telecommunication systems in the region. Provided that political stability can be maintained, there are opportunities for industrial development, foreign direct investment, economic diversification and growth. The most significant opportunities are expected to be found in the processing and export of gold, the oil refinery sector, in the agricultural sector due to productivity and possibly in the tourism sector.

Understandably, in order to successfully manage the austerity program, to support the diversification of the economy into other sectors and to maintain the existing infrastructure, it will be important that the country has the appropriate quality and numbers of technicians and craftspersons. It is equally important that those working in remote areas or the informal economy are also provided with the appropriate skills to work for micro-enterprises, as well as for themselves.

Setting the context for skills development

The development challenges facing Sudan are numerous, but at the heart of the problem is how to continue and accelerate economic growth, and correspondingly how to translate this into improved employment opportunities for the vast majority of the country's population. Skills enhancement for more women and men can help countries move to a virtuous circle of higher productivity, employment, income growth and development.[1] However, the process of human capital formation in Sudan is low by regional and international standards, as illustrated by the UN's Human Development Index.

[1] ILO, Report V, Skills for improved productivity, employment growth and development, International Labour Conference, Generva, 2008.

Table 1: Human Development Index for Sudan

Year	Sudan*	Low human development	Arab States	World
2011	0.408	0.456	0.641	0.682
2010	0.406	0.453	0.639	0.679
2009	0.403	0.448	0.634	0.676
2008	0.399	0.443	0.629	0.674
2007	0.395	0.437	0.623	0.670
2006	0.390	0.430	0.617	0.664
2005	0.383	0.422	0.609	0.660
2000	0.357	0.383	0.578	0.634
1995	0.326	0.363	0.545	0.613
1990	0.298	0.347	0.516	0.594
1985	0.273	0.334	0.481	0.576
1980	0.264	0.316	0.444	0.558

Source: Human Development Report, 2011

According to the Millennium Development Goals progress report 2010[2], net enrolment rates in primary education were at 49 percent in 2008, and only 70 percent of those who enrolled reached the last year of basic education (8 years). The secondary school net attendance rate was 18.9 percent in 2006, according to the Sudan Household Health Survey 2006.[3]

Official estimates suggest that the country's population will increase to 40 million by the year 2015. This indicates the tremendous challenge facing development planners who will need to cater for a multitude of new demands for social and other services for employment opportunities. Approximately one fourth of the country's population lives in urban areas. The Government and the public sector corporations are the major urban employers' accounting for slightly more than one quarter of all urban workers.

The reported total number of those employed in Sudan was 6,677,410 in the 2008 census, with strong gender disparities. Of this total, 34.1% were in the urban sector, 54.5% were in rural areas and 11.4% were nomads. Men represented 76.1% of those employed, and women only 23.9%. The ratio of employed to population aged 15-59 was reported at 39.5%. The unemployment rate among ages 15-59 stood at a high 17%, but youth unemployment (ages 15-24) was even higher, at 25.4%.

The problem of employment was exacerbated due to the poor performance of the economy. This factor coupled with the implementation of structural adjustment programs have resulted in the retrenchment of public sector employees. Also, other factors such as the high rate of population growth (2.4%) have contributed towards the poor employment situation by

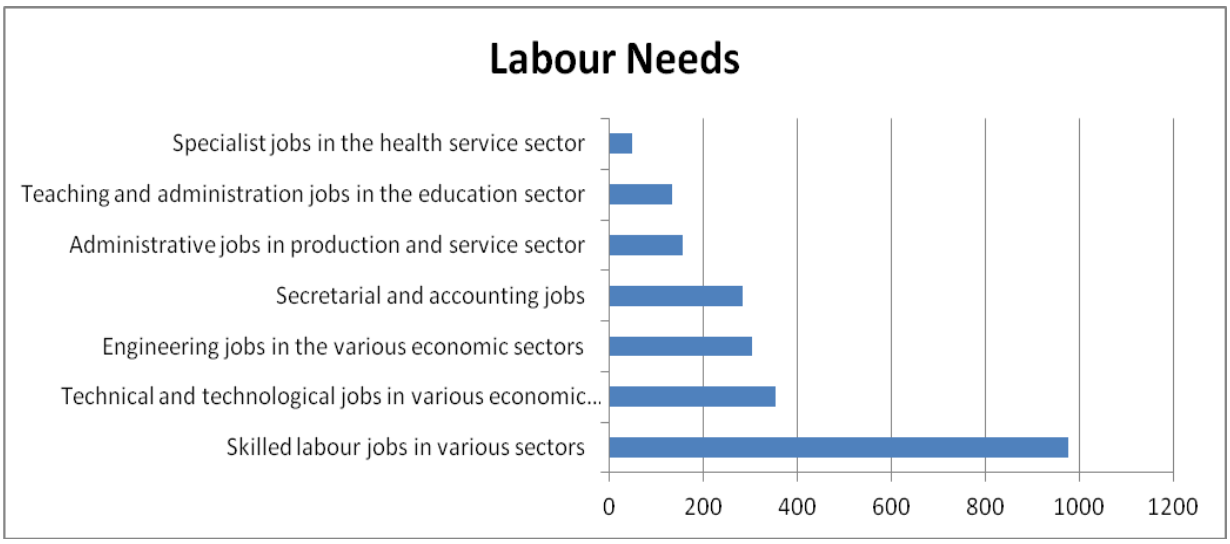
[2] National Population Council General Secretariat, Ministry of Welfare & Social Security, The Republic of Sudan (NPC/GS) "Sudan Millennium Development Goals Progress Report 2010, Ministry of Welfare & Social Security National Population Council General Secretariat.
http://www.sd.undp.org/doc/Sudan%20MDGs%20Report%202010.pdf

[3] Governmnet of National Unity, Governmnet of southern Sudan, Sudan Household Health Survey (SHHS) 2006. http://www.childinfo.org/files/MICS3_Sudan_2006_FinalReport_En.pdf

increasing the numbers coming onto the labour market. As a consequence of the smaller number of employment opportunities in the formal sector, as well as an increase in the numbers coming onto the labour market, the unemployment levels in the Sudan are likely to have risen in recent years according to the Ministry of Labour.

In most countries it is assumed that the provision of skills can help improve a person's employment opportunities. However, this is based on the assumption that a person is provided with the type of skills that are in demand. Within the formal sector in the Sudan, the nature and type of demand for skills has been in a constant state of flux, influenced by a number of drivers related to internal demands and the impact of globalization. Signals on the nature of the labour needs within the formal sector are highlighted in Figure 1 and point to the increasing importance of jobs that require skills.

Figure 1: Signals on the nature of labour needs across a selection of priority sectors



Source: Federal Ministry of Labour, 2007.

The data in Figure 1 was obtained from an establishment survey of 400 establishments conducted in 2007, by the Federal Ministry of Labour. It should be noted that the survey covered 151 categories in seven sectors. The analysis of the data from this survey highlighted the following important trends:

a. **Administrative Labour in production and service sector:** Occupations in high demand in the next five years are expected to be: business manager, administrative manager, customer service manager, personnel manager, real estate manager, and mass media specialist, especially in the food and beverage industries. The large need for real estate managers reflects the recent construction boom in Sudan.
b. **Engineering Labour in various economic sectors:** Engineers are needed across 21 sectors. There is a demand for electrical engineers, electronic system engineers, mechanical engineers, civil engineers, planning engineers with aviation engineers being in the highest demand.

c. **Specialists in the health service sector:** Among the 9 occupations in the sector, the demand for nursing specialists, physicians and general practitioners is highest. The biggest problem is that the available workforce is concentrated in Khartoum.
d. **Teaching and administration labour in the education sector:** Number of needs is large with 24 categories in demand. This includes mathematics teachers in primary schools, head masters, foreign language teachers in primary school, and mathematics teachers in secondary schools.
e. **Technical and Technological labour in various sectors:** The needs are large in 27 categories. Machinery technicians, electrical technicians and furniture designers were the top ranking jobs in demand.
f. **Skilled and semi–skilled labour in various sectors:** Demand is high in 31 categories, with metal and plate forming and welding heading the list, followed by ready-made suit tailors. Needs for drivers are also substantial. Further needs include chemical mixing machine operators and since Sudanese workers in these areas are rare, foreign workers fill the gaps.
g. **Secretarial and accounting labour:** Among the 15 categories listed, general accountants, humanitarian organization volunteers and book keepers are the occupations in highest demand.

Foreign Labour: The survey also reviewed the foreign labour in Sudan and the main conclusion indicates that, when Sudanese workers can satisfy the enterprises' needs, enterprises will not resort to foreign workers. However, when Sudanese workers do not have the appropriate skill levels then there is a need to recruit an expatriate worker.

A further survey provides an indication of the future employment trends within the formal sector (see Table 2).Two groups of industries were identified as important sectors. One is the group of industries which need technologies and techniques such as welding, metal forging, electrical appliances maintenance, automobile repair and maintenance and plumbing. The other group is more specialized industries such as processing of leather products, printing and packaging and design of clothes.

Table 2: Labour Needs Surveyed by UNIDO

No.	Sector	Main needs and reasons
1	Oil Industry	Needs will double within five years
2	Food Processing	Needs for technicians in packaging and hygiene
3	Construction	Operators for heavy machines, welding and maintenance of machines and equipment. Foreign labour is currently an important source.
4	Automobile Repair	Rapid increase in the number of car owners
5	Leather Products	Processing technicians
6	Printing, Packaging	Size of industry and its growth potential is large
7	Textile	Design and manufacturing technology
8	Chemical Products	As Sudan is an agricultural country there is a high demand

		for pesticides and also beauty goods e.g. soap and perfume
9	Welding, Metal Forming	Demand is large. Designing capacity is important.
10	Electricity	High demand but the standard of Sudanese engineers is low
11	Plumbing	Needs are expanding due to growth in construction sector. Wide range of knowledge and experience is needed.
12	Air Conditioning	Demand is large. Higher technology and technical skills are requested.
13	Repair of electrical appliances	Demand is large
14	Cutting techniques	Users are many from machinery to automobile industry. Skilled workers are required.

Source: UNIDO, 2007 / JICA Study Team, 2009

However, in Sudan, the formal labour market is accommodating only a small and decreasing portion of the economically active population. It is now clear that salaried jobs offer no answer to the growing demand for more and more jobs. It has increasingly become obvious that the great majority of the population will have to seek work in small businesses or as employees in the large and growing informal economy. It is estimated that the informal economy comprises up to 60% of the labour force Sudan.[4]

Half of the urban labour force works in the informal economy where migrants from rural areas find low-paying jobs while waiting for places in the formal sector, although its stagnation has meant an inability to generate new jobs. Significant employment based emigration from Sudan has continued in the last four decades. It is estimated that more than one million Sudanese are working abroad, many of them among the Sudan's most highly qualified personnel. The loss of their skills and of their contribution to society is among the major factors hampering development and is not adequately compensated for by remittances.

Overall, the labour market in Sudan is characterized by:

- a decreasing proportion of people with stable jobs;
- increasing overall unemployment rates;
- transformation of the structure of labour resources; and
- steadily rising internal and external labour migration, including among youth and professionals.

An acute challenge exists in the imbalance between labour demand and supply, with an over-supply in some jobs and an under-supply in others, in part because the working-age population is growing faster than engagement in the labour market.

The private sector is seen as part of the solution to today's deteriorating economic and employment problems and points to the need for developing small enterprises and self-

[4] African Economic Outlook, Sudan, 2012
http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Sudan%20Full%20PDF%20Country%20Note.pdf

employment, Moreover, small enterprises (SE) are considered as a viable mode of development that better fits developing countries. They create jobs, provide a vehicle for introducing a more equitable income distribution and improve forward and backward linkages between economic sectors, namely agricultural and industrial ones. Despite its remarkable benefits, small enterprises sector in Sudan has often been neglected. As a result they use primitive tools, produce relatively low-quality goods, and are frequently run by people without adequate knowledge and skills. Small enterprises often have difficulties in securing raw materials and marketing their products, In short, small enterprises could easily be perceived as simply "weak" and in need of improvement. Improvement, however, mainly consists of an integrated package that includes training credit, advisory and follow-up services.

The important question that needs to be addressed is how can those in the workforce, including youth, the unemployed and other vulnerable groups be provided with the appropriate skills to enable them to engage in productive employment and help them move towards an improved standards of living and 'ultimately better work'. This requires an understanding of the status of the current TVET system, including its overriding framework, the main providers, as well as the major constraints facing the system. Through the adoption of such an approach it is possible to identify the ability of the TVET system to meet the current labour market requirements. [5]

It must be remembered however, that the current TVET system has tended to cater for those who have left the formal education system and as such there are significant barriers to the majority of the population who are forced to earn a living in the informal economy. This raises the question of whether there is another option for those who wish to acquire skills and who are not able to access the TVET system. One option for acquiring skills is through the informal apprenticeship system and this refers to the system by which a young apprentice acquires the skills for a trade or craft in a micro or small enterprise by learning and working side by side with an experienced practitioner.

Apprentice and master craftsperson conclude a training agreement that is embedded in the local norms and traditions of a society. Apprentices learn technical skills and are inducted into a business culture and network which makes it easier for them to find jobs or start businesses when finishing their apprenticeship. Therefore, it is equally important to understand what role the informal economy apprenticeship plays in supporting the development of skills, particularly amongst youth and vulnerable groups. The informal apprenticeship needs to be improved in order to be recognized as a training system. Informal apprenticeship is cost effective if it is integrated into the production process and it has to be upgraded to get the maximum gains possible in terms of skills enhancement and achieving more of its potential. Formalizing the informal apprenticeship system is not the goal, nor is it a requirement for improvement. However forging and or enhancing links with the formal TVET system may offer one means of making improvements.

[5] UN Country Team Sudan. Country Analysis 2012.http://www.undg.org/docs/12642/201202_SUD-Country Analysis.pdf

It is against the background outlined above that the current study was conducted to provide a stock-take of the current TVET system. This stock-taking provides one of the first comprehensive overviews of the current TVET and how it is organized, including details on the main providers and the numbers coming out of the system (presented in the next section). Besides this stock taking activity, a survey was undertaken of 144 micro and small enterprises to help understand the nature and characteristics of the apprenticeship training in small enterprises in the informal economy. The findings of this survey are presented

2. Mapping the Technical Education and Vocational Training (TVET) System

The mapping of the TVET sector begins with an initial understanding of the overriding frameworks, the objectives for TVET and the structures for coordinating implementation. Then, it considers the main providers in the sector, covering those in both the public and private sectors. This helps us to identify the major constraints facing the system, as well as how they can be addressed or mitigated. Most of the evidence presented in this section is based on dialogue with stakeholders and those working in the sector.

Data from the 2011 Sudan Labour Force Survey indicate that less than 2 percent of the workforce holds vocational training or technical education certificates, confirming the feeble rate of formal TVET's contribution to skills development.

2.1 Overriding Framework for Supporting TVET

The country's national development policy, covering the period 2007 to 2013, aims to promote growth, reduce poverty, improve social services and raise the standard of living. A key component is support for human resource development, particularly in the following areas:

- Targeted planning for life-long training, linking it with appropriate technology, productivity and labour market needs;
- Cost effective and efficient utilisation of existing training centres;
- Geographical expansion of TVET facilities;
- Provision of labour market needs and new technological areas;
- Introducing new methods of training for persons with low literacy levels and school dropouts; and
- Improving access to skills, particularly for disadvantaged groups: women, youth, disabled and displaced.

2.2 The Structures for Supporting the Implementation of TVET

The coordination and reporting lines for Technical Education and Vocational Training are complex, influenced by the movements towards a federal system and also by historical circumstances. The starting point is to understand the distinction between Technical Education and Vocational Training, including who is responsible for its provision.

The provision of **technical education** is more general in nature, combining theory with practical training, and is primarily targeted at those young people who have successfully completed basic formal education. The most significant institutions are the technical schools that report to the State Ministries of Education (3 years programmes following 8 years of primary education), and the technical colleges (for graduates of technical or academic

secondary schools) who are supervised by the National Council for Technical and Technological Education (NCTTE). The Federal Ministry of Education is responsible for the curriculum, teachers, training, final examination and certification and the State Ministry of Education is responsible for the administrative and financial matters.

There are 98 **technical secondary schools** in 2013 compared to 3128 academic secondary schools, and 21 **technical colleges** at tertiary level. The share of technical schools has been decreasing over the past 20 years, pointing to an overemphasis of academic schooling to the detriment of TVET. There are four types of technical secondary schools: industrial (with several specialities including electronics, electricity, carpentry, automobiles, plumbing etc.), agricultural (animal husbandry, horticulture and plant science), commercial (accounting), and services/ home economics/ tourism. Among the students who complete the three years, only about 50 percent pass the final test and thus graduate. Others either repeat the year, sit the test again the following year after study from home, or directly enter the labour market. The following table shows the number of students enrolled in technical schools in 2010\11 by state (data from NCTTE, 2013).

Table 3: Students enrolled in technical secondary schools in 2010\11 by state and type of school

State	Industrial	Commercial	Agricultural	Girls (service, home economics, tourism)	Total number of students
Khartoum	1520	668	-	383	2571
Al Jazeera	745	626	-	-	1371
Sennar	179	483	-	-	662
Blue Nile	291	190	-	-	481
White Nile	755	466	40	101	1362
North	505	194	100	-	799
River Nile	767	335	40	108	1250
Kassala	333	1152	214	-	1699
Gedaref	531	1074	210	323	2138
Red Sea	481	344	-	-	825
North Kordofan	1174	901	22	282	2379
South Kordofan	194	-	-	-	194
North Darfur	729	925	-	159	1813
West Darfur	393	300	-	-	693
South Darfur	1130	150	-	-	1280
Total	**9727**	**7808**	**626**	**1356**	**19517**

Source: NCTTE 2013

Artisan institutes also fall under the authority of State Ministries of Education, and therefore are considered technical education, although programmes generally last 2 years only. They have originally been designed to cater to local resource availability (leather, wood, palm trees etc.), but have expanded their activity into other trades over the years. Sometimes, technical schools also serve as artisan institutes. No matter if independent or joint with technical schools, Figure 2 indicates them separately.

Vocational training aims to provide employable skills to enable young women and men to enter the labour market and engage in productive activities. The majority of vocational training occurs within Vocational Training Centres (VTCs) and comes under the General Secretariat of the Supreme Council for Vocational Training and Apprenticeship. There are currently 12 VTCs in Sudan, 9 of which are in Khartoum. 5 belong to the Federal Ministry of Labour, 4 VTCs to the State of Khartoum, and another 3 VTCs to the States of Kassla, Kordofan North, and White Nile. However, it is worth noting that under federalism some states have converted existing VTCs into technical colleges (in Gazera, Red Sea and South Darfur). VTCs provide the following services:

- **Apprenticeship Program:** This is a pre-employment program in 13 trades directed to youth who have successfully completed basic education (eight years of schooling). It lasts for three years; the first two years are spent in the centre in practical skills training and classroom instruction. The third year is spent in the industry (in-plant training) to consolidate the acquired skills, with usually one day per week at the centre. The prescribed in-plant period presents the potential workers to the employers for possible employment opportunities. In this respect, there is a good coordination between vocational training centres and the Craftsmen Union. As a result, a good number of trainees undertake their in-plant training for one year at the artisans' workshops. Apprentices graduate after passing a unified national exam. Demand for this training largely exceeds available places

Table 4: Number of apprenticeship graduates of private, federal and state training centers (2008-2012)

	Center Name	2008	2009	2010	2011	2012	Total
1	Khartoum 2	337	365	331	282	349	1664
2	Khartoum 3	91	125	98	82	125	521
3	Khartoum Bahary	162	185	152	165	185	849
4	Al Sadaka UmDurman	313	383	334	306	278	1614
5	Al Sudan Al Kury	197	196	251	147	137	928
6	Khartoum1	342	403	330	279	0	1354
7	Mar Youssef /K	78	113	132	141	107	571

8	Al Watani/K	38	73	95	98	104	408
9	Kosti	180	170	216	176	211	953
10	WedMedani	157	129	189	174	166	815
11	Port Sudan	314	281	211	220	177	1203
12	Kassla	57	82	82	62	60	343
13	Al Obaiyed Takat	34	62	75	38	59	268
14	Don Bosco / Al Obaiyed	101	111	103	74	102	491
15	Al Mushir Al Beshir - Barbar	0	0	27	18	35	80
16	Niala	6	16	12	7	5	46
	Total	**2407**	**2694**	**2638**	**2269**	**2100**	**12108**

Source: Al Radi, 2013.

- **Short Courses (accelerated training)**: These are also pre-employment courses directed to school dropouts and out of school youth, usually of 3 months. Short courses are designed to lead the trainees to self-employment, by adopting the ILO developed approach known as "Modules of Employable Skills, (MES)", or more recently introduced short courses in collaboration with JICA. Although some VTCs are very active in this area, many do not deliver these courses with clear aims and they lack the concepts of entrepreneurship and business skills for self-employment. Training for self-employment should be adopted in occupations which do not require large capital investment such as building construction, electrical domestic installation, pipe fitting and plumbing, repairs and maintenance works, etc. (Ibrahim, 2001). The importance of short courses cannot be over- emphasized especially when they target participants aiming for self-employment at a time when the salaried sector is no longer providing jobs at the same rates as in the past.

- **Skill up-grading courses:** These are courses of 3-5 months or shorter depending on the volume of the training gap that need to be bridged. They are directed to already employed public and private sector workers. The objectives of the courses are to allow these workers to cope with the advancement of technologies, raise their productivity, improve their product and/or service quality, rationalize their use of raw materials and reduce occupational hazards.

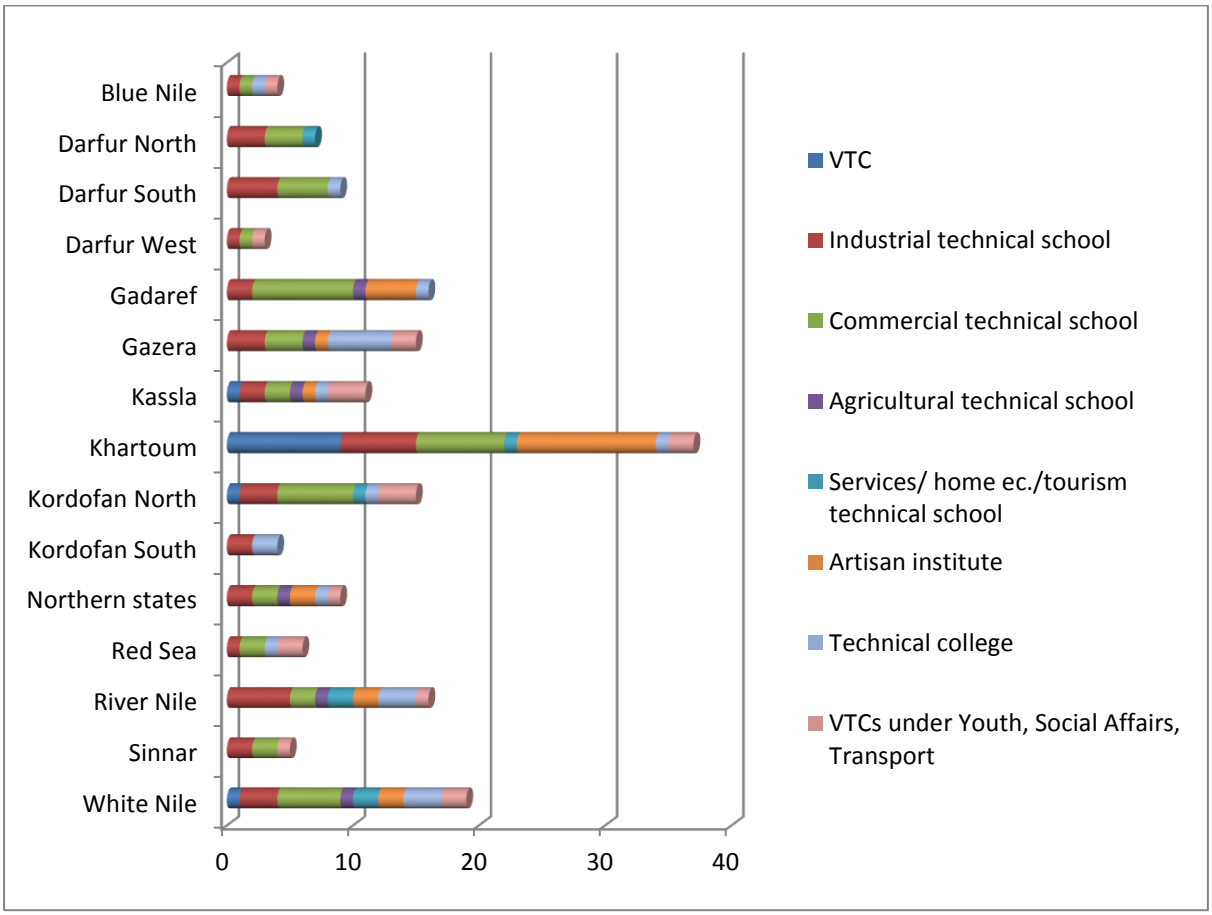
- **Trade testing activity:** The trade testing activity is carried out by almost all VTCs. The objective is to certify the skills of workers acquired through traditional or informal means of vocational training in an attempt to regulate the labour market. Trade tests can be taken by all workers, no matter if they attended a training course at the centre or if they acquired skills informally in workshops, such as by means of informal apprenticeship. Data on trade tests taken is not available at central level.

There are also other line ministries such as the Ministry of Youth, the Ministry of Social Affairs, the Ministry of Transport etc. that sustain small numbers of **vocational training centres or artisan institutes** focusing largely on short courses and tailor-made courses.

Figure 2 highlights the type of publicly supported TVET institutions in different states across Sudan. Unsurprisingly, this demonstrates that the majority of TVET institutions are located in the country's capital. However, what is worrying is the small number of public institutions in the states of Sennar, West Darfur, North Dafur and South Kordofan.

It is to be noted that technical colleges have only been recently established some using the assets of former vocational training centres or technical schools. As far as the technical schools are concerned, many have outdated equipment and are in need of rehabilitation.

Figure 2: Distribution of Public TVET institutions operating across different States in Sudan



Source: JICA Study team 2009 and NCTTE 2013.

2.3 Public Training Providers in Khartoum State

Public VTCs in Khartoum state

There are 5 VTCs in Khartoum under the Federal Ministry of Labour, 4 VTCs belonging to the State of Khartoum. All are supervised by SCVTA. Khartoum State has 14 public technical educational institutes including 13 at the secondary level and one technical college at the tertiary level.

More specific details on the status of Vocational Training Centres (VTCs) are shown in tables 5 and 6. Table 5 suggests that there is considerable capacity within the VTCs, with the majority focusing upon similar trades, namely maintenance, fitting, machining, automotive, electrical and welding. However, a number of common constraints are being experienced across these VTCs, ranging from a lack of equipment, poorly trained instructors and correspondingly, supply driven programs.

Table 5: National Vocational Training Centres under the direct management of the Ministry of Labour

Vocational Training Centre	Affiliation	Trades[6]	Enrolment Capacity	Current Situation
VTC Khartoum (11)	FMOL	1,2,3,4,5,6,10,11	400	Equipment in all VTCs, except those of Sudanese Korean VTC, which has been rehabilitated two years ago by KOICA, are obsolete and do not cope with advancement of technology. curricula are not being revised and updated for the last 3 decades. Trainers are not exposed to overseas training and not motivated. As a result of a JICA Project for Strengthening the Vocational Training System in Sudan, a considerable number of trainers have trained in management and technical areas abroad and in- country until 2013. Training Programmes are supply driven rather than demand driven.
VTC Khartoum (111)	FMOL	1,2,3,4,5,9	100	
VTC Sudanese Korean	FMOL	1,3,4,12,13,16	320	
Omdurman VTC (Friendship)	FMOL	1,2,3,4,5,7,8,12,13	400	
VTC Khartoum North	FMOL	1,2,3,4,5	320	
Total			2040	

Source: - Supreme Council for Vocational Training and Apprenticeship - Ministry of Labour- 2011

Table 6 shows Public VTCs built by the state of Khartoum with EU funding and technical assistance of UNIDO in 2008. Given the investment from the donor, it is not surprising that these institutions are "well built and equipped". These VTCs, however, do not offer apprenticeship programs but apply newly introduced competency-based learning at levels 1 and 2, each level requiring 9 months of centre-based training. The very first VTC in Khartoum, called VTC I, has been handed over to Khartoum state and subsequently been

[6] *The listing of trades is included in the Annex*

converted into the premises of the Khartoum State Vocational Training Authority, abandoning training activity on-site.

Table 6: Public VTCs built by the state of Khartoum with EU funding

No.	Name of VTC	Affiliation	Trades	Current situation
1	Khartoum North – Halfaia	Khartoum state - EU-UNIDO	Welding &Catering	Well-built and well equipped, but managerial abilities have to be fostered. Shortage of text books
2	Khartoum North – Haj Yousif	Khartoum state - EU—UNIDO	Auto motive trades	Well-built and well equipped but managerial abilities have to be fostered. Shortage of text books
3	Khartoum Mayo	Khartoum state - EU-UNIDO	Machining and Sheet metal trades	Well-built and well equipped but managerial abilities have to be fostered. Shortage of text books
4	Omdurman Karari	Khartoum state – EU - UNIDO	Electric trades	Well-built and well equipped but managerial abilities have to be fostered. Shortage of text books

Source: Author, based on Khartoum State Vocational Training Authority, 2013

Technical schools and artisan institutes in Khartoum state

Table 7 indicates that Khartoum State has a total of 13 technical schools and artisan institutes spread over different localities. At present, the technical and artisan schools are in a very bad shape, buildings need major maintenance, water, electrical, and sewage systems need to be rehabilitated, equipment needs to be replaced, curricula need to be updated, and teachers need to be trained and increased in number

Table 7: Data on the Technical schools and Artisan Institutes in Khartoum state

Name of institution	Affiliation	Trades	Enrolment capacity	Current Situation
Belgium technical school	SMOE	4,4,2,11	657	Buildings, electrical, water and sewage systems require maintenance. The majority of the equipment items are obsolete, some are inoperable and some needing spare parts. Trainers are not motivated
Jebel Always Artisan institute	SMOE	3,4,5,6	960	
Ali El sayed technical school	SMOE			
Omdurman youth Artisan	SMOE			

institute				and not trained.
Omdurman Technical school (boys)	SMOE	2,3,4,6,7,8	558	Curriculum needs updating. School management aspects have to be strengthened through training. Technical education is not linked with Labour Market opportunities (demand trends).
Omdurman Technical school (Girls)	SMOE	12,13		
Jebel Awlyaa technical school	SMOE	4,	148	
TaybaÉlhasnab	SMSA	1,3,4,5,6,7	192	
Soba Artisan institute	SMSA	3,5,6,7,9,12,14	375	
Elshajerra Artisan institute	SMOE	3,4,5,6	600	
Elslamania Artisan institute	SMOE	3,4,10, 12	160	
Khartoum Artisan institute	SMOE	3,4,5,6,7,9	1241	
Islamic Artisan Institute	SMOE		890	
Elhlfaya comprehensive school	SMOE		120	
Abu Zied comprehensive school	SMOE	4	70	
Total			6238	

Source: The National Council for Technical and Technological Educational – 2012

2.4 Private Training Providers in Khartoum State

Table 8 indicates the number of accredited private VTCs, all of which are in Khartoum State. On the one hand, some of the private VTCs are well built and equipped and active in training provision. On the other hand, some are not well equipment and as a consequence trainees are not prepared to pay the high fees. Fees are much lower at public VTCs.

Table 8: Private Vocational Training Centres

Name of Centre	*Affiliation*	*Trades*	*Enrolment Capacity*	*Current Situation*
VTC St. Joseph (Kht)	Catholic Church	3,4,5,6,7,1	375	The buildings of some of these centres need
VTC Akhbari	Privately owned	3,4,5,9	80	

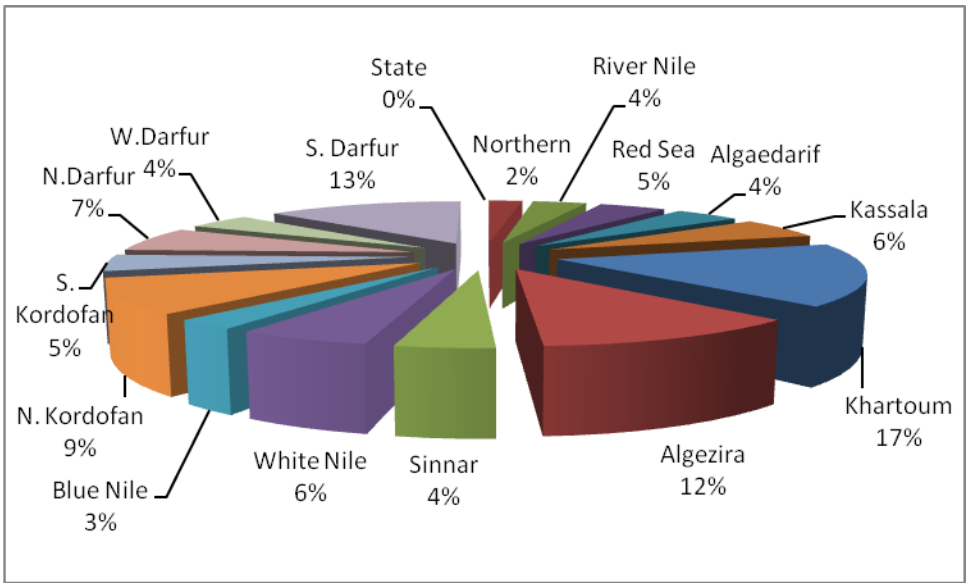
(Kht)				maintenance and water, electrical and sewage systems need to be rehabilitated. Working conditions need to be improved. Absence of training materials and text books. Absence of training of trainers. Shortage of easy terms finance fund.
VTC Bushriat (Kht)	Private		32	
VTC MihanAlaamia (Kht. North.)	Private		96	
The National VTC (Kht.North)	Private	3,4,5,11	96	
VTC Alaahli Elhadeith (Omdurman)	Private	3,4,	300	
VTC Al Giriish (Omdurman)	Ahli Community Owned	3,4,5,6,7,8,9,12	267	
VTC Seyam	Private		75	
VTC Spark	Private	3,4,6,9,5		
Salma Elneema Artisan institute (girls)	Private		203	
IbnElban Artisan institute	Private		64	
Total			1588	

Source: SCVTA, 2011 and NCTTE 2013.

2.5 TVET Provision at the State Level

Figure 3 shows the population level of the Republic of Sudan states after the disintegration. This demonstrates that Khartoum state is the most populated state with 5428000 persons (17 %), followed by the state of South Darfur – which has been recently separated into two states – with 4213000 persons (13 %) The lowest populated state was the Northern state with 719000 persons (2 %). What is important to highlight is that Northern States has a significant number of technical schools (5) despite having one of the smallest population levels. This reflects that the new Marawi Dam is located in the Northern State and has a number of irrigation projects from the River Nile, which generates demand for skills.

Figure 3: Population Distribution by State 2008



Source: Statistic book 2009, Central Bureau of Statistics, Dec 2010

The following tables show the affiliation and trades of selected TVET providers in the different states of Sudan. Not all providers included in Figure 2 are listed hereunder.

Table 9: TVET Institutions in Northern State

Name of institution	*Affiliation*	*Trades*
Elgorair Technical School	*SMOE*	*1,3,4,5*
Karima Technical school	*SMOE*	*3,4,5,*
Marawi Artisan Institute	*SMOE*	*3,4,5*
Dongola Artisan Institute	*SMOE*	*4,5*
Agricultural technical school Elbargeg	*SOME*	
Karima Youth Training Center	*SMOY*	*4,5*

Source: The National Council of Technical and Technological Education – 2012

The River Nile State has a total population of 1200000 persons (2.9%), and compared to other states has a good distribution of technical institutions across a number of trades (see table 10).

Table 10: TVET Institutions in River Nile State

No	*Name of institution*	*Affiliation*	*Trades*
1	*Atbara Technical School*	*SMOE*	*1,2,3,4,5*
2	*Rail Way VTC*	*SMOT*	*1,2,3,4,5*
3	*Barbar Artisan Institute*	*SMOE*	*4,5,12,13*
4	*Eldamar Artisan Institute*	*SMOE*	*4,5,12,13*

Source: The National Council for Technical and Technological Education - 2012

In contrast, the Elgezira state is an agricultural state and one of the most populated states in the country. This state has a significant number of villages and is supplied with water and electricity from a main system all of which require maintenance and has implications for qualified craftspersons.

Table 11: TVET Institutions in Gezira State

No	*Name of institution*	*Affiliation*	*Trades*
1	*Wad Madani Technical School*	*SMOE*	*1,2,3,4,5*
2	*Elhasaheissa Technical School*	*SMOE*	*1,2,3,4,5,*
3	*Masaad VTC*	*FMOA*	*1,2,3,4,5*
4	*Tambol Artisan Institute*	*SMOE*	*4,5,112,13*
5	*Almasallamia Youth Training Centre*	*SMOY*	*4,5,12,13,*

Source: The National Council for Technical and Technological Education - 2012

Within Sennar state, there is a population of around 1 285 000 representing 3.3% of the country's population. Within the state, there is a water reservoir that irrigates the Gazira agricultural scheme, and generates about 9 megawatts of electric power. In addition, the state has the second biggest sugar factory and a number of large mechanized farming projects. Understandably, most of the skill programs focus on electricity, welding and food processing (see Table12).

Table 12: TVET Institutions in Sinnar State

No	*Name of institution*	*Affiliation*	*Trades*
1	*Sinnar Youth Training Center*	*SMOY*	*4,5,12,13,*

Source: The National Council for Technical and Technological Education - 2012

In the state of Damazine there is a large dam and the area has a vast fertile land with a high rainfall rate. This makes the state very suitable for mechanized farming.

Table 13: TVET Institutions in Blue Nile State (Damazine)

No	*Name of institution*	*Affiliation*	*Trades*
1	*Eldmazeen Technical School*	*SMOE*	*1,2,3,4,5,6*
2	*Elrosairis Youth Center*	*SMOY*	*4,5*

Source: The National Council of Technical and Technological Education - 2012

Gadaref is another agriculture state where sorghum and sesame are widely grown in rain-fed mechanized farming schemes in which a large number of machinery is used.

Table 14: TVET Institutions in Gedarif State

Name of institution	*Affiliation*	*Trades*
Elgadarif Technical School	SMOE	*1,2,3,4,5,*
Elgadarif Artisan Institute	SMOE	*4,5,12,13*
Elshowak Artisan Institute	SMOE	*4,5*
Elhawata Artisan Institute	SMOE	*,4,5*
Elrahad Artisan Institute	SMOE	*,4,5*

Source: The National Council for Technical and Technological Education - 2012

In the state of Kassala the population is 1789000 persons, accounting for 4.6% of the country's population. In Kassala State there are two agricultural schemes: the Gash agricultural Scheme and New Halfa Agricultural Scheme. The state has a new Halfa Sugar factory.

Table 15: TVET Institutions in Kasala State

Name of institution	*Affiliation*	*Trades*
Kasala VTC	*SMOL*	*1,2,3,4,5*
Kasala Technical School	*SMOE*	*4,2,11*
Kasala Artisan Institute	*SMOE*	*4,5,*
Kasala Youth Center	*SMOY*	*4,5,12,13*
New Halffa Technical School	*SMOE*	*1,2,3,4,5*
New Halffa Youth Center	*SMOY*	*4,5,12,13*
Elgirba Youth Center	*SMOY*	*4,5,12,13*

Source: The National Council of Technical and Technological Education - 2012

The Red Sea state has a population of 1396 000 persons (3.6%). This state contains the country's largest harbour. It also has the biggest gold mine.

Table 16: TVET Institutions in Red Sea State

Name of institution	*Affiliation*	*Trades*
Port Sudan Technical School	*SMOE*	*(*) 3,4,5,6,7*
****Port Sudan VTC***	*SMOE*	*1,2,3,4,5,9,13,16*
Port Sudan Youth Centre	*SMOY*	*3,4,5,6,14*
Sinkat Youth Centre	*SMOY*	*4,5,12,13*

Source: The National Council of Technical and Technological Education - 2012

*The Port Sudan VTC was established in 1980 as a turn-key project by the GTZ and handed over to the state authority in 1994. Subsequently, the state transferred it to the Federal Ministry of Higher Education which converted it into technical college.

The White Nile state has a population of 1730000 persons (4.4%). The state has many small agricultural projects irrigated from the White Nile, and a large cultivated rain-fed area. The state has two big sugar factories, Kenana Sugar Factory and Assalaya Sugar Factory and this

has influenced the type of skills delivered by the various technical schools and VTCs in the state.

Table 17: TVET Institution in White Nile State

No	*Name of institution*	*Affiliation*	*Trades*
1	*Kosti Technical School*	*SMOE*	*(*)1,2,3,4,5*
2	*Kosti VTC*	*SMOL*	*1,2,3,4,5,6,17*
3	*Kosti Youth Training Center*	*SMOY*	*4,5,12,13,*
4	*Ediwaim Youth Training Center*	*SMOY*	*4,5,12,13,*

Source: The National Council of Technical and Technological Education - 2012

Kordofan states (North and South) are characterized by its Gum Arabic, animal resources, and traditional rain-fed agriculture. The two states are inhibited with 4326000 persons (11.1%). This is a significant proportion of the country's population and reflects the significant number of institutions supporting skills development in the fields of machinery, automotive, electricity, welding, carpentry, building and tailoring.

Table 18: TVET Institutions in Kordofan States

Name of institution	*Affiliation*	*Trades*
Elobeid Technical School	*SMOE*	*2,3,4,5,7,8*
Um rowaba Technical School	*SMOE*	*2,3,4,5,7*
Kadogli Technical School	*SMOE*	*2,3,4,5,6*
Elobeid VTC	*SMOF*	*2,3,4,5,6,7*
Elobeid Youth Training Center	*SMOY*	*4,5,7,12,13, 14*
Umrowaba Youth Training Center	*SMOY*	*4,5,7,12*

Source: The National Council of Technical and Technological Education - 2012

The three Darfur states (at present five states) have a total population of 7514000 persons (19%). The states are characterized by the traditional rain-fed agriculture and animal resources.

Table 19: TVET Institutions in Greater Darfur States

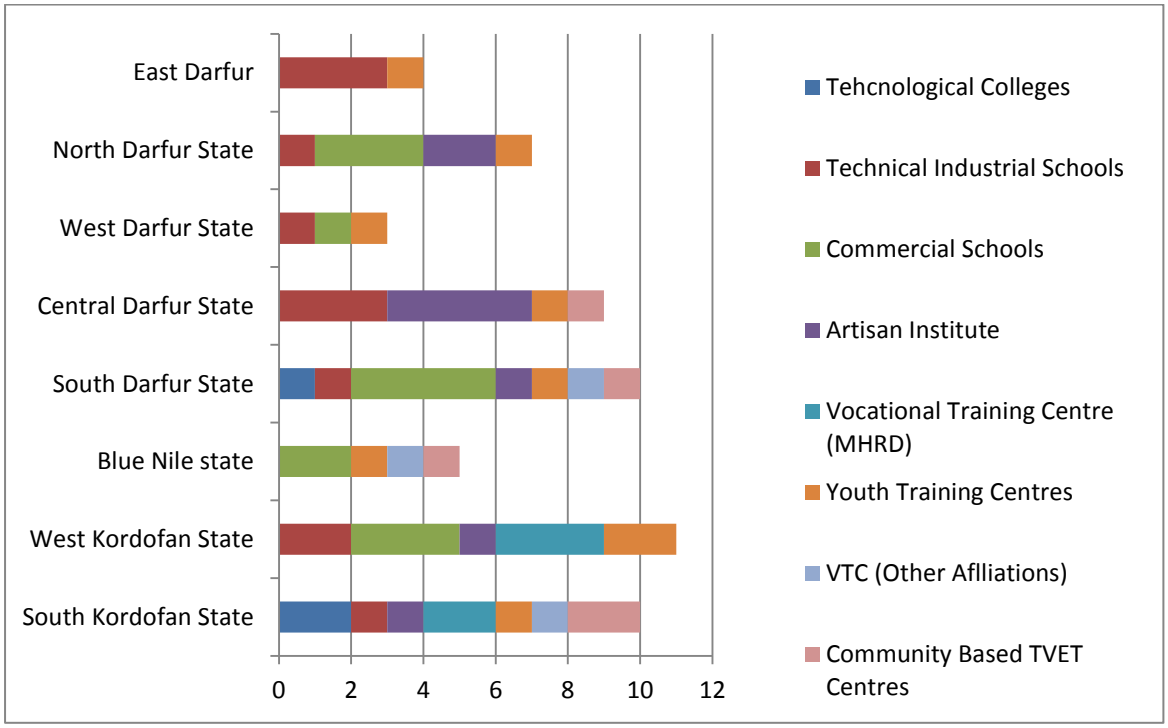
Name of institution	*Affiliation*	*Trades*
Nyala Technical School	*SOME*	*2,3,4,5,7,14*
Elfashir Technical School	*SMOE*	*4,5,12,13,*
Malleet Technical School	*SMOE*	*4,5,12,13*
Elginaina Technical School	*SMOE*	*4,5,12,13*

Source: The National Council of Technical and Technological Education - 2012

2.6 TVET Provision in Conflict States

A recent study has mapped public and private TVET providers in conflict states, namely Darfur, South Kordofan, West Kordofan and Blue Nile States. Among the 53 assessed TVET institutions only four are community-owned, belonging to local or international NGOs; the others are public, mainly affiliated to State Ministries. 38 are currently operating, with 15 not functioning (Khalid, 2013). The following figure provides an overview of the types of TVET institutions per state.

Figure 3b: Distribution of Public and Private TVET institutions operating across Conflict States in Sudan



Source: Khalid, 2013.

3. Qualifications System

Qualifications in the Sudan are awarded based on educational attainment level, i.e. skilled workers, technicians, and engineers which has the effect of restricting job opportunities. The relationship between a qualification and the educational attainment is as follows:

Qualification	Educational Attainment
Engineers	University Graduates with Bachelor degree
Technicians	Graduates from technical colleges, with Diploma degree
Skilled workers	VTC (Apprenticeship Diploma) Technical school (Certificate)

Source: SCVTA

The SCVTA is mandated by the Vocational Training and Apprenticeship Act (2001) to undertake trade testing. Article (6), item (j) of that Act stipulates the role as:

"*Setting the detailed procedures and systems of performing trade test for any group of workers recommended by the Council to be trade tested"*.

Accordingly, the SCVTA supervises preparation of trade testing, issuing of trade test certificates and any revisions of the certification system. It is worth mentioning that the existing trade testing system had been introduced with the ILO assistance. The outline of the trade test system for testing skilled workers is as follows:

- The trade test covers Grades 3 to 5;
- In case of failure, it is necessary to wait 6 months before doing the next trade test.
- Trade testing usually takes place at VTCs recognized by the SCVTA.
- In the cases where VTCs cannot organize the test, candidates can have the test in an appropriate establishment with a VTC examiner.

It should be pointed out that Trade test standards are based on the following:

- The time to perform the task,
- The method and manner of work,
- The accuracy of the work,
- Finishing of a defined task
- Cost effective use of materials,
- Proper use of tools and their maintenance,
- Hygiene and safety.

The relationship between successful trade testing and the occupation is shown in table.20.

Table 20a: Qualification system for skilled workers

Post	Trade system (skilled workers)
Supervisor	Grade 7
Forman	Grade 6
Skilled worker	Grade 5
Skilled worker / VTC Graduate	Grade 4
Skilled worker / Technical school graduate	Grade 3
Semi – skilled worker	Grade 2
Unskilled worker	Grade 1

Source: SCVTA

At the same time, the National Council for Technical and Technological Education uses a different qualification system. The Track of Technical and Technological education stipulates the following classifications of occupations and professions.

Table 20b: Qualification system for technicians and technologists

	Post	Qualification/ certificate	Remarks
1	**Skilled Labourer**	Vocational Training certificate	Based on skills and competencies
2	**Technician**	Technical Secondary School Certificate	At least three years of Technical Education
3	**Technologist**	Bachelor of Technology	Fresh Graduates of Technological Colleges
4	**Specialized Technologist**	Post graduate studies plus experience	As per the needs of the labour market
5	**Consultant Technologist**	Post graduate degree or equivalent qualification plus experience	As per the needs of the labour market
6	**Fellow Technologist**	Fellowship: accredit-able experience by the Board of Professions	As per the needs of the labour market

Source: NCTTE

4. The Role Played by Donors in Supporting TVET in Sudan

Donors have played a significant role in supporting developments in TVET. The most significant projects are outlined in Table 18 and the specific details include the following:

- The support by KOICA is targeting the establishment of Al Basheer Agricultural VTC at Medani the capital of Gezira State, and hopes to promote job creation and agribusiness by promoting training in agriculture. This has a budget of around USD6 000 000. This project started in 2011 and will be completed in 2014. Amongst the expected outputs are: the construction of infrastructure; training of Sudanese personnel in Korea, provision of curricula and textbooks, equipment and technical assistance.

- The Project of Strengthening Vocational Training System in Sudan, being funded by JICA has a foreign technical component of about 5.5 million USD, and the project period is 3 years. It started in January 2011 and ends in January 2014. The purpose of the project is to strengthen the capacity of the SCVTA's for managing vocational training based on social labour market needs. The activities include conducting a needs survey, curriculum development, TOT and implementation of a training course. Support is provided by SCVTA staff and a JICA expert team. A longer apprenticeship program of learning is also expected to be developed using a similar approach to that used for developing short-term programs of learning.

- The Saudi Development Fund has granted USD2 million as a foreign component for the establishment of the VTCs in the two states of South Kordofan (Kadogli), and Blue Nile (Damazine). The Federal Ministry of Finance and National Economy is committed to providing co-financing.

The two projects are at present in the construction phase. A tender for the procurement of equipment has been finalized. The projects will train youth in the skills of maintenance fitting, building, plumbing, general electricity, air conditioning and welding. It is envisaged that the two centres will be operational in 2014 with an enrolment capacity of 144 trainees per centre provided that disbursement of fund is secured.

Table 21: TVET projects implemented in Sudan in the last 5 years

Project	Funding for Establishment	Project duration	Affiliation
Rehabilitation of Sudanese Korean VTC	KOICA	Jan-Dec 2008	Federal
Study on Vocational Training System development in the Sudan	JICA	Jan-Dec 2009	Federal

Strengthening of Vocational Training System in Sudan	JICA	Jan 2001 – Dec 2013	Federal
VTC Kadogli South Kordofan	Saudi development Fund	Jan. 2011 - Jan 2014	State and Federal
VTC Damazeen Blue Nile State	Saudi development Fund	Jan. 2011 - Jan 2014	State and Federal
Rehabilitation of Friendship VTC Omdurman	Peoples' Republic of China	Preliminary survey done in December 2011	Federal
El Bashir Agricultural VTC at Medani Capital of Gezira State	KOICA	January 2012 - January 2016)	State and Federal
Rehabilitation of VTC El Obied	JICA	Implementation started in January 2012	State and Federal

Source: The Supreme Council for Vocational Training and Apprenticeship, 2012

5. Constraints Facing the TVET System

A number of constraints have already been mentioned in the preceding sections. However, it is important to focus upon these constraints in more depth. Only by understanding them it is possible to offer solutions that are effective and sustainable over the medium to longer term. For the sake of offering guidance on ways forward for TVET, the major constraints can be grouped into the following areas:

- The lack of available funds for TVET
- The management and utilisation of funds within the system
- Qualifications that do not respond to the needs of the labour market
- Lack of employability amongst TVET graduates

5.1 The Availability of Suitable Funds for TVET

The majority of public VTCs are dependent on public finance to cover their staff salaries and other recurrent costs. However, the allocated resources are only enough to pay staff salaries every month and therefore other recurrent costs, such as training materials, electricity, water, and waste collection bills cannot be met. Understandably, this has seriously affected the quality of training delivery and many VTCs lack adequate resources to support learning, let alone operate their technical equipment.

The government funding mechanism links funds to national priorities and government gives first priority to national security, and defence. For service institutions like TVET, funding is not based on plans, but based on what the Ministry of Finance can afford to pay. The lack of available funds to meet basic recurrent costs is at the heart of constraints facing the TVET system and unless this can be tackled it will be difficult to move forward and address systemic reform.

5.2 The Management and Utilization of Funds within the TVET System

Within Sudan the VTCs have the freedom to generate their own revenues. However, on the downside the VTCs don't have the freedom to retain, and spend the income generated since all funds must be forwarded to the public treasury. Understandably, this acts as a disincentive for VTCs to generate their own income and inhibits long term sustainability.

It is important to note that the SCVTA receives only 50% of the financial allocation budgeted for the operational expenses of the vocational training activities. Understandably, the lack of financial resources has a knock on effect for many areas of the TVET system, most noticeable of which are the instructors and the learning that takes place at the VTCs. The lack of resources to support even recurrent costs means that instructors never have their skills upgraded and in most cases they work with old equipment and a lack of learning resources. As a consequence, the instructors are not motivated and lack the commitment that is

necessary to support the delivery of programs. Similarly, the programs are not upgraded and limited attempts are made to keep abreast of technological changes that are occurring in the workplace. The situation is compounded by the fact that no incentives are provided for those who manage the institutions, all of which makes it very difficult to introduce change or even manage existing operations in an effective manner.

As a result of funding shortages and minimal incentives to generate income, the planning and managing of funds are often neglected at the institutional level. This partly reflects the lack of uncertainty and the frequent changes.

5.3 Qualifications that do not Respond to the Needs of the Labour Market (i.e. they are not fit for purpose)

The current trade testing system has not been updated for over 10 years and fails to reflect recent changes in technology or new demands within the workplace. Similarly, the assessment procedures and systems also need to be revised according to more innovative and modern pedagogical practices. Under the current regulations, if a candidate fails a test, they can only take the test again six months later. The quality of teaching has also deteriorated over the past decade due to the lack of learning materials and technology constraints due to the funding constraints mentioned previously. While there is a clear need for more up-to-date systems, particularly those surrounding quality assurance, the initial reform should focus more upon updating the existing learning materials and assessment procedures so that learners can be provided with more work readiness skills. When this is achieved, the whole process of systemic reform can take place in the near future, with a view to identifying how systemic reform can be implemented.

5.4 Lack of Feedback Mechanisms to Assess Employability amongst Vocational Graduates

There is an uncertainty about the employability of graduates coming out of the VTCs and the technical colleges. In the absence of any formal feedback mechanism, it is difficult to evaluate the employment record of VTCs and the corresponding performance of the centres themselves. The only tracer study was conducted by GTZ in 1996 and this found that the market was flooded in certain skills and recommended changes to the apprenticeship programs. This feed-back mechanism should have been formalised into management systems within VTCs.

Give the constraints identified above, it is necessary to move forward with a number of reforms. Given these constraints and the lack of resources, this is going to be difficult. Nevertheless, the process of reform should begin by tackling some of the immediate operational constraints and then move onto more systemic level reforms. The recommendations below provide some guidance on how this can be achieved, including what can be done over the short-term and longer term, and by whom

Box 1: How to approach the reform process for TVET

The following recommendations fall into four main areas: governance and equity of TVET, the responsiveness of TVET to the labour market, strengthening the role of the social partners in TVET planning, management and oversight, and upgrade the quality of delivery of TVET providers.

- There is no doubt that there is a long road ahead for reforming the TVET system. However, change should occur incrementally and it should begin by reaching an agreement on what can be achieved, as well as what cannot be achieved with partners.
- Much of the initial reforms should focus upon areas that don't necessary need a lot of resources, particularly in areas of reform that require political decisions. The basis for such decisions must be based on a consensus amongst different partners. This will help ensure that agreement is reached and support achieved for subsequent implementation.
- Adopting such an approach may involve a review of existing legislation and current implementation arrangements.
- One of the areas to tackle with regard to current implementation arrangements is the whole area of decentralisation and the operation on institutions at the state level.
- Besides political decisions, it will be equally important to tackle a related issue, namely administrative reform, particularly around current structures that duplicate activities.
- Equally important is the way in which TVET management relates to other government departments, particularly education and other line ministries that may employ TVET graduates, such as agriculture or public works. Such links need to be more formalized.
- Wherever possible, attempts must be made to reach agreement on a more favourable funding structure for TVET institutions. Unless this can be achieved it will be impossible to move forward with any sustainable reform.
- Public-private partnership and the involvement of social partners in the identification of skill needs, the planning, management, provision, and oversight of the system is paramount for making TVET delivery more effective and responsive to labour market needs.
- Sustainable mechanisms for employer engagement need to be identified and put in place at multiple levels.
- Occupational standards need to be developed jointly with social partners.
- Any reform around funding must tackle the whole area of the institutions' ability to manage, generate and maintain their own funds. Unless this occurs, managers at the institutional level will not have motivation to run their own institutions effectively.
- Provided the above activities can be put in place, this will help to provide the basis for a more conducive environment for TVET reform
- The reforms must centre on the setting up of a simple and effective M&E system that is sustainable, involving the use of tracer studies at the decentralised level.
- The next phase of the reform process must focus upon the lack of underdeveloped capacity within the system.
- The first part of building capacity must focus upon the existing educational materials and equipment. Emphasis must be given to how the TVET system can get access to more recent curriculum and learning material. Wherever possible, gain access to curriculum and learning resources from regional TVET networks and if necessary

adapt to the local context.

- An area that will need immediate attention is support for improved management at the institutional level, particularly around planning and sustainability
- Reform will not be possible unless those working in the system are capacitated. This includes social partners as well as initial and continuing training of instructors.
- When progress has been made on the development of new and improved systems, the process of systemic reform can be tackled. This is longer term and concerns the systemic issues that act as constraints within the system. For instance, if instructors do not have the appropriate pay and conditions it will be difficult to attract and retain suitable people. However, most of constraint relate to decision made outside of the TVET system and will take time to resolve.

6. The Importance of Skills Development in the Informal Economy

Supporting the development of skills within the informal economy can result in a number of direct and indirect benefits for different groups. Commonly acknowledged benefits for the individual include raising income and security, as well as access to further learning and even the possibility of formal sector employment. For the company, it can also result in improved profitability, the utilization of technology and possibly higher turnover, as well as profits. Similarly, some of the more indirect benefits centre on improvements to social capital in local communities.

As explained earlier, the TVET system was originally designed to support the development of skills for the formal sector. The effectiveness of the TVET system in carrying out this function is also questionable due to the number of constraints mentioned previously, particularly in the area of funding. Formal sector employment in Sudan is accommodating only a small and decreasing portion of the economically active population. It has increasingly become obvious that the great majority of the population will have to seek work in the large and growing informal economy. According to the recent ILO world employment survey, around 85% of workers are engaged in vulnerable forms of employment.[7]

Some recent statistics highlight the nature of the problem facing Sudan. The labour force of about 10 million is characterized by massive seasonal migration by workers in the move in search of work at any one time. The circumstances will become worse when the population will increase to 40 million by the year 2015.

Sudan also suffers from high levels of underemployment. This is largely due the structure of employment in the country where 60% of the labour force is engaged mainly in subsistence agriculture or pastoral activity at a level of productivity which hardly enables survival. Similarly, a significant proportion of the total labour force is engaged in the informal economy. The labour force in the informal economy is grossly underemployed due to low levels of incomes and productivity. Thus, the employment problem in Sudan is essentially the high rates of underemployment, characterized by low levels of incomes and productivity.

In Sudan, most affected by the incidence of unemployment are women and the first time entrants to the labour force, school leavers and youth without pervious work experience. On the other hand, self-employment initiatives are often constrained by the lack of conducive environment for the growth and development of the informal economy, in which the majority of those seeking gainful economic activities hope to find a place. In addition to open unemployment and underemployment, real wages have been declining due to the relative stagnation in average real wages compared to the ever rising cost of living. The combined

[7] IILO Global Employment Trends, 2012

effects of open unemployment, underemployment and the declining real wages are manifested in the rising levels of poverty which is becoming a serious problem in Sudan.

The situation has been compounded by the rising incidence of poverty and the fact that an increasing proportion of young people engage in child labour, with an estimated 13% of children aged 5 to 14 in employment. Sudan has ratified the ILO convention on elimination of the worst forms of child labour in 2003 and formulated the new labour act, which provides for the protection of working children by prohibiting their employment in some forms of work until they reach the age of 14. The new Child Act (2010) is a step forward in the way to combat child labour in Sudan. It provides for the right to free and compulsory primary education and prohibits the work of children less than 14 years. Among working children are many school drop-outs. Census data recently found that the school attendance rate peaks at age 11 and then drops during the teenage years, particularly among girls, when children are needed by families.

Small enterprises (SE) are considered as a viable mode of development that better fits developing countries. They create jobs, provide a vehicle for introducing a more equitable income distribution and improve forward and backward linkages between economic sectors, namely agricultural and industrial ones. Despite its remarkable benefits, the small enterprises sector in Sudan has often been neglected. As a result they use primitive tools, produce relatively low-quality goods, and are frequently run by people without adequate knowledge and skills. Small enterprises often have difficulties in securing raw materials and marketing their products. In short, small enterprises could easily be perceived as simply "weak" and in need of improvement. The recommended improvement, however, mainly consists of an integrated package that includes training credit, advisory and follow-up services.

A key component for supporting small enterprises is skills development, particularly through the informal apprenticeship system. This system provides a major pathway for initial vocational training, providing young people with an opportunity to become employable and enter the job market. However the informal apprenticeship needs to be improved in order to be recognized as a training system. Informal apprenticeship is cost effective, it is integrated in the production process and it has to be upgraded to get the maximum gains possible in terms of skills enhancement and with the objective of achieving more of its potential.

7. Understanding the Informal Apprenticeship and the Need for Empirical Research

The ILO has conducted country level research to understand what motivates master craftspeople and apprentices to conclude apprenticeship agreements and to identify ways to improve the system. In order not to drive out existing good practices while addressing deficiencies, interventions need to build on current practices. A step-by-step approach combining different types of interventions may be required to improve the quality of training and of skills acquired, working conditions and skills recognition beyond the local community, financial arrangements and young women's access to non-traditional occupations. Human resources development and skills acquisition are considered to be instrumental in addressing the challenge of employment in Sudan, especially youth unemployment. Apprenticeships in the informal economy represent one of the main sources for skills development, although the informal apprenticeship has long been neglected area of national training policies.

The informal economy is characterized by a relatively high absorptive capacity for the new entrants to the labour market. This is in comparison to the limited capacity of the formal education and training systems to provide vocational education and training for a growing labour force. The majority of the labour force are youth and as new entrants to the labour market, lack the necessary skills to compete for gainful employment. It is high time therefore that informal apprenticeship receives adequate attention for enhancing skills and youth employability, taking into accounts the existing traditional rules and local norms.

The majority of young people in Sudan are trapped in a vicious circle of poverty and low productivity and low income. For those who attend formal schooling, the acquired skills do not match the needs of the labour market exacerbating the problem of youth with inappropriate skills for the constantly changing market. Many skills however are acquired through informal apprenticeship among family, friends and social networks. This practice is more responsive to the kind of skills needed in the economy as opposed to formal education systems that tend to follow old, obsolete and traditional methods and orientation. Thus the transition between school and work is very difficult and the official youth unemployment is very high.

However, the current informal apprenticeship has several short comings. A significant percentage of apprentices are under 15 years which is the legal working age limit. This form of employment falls under the definition of child labour stipulated in ILO convention 138. It is also characterized by long working hours coupled with very low pay that render informal apprenticeship as cheap labour. Almost all women and migrants are excluded from access to apprenticeship, the training quality is questionable and the technology level imparted is low.

Because informal apprenticeships are not organized they are variable in quality. Some elongated apprenticeships can be exploitative when apprentices are employed as cheap labour and do not develop the skills required. No specific training program and an ambiguous contractual relationship between the master craftsperson and the apprentice exist.

Informal apprenticeship needs to be improved in order to be recognized as a training system. This research has been carried out to identify and understand the social norms, art, customs and traditions governing informal apprenticeship in Sudan.

For young people employed in the informal economy, apprenticeship is one of the major pathways for initial vocational training as it provides the skills basis to become employable and enter the job market. Knowledge of informal apprenticeship, both at the conceptual and empirical level however is still scarce.

7.1 Objectives of the Study

It is against this background that the need arises to conduct an empirical research study that aims to understand the current practices of informal apprenticeship in order to identify possible ways and means of improving the existing situation for the businesses and apprentices involved. Therefore a survey was supported by the ILO of 144 micro and small enterprises across Sudan, with a view to studying current practices of informal apprenticeship in order to identify possible ways and means of improving the existing situation for the business and apprentices involved. The study also aims to improve understanding of the informal apprenticeship system and stimulate efforts to realize more of their potential to boost employability, income opportunities and decent work for many young people in Sudan. The objectives and methods used, as well as the findings and their possible implications are outlined below.

7.2 Methodology of the Study

A combination of quantitative and qualitative methods was used to collect the data for the study. The qualitative methods included interviews with key informants and provided a means of gathering background information and a means of exploring issues that could not be tackled by the quantitative approach. The quantitative approach involved a survey of 144 micro and small enterprises. The questionnaires used for the survey were provided by the ILO and adapted and translated into Arabic language to suit the needs of the Sudanese informal economy. Three questionnaires were used, the first for master crafts persons, the second was for skilled workers and the third was for apprentices. These questionnaires were used to collect primary data. To ensure that questions were properly understood by all concerned, the research assistants (data collectors) were trained on how to use these questionnaires.

The process of conducting the research started with a review of the research study tools that were used for a similar project in Egypt. These were the questionnaires for master crafts person, for skilled workers and for apprentices. They were adapted to the local context of Sudan, taking into account specificity of the country and other relevant local conditions.

7.3 Sampling Framework

The research covered the three towns of Khartoum, Omdurman and Khartoum North. The actual number of enterprises that are involved in informal apprenticeship training is not known. Therefore, it was not possible to take a proportionate sample of the various trades. It was decided to cover 150 enterprises providing informal apprenticeship. Fifty enterprises from each of the three towns, especially those with a high number of informal activities were targeted. It was also decided to select enterprises providing informal apprenticeship training as defined by the ILO.

Within each enterprise, the master crafts person was interviewed along with at least one skilled worker and one apprentice. As a result 144 master crafts persons, 109 skilled workers and 135 apprentices were interviewed. The research covered 10 different types of trades in Khartoum, Omdurman and Khartoum North. The majority of master crafts persons interviewed were Auto mechanics followed by carpentry and car body repair, machining, electricity & motor rewinding.

Table 22: Type of occupations covered in the sampling framework

No	Type of Occupation	N	Percentage
1	Welding & sheet metal work	26	18%
2	Auto mechanics	48	33.3
3	Carpentry	23	16
4	Car body repair & painting	23	16
5	Machining	07	4.9
6	Electricity & Motor rewinding	06	4.1
7	Plumbing	05	3.5
8	Air-Conditioning & Refrigeration	04	2.8
9	Aluminium works	01	.7
10	Car Seat report	01	.7
	Total	144	100

The scope of coverage was limited depending on availability of apprentices and as such, some sectors like textile and traditional crafts were not covered.

Finally, in relation to the sampling framework, it is important to point out that apprentices in the trades covered are all males which is a deplorable situation at a time when policy makers, government bodies and the social partners are aware of the importance of bridging the gender divide. Only 4 females were engaged in informal apprenticeship during the last two years. Indeed the trades covered are traditionally male trades because these are the only trades where apprentices are present. The research team tried in vain to identify activities where female apprentices are engaged. However, the evidence should appear to suggest that Sudanese females currently enrolled in formal training have not yet known the path to informal apprenticeship.

7.4 Outline of the Study on Small and Micro-Enterprises

This section presents the results of the survey and consists of the following:

- The first section **outlines the socio-economic context** surrounding apprenticeship training in Sudan. This underlines the importance of apprenticeship training as a vehicle for skills training in Sudan, as well as the industries and occupations where apprenticeship training operates.
- The second section provides the **general and specific characteristics** of those working in the small and micro-enterprises, including their age, gender, education background and whether those individuals are members of any societies. It should be noted that workers fall into the following categories: master craftspersons, skilled worker and apprentice.
- Within the third section attention is given to the **practices performed by the micro-enterprises**, particularly their networking activities and their decision to take on additional apprentices.
- The **apprenticeship program** is tackled in the next section, including the terms and conditions surrounding this process, the costs associated with the apprenticeship, the content of the training delivered, and issues surrounding skill recognition.
- The penultimate section addresses the **training practices and skill needs** of those working in micro-enterprises, before finally considering how the process can be improved.

7.4.1 Socio-Economic Context Surrounding Informal Apprenticeship Training

The social context surrounding apprenticeship is important to understand in a country, such as Sudan, where the incidence of poverty is relatively high. According to the 2009 census, the population is largely young (about 50% of the people are below the age of 18) resulting in large numbers of youth entering the labour market each year. Under the current system formal vocational training facilities fail to provide adequate training opportunities to out of school youth. Venturing into self-employment without acquiring the required technical skills and easy access to finance is a risky option.

Informal apprenticeship represents a good avenue for skills acquisition and employability access for young people. This means that master crafts persons (MCs) are faced with high demand for informal apprenticeship. Yet the enterprise's capacity to train is limited because training is time consuming and diverting some of the MCs attention from their core income generating activities. Also MCs are not interested to saturate their own market with

competitors and thus need to balance the amount of newly-trained people in the trade with existing market opportunities.

Besides the social context, it is also important to understand where the opportunities for apprenticeship training can be found in Sudan. Ultimately, the type of demand for products and services influences the type of training that occurs for apprentices. However, the micro and small scale enterprises that employ apprentices and which are supposed to respond to these growing demands face a series of problems and challenges, particularly in terms of finance, technology, equipment & tools and trained & workers, space & infrastructure.

Despite the fact that there are many familiarities among trades, they also demonstrate many differences. Thus it is important to discuss each trade separately by summarizing the main economic activities, the challenges faced and the economic opportunities available for each trade. This then sets the economic context in which apprenticeship training in the informal economy takes place:

- ***Auto Mechanics*** – This occupation covers the repair and maintenance of motor vehicles. In this research, it also includes auto-electric works as well. In the last decade, the number of vehicles in the Sudan has increased tremendously and as a result the need for servicing and maintaining cars has consequently increased. The main challenge facing the people in this skill area is how to upgrade and improve their technical skills and equipment to cope with the advancement of technology of the car industry, accessing credit facilities, limited space & increase competition.

- ***Carpentry*** - This trade covers making and creation of frame work and other structural units for building including rafters, floors partitions, windows & doors. Also in making of furniture & cabinets, the trade is facing the competition from imported wood products. In the light of a recent government decision that banned imported wood products, it is expected that the trade will now flourish. The workforce in the trade needs to strengthen their design capacities and put more emphasis on trade calculations and technical drawing.

- ***Welding and Sheet metal work*** - The welding trade is becoming very important in Sudan because of the expanding oil industry (pipe and oil containers welding). Welding skills are also useful in manufacturing of furniture of doors and windows, windows grills and fencing bars. The key challenges for the trade are high costs of raw materials, shortage of space, access to credit and competition with imported products.

- ***Car-body repair and painting*** -This is a trade of high potential prospects since the number of vehicles is increasing. Understandably, with the introduction of new technology, this creates the demand for new types of skills to repair and maintain vehicles.

- ***Electricity and motor rewinding*** - The trade is dealing with domestic installation carrying out repairs to electrical equipment, positions and fixed electrical units such

as distribution boards, fuses boards for light and power units. The trade has high employability prospects because of the ongoing big electrification scheme in the country.

- ***Plumbing*** - The trade covers pipe fitting for households and different organizations. This trade is heavily influenced by the construction boom and currently there is a global shortage of plumbers.

- ***Air-Conditioning and Refrigeration*** - The trade covers installation and maintenance of air coolers, air conditions, split units and refrigerators. Because Sudan is a hot country, cooling equipment use is spreading and as a result the servicing of cooling equipment is increasing. Some of the challenges facing the trade are limited space and difficulties in obtaining gases.

7.4.2 General Characteristics of those Working in Small and Micro-Enterprises

The research analysed different groups of staff working in the small and micro-enterprises. Results show that in workshops the staff is composed of master craftspersons (MC) skilled workers (SW) and apprentices. The key difference between MC and SW is that usually the MC is the owner of the workshop and most often more experienced and competent. The availability of MC and SW in the workshops guarantees the effectiveness of apprenticeship training. In relation to the general characteristics of those working in the enterprises, the following issues were found:

- ***Age Structure*** - The average age of master crafts persons is 43.5 years, skilled workers average age is 38.6 years and that of apprentices is 22.8 years.

- ***Gender pattern*** - The research results reveal clear male domination across all trades surveyed in the sample. It is noteworthy that in the last 2 years only four female apprentices had received informal apprenticeship training. When master crafts persons were asked why there were no females apprentices in their workshops, 45% of them reported that, by tradition this is a male work, 28.5% said that no female applied to become an apprentice, and 20.1% concluded that females cannot do such jobs. Researchers were not in a position to identify female trades other than those included in the research sample. However, from the experience of the researchers no female apprentices as such could be traced even in the trades of food processing, tailoring and hair dressing.

- ***Persons with disabilities*** - The field survey found out that only 20 disabled persons had received an informal apprenticeship in the last 2 years. When master crafts persons were asked about the reasons for low recruitment of persons with disabilities, 54.9% of them reported that no disabled person asked to become an apprentice, 21.5% said that disabled persons cannot undertake this kind of informal apprenticeship.

- ***Urban-Rural provenance***: - The research confirms the growing migration trend from rural to urban settings since apprentices who are youngest among the three groups, have the highest percentage (60%) of those migrating from rural to urban centres, particularly to the national capital Khartoum.

7.4.3 Specific Characteristics of those Working in Small and Micro Enterprises

Once again the specific characteristics are addressed for the (a) master crafts person, followed by the (b) skilled worker and the finally (c) the apprentice.

Box 2: Specific Characteristics of master crafts persons

Age: The average age of master crafts persons interviewed within the selected sample is 43.5 years.
Sex: All the 144 master crafts persons surveyed were males.
Nationality: All are Sudanese.
Ownership of the workshops: The result of the research indicate that 95.8% of the surveyed workshops are owned by the interviewed master crafts persons, the rest is owned by a group of people.
Membership of association: When master crafts persons were asked if this business or the owner is member of any association, their responses can be seen in table 20.

Table 23: Membership of associations for Master Craft Persons

Type of Cooperative	N	%	% of cases
None	26	17.4	18.4
Workers Union	21	14.1	14.9
Industrial association	62	41.6	44.
Others	40	26.8	28.4
Total	149	100	105.7

The educational levels data is shown in Figure 4 and highlights that the master crafts persons are reasonably educated with a literacy rate of 94.4%: 27,1% have completed secondary education, 43.8% have completed basic education and 6.9% have undertaken technical and tertiary education.

It is worth mentioning that the majority of the master crafts persons (84.7%) have acquired their skills through informal apprenticeship.

Figure 4: Highest level of education held by Master Craftsperson

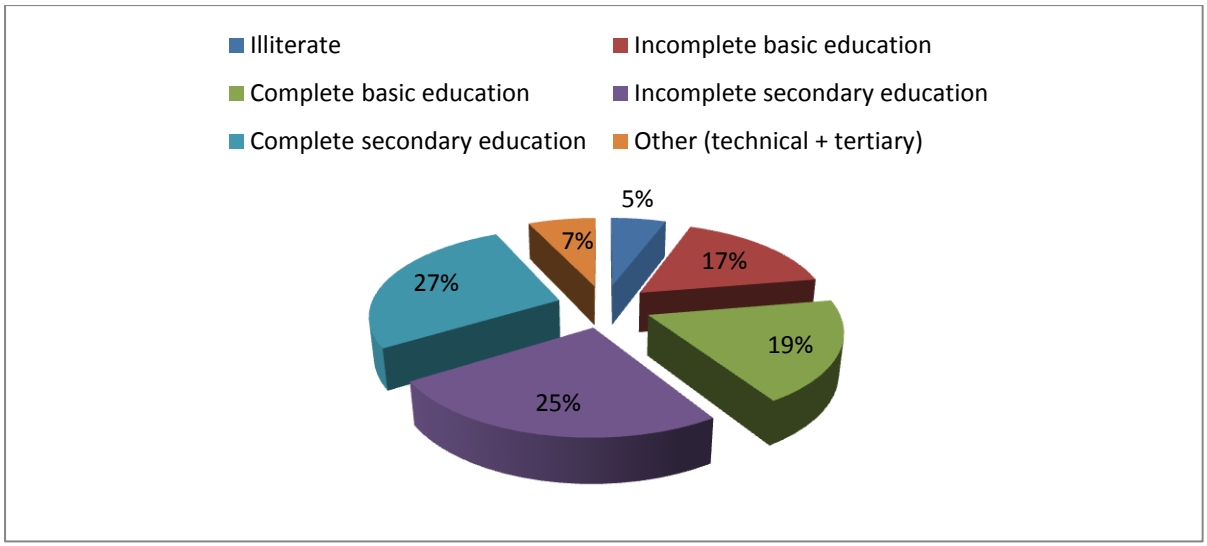
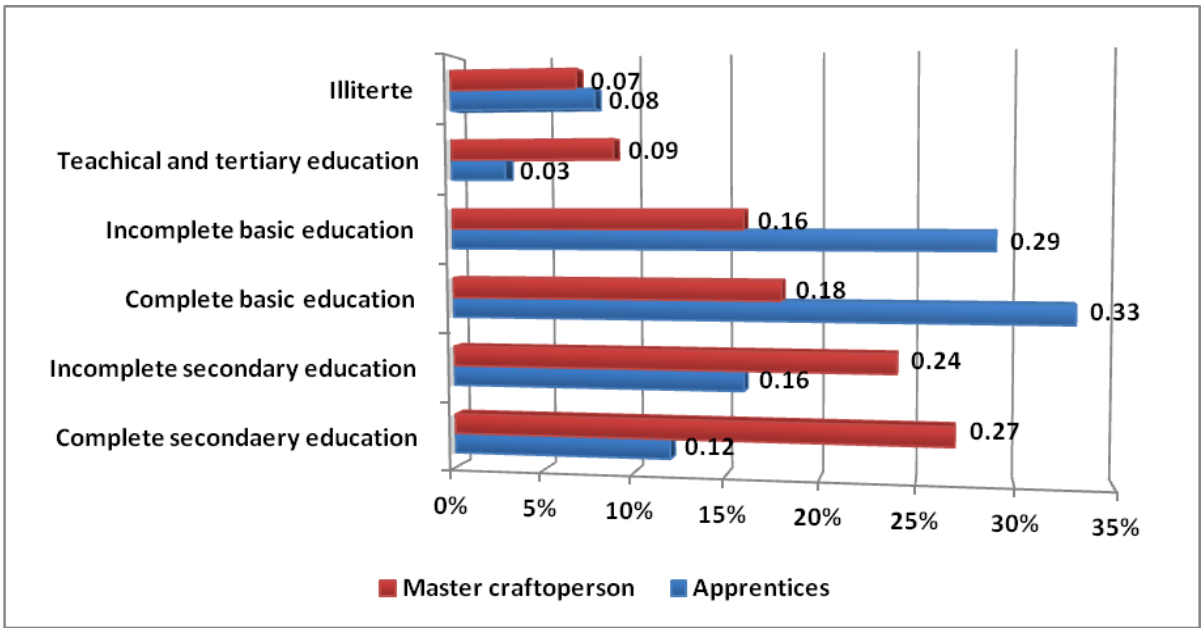


Figure 5 highlights the differences in educational levels between Master crafts person and the apprentice. What is interesting about this data is that master craftsperson tend to be better educated than their apprentices. It shows that the highest educational level achieved by apprentices is basic education (33%), while for master craftsperson it is secondary education.

Figure 5: Educational levels of master craftspersons and apprentices



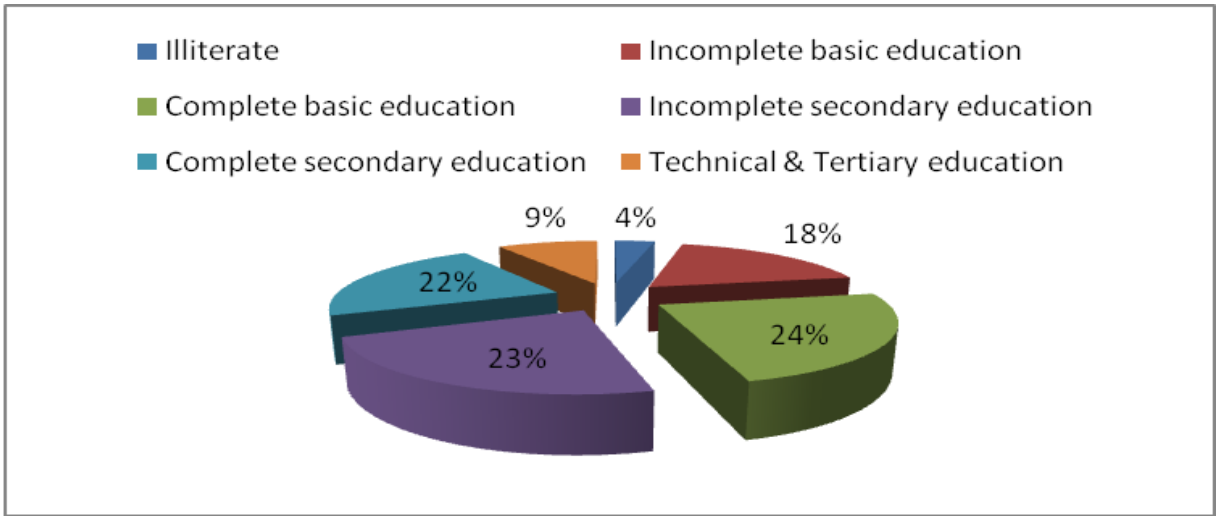
Specific characteristics of skilled workers

Box 3: Specific characteristic of skilled workers

Place of birth: 38.5% of the skilled workers were born in Khartoum State and 61.5% were born in other States in urban and rural centres and at a later stage migrated to Khartoum. 74.3% of them have learnt their current trade through an informal apprenticeship. 64.2% of them were employed by the same workshops in which they spent their apprenticeship training.
Sex: All the skilled workers in the sample were males.
Age: The average age of the skilled workers is 38.5 years.
Nationality: All were Sudanese (107) except 2 who are foreigners - a Southern Sudanese and an Ethiopian.

The highest education level of skilled workers is shown in Figure 6. This highlights that 24% have completed basic education and a similar number have completed secondary education.

Figure 6: Highest level of education held by skilled worker



Specific characteristics of the apprentices:

The specific characteristics of the apprentices are shown in Box 4. A number of issues need to be noted. The average age of apprentices is 22 years, but more importantly 30% of the apprentices in the sample are below the age of 18, including 12 year olds (see Box 4 below). These findings illustrate that a considerable portion is below the age of compulsory education. It is noteworthy that the interim constitution provides for basic compulsory education and that Sudan is committed to the millennium development goals including attaining universal education by 2015. Despite such encouraging factors, engaging apprentices below the legal age of compulsory education is still practiced.

Poor working conditions for apprentices

Hazardous work, poor conditions of employment and lack of clarity in concluding apprenticeship agreements in terms of duration, fees, training content, certification…etc. were also noted. The country's labour inspectorate has a role to play in ensuring enforcement of the relevant legal provisions of the labour law particularly in combating all forms of health and safety hazards at the work place.

Box 4: Specific characteristics of the apprentices

Place of birth: About 50% of the surveyed apprentices were born in Khartoum State, and the rest were born in urban and rural areas of other states and migrated to Khartoum State seeking skill development that leads to productive employment and decent work.
Sex: All interviewed apprentices were male, indicating that informal apprenticeship training is totally dominated by males
Age: Out of the total of 135 apprentices 30% were in age ranges of 12 to 17 years old, 40% were in the ages of 18 to 22 and 30% between the age of 23 to 30
Nationality:- It has been found that all the apprentices of the sample are Sudanese nationals

The highest education level of apprentices is shown in Figure 7 and highlights that nearly 35% have completed secondary education. However, what is more interesting is the comparative education levels between the master crafts person, the skilled worker and the apprentice (see Figure 8). The evidence reveals a similar pattern of educational attainment, amongst the three different types of workers. The only area of significant difference relates to the fact that the highest level of education amongst apprentices is in the area of basic education. In contrast, the highest level of education for the majority of master crafts persons is secondary education. This demonstrates the master crafts person has on average achieved a higher education attainment than other workers. These findings would also highlight the importance of completing secondary education if a person wants to become a master crafts person.

Figure 7: Highest education attainment of apprentices

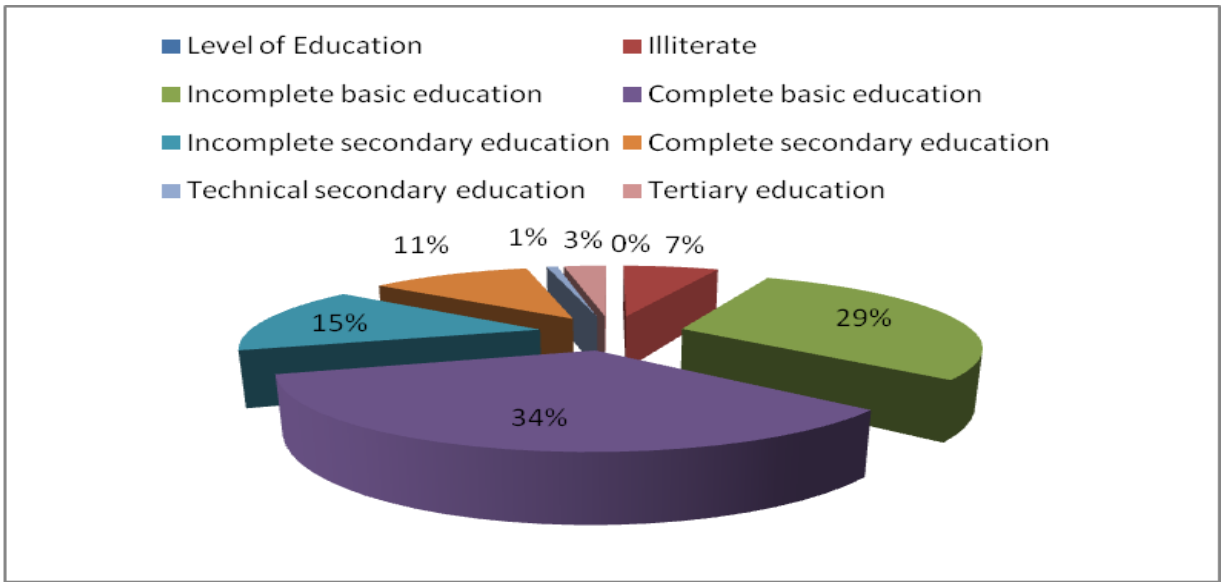
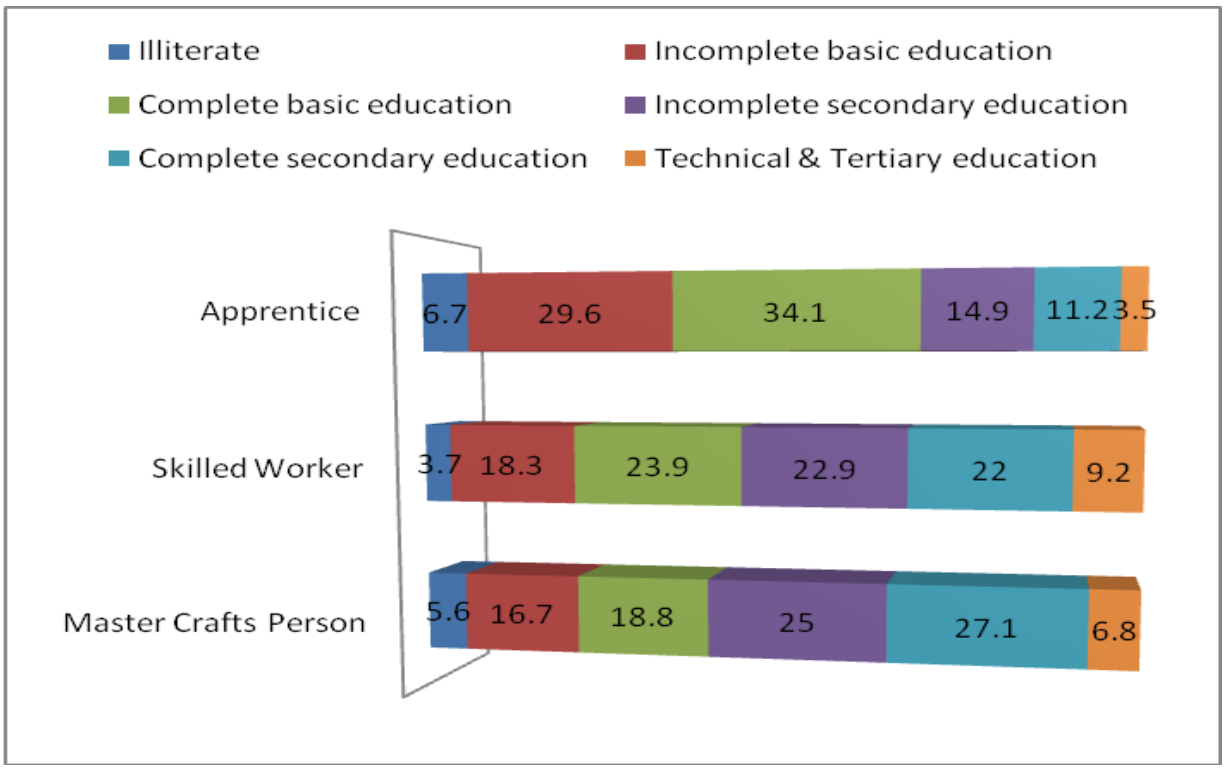


Figure 8: A comparison of the education levels between apprentices, skilled workers and master crafts persons



7.4.4 Practices Performed by Small and Micro-Enterprises

When looking at the practices performed by micro and small enterprises it was important to address two important issues. The first issue concerns the relationship that such enterprises have with external organizations. This is important because it can provide an avenue for policy support, particularly in terms of accessing the enterprises and helping them to tackle constraints. The second issue is what influences micro and small enterprise to recruit apprentices, particularly around whether they have enough business and the specific factors that influence their recruitment practices.

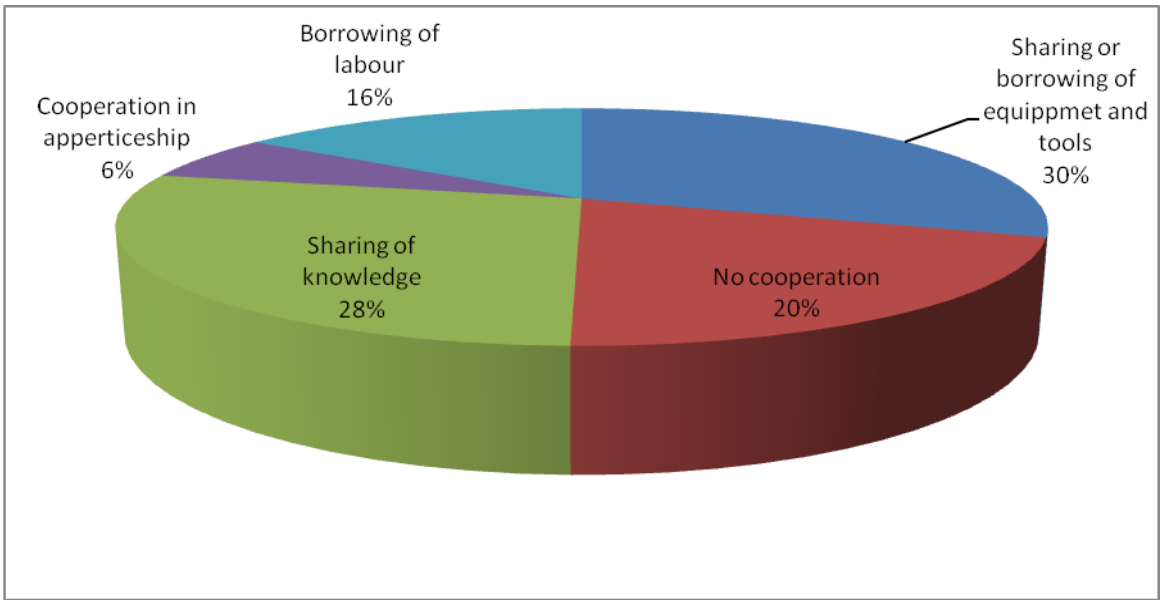
Information on the type of relationship that micro and small enterprises have formed was obtained by asking them whom they registered with. The results are shown in table 24 and highlight that the majority of businesses are registered with town councils (48.7%), only 2.5% are registered with commercial registrar and 16.8% registered with tax authority. The data reflect the irregularities associated with the informal economy.

Information was also obtained on the degree to which the micro and small enterprises cooperated with each other (see Figure 9). The areas where micro enterprises co-operate are in the field of sharing equipment and knowledge. This has important policy implications in terms of how productivity can be improved amongst these organizations.

Table 24: .Organisation that micro and small enterprises are registered with

Registered with	N	%	% of cases
Workers' Union	6	5.0%	5.6%
Town Council	58	48.7%	54.2%
Commercial registrar	3	2.5%	2.8%
Tax authority	20	16.8%	18.7%
None	8	6.7%	7.5%
Other	24	20.2%	22.4%
Total	**119**	**100.0%**	**111.2%**

Figure 9: Areas where businesses cooperate with each other



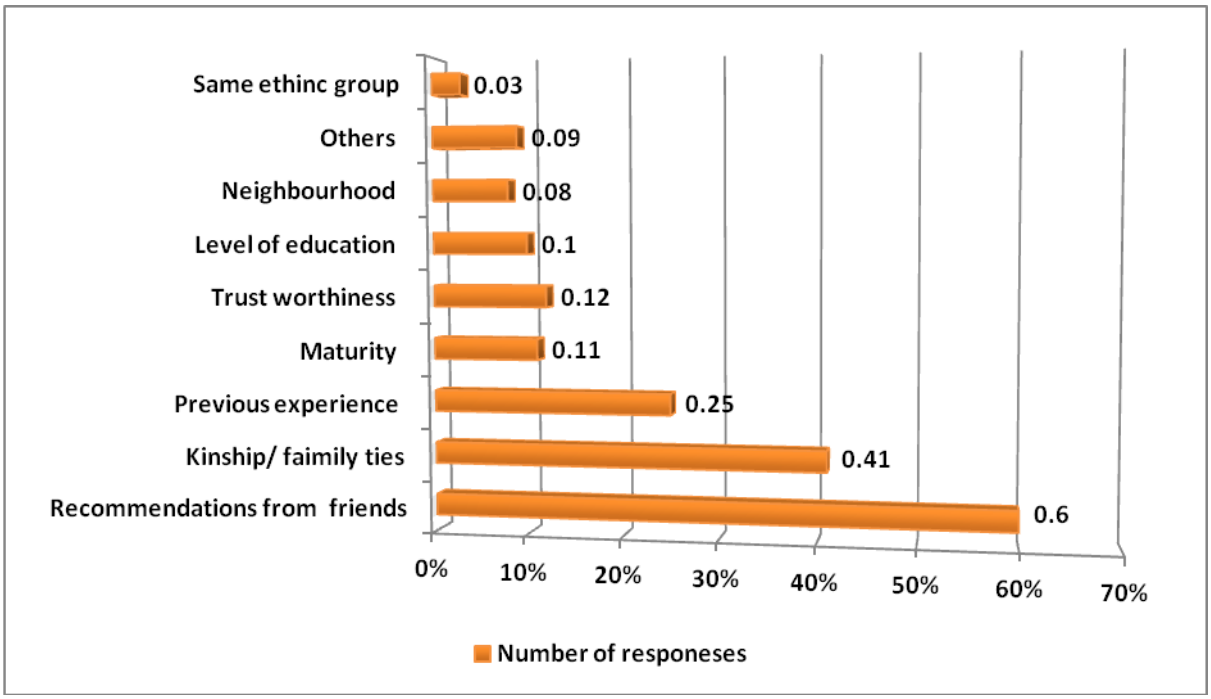
An important question is whether enterprises have enough work to provide significant training for apprentices. When master crafts person were asked about this issue 13.9% said that work adequacy is very high, 20.1% answered moderate, 25.0% said low and 3.5% said very low (see Table 25).

Table 25: What is the volume of current work in your enterprise?

Availability of work	N	Percent
Very high	20	13.9%
Medium	29	20.1%
Low	36	25.0%
Very low	5	3.5%
Missing	54	37.5%
Total	**144**	**100.0%**

Equally significant is the factors which influence recruitment practices by those enterprises who decide to hire apprentices. This shows some interesting findings. The most important finding is that informal networks are the most important factor influencing a decision to recruit someone. Indeed, 44% of respondents said friends were the most important factor influencing the decision to recruit an apprentice. Around 30% were influenced by kinship.

Figure 10: Factors influencing the recruitment of an apprentice



7.4.5 The terms and Conditions of the Informal Apprenticeship System

There are a number of important issues surrounding the conditions, the delivery mechanisms and the type of skills developed under the informal apprenticeship system. The conditions refer to the agreements that are made between the apprentice and the master crafts person, including the possible costs associated with the training period and what is provided in kind by the master crafts person. Closely connected to this, is the length of such agreement and the recognition of acquired skills. Only by addressing these issues is it possible to improve the existing process and identify what type of support is required to make the existing informal apprenticeship system more effective.
The survey enquired how many hours an apprentice works, the degree to which they are provided with any form of social protection and whether the apprentice and the master craftsperson conclude an apprenticeship contract, as well as the content of such a contract.

When apprentices were asked how many days a week they usually work in the workshop, the majority of them (88.1%) said that they work 6 days a week, and 9.6% said that they work 7 days a week. Working hours exceed 8 hours a day.

When master craftspersons were asked what happens in case the apprentice has to stay home because of illness or because of occupational injury, 64.6% said that wage or pocket money would continue to be paid, 16.7% indicated that it would not be paid, and some of them said that they pay half the wage. The responses of the apprentices to the same question confirmed the master craftspersons' statements.

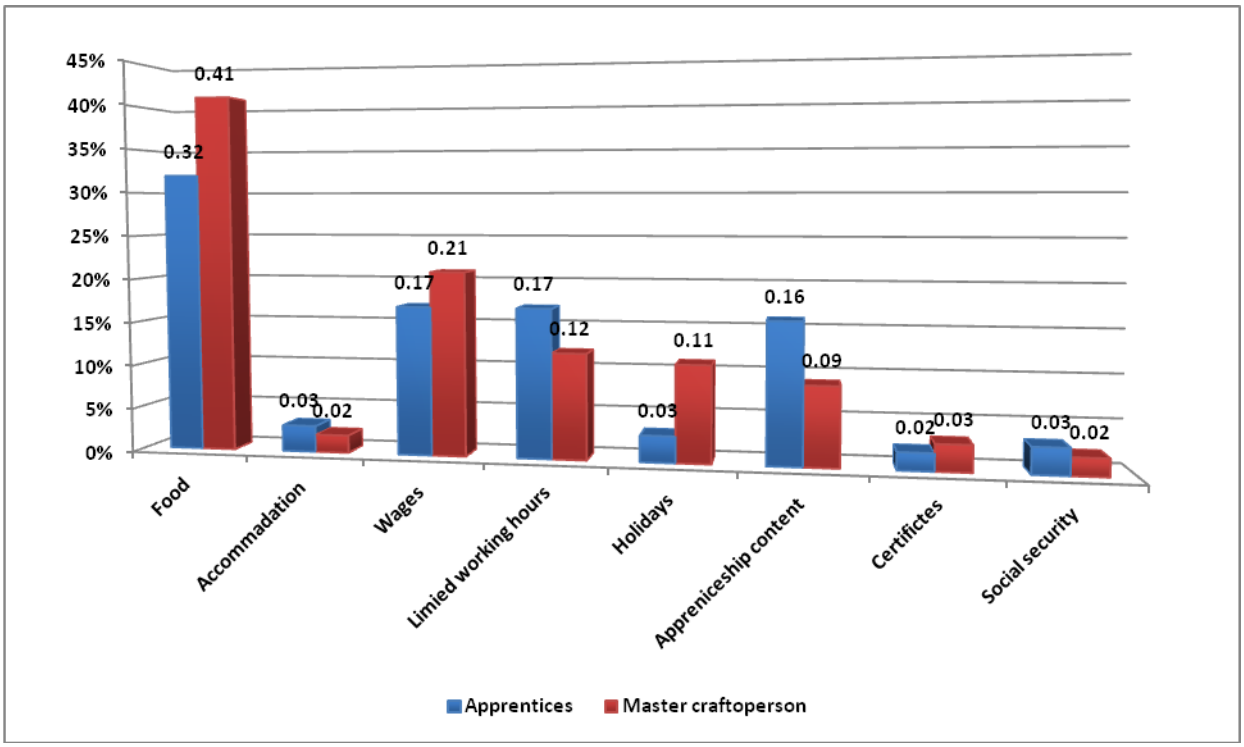
When apprentices were asked who paid for the doctor in case of sickness, 78.5% confirmed that the master crafts person does, 9.6% of them said that their parents or relatives did while 3.7% stated that they paid for themselves. As to master crafts persons, 86.8% of them said that they always met the medical fees when their apprentice fell sick.

When it comes to the training contracts, the majority of agreements governing the informal apprenticeship are verbal agreements (79.9%), only 3.6% of the master crafts person said that they carry out informal apprenticeship training according to written contracts.

What is equally significant is what is provided under such an agreement. Figure 11 provides an indication of the items provided under such an arrangement from the perspective of the master craft person and the apprentice. The figures suggest that most of master craftspersons provide food to their apprentices, but also suggests that apprentices are provided with minimal social security or holidays.

The figure also highlights the differences in perceptions between the master craftsperson and the apprentice about what is provided under such an arrangement. Unsurprisingly, a number of differences occur, most significant of which are in the areas of food and holidays.

Figure 11: Items covered in apprenticeship contracts as reported by master craftspersons and apprentices



When it comes to the issues of training fees for the apprenticeship, both the master crafts persons and the apprentices agreed that this training is provided free of charge (i.e. no training fees have to be paid by the apprentice or his parents). The prevailing practice is that

apprentices receive wages or pocket money for the work they do for the workshop. Moreover, some apprentices said they sometimes received tips from the workshop customers.

The average money received per week from both master crafts persons and customers ranged from 12 to 60 SDG.

A final issue surrounding the conditions of the apprenticeship relates to the length, as well as the duration and possible termination of the contract. When master crafts persons were asked, if they fixed an apprenticeship period, 112 out of 144 (77.8%) said they did. When the master crafts people were asked how long this period was, the responses show that the duration varied widely, ranging from 1 month to 60 months.

Qualitative analysis through interviews with master crafts persons and key informants confirms earlier findings that there is no standard duration across the trades. According to the master crafts persons, the apprenticeship duration mainly depends on the speed at which the apprentices acquire the skills.

The reasons for the great difference in apprenticeship duration and why some workshops are only providing short training needs further investigation. When apprentices were asked how long apprenticeship lasts, the response varied from 3 months to 60 months which confirms the response of the master crafts person (see table 26). 20% did not know how long their training would last.

The apprentices were also asked, how they know when their apprenticeship ends, the majority (79.3%) of the respondents reported that it is the master craftsperson who determines the end of the apprenticeship.

Table 26: Durations of informal apprenticeship in months

Months	Frequency	Percent
3	14	10.4%
6	15	11.1%
12	16	11.9%
24	23	17.0%
36	30	22.2%
48	3	2.2%
60	4	3.0%
Missing	28	20.7%

Content and process of training

The responses from the respondents surveyed revealed that the apprenticeship program training focuses mainly upon the development of practical technical skills. However, the

contents of most informal apprenticeship programs are diversified, covering a wide range of practical technical skills, maintenance of machines, workshop organization and relevant knowledge, etc. However very few master crafts persons give attention to such components as accounting and costing, negotiation with customers and other content components.

Table 27: Types of skills developed under the informal apprenticeship (multiple responses)

Type of skills provided	N	Percent of cases
Technical skills	101	81.5%
Relevant knowledge	34	27.5%
Workshop organization	36	29.0%
Maintenance of machines	52	41.9%
Accounting & Costing	11	8.9%
Purchasing of materials	5	4.0%
Negotiation with Customers	18	14.5%
Marketing and Advertising	10	8.1%
Safety handling of tools & materials	57	46.0%
Literacy/Numeracy	4	23.4%

When apprentices were asked, who imparts the skills to you, 65.5% (n=110) of the total apprentices (n=135) interviewed stated that master crafts persons do, 30.4% (n=51) said that it is the job of the skilled workers, and 4.2% indicated that senior apprentices carry out the skills training and impart the skills as required .

In the qualitative interviews, master crafts persons described different steps they follow in training apprentices. One master crafts person (carpentry) said that at the beginning the apprentice is used as a messenger and then given minor jobs such as straightening of nails and carrying woods sheets from one place to another, preparation of glue and helping in clearing of the workshop. Then, the apprentice will be required to undertake simple technical tasks such as cutting of wood into pieces as required. Gradually the apprentice proceeds to perform more technical and complex tasks like making of joints.

7.4.6 Performance of the Informal Apprenticeship Program

Before any recommendations can be made on how to improve the performance of the apprenticeship program, it is necessary to have some signals on the existing performance of the apprenticeship system over the past two years during which the interviewed master crafts persons have trained 543 trainees. According to qualitative data a significant proportion of the apprentices that completed an apprenticeship have managed to establish their own businesses, others have been appointed as skilled workers in the same workshop where they

have received training, some found salaried employment in large private and public enterprises, and a small portion became unemployed.

In the same period, 319 apprentices left the workshops before completing the informal apprenticeship period, which amounts to a drop-out rate of 37%.

At the heart of a successful apprenticeship program is the quality of training that takes place in the workplace, and this ultimately depends on the skills, knowledge and competency of the master craftsperson. Therefore, before any strategies are developed to improve the capacity of master crafts person, it is also necessary to understand what type training they undertake, if they don't undertake training why, and what skills do they require in order to improve their enterprises performance? Once these questions are answered it is easier to identify what other strategies or mechanism can be utilized to improve the performance of the informal apprenticeship system.

Master crafts persons were asked, if they participated in other skills upgrading or business related training courses. A significant 86.1% (n=124) said they have not participated. The reasons for not participating are presented in table 28.

Table 28: Reasons why master craft persons did not undertake training

Reason	N	Percent
Appropriate course not available	22	13.3%
No time to attend such a course	87	52.7%
No money for attending such a course	49	29.7%
No need for further skills	6	3.6%
Others	1	0.7%
Total	**165**	**100.0%**

When the same master crafts persons were asked whether they wanted to participate in further training, a reasonable number answered yes (64.6%). The majority of master crafts persons (86.1%) have not enrolled in upgrading training before, and the reason for that is that they have no time to attend such courses, additionally they have no money to meet the expenses of the training, however they felt that there is a need for upgrading their skills through training and this is reflected in table (28).

It is worth mentioning that 64.6% (93 out of 144) said that they would have liked to participate in further upgrading training and mentioned that they have no time to attend such courses and/or they have no money for attending such courses despite the expressed needs. Therefore, when designing such courses, planners have to take these factors into consideration, that is to say courses have to be organized in the evening (after working hours) and they should be subsidized in order to be affordable.

Table 29: Skill gaps identified by master crafts person

Type of skills	N	Percent of cases
Technical skills	101	81.5%
Theoretical knowledge	34	27.4%
Workshop organization	36	29.0%
Machines maintenance	52	41.9%
Accounting & Costing	11	8.9%
Purchasing of raw materials	5	4.0%
Negotiation with Customers	18	14.5%
Marketing & Advertising	10	8.1%
Safe handling of tools & materials	57	46.0%
Literacy/Numeracy	4	3.2%
Teaching skills	29	23.4%
Others	3	2.4%
Total	**360**	**290.3%**

Skilled workers were also asked what skills they required in order to perform their jobs more effectively.

Table 30: Skill gaps identified by skilled workers

Type of skills	N	Percent of cases
Technical skills	81	82.7%
Theoretical knowledge	22	22.4%
Workshop organization	22	22.4%
Machines maintenance	47	48.0%
Accounting & Costing	3	3.1%
Purchasing of materials	3	3.1%
Negotiation with Customers	9	9.2%
Marketing & Advertising	3	3.1%
Safe handling of tools & materials	41	41.8%
Literacy/Numeracy	2	2.0%
Teaching skills	18	18.4%
Others	2	2.0%
Total	**253**	**258.2%**

What is interesting about the skills needs for the master crafts person and the skilled worker is that they are very similar in a number of areas. This means that courses designed to close the training gaps of master crafts persons would also be relevant to skilled workers.

When skilled workers were asked if they wanted to participate in further training, a significant 63.3% (69 out of 109) said yes. They did not participate in other upgrading courses either because they did not have time to do so and/or they could not afford paying the

cost of the course. Again when upgrading courses have to be organized for skilled workers both timing and fees have to be considered.

Table 31: indicates reasons for not participating

Reason	N	Percent
Appropriate course not available	11	8.8%
No time to attend such courses	58	46.4%
No money for attending	50	40.0%
No need for further skills	5	4.0%
Others	1	0.8%
Total	**125**	**100.0%**

7.4.7 Improvements to the Informal Apprenticeship System

The master crafts persons were also asked how the apprenticeship system could be improved. The results are presented in table 30 and 38.8% of the workshops surveyed suffered from shortage of equipment and working tools, while 24.3% of respondents said that they would like to undertake continuous training and development. A smaller 18.7% of the master crafts person would like to see their apprentices paying more attention and interest in the learning process and be more patient to acquire the necessary skills. A lower 3.5% of the master crafts persons suggested the improvement of the working environment and 2.1% requested the reduction of taxes and fees. Only 0.7% said that the education level of the apprentices should be improved.

Table 32: Master craft persons views of how the apprenticeship system could be improved

Suggestion	N	Percent
Provision of enough equipment & tools	56	38.8%
Provision of continuous training & development	35	24.3%
Apprentice should be patient and pay attention to learning	27	18.7%
Improving working environment		
Reduction of taxes and fees	5	3.5%
Improving education level of apprentices	3	2.1%
Others	1	0.7%
Total	17	11.9%
	144	**100.0%**

The qualitative interviews also pointed to the importance of occupational health and safety. The research team found that OSH measures at the informal economy are not ensured. That is to say apprentices are most likely exposed to work injury and other risks and occasionally

work injuries occurred. Such a situation calls for improvement measures and that the Ministry of Labour through Its labour inspectorate should undertake all necessary measures to eliminate hazards at work places.

More specific details of the areas for supporting improvements within the informal apprenticeship system are outlined in Box 5. This provides a comprehensive overview of the issues that need to be addressed and by whom.

7.4.8 Major Recommendations for Improving the Informal Apprenticeship System

Box 5: Major recommendations for improving the informal apprenticeship system

- Informal apprenticeship is currently performing with no support from the government. However, government should support efforts aimed at improving informal apprenticeship, without disturbing the basic pillars of the informal system. Efforts should be directed at making the informal apprenticeship more dynamic to respond to current and future changes and to support the creation of dynamic local economies that benefit from innovation and entrepreneurship in apprenticeship trades.
- It is therefore imperative that the Ministry of Labour and other government agencies concerned should ensure application of fundamental principles and rights at work in all sectors including self-employment and other informal activities.
- The role of informal apprenticeship in skill building among poor young people should be recognized by the government and community. Government should resolve the problems faced by the informal economy such as finance and adequate space for work place and to facilitate the provision of business development services and contribute to the improvement of working conditions.
- Government should allocate annually some public funds for improving informal apprenticeship. Securing adequate sources of funding is a prerequisite for upgrading informal apprenticeship.
- To provide effective and relevant informal apprenticeship training. Some incentives such as tax reduction should be given to workshops owners and the working hours of apprentices should be reduced to a maximum of 8 hours a day.
- In order to ensure quality graduates from informal apprenticeship, the different component of the system should be improved including curricula, training materials, equipment's in addition to enhancing the capabilities of trainers on continuous basis.
- Informal apprenticeship should forge links with public and private enterprises in the organized sector. The training offered by the traditional informal training could be supplemented by Off. Job apprenticeship training in these enterprises or in well-established training centres located in the areas where apprentices work.
- While informal apprenticeship follows informal rules such as customs and cultural and social norms that are enforced by informal mechanisms, Safety and health measures should be ensured in the work place and the Government through the labour inspectorate of the Ministry of Labour should take all necessary measures to eliminate hazardous work and child labour in small and micro-enterprises where informal apprenticeship takes place.
- Informal apprenticeship in Sudan is traditional skills oriented and lacks access to new skills or technology. To address this shortcoming, links with larger enterprises and formal training institutions should be established and cooperation among businesses

be fostered. Provision of skills upgrading courses for master crafts persons and apprentices must be ensured.

- Social networks, trade unions and business associations should be involved in improving informal apprenticeship. Sudan has long standing and deep rooted traditions of trade unions social work and as such trade unions and business associations can be instrumental for improving the business environment for small enterprises, they can become involved in quality assurance of training, standard setting, recognition of skills and in enforcing training contracts. The Sudanese chamber of small scale industries can take the lead role in this respect.
- Informal apprenticeship in the micro-enterprises surveyed demonstrates almost complete occupational segregation along gender lines. Access of girls to informal apprenticeship which had been denied for almost all the trades covered in this research should be encouraged in order to break the gender divide. Equally important is breaking the existing gender barriers to increase the participation of young women in informal apprenticeship. This can be achieved by encouraging youth to apply for apprenticeships commonly associated with the other sex and by raising awareness among master crafts persons to change attitudes and break stereotype gender roles. The Sudanese chamber of small scale industries, trade unions and civil society organizations should be involved in such awareness raising campaigns.
- Apprenticeship is sometimes described as a system which uses young people as cheap labour. In some of the establishments surveyed, instances of long working hours, disputes and low pay were reported; hence the need arises for a conflict resolution mechanism. In particular practicable rules and standards are needed for assuring the quality of training provided by the master crafts person and for enforcing the terms of apprenticeship contract.
- For formal recognition of informal skills, relevant vocational training authorities should make it easier for the informal apprenticeship graduates to participate in formal trade testing and certification system. The scope of recognition could be expanded by introducing credentials by business associations in areas where no formal vocational training structures exist. The policy should ultimately aim to promote inclusion of informal apprenticeship in national training system and to institutionalize recognition of skills acquired in informal apprenticeship.
- For master crafts persons and skilled workers to acquire new skills for adopting new technologies, they should undergo skill upgrading courses preferably in formal vocational training facilities. They should also undertake business skills training and pedagogical training.
- Training of apprentices in the informal apprenticeship could be complemented with formal vocational training especially in relevant trade calculation, technical drawing and technology.
- The ILO commitment to upgrade apprenticeship systems in the informal economy is rooted in the human resources development recommendation,2004 (No.195).Technical assistance therefore by the ILO is required to strengthen micro and small enterprises involved in informal apprenticeship in Sudan and build the capacity of master crafts persons and the trainers who impart skills to apprentices. The ILO could also assist in creating the environment conducive to improving equal access to apprenticeship for young women and men, develop assessment and certification schemes for recognition of skills, enhance social protection for apprentices and master crafts persons and strengthen social dialogue in the design and implementation of policies
- Informal apprenticeship should not be viewed as exploitation of young people so long

as training and skills are imparted in exchange of labour provided. It should be perceived as the training system of the informal economy that stems from the family and traditions of social networks and that it has potentials to develop. The distinction between formal and informal does not mean effective and ineffective. Hence the importance of building on the strengths of informal apprenticeship and eliminating their short comings.

- The challenge is to stimulate efforts and encourage initiatives to realize more of their potentials to combat child labour and youth unemployment, to boost employability, income opportunities and decent work for many young people in Sudan.

8. Concluding Comments and Moving Forward

8.1 General Conclusions

There is no doubt that Sudan faces significant challenges, a significant proportion of which centre around how to improve the earning potential of the country's growing population, support economic diversification and help the government to achieve its visions of a more stable and prosperous nation. The share of formal TVET in the country's overall education and training has been shrinking, which is a trend that needs to be reversed. Any sustainable industrial development requires a sound and supportive skills development system effective in providing relevant and quality skills for economic sectors that are thriving or have potential to develop.

However, this raises another important question of how to improve access to skills and raise human capital levels, particularly for women and those who are marginalised. This is a complex process and requires resources, as well as long term political commitment. Doing nothing is not an option and will only make the current situation worse. The starting point for moving forward is to develop a broad national framework for skills development, encompassing TVET in the formal sector, the informal apprenticeship system and other systems involved in human resource development. A number of the documents have already emphasized that the government lacks resources and other activities have a more important priority than skills development. In part this may be true, but over the short to medium term it will be necessary to have a framework in place to support this process. Moreover, given that aid is flowing into Sudan it will be important that the government and stakeholders become more proactive and identify what is needed in this sector, as opposed to having it identified for them.

The process of developing a new skills strategy should begin with a vision of where the country's human resource development system is going and what the country's stakeholders would like to achieve over the medium to longer term. Once such a vision has been agreed upon it is necessary to determine the priorities plus a number of guiding principles.

8.2 Guiding Principles for Reform

- The reform process must be owned by government, social partners and other stakeholders, ensuring that there is full commitment to future implementation.

- There is a need to ensure that any recommendations build upon existing frameworks, including how existing structures can be made to work more effectively and efficiently. This may be easier said than done, but in the context of TVET and skills development in Sudan there appears to be many opportunities for different government structures and stakeholders to cooperate and work together.

- When approaching reform, it is an equally important issue is to ensure that a cohesive and coherent approach is taken to education and training, covering the formal TVET

sector and the informal apprenticeship system. Currently, the linkages between the different parts of the formal and informal systems are not good. This must be reversed, especially in the area of TVET where there is a need for much stronger links between the informal apprenticeship system and existing VTCs.

- Social partners must play a role in driving this process and there is a need to link provision of skills to identified priorities. There must be a close synergy between skills that are delivered and the defined labour market needs, as opposed to chasing markets which are nearly always impossible to catch.

- It will be important to identify cross cutting issues that are very important in the context of Sudan. One of these was raised in this study centred on the need to improve gender parity, particularly within the informal apprenticeship system.

- A final important issue relates to the defined functions and reporting lines of the different institutions within the skills system, particularly those at the federal and state level.

Obviously, these principles would need to be discussed with government, social partners and other stakeholders. Once the principles have been confirmed it will be possible to determine the priority areas requiring support. In adopting such an approach it will be important to reach a conclusion on what is achievable over the short-term and what is possible over the medium to longer term. There is no point identifying changes that are impossible to implement or those that are not sustainable over the longer term. A consensus must also be reached on these priority areas for support within the system. When this has been achieved, it is then possible to develop an indicative funding plan, including what role donors should play in this process. This cannot be achieved overnight, but it is important to start planning for the future and not just leave events to chance.

9. References

African Economic Outlook, Sudan, 2012 found at http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Sudan%20Full%20PDF%20Country%20Note.pdf

El-Mahadi, A., Informal Apprenticeship in the Small enterprise: Alternative Approach Cairo – Egypt 2009.

Al Radi, M. 2013. Legislations and policies, Contribution to Workshop on Review and Development of TVET performance, Ministry of Human Resources Development and Labour, July 2013.

Aggarwal, A., C. Hofmann, A. Phiri, A Study on Informal Apprenticeship in Malawi – Employment Sector – Employment Report No. 9 – ILO 2010.

Cambridge Policy Consultants – Evaluation of Modern Apprenticeships and Skill seekers, Final Report – 2006

ECTLM, JICA Study on Reviewing Trends and Prospects of Sudanese Economy & Surveying Training Needs of Companies.

Ertur, O., W. House, Population and human resource development in the Sudan, 1994.

Government of National Unity, Government of Southern Sudan, Sudan Household Health Survey (SHHS) 2006 found at http://www.childinfo.org/files/MICS3_Sudan_2006_FinalReport_En.pdf

ILO, Report V, Skills for improved productivity, employment growth and development, International Labour Conference, Generva, 2008.

ILO, Global Employment Trends, 2012

Khalid, I. 2013. *TVET capacity assessment In Darfur, South Kordofan, West Kordofan and Blue Nile States*, Report produced in the framework of a UNDP/ILO programme to support the development of a National Employment Framework, Khartoum, 2013.

National Population Council General Secretariat, Ministry of Welfare & Social Security, The Republic of Sudan (NPC/GS) "Sudan Millennium Development Goals Progress Report 2010, Ministry of Welfare & Social Security National Population Council General Secretariat, found at http://www.sd.undp.org/doc/Sudan%20MDGs%20Report%202010.pdf

Nuebler I., C. Hofmann, C. Greiner, Understanding Informal Apprenticeship – Findings from empirical research in Tanzania Employment Sector, Employment Working Paper No. 32 ILO, 2009.

Sudan Millennium Development Goals Progress Report 2010

UN Country Team Sudan. Country Analysis 2012, found at http://www.undg.org/docs/12642/201202_SUD-Country-Analysis.pdf

UNDP. 2011. Human Development Report 2011.

Walter, R., E. Filipiak, 2008. Towards a Renewal of Apprenticeship in West Africa. Enhancing the Professional Integration of Young People.

World Bank. 2012. Sudan. Country Economic Brief, Issue No. 2012-02, December 2012

Annex 1: List of Trades Offered in TVET Providers

1. Maintenance Fitting;
2. Machining;
3. Automotive;
4. Electrical
5. Welding;
6. Carpentry;
7. Building;
8. Plumbing;
9. Air conditioning;
10. Technical Drawing;
11. Radio;
12. Tailoring;
13. Food processing;
14. Leather work;
15. Printing,
16. Computing
17. Earth moving machinery