

A LABOUR MARKET SURVEY ON ERITREA:

UPSKILLING AND PROFESSIONAL
TRAINING IN ICT, HOSPITALITY
AND COLD CHAIN SECTORS

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HOSPITALITY AND COLD CHAIN SECTORS

The research was realized by Fabio De Blasis, Anna Caputo, Worku Zeray Hailu in collaboration with I.R.E.S. Emilia Romagna (Istituto Ricerche Economiche e Sociali - I.R.E.S. Emilia Romagna).

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A labour market survey on Eritrea:
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hospitality and cold chain sectors

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Executive Summary

This research is primarily aimed to conduct a proper needs analysis about vocational training in Eritrea, specifically in the major economic cities of Asmara and Massawa. In order to provide a comprehensive roadmap relevant to prepare training courses for the development of professional skills, the research endeavoured to grasp the demand and supply sides of the labour market. This ultimately is aimed to augment the career of formal workers, informal workers and educated and uneducated job seekers in the labour market.

The needs analysis targeted three selected economic activities for vocational training programme namely: ICT, Tourism, Refrigeration/Air conditioning. The research identified five target groups interested by professional training: on the demand side (i) companies; on the supply side (ii) formal workers; (iii) informal workers; (iv) job seekers; (v) students for the assessment. Moreover, some trainers, professionals, experts working in TVET centres have also been interviewed.

This research has utilized secondary data and researches, however, lack of sufficient data, surveys and literature on the subject matter was evident. These sources, although constrained in the demand side, i.e. the status and development of the economic sectors, companies, and economic growth, able to serve as point of departure in accomplishing the primary research.

The secondary research was solely done on the basis of Eritrea labour market survey conducted by the government of Eritrea. The Eritrean Populations and Health Survey (2010) and subsequent studies illustrate that Eritrea's demographic structure is consistent to the structure of developing countries. 53.3% of the population is below 19 years of age, 51.6% of the overall population are women and migration to urban areas is high (4.8% per year).

According the Labour Force Survey the working age population represented 60% over the total; labour force represented 77.5% of the WAP. The analysis showed limitation of the Eritrean labour market to assimilate female workers. Likewise, there is higher involvement of males in the labour market than females – 82.9% compared to 72.9%. The fact that unemployment rate stood at 3.5% explain that Eritrea is not exposed to lack of job opportunities, and should look at the reward side of the remuneration. Another concerning situation here is the share of the informal sector in the economy (31%) and lack of vocational/professional skills of the involved persons.

The education system in Eritrea endeavours to expand quality education in the country. The task of creating «decent work» for all categories of the society, with special attention to the vulnerable sections, is greatly associated with the proliferation of professional training programmes. Hence, establishing well-tailored professional training programs could foster employment and encourage the labour market.

The primary research, which in terms of timing coincided with the outbreak of COVID-19 and the subsequent lockdown measure taken to curb it, was done in the face of challenges and

consequently experienced limitations. Generally, the survey conducted in the ground shows the target sectors of the AID project – Tourism, Refrigeration and ICT – are evolving to the promising direction. The three sectors are almost new entrant economic sectors in terms of skilled work force. As the country's educational and vocational skills development is limited to the formal structures of schooling system, creating skills development opportunity for adults and youths who are out of the school is crucial.

In Eritrea, tourism sector is still at a nascent stage of development. Considering this potential and expected changes in the region, the research demonstrated extreme need of training for the existing and future employees in the tourism/hospitality sector. The fact that 84% of the existing employees in the sector are women, the impact of professional training would have visible improvement in the livelihood of their family and the society. Moreover, the provision of intermediate/advanced training might help to transform the large number of people (particularly women and youth) working in the informal to the formal sector.

Refrigeration is kind of new area in Eritrea and most of the people employed in the sector do not have proper formal training. As the economy and living conditions of the country improve, the need for skilled workers in domestic, commercial and industrial refrigeration/air conditioning will be high. The only professional training provider in the field of refrigeration/air conditioning in the country is the NCEW training centre, located in Massawa. If this is to satisfy the market with the required standards of trainees, the need for additional advanced industrial-related trainings is high.

ICT sector has been slowly developing over the last years. Basic computer applications, secretarial functions and internet communication applications are spread in function; and some companies have introduced ICT technologies in their operations. Nonetheless, these enterprises reported difficulties with the maintenance and updating of computers, servers and software used in production processes and production systems control. This and the growing of ICT employees in the informal sector require basic and intermediate ICT training in Eritrea. In a nut shell, this research recommends the establishment of additional vocational training opportunities in Eritrea.

Introduction

This survey was set to identify the labour market and vocational skills training needs in Asmara and Massawa, where the National Confederation of Eritrean Workers (NCEW) is taking initiatives to provide new skills and upgrade the skills of workers and the jobless.

The research targeted the formally employed, informal workers, students, employers, policy makers and education/training providers in Asmara and Massawa. Although the study was particularly interested in exploring the three key sectoral areas, namely, ICT, Hospitality and Refrigeration, it was also generally keen to learn about the labour market in the country.

In the undertaking of this research, attempts were made to get secondary data and information on the labour force and employment context of the country. Studies conducted earlier, including the 1) Eritrea Population and Health Survey (EPHS2010), carried out by the National Statistics Office or the Ministry of National Development, 2) Eritrea Labour Force Survey (2015/2016) by the Ministry of Labour and Social Welfare, conducted in collaboration with UNDP and FAO and 3) Labour Market Research in Massawa, undertaken by the National Confederation of Eritrean Workers (NCEW) in collaboration with ISCOS in 2003. NCEW reports on the Massawa Workers' Vocational Training Centre (MWVTC) were also consulted, in order to understand the current vocational skill building and upgrading programmes available for workers and other jobless. It was not possible to locate other recent secondary resource materials relevant to the study.

The primary research involved preparation of questionnaires targeting various social groups in Asmara and Massawa. Data collectors both in Asmara and Massawa were recruited and orientation on how to administer the questionnaires given to them. The cases in each target social category were randomly selected. The questionnaires were filled and delivered to the NCEW project coordinator who forwarded them to the local researcher.

The data and information collected through the questionnaires were manually tallied, tabulated and computed to get a clear picture on the current conditions. The survey result has been analysed and attempts made to reach at conclusions.

The study revealed that the country's educational and vocational skills development is limited to the formal structures of schools starting from preschool to colleges. There is little opportunity that would enable adults and youths who are out of school to learn new skills or upgrade their competencies. The existing private entities involved in one or another type of vocational training are only available for those who can afford to pay.

The NCEW established a vocational training centre in Massawa with the initial aim of advancing the vocational skills of workers employed in various enterprises. The training centre is in its third year of commencement providing training in six trades. So far the training has been limited to workers already working for different enterprises in and around Massawa. The lessons learnt

from the three years' experience has convinced the NCEW that the opportunity should not be limited to the employed only, but that it should be extended to include the jobless and other vulnerable groups and thus enable them to find jobs.

Apparently, the NCEW facility is too small to make significant impact on the country's needs for technically versed youths and adults to meet the challenges in the economic growth and development. Although there is no available statistics, there has been recent outflow of large numbers of youths attracted by the seemingly better opportunities in the developed countries. There is a need to reverse this trend by providing the youths with employable skills and better living conditions. The research amply attests that the bulk of the work in Eritrea is unskilled engaged in basic activities.

The research and needs analysis

From the theoretical perspective, this research adopts the realistic theory¹, which considers intervention outcomes as specifically tailored to local needs, characteristics, strengths, lacks and limits, not only as objectives set up ex ante and based on logical framework supporting implementation. According to realistic approach, the specific territorial context and the pre-existing tools are the key factor to successful intervention.

Commonality and social betterment are the key values underpinnings intervention set by considering realistic approach² and could be considered strategic to the implementation of project «Dialogue, Training, Bargaining: Work as an instrument of peace».

Realist evaluation asks not, «What works?» or, «Does this program work?» but asks instead, «What works for whom in what circumstances and in what respects, and how?»³

Since the relevant convergence between macro and micro level of analysis, realistic approach encourages mixed methods, i.e. qualitative and quantitative methods in order to better understanding the complexity.

Moreover, the present analysis detects the relation Context-Mechanism-Output⁴ to set up the most appropriate tool to support the intervention. The context plays a determinant role in the definition of goal, strategy, and tools, mapping the pre-existing conditions in which the intervention will be embedded.

Concerning the specific Eritrean situation, analysis has been conducted at macro level collecting data and information at national (governmental) and international level (international organisation dataset by World Bank, UNDP, etc.). At micro level information has been collected through

¹ Pawson & Tilley, *Realistic Evaluation*, London, 1997. The realistic approach theory is largely validated in the evaluation of public policy, mostly for mid-term evaluation. In this specific project, the research team privileged the realistic approach since the analysis has to be considered as an ex ante evaluation of the context and the specific needs of target group in limited areas, i.e. Asmara and Massawa urban areas, mainly referring to the lack of up-to-date data and information.

² Pawson, *Evidence-Based Policy. A Realist Perspective*, London 2006.

³ Pawson & Tilley, *Realist Evaluation*, paper funded by the British Cabinet Office, 2004.

⁴ Pawson & Tilley, *Realistic Evaluation* London, 1997, p. 85.

qualitative tools (structured and semi-structured interviews, focus groups, questionnaires⁵). The direct involvement of stakeholders and beneficiaries can limit risks, distortion and reduce failures. Context considers individuals, institutional settings, social relations. Mechanism is the complex of activities and tools set up to implement the intervention considering the pre-existing context, on-going change, social elements. Output is what the intervention produces considering specific characteristics of both context and mechanism.

In the case of Eritrea, since the lack of up-to-date data and information about the context, the desk and infield research focused on special needs of final beneficiaries and stakeholders in order to tailor training programs specifically aimed to respond to local needs and development strategy. Realistic approach combined with mixed-method tools allowed a deeper knowledge of the contexts to set up the better mechanism in order to reach output and outcomes.

The crucial issue in intervention supporting local development is to increase coincidence between programming strategy and street-level objective, i.e. institutional development and specific needs and expectations of the beneficiaries, stakeholders, social actors, institutions.

The research was carried out in accordance with Expected Result 1.1, Activity 1.1. and 1.2 of the project AID 11604. The overall objective of the research was to provide detailed information about labour market dynamics and needs in terms of professional training, in order to define training curricula for the two NCEW training centres in Asmara and Massawa.

Expected result 1.1	Elaboration of baseline carrying out studies and analyses on the labour market and employment sectors of the local context
Activity 1.1	Elaboration of studies and analyses on the local labour market context (employment, sectors, training, sectoral demand/request, etc.)
Activity 1.2	Formulation of training programmes with particular attention to the most vulnerable groups such as young people, women and disabled

The research and needs analysis were carried out addressing three key economic/vocational sectors as identified in AID 11604, which are considered fundamental for the future development of the country:

1. Tourism/Hospitality;
2. ICT/Computer Science;
3. Refrigeration/Air-conditioning.

The methodology included desk/secondary research and fieldwork in the cities of Asmara and Massawa. The main goal was to set up Eritrean framework and define labour market framework. The analysis was based on the comparison between sources and the validation of data through such comparison. Desk/secondary research was based on analysis of data, information and documents issued by Eritrea Government and official sources and international organizations' report.

In the fieldwork, a mixed qualitative/quantitative approach was adopted, combining study-visits, open-ended questionnaires, semi-structured interviews, focus groups with privileged actors, local

⁵ Further information is provided below.

stakeholders and final beneficiaries. The qualitative method and tools have the advantage to go deep inside the issues and to intercept both needs (bottom-up perspective) and interests (top-down perspective). A team of three researchers (two Italians and one Eritrean) and four data collectors (all of them Eritreans) contributed to the research.

The infield activities were mainly conducted in English and national languages⁶.

The stakeholders included in the fieldwork consisted of companies operating in the three sectors, formal and informal workers, jobseekers, students, trainers, and training centres.

Table 1 - Fieldwork analysis, tools and stakeholders involved

<i>Target group</i>	<i>Tools used</i>	<i>Number of interviews carried out</i>	<i>Number of questionnaires administered</i>
Companies	Semi-structured interviews; Questionnaires; Study Visit	12 interviews	34 (12 in Asmara; 22 in Massawa)
Formal Workers	Questionnaires; Focus Group	2 focus groups (14 participants)	63 (27 in Asmara; 36 in Massawa)
Informal Workers	Sem-structured interviews; Questionnaires	4 interviews	25 (Asmara)
Job seekers	Questionnaires		57 (48 in Asmara; 9 in Massawa)
Students	Questionnaires		100 (68 in Asmara; 32 in Massawa)
Trainers, experts, directors working in TVET organisations/centres/providers	Semi-structured interviews	4 interviews	

Companies included in the sample consisted of public or private enterprises linked to one or more of the three sectors: hotels, restaurants, tour operator, factories, computer centres, shops, public authorities supplying services to local residents or companies. Workers included in the sample consisted of people employed in one of the targeted sectors or related economic activities, while job seekers consisted of people registered at the labour office. Students included in the sample were attending secondary schools or colleges.

In depth semi-structured interviews were carried out with company's managers (12), workers (18, including 2 focus groups) and directors/trainers of training centres (4); questionnaires were administered to companies (34), formal workers (63), informal workers (25), jobseekers (57) and students (100). With regards to the geographical distribution of data collection, 12 companies were involved in the city of Asmara and 22 in the city of Massawa. In the city of Asmara a total of 52 questionnaires were administered to formal and informal workers; a total of 48 questionnaires were administered to job-seekers; a total of 68 questionnaires were administered to students. In the city of Massawa, a total of 36 questionnaires were administered to formal workers; a total of 9 questionnaires were administered to job-seekers; a total of 32 questionnaires were administered to students.

⁶ The research group participated by local researcher and data collectors that, if necessary, administered questionnaires, and conducted interviews in official Eritrea languages (mainly Tygrinya) to allow the involvement of persons with different educational levels.

Limitations

Despite the adequate preparations made to undertake the primary data collection in accordance with the designed operational plan, the actual implementation encountered various limitations:

- The identification of the various target groups, especially the informal workers and job seekers was problematic in the Eritrean context. Hence, it was not possible to reach the intended target number of persons to be interviewed (100 jobseekers).
- Policy makers, representative of Civil Societies Organizations and training institutions were also planned to be interviewed towards the end of the survey. Unfortunately, the COVID-19 pandemic hampered the activity.
- The research also greatly suffered from the lack or non-availability of relevant data and information which could support the required needs analysis for training needs in general, and specifically the three identified sectors.

PART I

ABOUT ERITREA

1.

Country outlook

1.1 Geography¹

Eritrea is situated in the Horn of Africa and lies north of the equator between latitudes 12°22' N and 18°02'N, and longitudes 36°26'21" E and 43°13' E. It has an area of 122.000 square kilo meters. To the east, the country is bordered by the Red Sea, extending 1.212 kilo meters from Ras Kasar in the north to Dar Elwain in the southeast. Djibouti borders Eritrea in the southeast, Ethiopia in the south, and the Sudan in the north and west.

Eritrea is a land of contrasts with land rising from below sea level to 3.000 meters above sea level. There are three major physiographic zones: the Western Lowlands, the Central and Northern Highlands, and the Eastern Lowlands (also referred to as the Coastal Plains). Temperature varies with altitude: the mean annual temperature ranges from 16°-18°C in the Highlands to 28°C in the Lowlands to more than 30°C in the Coastal Plains (Ministry of Land, Water and Environment, 1997). Most of the Western Lowlands and Coastal Plains are associated with hot and dry climatic conditions, while the Highlands are relatively cool. The presence of flat land, relatively fertile soil, and a milder climate makes the Central Highlands a centre of rain-fed agricultural activity. Several of the major urban centres of Eritrea, including the capital city, Asmara, are located in the Central Highlands zone. The Western Lowlands have huge potential for cultivation and agro-pastoralism. The Coastal Plains are the location of the two major port towns of Eritrea, Massawa, and Assab. In general, the Central Highlands are the most densely populated part of the country, while the Lowlands are sparsely populated.

Rainfall in Eritrea ranges from less than 200 mm per annum in the Eastern Lowlands to about 1.000mm per annum in a small pocket of the Escarpment; the annual rainfall in the Highlands ranges from 450mm to 600 mm. The southern part of the Western Lowlands receives 600-800 mm per annum. The Eastern Lowland is also known for its fertile land, crossing rivers from the highland and potential area for marine resources development, industrialization and trade linking the hinterland (including neighbouring countries) and the outside world. There are two major periods of precipitation in Eritrea. One, from June to September, covers both the Western Lowlands and the Highlands. The second comes between October and March and covers the Eastern Lowlands.

¹ Data about Geography and History has been taken from the *Eritrea Population and Health Survey* (EPHS2010), report, published by the National Statistics Office of the State of Eritrea.

The administrative governance is structured in different levels², with Eritrea divided in six geographical regions (Zoba): Maekel (central region including Asmara), Anseba, Gash-Barka, Debub, SemienawiKeyihBahri (Northern sea region including the city of Massawa), DebubawiKeyihBahri. Each Zoba is divided in nus-zobas (sub-regions). Nus-zobas are divided in Kebabi (the lowest administrative unit), which covers urban districts, villages or rural areas. The Kebabi are officially divided into several Adi (villages)³.

1.2 Population

Eritrea is a mosaic country with nine different language groups and professing two major religions, namely, Christianity and Islam.

Data about sizes of the ethnic groups are different according to sources⁴. About half of the population belongs to the Tigrinya group, professing predominantly Christianity and living in the highlands and in the cities of the lowland. The second largest group is Tigre; they are mainly Muslims and live along the Red Sea coast and in the hills and lowlands of the West. The other seven ethnic groups are less large. The Afar live along the Red Sea coast and profess Islamic religion. The Saho lives in the hills and lowlands to the south-east of Asmara and South of Massawa. The Bidawyet are Muslims and they mainly live as nomads along the border with Sudan. The Bilen live in villages to the north of Keren and are mostly sedentary farmers. Bilen are half Christian, half Muslim.

The Kunama are mainly Muslims but some groups profess Christian or their own religion; they live in South-Western Eritrea. The Nara are mostly Muslims and live in South-Western Eritrea. The Rashaida are a nomadic Arabic tribe, professing Islamic religion and mainly living in the lowlands along the border between Eritrea and Sudan.

Eritreans speak languages of three main families: Semitic (Tigrinya, Tigre and Arabic), Cushitic (Saho, Bilen, Afar and Hedareb) and Nilo-Saharan (Kunama and Nara)⁵. There is a close correspondence between the ethnic group and the spoken languages. Tigrinya language is far along the most spoken in the state. All the nine languages have equal official status⁶.

The distribution of the population is not homogeneous in the country, most people living in the Highlands.

According to updated UN Population Division Report, which corresponds to national data, Eritrea has a population of 3.6 million people⁷.

According to Labour force Survey conducted in 2015-2016, 51.6% were females and 40%

² EASO, 2015 «*Eritrean Country Focus*», p. 17.

³ Kebabi does not have their own administrative structures.

⁴ World Bank <https://data.worldbank.org/country/eritrea>; Ethnic groups information refer to EASO 2015.

⁵ EASO, 2015 p. 14.

⁶ Besides of the local languages, Italian is spoken by what remains of the colonising community; English is often used as working and business language.

⁷ «*World Population Prospects 2019*». UN DESA. 2019. Archived from the original on 2021-02-27. Retrieved 2021-02-28.

children below 14 years of age. At the Zobas level, the most populated administrative district is Debub, with almost 28% of the whole population, followed by Gash Barka (23.7%), Maekel (20.3%), Anseba (15%), Semienawi Keyih Bahri (10%), Debubawi Keyih Bahri (2%)⁸.

Considering geographical distribution, 69.3% of the population is rural and the remaining 30.7% urban.

Figure 1 - Eritrea population per sex and age

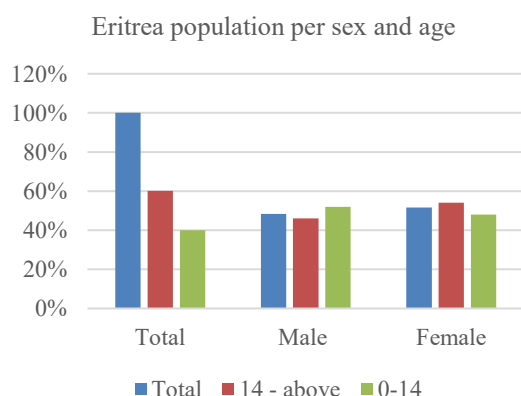
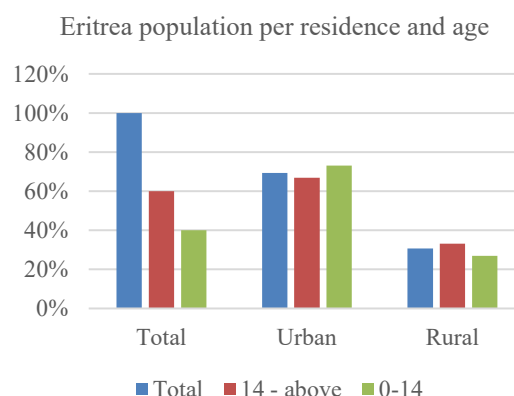


Figure 2 - Eritrea population per residence and age



Source: Authors' elaboration based on *Eritrea Labour Force Survey 2015-2016*

1.3 Economic outlook

Eritrea has a strategic position on the Red Sea and is endowed with abundant natural resources including arable land (estimated at 26% of the whole surface), 4% of which is under irrigation. The potential to collect surface water through building dams is huge, and on top of that there are adequate supplies of ground water, particularly in the Western Lowlands and in some parts of the Coastal Plains that can be used for both household and industrial purposes. Above agricultural resources, Eritrea is provided with marine resources related to fishing and coastal natural resources appealing for tourism; mineral resources, including copper, gold, iron, nickel, silica, sulphur, potash and good quality marble.

For long time Eritrea suffered from external invasions and colonisers' appetite. The economic development of the country has been affected by the interference of foreign states interested in the exploitation of local resources. The economic potential of the coastal areas first attracted otoman Turks, that controlled the Northern coast from the middle of the sixteenth century to the second half of the nineteenth century. With the opening of the Suez Canal in 1869, the European colonizers became interested in the Red Sea and Horn of Africa. Italy, which set foot in the port

⁸ The research compared data, where available of the countries in the Horn of Africa (Ethiopia and Somalia with the exclusion of Djibouti for its peculiarity), neighbouring countries Sudan and South Sudan and East African countries, i.e. Uganda and Kenya.

of Assab in 1869, in 1890 declared Eritrea its first African colony. Following the defeat of Italy in the World War II, in 1941 Great Britain took over the administration of Eritrea. In 1952, after 10 years of British colonial rule, Eritrea was federated with Ethiopia by the United Nations against the will of the Eritrean people. A decade later, Ethiopia abrogated the federal arrangement of the United Nations and annexed Eritrea as one of its provinces. This led to the Eritrean struggle for self-determination, which resulted in a protracted liberation war lasting from 1961 to 1991. Two years after the end of the war, a United Nations supervised referendum was held to determine Eritrea's political status; 99.8 percent of the voters chose independence in that referendum. Independence was formally declared in May 1993. Thereafter, Eritrea became a member of the United Nations and many other international and regional organizations. Such a complex history, with a recent experience of colonisation and external influence of foreign countries had a huge impact on Eritrea's economic system and its development perspective. The war for liberation destroyed most of Eritrea's infrastructure and devastated its economy and environment. This compelled Eritrea to entirely reconstruct its social, economic, and physical infrastructure. In an effort to place the economy on a path of sustainable development, the government targeted to complete the transitional phase of rehabilitation and reconstruction in the first decade of independence. Government development efforts concentrated on twofold aims: (i) rebuilding and rehabilitating economic and social infrastructures damaged or destroyed by war; (ii) implementing economic and social development strategies and policies. Among these it is worth to be mentioned the Macro Policy of 1994, which mapped out short, medium, and long-term reconstruction and development programs.

Unfortunately, in May 1998, under the pretext of a border dispute, Ethiopia declared war against Eritrea and occupied some parts of Gash-Barka, Debub and Debubawi Keyih Bahri. The impact of the war on Eritrea economy was evident in the destruction of much civil infrastructures, painfully built during the previous seven years of peace. The state of war known as no-war no-peace situation lasted until July 2018, when the Peace and Friendship agreement was signed between the two countries in Asmara.

According to HDI 2021 Eritrea's GDP per capita is 2,700 US dollars. Although manufacturing is gradually growing, agriculture and pastoralism still dominate the main sources of livelihood. Similarly although encouraging endeavours to expand irrigation throughout the country are going well, rain fed agriculture is still dominant. Eritrea's economic outlook is positive, with real GDP growth projected to increase to 3.9% in 2020 and 4.0% in 2021. Per capita income is expected to grow from 1.8% in 2019 to 2.6% in 2021.

2. Labour force, education and target sectors

2.1 *Labour force*¹

Labour market regulation and administration

In 1991, the independence of Eritrea marked a new deal in policy making also in the labour market; the government issued a labour law guaranteeing the freedom of association and the rights to organize and collective bargain extended both to workers and employers. A department of labour was set up and organised in branches, each of them competent for specific policy issues: (i) employment, (ii) occupation safety and health, (iii) labour relations and labour dispute settlement procedures².

In 2001, Government issued Labour Proclamation strengthening negotiations between social partners³, creating board and institutions to support labour policy and spreading participation. Specifically, the proclamation created Tripartite Labour Relations Board, Labour Courts and Labour Advisory Board to foster participation of workers and employers in the definition and implementation of labour policies. 2001 Labour Proclamation also fixed the minimum working age at 18 years, however 14-year-old children may sign contract agreement to do light work, setting up the limit of 35 hour per week. Children from 14 years of age may also be enrolled in training activities mentored by experienced and trusted teachers and counsellors⁴.

In 2000 Eritrea ratified seven ILO international conventions (Forced Labour Convention; Freedom of Association and Protection of the Right to Organise Convention; Right to Organise and Collective Bargaining Convention; Equal Remuneration Convention; Abolition of Forced Labour Convention; Discrimination (Employment and Occupation); Minimum Age Convention). In 2019 Eritrea ratified ILO convention Worst Forms of Child Labour Convention⁵, with a concrete commitment to effectively elevate the minimum working age to 18 years.

¹ The analysis of Eritrean population and labour market is carried on the basis of the *Eritrea Labour Force Survey 2015-2016*, 2017, the most reliable and up-to-date source providing detailed information about characteristics, residence, education, age, sex.

² *Eritrea Labour Force Survey 2015-2016*, 2018 15-2017, pp. 2-3.

³ Labour Proclamation N° 118/2001, https://www.ilo.org/dyn/natlex/natlex4.detail?p_isn=61291.

⁴ Labour Force Survey, 2018 p. 10.

⁵ https://www.ilo.org/dyn/normlex/en/Fp=NORMLEXPUB:11200:0:NO::P11200_COUNTRY_ID:103282.

Eritrea labour force

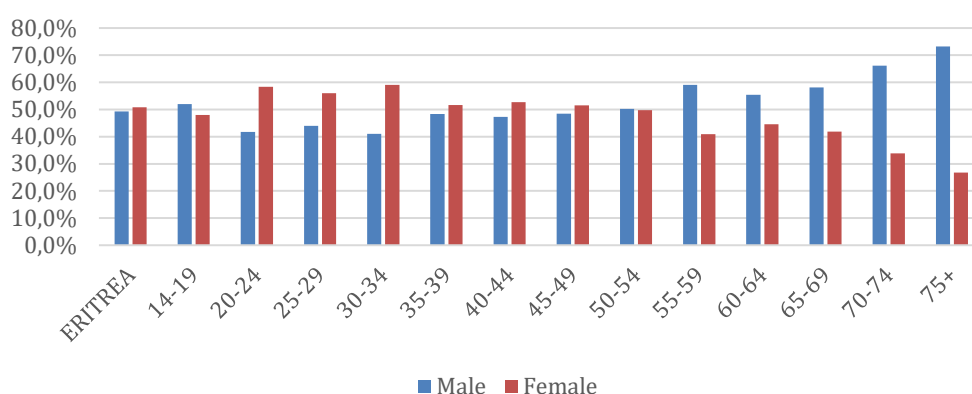
In 2016, the *working age population* (WAP)⁶ was 1.921.509 considering people 14 years and above. Looking at row data, people in WAP between 14 and 64 years were about 53.3% of the total.

Generally, the Eritrea working age population pyramid is coherent with the general Eritrean population. Considering the gender, males WAP was 46%, female was the remaining 54%. Looking at demographic differential, the largest part of the working age population is in the group 14-19 years (22,3%), followed by the group 20-24 (12,3%). Young people, between 14 and 40 years, accounted for 37.7% of the population and 62.8% of the working age population.

Looking at sex, 54% of the WAP were females, in the age groups from 20 up to 55 women outnumbered men with a medium value of 57.8% of working age population. The geographical distribution presented peculiarities; 66.9% of WAP lived in rural areas, 33.1% lived in urban areas.

In 2016 inactive population counted about 52,555 persons considered *potential labour force*⁷ and corresponding to 12,1% out of labour force. Of people in the working age population, 77.5% represented the *Labour force population*⁸ (LFP). The age group between 14 and 39 years represented 61.9% of the LFP. Considering the composition of LFP per sex the number of female workers was higher than males and the women rate (50.8%) was slightly higher than men's (49.2%).

Figure 3 - Labour Force population per gender and age



Source: Authors' elaboration based on *Eritrea Labour Force Survey 2015-2016*

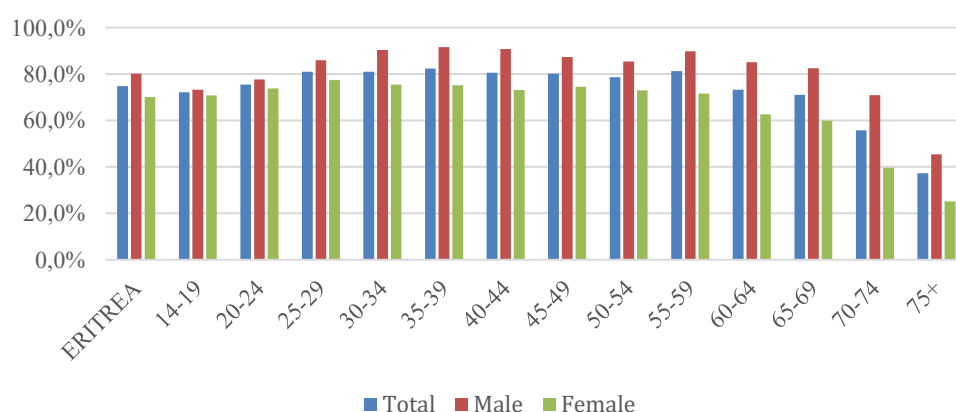
⁶ Working age population is commonly defined as persons aged 15 years and older, but this varies from country to country. In Eritrea according to national legislation WAP includes people above 14 years of age. Young people between 14 and 19 years of age are accounted in the WAP if not enrolled in any educational path. Persons over 65 years of age are accounted because of lack of a consolidated pension system.

⁷ «The potential labour force refers to persons not in employment who express an interest in this form of work but for whom existing conditions limit their active job search and/or their availability». *ILO Glossary of Statistical Terms* <https://www.ilo.org/ilostat-files/Documents/Statistical%20Glossary.pdf>.

⁸ «The labour force comprises all persons of working age who furnish the supply of labour for the production of goods and services during a specified time-reference period. It refers to the sum of all persons of working age who are employed and those who are unemployed». *ILO Glossary of Statistical Terms* <https://www.ilo.org/ilostat-files/Documents/Statistical%20Glossary.pdf>.

The labour force participation rate⁹ was about 77,5% of working age population, a high rate compared to countries of the region. In 2016, unemployment rate was 3.5% and absorption rate was about 75.9%.

Figure 4 - Employment rate per sex and age group



Source: Authors' elaboration based on *Eritrea Labour Force Survey 2015-2016*

Informal economy¹⁰

Informal economy had the attention of Eritrean government and public policy with specific studies and research investigating the phenomenon and the capacity in order to overcome the issue¹¹.

Informal economy is defined as persons doing informal jobs and/or employed in informal sectors or activities¹². Labour Force Survey¹³ defined «informal economy as all persons 14 years of age and over who were engaged in unregistered private business enterprises that did not keep written record of accounts, size of employees less or equal to three, not entitled of paid sick leave and paid annual leave, no social security coverage, and all contributing to family workers.

Informal employment is defined to include:

- Employees with non-formal relationship with their employees;
- Employees and own-account workers of informal sector enterprises;
- All contributing family workers»¹⁴.

⁹ «The labour force participation rate expresses the labour force as a percent of the working-age Population», *ILO Statistical Glossary* <https://www.ilo.org/ilostat-files/Documents/Statistical%20Glossary.pdf>.

¹⁰ *ILO Informal Economy* https://www.ilo.org/ilostat-files/Documents/description_IFL_EN.pdf.

¹¹ Work situation of informal sectors for organizing purpose and enhancing their rights, NCEW, Asmara 2010.

¹² *ILO Glossary of Statistical Terms* <https://www.ilo.org/ilostat-files/Documents/Statistical%20Glossary.pdf>.

¹³ *Eritrea Labour Force Survey 2015-2016*, 2018.

¹⁴ *Eritrea Labour Force Survey 2015-2016*, 2018, p. 45, the analysis does not account informal workers in the agricultural sector.

The above-mentioned survey adopted a relative approach to analyse the informal sector in employment¹⁵. Since the relevance in Eritrea of household-based agricultural activities, the survey excluded informal workers of the sector. Including agriculture, the informal economy absorbed 58.2% out of the total employed population, excluding agricultural persons employed in informal economy corresponded to 31.5% of total employees.

Looking at age, in Eritrea the group with the highest incidence of informal workers were people between 35 and 44 years, corresponding to 38.8% out of the total employees; the age group with the lowest rate of informal workers was 14-24, corresponding to 24.4%.

The geographical distribution of informal job was characterized by imbalance between rural and urban areas: excluding agriculture, informal economy was more relevant in urban areas. About 49% of urban employed persons were engaged in informal economy, while 24.7% of rural employed residents were employed in informal economy.

Table 2 - Relevance of informal economy (excluding agriculture) by sex, age and residence, %

	<i>Total</i>	<i>Male</i>	<i>Female</i>	<i>Urban</i>	<i>Rural</i>
Eritrea	31,5	27,3	35,5	49	24,7
14-24	24,5	17,8	30,7	44	18,1
25-34	35,8	29,7	40,3	47,7	30,5
35-44	38	33,4	42,3	52,6	31,4
45-54	35,5	34,4	36,6	50,9	29,1
65+	26,2	26	26,4	55,6	16,9

Source: Authors' elaboration based on *Eritrea Labour Force Survey 2015-2016*

Economic sectors, economic activities and occupational categories

Looking at the broader economic sectors, data from Labour Force Survey showed that the service sector absorbed 48% of the employed population. The agricultural sector employs 43.8%. Lastly, the industry sector absorbed 8%, with significant variation between urban areas (14%) and rural areas (5.9%)¹⁶, and an equilibrium in the gender distribution.

Breaking up broad economic sectors into activities data showed that agriculture was predominant¹⁷ employing 43.8% of Eritrean workers. The second most important economic activity was «public administration of state and community», employing 18.5% of the employed population. The third category was «other retail trade», employing 8.4% of total employed persons. The fourth

¹⁵ «Informal employment comprises persons who in their main job were: (a) own-account workers, employers or members of producers' cooperatives employed in their own informal sector enterprises; (b) ownaccount workers engaged in the production of goods exclusively for own final use by their household; (c) contributing family workers, irrespective of whether they work in formal or informal sector enterprises; or (d) employees holding informal jobs, whether employed by formal sector enterprises, informal sector enterprises, or as paid domestic workers by households.» *ILO Glossary of Statistical Terms* <https://www.ilo.org/ilostat-files/Documents/Statistical%20Glossary.pdf>.

¹⁶ *Eritrea Labour Force Survey 2015-2016*, 2018, p. 115.

¹⁷ Economic activity refers to the activity of the establishment in which an employed person worked during the reference period of the survey.

category was «manufacturing», absorbing 4.9% of total employed. The fifth category was «retail trade in stall and markets», absorbing 4.1% of the total employed.

Other economic activities include «education» (3.4% of total employment), «other personal services – hairdressing, repairs» (3.4%), construction (2.1%), «transport – land, sea, air and warehousing» (2%).

Looking at the distribution of the employment by main occupation¹⁸, *agriculture*, including *forestry and fishery*, was the main occupation for 42.6% of the employed population, followed by «*service and sale workers*» absorbing 13.7% of total employment. The third occupational category was «*technicians and associate professionals*», absorbing 11.6% of total employment. The fourth category was «*craft and related trades workers*», accounting for 10.2% of total employment. Low skills occupation – i.e. «*elementary occupation*» absorbs 8.3% of total employment. Other occupational categories include «professionals» (5.5% of total employed), «clerical support workers» (5.2%), «plant machine operators» (1.6%) and managers (1.2%).

Table 3 - Percentage distribution of employed persons by major occupation

Occupation	Percentage		
	total	Male	female
Agriculture, forestry and fishery workers	42.6%	42.8%	42.4%
Service and sales workers	13.7%	8.4%	18.9%
Technicians and associate professionals	11.6%	19.7%	3.7%
Craft and related trade workers	10.2%	7%	13.3%
Elementary occupation	8.3%	8%	8.6%
Professionals	5.5%	6.1%	4.8%
Clerical support workers	5.2%	3.7%	6.9%
Plant and machine operators and assemblers	1.6%	2.8%	0.3%
Managers	1.2%	1.3%	1.1%

Source: Authors' elaboration based on *Eritrea Labour Force Survey 2015-2016*

2.2 Education system, TVET and Labour

The Education system in Eritrea consists of compulsory basic education (elementary and middle school), secondary education and tertiary education (college and university). The largest part of schools and educational institutions are public and free. Public system also provides pre-primary education, that is part of the basic education, but is not considered compulsory. Administrative organisation of educational system is forged over the administrative governance, with 6 administrative regions and 55 sub-regional office (nus-zobas)¹⁹.

¹⁸ Occupation refers to the kind of work done by a person employed, irrespective of the branch of economic activity or the status in employment of the person.

¹⁹ «Survey Of ICT and Education in Africa: Eritrea Country Report Eritrea» – 1 <http://documents.worldbank.org/curated/en/235261468023669938/pdf/463920BRI0Box31ea010ICTed0Survey111.pdf> *ICT in Education in Eritrea*.

Pre-elementary level is a two-year school; the official entry age to pre-primary level of education in Eritrea is 4 years of age. According to last *Eritrea Education Sector Plan* (2018), pre-elementary net enrolment rate is low – 17.6% in 2015/16, though the general accessibility has increased from 8.6% in 2000.

The *Elementary/primary level* includes grades 1-5 for children of 6 to 10 years of age and takes five years. According to the same source, net enrolment rate in primary education increased from 76.6% in 2011/12 to 82.1% in 2015/16, partially reflecting the increase in the number of primary schools between 2011 and 2013 from 875 to 908. The enrolment rate in primary school is significantly higher in urban areas than in rural areas.

Middle level is part of the basic education cycle in the Eritrean education system and consists of 3 years of schooling from grade 6 up to grade 8 for the students 11 to 13 years of age. At the end of the middle school (grade 8), students must pass a national official examination before attending secondary schools.

Secondary education lasts four years (Grades 9-12) and involves the students 14 to 17 years of age. There are also «intermediate» technical and vocational training secondary schools where students join from after the completion of grade ten; such training lasts 2 years and in 2017 comprised only 5 percent of total enrolment of secondary level. Overall, in 2020 a total of 14.960 students took the ESECE²⁰.

The results of the final exam ESECE (grade 12) determine further possibilities in *tertiary education*. Once completed secondary school, youth with low and medium marks might go into «advanced» technical and vocational education and training (TVET) or assigned to other national activities. The batch with the highest marks enters one of Eritrea's nine higher learning institutes (colleges)²¹. The Mai Nefhi Eritrea Institute of Technology provides higher education in computer science, computer engineering, auto engineering, electricity and electronics.

The Hamelmalo College of Agriculture provides higher learning in plant and animal sciences, agronomy, agricultural engineering, plant protection, animal health. The Adi Keih College of Arts, Business and Economic provides higher education in business, economics, management, law, sociology, anthropology, history, geography. The College of Health Sciences and Medicine provides various health related education of various levels, including MD in medicine and dentistry, nursing, pharmacy technicians, laboratory technicians, public health workers.

Overall, in the last decades sizeable progress has been made in expanding general accessibility to basic and free education including early childhood education services across the country. The National Educational Policy (NEP, 2009) underlined the Government's commitment to providing educational opportunities to all citizens, irrespective of their ethnicity, language, gender, religion, disability and socioeconomic status. However, despite significant efforts Eritrea still faces the dual challenge of increasing access to educational opportunities and improving the quality of education at all levels in the school system.

²⁰ <http://www.shabait.com/news/local-news/30320-national-school-leaving-examination-underway>.

²¹ Asmara College Health Science – Asmara; College of Arts and Social Sciences - Adi Keyh; College of Business and Economics – Halhale; College of Marine Sciences and Technology – Massawa; Eritrea Institute of Technology - Mai Nefhi (College of Science and College of Engineering); Hamelmalo College of Agriculture - Hamelmalo Subregion; Orot School of Medicine – Asmara; College of Education at Eritrea Institute of Technology.

Over the last years, several initiatives have been taken to improve access to education and strengthen alternative routes for those who are excluded from the formal provisions. These include Adult Literacy and Non-formal education (literacy, post literacy and continuing education for children, youth and adults through non-formal means for the population outside the formal education system)²²; Complementary Elementary Education (CEE) program for out of school children aged 9-14 years (children who fail to enrol into elementary school at the right age)²³; nomadic education for pastoral communities; «positive discrimination policies» to increase female and vulnerable communities enrolment in primary schools, secondary schools and TVETs.

Technical and Vocational Education and Training

The Department of Technical and Vocational Education and Training is responsible for TVET governance in Eritrea²⁴. The five-year Strategic Plan of the Ministry of Education (2013-2017) emphasizes the need to increase the enrolment in the TVET sector and thus produce highly skilled workforce versed with modern technology necessary for the country's economic development and growth. The formal TVET currently provided has two levels: 1) intermediate technical schools lasting 3 years (grades 10-12) and 2) advanced level of 1-3 years training for post-secondary level.

As stated in the last Eritrea Education Sector Plan, Technical Vocational Education and Training (TVET) intends to provide technical knowledge and skills for employment and self-employment through non-formal and informal learning, in line with changing technological and national development need.

There are currently nine formal technical and vocational training centres, located in four Zobas of the country, namely: (i) Wina Technical School; (ii) Asmara Technical School; (iii) Mai Habar Technical School; (iv) Halay Technical School; (v) Don Bosco Technical School; (vi) Denden Commercial school; (vii) Hagaz Agro-Technical School; (viii) Music School; (ix) the Centre for Vocational Training (CeVoT). The latter was established in 2007 in Sawa and consists of five schools providing training to secondary school graduates (after 12th grade) in the fields of Agricultural Technology, ii) Commerce and Business Management, iii) Building Technology, iv) Advanced Farm Machinery, and v) Building Machinery schools. In addition to the academic subjects (English, mathematics, science, ICT, entrepreneurship, geography and history).

Overall, access to TVET is limited due to the limitation of space and capacity of TVET schools. There is a slightly lower rate of female enrolment compared to their male counterparts: female students accounted for 46% of total enrolments in the period 2012/2013-2017/2018. With regards to «advanced» TVET targeting secondary graduates (after archiving Eritrean Secondary

²² From 2008 to 2018 a total of 364.697 adults (of which 323,436 women) were registered at the learning centers of adult literacy programs. *Eritrea Education Sector Plan*, 2018, p. 47.

²³ This alternative strategy of education provision is a three-year course and is equivalent to five years of elementary school and allows mainstreaming into the formal education at the junior level, or access to vocational training.

²⁴ Governance of TVET is based on regulations and directives issued by the State. While primary, middle and secondary schools report to MoE offices at the regional (zoba) level, TVET institutions report directly to the Department of Technical Vocational Education and Training.

School Leaving Certificate Examination), between 2012/2013 and 2017/2018 a total of 6.962 enrolments were recorded at the Centre for Vocational Training (CeVoT) in Sawa; in 2017/2018 there were 971 enrolments among the five CeVoT schools²⁵.

Eritrea has shortage of technical and vocational skilled manpower. Enrolment patterns show disparities by gender and location. At the same time, the quality of the training offered is negatively affected by multiple factors including inadequate equipment facilities, shortage of materials and training tools and shortage of qualified instructors as well as poor infrastructure.

Beside the school-based TVET targeting the student population, there are other non-formal trainings such as the Skill Development Programs which target school leavers, the unemployed, the existing workforce and other target groups²⁶. This training usually last 3-9 months, leads to recognized national Certificates and it is provided in accredited training centres by MoE and other Ministries²⁷, Local NGOs, Private institutions, and Parastatal companies²⁸. The Ministry of Marine Resources also provides vocational training to artisanal fishermen in fishing. The Ministry of Tourism used to operate a training centre which used to provide training (in cooking, catering, house-keeping, etc.) but this remains closed since few years. Many of the parastatal companies also provide various trainings and on-the-job training in respective areas of occupation, including construction and heavy machinery repair and operations. Other enterprise-based non formal training programs consist of apprenticeship, learner ship, dual training courses which are carried out within the firms/industries: according to Labour Force Survey, in 2015 there were 91.439 unpaid trainees in the entire country.²⁹

The National Confederation of Eritrean Workers (NCEW) has also established a workers' vocational training centre in Massawa and for the third consecutive year, it continues to provide training in six technical fields. A notable private training centre based in Asmara is SMAP which provides certificate and diploma level of trainings in computer, business and management. It enrolls students who completed grade twelve, but did not get passing marks to join the colleges. Some civil society organizations, including the National Union of Eritrean Women (NUEW), National Union of Eritrean Youth and Students (NUEYS), and local administrations provide one type or another type of technical trainings such as weaving, embroidery, computer applications to youths and vulnerable women.

²⁵ *Eritrea Education Sector Plan*, 2018, p. 45

²⁶ *Eritrea Education Sector Analysis*, 2017, p. 219.

²⁷ Ministry of Agriculture (MoA), Ministry of Health (MoH), Ministry of Fisheries, Ministry of Tourism (MoT), and Ministry of Local Government (MoLG).

²⁸ There are also community-based non-formal trainings, often undertaken by local accredited NGOs, i.e., the National Union of Eritrean Youth and Students (NUEYS) and National the Union of Eritrean Women (NUEW).

²⁹ *Eritrea Labour Force Survey 2015-2016*, 2018, p.104.

2.3 Target Sectors: ICT, Tourism/Hospitality and Refrigeration/Air Conditioning

Information and communications technology

In order to foster ICT development in Eritrea, an *Education National Policy for ICT in Education* was launched in 2005, with the aim of promoting ICT in the education system at all levels and introducing/improving ICT facilities and related training – for students, teachers and education managers – in schools and colleges. The vocational training centres have been particularly earmarked to pass on technical skills, including ICT skills for students dropping out at the different levels of the education system. Over the last years, similar policies have been adopted to promote ICT in public administration, enterprises and production processes³⁰. However, lack and unreliability of electricity supply³¹ and telecommunication networks, limited availability of ICT infrastructures and facilities, critical shortage of qualified ICT trainers and technicians are challenging the ICT development in the country, especially in rural areas³². The Eritrea Telecommunication Services Corporation (commonly known as EriTel) is the sole operator of both landline and mobile telephone communication infrastructure in the country. Most fixed line telephones are located in Asmara. Over the last years there has been an increasing number of mobile phone users (from 141.000 subscriptions in 2009 to 695.000 in 2017, +393%). According to the last Population and Health Survey, in 2010 most of mobile phone owners, internet users and households owned a television were located in the city of Asmara. Radio penetration in the rural area is well realized. Although the spread of computers for personal, in public service, business and industrial use is evident in Eritrea, lack of concrete data is observed.

With regards to employment, as already mentioned, the sector absorbed 0.4% of the total employment, with a higher involvement of women (57% of the total ICT employment). Over the last years, according to research findings, there has been an indefinite but growing number of self-employed workers in the computer-related economy (maintaining, repairing, programming), suggesting that ICT sector is creating a small informal high-skilled labour market, especially in Asmara (less in other cities such as Massawa).

Tourism/Hospitality

In Eritrea, tourism industry is still at a nascent stage of development. Since Eritrea's independence in 1993, tourism was identified as a key development industry as part of the country's post-war reconstruction efforts. In mid '90s international arrivals in Eritrea reached 416.000 (1996) and

³⁰ See Mungamuru N., Kaliyaperumal K., Sreedhar A., Patharaj J. (2012), «The Role of ICT in the Economic Development of North East Africa: Eritrea (2012)». *Journal of Emerging Trends in Computing and Information Sciences*, Vol. 3, No. 3.

³¹ For instance, only 463 (32,5%) schools have source of electric power. Absence or inadequacy of reliable power is a major challenge for majority of schools across the country. This hampers the implementation of various activities of the schools including provision ICT service (*Eritrea Education Sector Plan*, 2018, p 80). Overall, in Eritrea, as in most developing countries, the availability of electricity is limited to the main cities, towns and some semi-urban and rural catchments surrounding them.

³² *Eritrea Education Sector Plan*, 2018, p 85.

in the late '90s the sector directly employed 5.700 people (including all restaurants) and indirectly employed about 20.000 people³³. In 1999 a comprehensive National Tourism Development Plan from 2000-2020 was finalized as a guiding framework for Eritrea's Ministry of Tourism and Culture to develop the sector, with the aim of reaching 1 million tourist arrivals by 2020. The Plan stated that tourism encompasses a wide range of attractions and activities related to the natural environment and historic and cultural heritage of the country³⁴. In particular, the Plan identified the following types of tourist markets: beach resort; general sightseeing; scuba diving and snorkelling; special interest and adventure; spa; meeting and conference³⁵.

In order to boost the sector, the tourism development strategy of 1999 highlighted the need of: expanding/improving of tourism facilities and services such as accommodations, bar and restaurants, tour operators and tourism information services at local level; improving infrastructures for tourism, such as airport and air services, roads, railways, water and electricity supply and telecommunications; and improving tourism-related educational and vocational training, and reaching an annual average output of 300 to 400 trainees (new entrants to tourism) and of 150-200 existing staff re-trained and upgraded under the supervision of the Hotel and Tourism Training Centre (HTTC).

However, the border war between Ethiopia and Eritrea from 1998-2000 and the followed state of war hampered the development of a sizable tourism industry in the country. International arrivals declined although it has made a slow recovery in the late '00s. According to the World Bank, in 2016 (latest year available on WB dataset) there were about 142.000 international arrivals, with overseas Eritreans accounting for the majority of visitors (over 75%)³⁶.

Nevertheless, the peace agreement with Ethiopia is having positive effects on international tourism in Eritrea. There is no data on the number of arrivals for the period 2017-2020, but all the stakeholders interviewed agreed that tourism in Asmara (declared as a UNESCO World Heritage Site in 2017) and Massawa (departure point for trips to the pristine Dahlak islands) has been steadily increasing over the last two years, with a sharp increase in summer and December 2019 – especially of people coming from Europe. In Massawa, data collected from the biggest hotel of the city show an increase of international non-Eritreans tourists: from 2017 to 2019 non-Eritreans arrivals at Dahlak Hotel increased from 1.257 to 5.433 (+332%), the majority of which – for the first time since its opening – came from Europe and USA. While this is encouraging, the need to enhance the real capacity such increase in terms of human resources, management, infrastructures and services is evident.

³³ *National Tourism Development Plan for Eritrea 2000-2020*, p. 15

³⁴ *National Tourism Development Plan for Eritrea 2000-2020*, p. 12.

³⁵ The Plan identified several types of tourism which can be developed in the country: beach and marine resort tourism in the coastal and island areas; cultural tourism based on the archaeological/historic sites, architectural heritage and cultural patterns; nature or ecotourism based on national parks and reserves; urban tourism, especially in Asmara, Massawa and Keren; adventure tourism including activities such as trekking in the mountains and deserts and river boating; health tourism focused on the hot springs; agrotourism and rural tourism involving visits to agricultural enterprises and villages; business and conference tourism based on business travel and developing meeting and conference facilities; cruise tourism including visits by private yachts, local Red Sea ship cruises and larger ships (ibidem).

³⁶ For instance, in 2015 overseas Eritreans accounted for 91.202 arrivals out of 114.000 (80%), while Europeans accounted for 1885 arrivals out of 114.000 (less than 2%).

The scope of refrigeration/air conditioning³⁷ is far reaching and embraces a wide range of activities and sectors: it is used for different purposes such as domestic temperature control and food conservation; industrial and commercial food production, storage and distribution; medicines, vaccines and blood transportation and conservation; manufacturing and petrochemical and so on. In Eritrea, refrigeration and air conditioning is used (to a limited extent) for domestic, commercial and industrial purposes. Domestic and commercial refrigeration/air conditioning equipment include refrigerators, freezers, air conditioners and water coolers used in houses, shops, groceries, restaurants, hotels, offices, and so on. There is no up-to-date and detailed information on the penetration of refrigeration/air conditioning in the country. Domestic and commercial air conditioning is mainly available in offices, ministries, shops, hotels, restaurants, expats residents and households in urban areas (Asmara and Massawa). In 2010 the Population and Health Survey estimated that 8,8% of the country's households owned a refrigerator (roughly 70.000 units can be estimated). Although the increase is evident in the past more than 10 years, clear study about the expansion is yet to be conducted.

Commercial refrigerators are also used in food processing and groceries, restaurants, bars, hotels and cafes located in main urban areas; according to UNEP, in 2010 there were 6.138 commercial refrigeration and food processing units in Eritrea. The same source also reports 4.849 industrial and other equipment units in the country³⁸: at the time of the research, industrial refrigeration and cooling systems were used in some industries – construction, fishing, mining, food and beverage. However, during the fieldwork industrial refrigeration was reported to be affected by the lack of qualified technicians and spare parts; many enterprises in Massawa have slowed down their activities because of the problems with maintenance of machineries and cooling systems control, which also depend on the expertise and know-how of high skilled computer engineers/technicians (for which there is a shortage of). Overall, the transition to alternative and clean refrigerants seem to be at the very early stage of beginning, with only few technicians trained in good refrigeration practices.

³⁷ Refrigeration may be defined as the process of transferring heat from a low temperature region to a high temperature region (in other words, the process of cooling a substance. Air conditioning is the process of controlling and maintaining the property of air, like temperature, humidity, purity, direction of flow.

³⁸ UNEP (2012), Project Proposal: Eritrea. Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol, Sixty-seventh Meeting, UNEP/OzL.Pro/ExCom/67/24, p. 4.

PART II

WORKING FOR UPSKILLING IN ASMARA AND MASSAWA

3. Population, Labour Force and Education in Asmara and Massawa

The present part is divided in two sections. The first chapter focuses on geographical areas of Asmara and Massawa in order to provide information about population, economic activities and educational sector. It should be underlined that specific data are available about Asmara, but not about Massawa, so, with the purpose of equalizing information, the research will analyse data about Asmara and will introduce preliminary introduction about Massawa.

The second section presents the results of the primary research based on in-field activities: questionnaires and focus group to target groups sample and interviews to stakeholders.

The aim of the second chapter intends to investigate real needs about professional training of labour market, exploring demand side (employers) and supply side (workers/employees). To fulfil these requirements, five target groups have been involved: (i) companies, (ii) formal workers, (iii) informal workers, (iv) job seekers, (v) students (enrolled in secondary school and college programs).

3.1 Population

Asmara is the capital of Eritrea, located in the centre of the country on the Highlands at an elevation of 2.325 metres above sea level. According to source¹, in 2016 Asmara counted 440.823 inhabitants. Persons in the age group 15-64 were about 58.9%; young people below 14 years of age were about 32.3% of the city population, a lower rate compared to other geographical areas; for example, in rural areas children were 44.4% of the local population. Persons of age 65+ were about 8.7%, a higher rate compared to other geographical areas.

Massawa is the main city of the Zoba Semienawi Kayih Bahri and it is located on the Red Sea. Massawa hosts the biggest port in Eritrea, an important commercial hub for the Horn of Africa and for the Red Sea Region. The port city of Massawa counts 53.090 inhabitants². As above mentioned, facing the shortage of detailed data about the city of Massawa, this section will not go further in analysing it.

¹ *Eritrea Labour Force Survey 2015-2016*, 2018 p. 96, Annex Table A 2.2.

² Online available data.

3.2 Labour force

Asmara is inhabited by about 16% of the Eritrean *working age population* and 48.3% of the WAP living in all Eritrean towns. It represented 12,3% of the national labour force population and 58.4% of the labour force of the people living in the urban areas.

The unemployment rate in Asmara in 2016 was estimated at 9%, higher than the national figure, 3.5%, with a slight variation between male 8%) and female 10%. The unemployment rate in Asmara was estimated to be higher even if compared to other towns 4.1%.

Table 4 - Unemployment Rate (%), comparison between Asmara, other towns and Eritrea

Residence	Total	Male	Female
Asmara	9	8	9
Other Towns	4,1	3,5	4,7
Eritrea	3,5	3,4	3,7

Source: Authors' elaboration based on *Eritrea Labour Force Survey 2015-2016*

Looking at the broader economic sectors, data from Labour Force Survey showed that in 2016 the overwhelming majority of workers in Asmara were employed in the service sector, which absorbed 81.6% of the total employment: such rate is much higher than the national figure (48%). The secondary sector followed with 17.4% of total employed persons: again, the employment rate in industry was much higher than the national data 8.3%. Finally, unsurprisingly only 0.9% of workers were employed in the agricultural sector.

Looking at the main economic activities, data showed that «*Public administration of state and community*» absorbed the greatest absolute number of workers in Asmara - 32.8% of the total employment. The second most important economic activity in Asmara was «*manufacturing*», absorbing 13.2% of total employment. Remaining economic activities in Asmara did not register rate of absorption higher than 8%, but the aggregation of economic activities related to trade and retails made the rate of employed people up to 11.4%. The fourth economic activity in Asmara by number of workers was «*other personal services- hairdressing, repairs*» representing 5,3% of total employment. The fifth economic activity was «*education*» 5.1% of total labour force, followed by «*transport – land, sea, air and warehousing*» employed 4.8%. *Accommodation and food and beverage services* employed about 3.2%. *Information and communication technology* sector absorbed about 0.6%. Considering economic activities requiring high degree of specialisation, technical competencies and high skills (i.e. *Professional, technical and scientific activities* – 1.3%; *Financial and real estate* – 0.9%; *Entertainment, art and recreation* – 1.2%; *Publishing, motion picture and broadcasting* – 0.5%), Asmara absorbed the largest part of Eritrea's employment (42.7%).

3.3 Education

Asmara hosts important high education institutions such as Asmara Community College of Education (ACCE), preparing teachers for primary school education; Asmara College of Medicine

and Health Sciences, delivering academic courses in Medicine, Pharmacy, Nursery, Public Health, Medical Laboratory, Radiology, Behavioural science. Four out of nine Technical Vocational and Educational Training (TVET) schools are located in Asmara. The first technical school in Eritrea was opened in 1954 in the Capital city, the Asmara Technical School³.

In Massawa is located one of the most prominent educational institution in Eritrea, the College of Marine and Aquatic Sciences⁴. There are also two intermediate TVET schools in the region where Massawa is located. Since 2017 the NCEW training centres in the city of Massawa is providing training courses in several fields such as electricity, wood and metal, electronics, ICT and refrigeration.

³ *Eritrea Education Sector Analysis*, 2017, p. 216.

⁴ The college was previously a technical school providing courses related to port and costal area activities; only in 2006 it became a college.

4. Professional training needs analysis

4.1 Companies interviews

Overall, 32 companies in the three sectors were interviewed, of which 10 were in Asmara and 22 companies in Massawa. Companies sampled included hotels, restaurants and tour operator in the tourism sector; computer centers, banks, public authorities and factories with ICT departments in ICT sector; supermarkets and grocery stores, public authorities and factories with cooling systems in their activities/operations in the refrigeration sector. The interviewed companies were 40% in Tourism, 40% in refrigeration and 20% in ICT.

Table 5 - Companies sampled by sector of operation

<i>Town</i>	<i>Tourism</i>	<i>ICT</i>	<i>Refrigeration</i>	<i>Total</i>
Asmara	2	1	7	10
Massawa	11	5	6	22
<i>Total</i>	<i>13</i>	<i>6</i>	<i>13</i>	<i>32</i>

Source: field data

Many interviewed companies were not willing to disclose the number or sex composition of their employees. However, the 19 companies which answered the question employ on average 83,8 workers, with a minimum of two and a maximum of 397. There is a significant variation in terms of number of employees between sectors and between public and private entities, with the former employing greater number of workers (on average 112) and the latter employing a lesser amount of workers (67). With regards to the composition of the labour force, out of a total of 1.593 employees, 863 (54%) are women and 730 are men (46%), with significant variation between sectors. Within enterprises interviewed in relation to ICT and Refrigeration sectors women account for 47.2% and 43.1% of the labour force and are mainly employed in office work (administration, accounting, secretaries, etc.); on the contrary in the tourism sector women account for the overwhelming majority of the labour force (75%) and are mainly employed as waitresses and cleaners (with a minority employed as receptionists or accountants).

Table 6 - Average number and sex of employees per sector of operation

<i>Sector</i>	<i>Employees</i>	<i>N. of women</i>	<i>Women %</i>
ICT	178.7	84.3	47.2%
Refrigeration	56.0	23.5	42.0%
Tourism/Hospitality	37.2	28.2	75.8%
<i>Total</i>	<i>83.8</i>	<i>45.4</i>	<i>54.2%</i>

Source: field data

Employers were asked which recruitment channels they usually use to hire labourers. The respondents in Asmara and Massawa indicated that they recruit employees using various means; the most reported channel is Labour Office, followed by direct application, newspaper and friends/acquaintances. Unsurprisingly, the public sector – including parastatal companies – are the most reliant on labour offices and government assignments. National Service is one of the channels through which Eritrean workers are assigned to parastatal and public companies. The private sector, especially in Asmara, seem to rely more on direct applications, newspapers and other channels.

Table 7 - Usual means of recruiting workers

<i>Town</i>	<i>Labour office</i>	<i>Friends/acquaintances</i>	<i>Direct application</i>	<i>Newspaper</i>	<i>Newspaper and labour</i>	<i>Total</i>
Asmara	3	0	3	4	0	10
Massawa	7	4	6	2	3	22
<i>Total</i>	<i>10</i>	<i>4</i>	<i>9</i>	<i>6</i>	<i>3</i>	<i>32</i>

Source: field data

Employers were also asked if they would hire and employ people from disadvantaged groups. About 56% said that they would employ disabled people, while the remaining 44% said no, mainly because many jobs in the Refrigeration and Tourism sectors require elevate workload and physical work. ICT-related jobs, on the other hand, are thought to be more suitable for disabled people; some hotels have also reported to employ disabled people in kitchens.

Table 8 - Willing to recruit job seekers from disadvantaged groups

<i>Town</i>	<i>Yes</i>	<i>No</i>	<i>Total</i>
Asmara	2	8	10
Massawa	16	6	22
<i>Total</i>	<i>18</i>	<i>14</i>	<i>32</i>

Source: field data

Companies were asked what kind of skills and competences they usually seek in jobseekers when hiring for a job. Managers generally look at some soft skills such as strong work ethic and ability to adapt and work in a team. In addition, ICT enterprises and manager of ICT departments highlighted the fundamental importance of computer literacy – Windows, Microsoft office – in order to get a job; enterprises related to Refrigeration/Air-cooling highlighted the knowledge of basic electrics, mechanics and electronics; enterprises related to Tourism/Hospitality highlighted the knowledge of basic waitering/food serving, coking, housekeeping, accounting, English and in few cases (two tour operators in Massawa) diving.

Table 9 - Competences and skills required by employers to job seekers

<i>Sector</i>	<i>Skills/ Competences</i>
ICT	- Basic Windows - Basic Office Suite - Computer Maintenance
Refrigeration/Air Cooling	- Basic Mechanics - Basic Electronics - Basic Electricity
Tourism/Hospitality	- Basic Catering/ Food-Serving - Basic Cooking - Basic Accounting - Basic English - Housekeeping - Basic Diving (only for tour operators)

Source: field data

In general, except for high-skilled professionals, the idea of the enterprises is that jobseekers (especially youth) are favoured in low-level/entry-level positions in all the sectors considered. Enterprises were also asked what are the barriers that are usually preventing local job-seekers to get a job: the most reported barrier (by 11 out of 31) is the lack of skills/knowledge, followed by lack of job opportunities (9), lack of work experience (6), lack of information (3).

Table 10 - Barriers that are preventing local job seekers to get a job in companies

<i>Town</i>	<i>Lack of skills</i>	<i>Lack of information</i>	<i>Lack of job opportunities</i>	<i>Lack of work experience</i>	<i>Lack of money to pay the employees</i>	<i>The employees are enough to handle the work</i>	<i>Total</i>
Asmara	2	0	5	1	1	1	10
Massawa	9	3	4	5			21
<i>Total</i>	<i>11</i>	<i>3</i>	<i>9</i>	<i>6</i>	<i>1</i>	<i>1</i>	<i>31</i>

Source: field data

The same question was asked about the barriers that are usually preventing «informal» workers within the three sectors to access «formal» labour market: the most reported barrier (by 10 out of 32) is the lack of job opportunities, followed by lack of skills/competences (9) and lack of information (9).

Table 11 - Barriers that are preventing informal workers to access formal job in companies

<i>Town</i>	<i>Lack of skills</i>	<i>Lack of information</i>	<i>Lack of job opportunities</i>	<i>Lack of skills, lack of information</i>	<i>They have other priority</i>	<i>Lack of salary to pay</i>	<i>Total</i>
Asmara	2	2	3	0	1	1	9
Massawa	7	7	7	1			22
<i>Total</i>	<i>9</i>	<i>9</i>	<i>10</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>31</i>

Source: field data

Enterprises were asked to assess the frequency of any sort of professional training among their current employees. Only 17 companies were able to provide such information; in the latter, about 42% (312 out of 740) of total employees hold a training certificate, with significant variation between sectors. Companies interviewed with regards to ICT and Refrigeration seem those with the highest percentage of employees with professional training (70% and 60%), while the tourism sector seems to be the one with the lowest percentage (23%). Moreover, professional training seems to be largely linked to the public sector, in which a higher percentage of the workers hold a training certificate.

Table 12 - Relevance of professional training among employees

<i>Sector</i>	<i>Total Employees</i>	<i>Employees with training certificate</i>	<i>% of employees with training certificate</i>
ICT	210	148	70,4%
Refrigeration/Air Conditioning	112	68	60,7%
Tourism/Hospitality	409	96	23,5%
<i>Total</i>	<i>740</i>	<i>312</i>	<i>42,1%</i>

Source: field data

Companies were asked whether they provide internal training programmes for career advancement and professional upskilling. Most companies (56%) responded that they provide in-house trainings to their employees; this percentage is higher in Asmara (80%) when compared to Massawa (45%).

Table 13 - Provision of internal training programs

<i>Town</i>	<i>Yes</i>	<i>No</i>	<i>No answer</i>	<i>Total</i>
Asmara	8	2	0	10
Massawa	10	8	4	22
<i>Total</i>	<i>18</i>	<i>10</i>	<i>4</i>	<i>32</i>

Source: field data

Internal training is however often «informal» and «on the job», mainly concerns new workers, and it is not able to properly upskill their employees: all the enterprises interviewed argued that they would need more advanced and structured training for their workers. This is not surprising given that, at the same time, most of enterprises (28 out of 32) reported lack of skills and competences in their operation and would need more qualified workers in all sectors.

Table 14 - Companies reporting lack of skills

<i>Town</i>	<i>Yes</i>	<i>No</i>	<i>Total</i>
Asmara	9	1	10
Massawa	19	3	22
<i>Total</i>	<i>28</i>	<i>4</i>	<i>32</i>

Source: field data

Enterprises were asked what specific skills and competences need to be upgraded among their employees. In general, the employers showed the importance of improving soft skills such as team-building, communication, leadership and problem solving (especially among tutors and line-managers). Other skills and competencies that need to be upgraded vary according to the specific sector of operation and the specific problems that such enterprises are experiencing. With regards to refrigeration, supermarkets and small grocery stores in Asmara reported difficulties in finding technician to repair refrigerators (especially new models); many hotels in Massawa also reported difficulties in air conditioning installation, repairing and maintenance. There is therefore a demand in the sector for basic electronics, mechanics and electricity trainings and qualified technicians.

In the city of Massawa, there is the highest need of advanced (industrial) refrigeration training as the entire fish industry (ice production; water desalinisation; fish storing and conservation) is affected by the problems related with machinery and cold chain systems maintenance. At the time of research, many enterprises had slowed down their activities or manufacturing lines because they were unable to deal with the maintenance and programming of PLC (Programmable Logic Controller) which controls industrial production processes¹. The same lack of internal knowledge and competences regarding PLC maintenance and repairing was also reported by other companies producing beverages and irrigation pipes.

Therefore, most of the enterprises which introduced PLC technology highlighted the need of advanced ICT trainings to their workers, particularly programming and coding to solve the problems with PLC software. Regarding the broader ICT sector, many companies including hotels of the city of Asmara and factories with ICT departments also highlighted the need of basic and advanced computer trainings, particularly accounting, servering and networking for their workers. Several hotels, computers centres and factories reported difficulties in finding skilled technicians for computer/software/server maintenance and repairing; many companies do not have such internal competences, and some factories are forced to look for expensive foreign technicians. In Asmara some hotels and tour operators are using ICT technologies (reservations, accounting, work shifts planning, etc.), but only to a limited extent; internet connection is not reliable and expensive; employees rarely have the skills to properly install/operate ICT systems.

In Massawa ICT development is very limited: computers are mainly found in industry sector or public offices. Indeed, in Massawa none of the hotels (not even the largest such as Dahlak Hotel) has introduced ICT in its operations: the main reasons – beside the high cost of computers and software and the lack of internet services – were reported to be the shortage of local technicians for computer maintenance/repairing and the lack of internal know-how on database/accounting/management software. With regards to tourism in Asmara and Massawa, all the enterprises operating in the sector also highlighted the need to upskill their workers: managers of hotels, restaurants and tour operators agreed that in a context of sharp increase in tourism, their workers would need waitering/food serving, cooking, accounting, languages (English, French, Italian, German), customer care, reception, tourist guiding and diving training (the latter only for the two tour operators interviewed in Massawa). The need for tourism training is higher in Asmara when com-

¹ Erifish, Ministry of Marine Resources, Fishing Port Administration in Massawa were experiencing such problems.

pared to Massawa. According to in-depth interviews and data collected through questionnaires, companies in Asmara show a high demand for basic/intermediate ICT and basic/intermediate tourism; a medium demand for advanced ICT, advanced tourism and basic/intermediate refrigeration. Companies in Massawa show a high demand for advanced ICT, basic tourism and advanced refrigeration; a medium demand for intermediate tourism, basic/intermediate ICT and basic/intermediate refrigeration; and a low demand for advanced tourism. The table below shows a summary of the skills and competences which need to be upgraded among current employees in each sector and city: «training needs» refers to the specific training needed; «training level» refers to the level of training (basic/intermediate/advanced); and «training demand» refers to the demand of such training in companies.

Table 15 - Competences and skills to be upgraded among workers and employers' training need demand

Sector	Training needs	Training level	Training Demand	
			Asmara	Massawa
ICT	Microsoft Office	Basic	High	Medium
	Social Media	Basic	Medium	Low
	Computer Applications	Intermediate	Medium	Low
	Networking	Intermediate	Medium	Low
	Computer Maintenance	Intermediate	High	Medium
	Softwaring	Advanced	Medium	Medium
	Servering	Advanced	Medium	Low
	Computer engineering	Advanced	Low	Low
Tourism	Waitressing	Basic	High	High
	Cooking	Basic/Intermediate	High	High
	Customer care	Basic/Intermediate	High	High
	Receptioning	Basic/Intermediate	High	Low
	Languages (English, French, German, Italian)	Basic/Intermediate	Medium	Medium
	Tour guiding	Intermediate	High	Medium
	Diving	Intermediate	Low	High
	Accounting	Intermediate	Medium	Medium
	Store keeping	Intermediate	Low	Low
	Management	Advanced	Medium	Low
Refrigeration	Electricity	Basic/Intermediate	Medium	High
	Electronics	Basic/Intermediate	Medium	High
	Industrial cooling systems control (PLC)	Advanced	Medium	High
	Electrical engineering	Advanced	Medium	Medium
	Electronic engineering	Advanced	Medium	Medium

Source: field data

Overall, the companies interviewed identified the lack of proper training services and the old age/low level of literacy of some employees as the main barriers to internal workers' upskilling. Most of the managers/administrators consider however high-quality professional training for youth as a tool to solve the problem of lack of motivation and – especially in the tourism sector – the high turnover of workers. Unsurprisingly, nearly all the enterprises interviewed in Massawa and Asmara would be available to host/recruit project learners after training courses also by work-based learning schemes. Most of the managers highlighted the importance of including practical

on-site training in training programs, especially for job seekers and informal workers to get used to specific production processes and machineries/technologies. They also argued that professional training should be followed by constant updates - especially in ICT and Refrigeration sectors when introducing new technologies – and continuous training within their companies.

4.2 Formal Workers interviews

A total of 63 persons working in the formal sector were interviewed. Out of this figure 27 were in Asmara and 36 in Massawa. Initially, it was planned to interview 50 workers in the formal sector engaged in three occupations namely, Tourism, ICT and Refrigeration. But since the data collectors filled 63 questionnaires the researcher decided to analyze all the filled questionnaires. In addition to questionnaires, two focus group discussions involving a total of 14 workers were carried out².

Out of the 63 workers sampled 3 persons missed to fill the sector of their occupation. Another 3 of the 60 persons who gave the sector of their occupation were found to be employed outside the three designated sectors of occupation, namely Tourism, ICT and Refrigeration. Thus, it was possible to get 57 interviewees who accurately responded to the question about the sector of their employment; of these, 35% were employed in Tourism, another 38.6% in ICT and 26.4% in Refrigeration.

Table 16 - Sector of work of interviewed formal workers

Town	Tourism	ICT	Refrigeration	Bank of Eritrea	Zoba administration	Dongolo Wood and Metal Factory	Total
Asmara	9	10	5				24
Massawa	11	12	10	1	1	1	36
Total	20	22	15	1	1	1	60

Source: field data

Out of 63 workers sampled, 33 were males (53%) and 30 were females (47%), with a significant variation between sectors. Tourism sector shows the highest participation of women, followed by ICT; refrigeration related jobs, on the contrary, involve mainly men.

Table 17 - Sex of interviewed formal workers sampled

Town	Female	Male	Total
Asmara	15	12	27
Massawa	15	21	36
Total	30	33	63

Source: field data

² The first focus group was carried out with 5 ICT-workers from 4 different employers and the second with 9 Refrigeration/Air Cooling-workers from 7 different employers.

Only 52 workers were willing to disclose their age. The majority of the formal workers (67%) were between 21 and 30 years old. Overall, employees have been working in the same enterprise/ministry/authority for 5.4 years, without significant variation between sectors.

Table 18 - Age cluster of formal workers sampled

<i>Town</i>	<i>Age clusters</i>								<i>Total</i>
	<i>15-20</i>	<i>21-25</i>	<i>26-30</i>	<i>31-35</i>	<i>36-40</i>	<i>41-45</i>	<i>46-50</i>	<i>51-55</i>	
Total	1	15	20	4	4	3	4	1	52

Source: field data

Employees were asked how they obtained the current job: 32.2% said that they were assigned through National Service, 29% said through application to the labour office, 19.3% by direct applications, 17.7% through friends. Such data confirm the National Service as the main channel of recruiting workers, especially in the public sector and in the city of Massawa. In the private tourism sector, there seems to be the highest percentage of workers having obtained the job through other channels (direct applications and friends).

Table 19 - How the job was obtained

<i>Town</i>	<i>Labour office</i>	<i>Friends</i>	<i>Direct application</i>	<i>Assigned</i>	<i>No answer</i>	<i>Total</i>
Asmara	11	11	3	1	0	26
Massawa	7	0	9	19	1	36
<i>Total</i>	<i>18</i>	<i>11</i>	<i>12</i>	<i>20</i>	<i>1</i>	<i>62</i>

Source: field data

Formal workers were also asked whether they were ever employed in the informal sector: the majority 65% answered that they were never employed in the informal sector, while 35% had ever employment in the informal sector.

Table 20 - Formal workers ever employed in the informal sector

<i>Town</i>	<i>Yes</i>	<i>No</i>	<i>No answer</i>	<i>Total</i>
Asmara	11	16	0	27
Massawa	9	25	1	35
<i>Total</i>	<i>20</i>	<i>41</i>	<i>1</i>	<i>62</i>

Source: field data

Responding to what type of informal sector/jobs, the occupations they ever worked are very diverse. Apparently, the highest frequencies are in electronic/ICT in the city of Asmara, and tourism/catering in the city of Massawa, constituting 13.8% each.

Table 21 - Types of jobs in the informal sector (multiple answers)

<i>Asmara</i>		<i>Massawa</i>	
<i>Professional sector</i>	<i>Frequency</i>	<i>Professional sector</i>	<i>Frequency</i>
Education	2	Tourism	4
Health	1	Finance	2
Plumping	1	Mechanics	2
Electronics + ICT	4	No specified	1
Mining sector	1		
Mapping	1		
Modeling	1		
Agriculture	1		
<i>Total</i>	<i>20</i>	<i>Total</i>	<i>9</i>

Source: field data

Given the high number of women in the tourism/hospitality sector, there is also a higher prevalence of women who have experienced informal labour compared to men. These women were previously employed as informal waitresses or accountants in other hotels and restaurants before getting the current «formal» job. Informal work experiences among employees of the ICT sector were mainly related to private and small-scale computer maintenance and repairing. Employees in ICT who transited from «informal» labour market to «formal» labour market (unlike employees of tourism/hospitality sector, for which the transition from «informal» to «formal» occurred without significant change in the type of work performed) have also upgraded their position: from small scale repairing/maintenance of computers there are now mostly working in ICT departments and/or industrial-related activities such as production systems control and cooling systems control. It is interesting to note that the majority of the workers who attended the two focus groups highlighted that the main reason for transiting from «informal» to «formal» labour is salary increase, but at the same time they agreed that informal economy might still provide a better salary than «formal» economy, especially in ICT and (to a lower extent) Refrigeration/Air-cooling and particularly when they have no «formal» qualification. Employees agreed that by providing informal workers with professional training and formal certificates, their knowledge and skills might be upgraded and «formalized», so their chance to get a «formal» job and a higher income would increase.

Workers were asked what they usually do to upgrade their skill and competences. The majority (39) responded 63% learn by doing or through experience; only 10 (16%) workers said that seek to upgrade their skills through professional trainings and 6 (10%) learned by combining professional training and doing.

Table 22 - Workers' ways of upgrading and upskilling skills and competences

<i>Town</i>	<i>Nothing</i>	<i>Learn by doing</i>	<i>Professional training</i>	<i>Learn by doing and professional training</i>	<i>Total</i>
Asmara	2	21	3	1	27
Massawa	5	18	7	5	35
<i>Total</i>	<i>7</i>	<i>39</i>	<i>10</i>	<i>6</i>	<i>62</i>

Source: field data

However, formal workers were also asked whether they have had any professional training in the past and 63% (38) out of the 60 persons who answered said that they had ever had professional training while the 37% said no.

Table 23 - Workers with professional training

<i>Town</i>	<i>Yes</i>	<i>No</i>	<i>Total</i>
Asmara	15	12	27
Massawa	23	10	33
<i>Total</i>	<i>38</i>	<i>22</i>	<i>60</i>

Source: field data

Although the fields of training which the YES respondents had attended are very diverse, the frequencies of those who attended computer and electronics (ICT) related fields are highest records. Only four respondents had tourism/hospitality related training and another one had taken refrigeration/air conditioning related training.

Table 24 - Type of professional training received by YES respondents

<i>Asmara</i>		<i>Massawa</i>	
<i>Professional training received</i>	<i>Frequency</i>	<i>Professional training received</i>	<i>Frequency</i>
Refrigeration A/C heating	1	Accounting	2
Secretarial scenes and business management and video editing	1	Hospitality	1
Computer application	2	Accounting and computer	2
Certificate on plumbing	2	Electronics	5
Geology programing maintenance	2	Electricity and electronics	1
Graphics	1	Dressing, fashion makeup artist, computer network- ing	1
Food and Beverage	1	Tourism and hotel management	1
Recoding and archives	2	Cook	1
Accounting	1	Office management and electricity	1
B.A economics	1	Basic computer maintenance and printer and photocopy administration	1
No specified	1	Wave dizziness and secretary styling	1
		Basic accounting and hair styling	1
		Photography	1
		Computer	1
		Art and electronics	1
		General wood work	1
		Auto CAD	1
<i>Total</i>	<i>15</i>		<i>23</i>

Source: field data

Formal works were further asked if they have had the availability of training programs in their current workplace for upgrading their skills and career advancement; the majority 55.6% said that they did not, while 44.4% said YES, attesting that there are few means of internal career advancing opportunities in both cities.

Table 25 - Availability of training programs at the current workplace for up skilling and career advancement

<i>Town</i>	<i>Yes</i>	<i>No</i>	<i>Total</i>
Asmara	12	15	27
Massawa	16	20	36
<i>Total</i>	28	35	63

Source: field data

The highest number of career advancement training received was ICT (Computer) related, scoring (9) 32%; followed by Electronic (4) 14%, store management (keeping) (3) 11%, and Refrigeration/ventilation (2) 7%.

Table 26 - Type of training received from the current employer

<i>Asmara</i>		<i>Massawa</i>	
<i>Professional training received</i>	<i>No.</i>	<i>Professional training received</i>	<i>No.</i>
Ventilation and refrigeration	2	ICT	6
General repair works	2	Electronics	4
ICT	3	Woodworks	1
Meteorology and GIS	2	Store management	2
Audio-visuals	1	Finance	1
Store management	1	English	1
Health	1	Auto mechanics	1
<i>Total</i>	12	<i>Total</i>	16

Source: field data

Overall, nearly all the employees sampled consider professional training fundamental for both economic development and personal upskilling. On the one side, focus groups showed that employees consider professional training as a tool to improve the productivity and solve the problems of their enterprises/ministries. Specifically, employees in ICT and Refrigeration/Air-cooling sectors – in which enterprises are facing serious problems in maintaining industrial machineries - highlighted that throughout professional training they might be able to reduce the expenses and losses caused by machinery replacing³ and to restart the production process which are currently slowed down or suspended. On the other side, employees see professional training as a tool to improve their own knowledge and eventually to reach carrier advancement and salary increase.

³ According to the findings, machineries that cannot be repaired due to lack of know-how are often replaced. Workers argue that once trained, they could therefore reduce costs for companies by repairing such machineries.

Table 27 - Importance of professional training for career advancement

<i>Town</i>	<i>Yes</i>	<i>NO</i>	<i>Total</i>
Asmara	24	3	27
Massawa	35	1	36
<i>Total</i>	<i>59</i>	<i>4</i>	<i>63</i>

Source: field data

However, when asked to discuss about the quality and effectiveness of training programs they have taken, employees stated that they are usually very basic and too much theoretical; many undertook professional training courses several years ago and thus have argued that they would need training updates to deal with the new technologies and machineries that have been introduced at the workplace (especially in ICT and Refrigeration/Air-cooling sectors). With regards to «internal» training schemes, it was highlighted that they did not often lead to salary increase and career advancement; moreover, most of the time «internal» training has been supplied by internal staff «on the job» without proper «formalisation» (no certificate). In addition, some of the workers highlighted that the equipment and materials used during training were often outdated and there was a shortage of advanced/latest training materials such as computers, software, machineries and spare parts, which prevent them to properly upskill. Moreover, especially in ICT and Refrigeration/Air-cooling sectors, employees argued that there is a lack of knowledge on the side of both trainers (whether «internal» or «external») and employers regarding the latest machineries/technologies that have been introduced in enterprises/Ministries/Authorities (particularly PLC).

Unsurprisingly, when asked what is preventing them to upgrade their skill and competences, most of the workers reported the lack of proper training services, followed by lack of time and lack of money. The lack of training services seems to be more pronounced in Massawa than Asmara. The employees in ICT and Refrigeration/Air-cooling sectors who participated in focus group discussions highlighted the fact that NCEW training centre is the only one providing high quality courses in Massawa and can only train a limited number of people. In Asmara, the most-reported barrier to professional upskilling was the lack of time. During focus groups, employees argued that when working full time it might be hard to attend a training program, unless it is provided by their employers or there is an agreement between the employers and the training providers to let them attend classes during work time. The third barrier was reported to be the lack of money: the employees argued that the few private-training courses available are too expensive. Particularly women employed in tourism sector argued that they cannot afford any kind of training with their current salary as it is just enough to make a living. In addition, most of the employees in ICT and Refrigeration/Air-cooling in Massawa highlighted that undertaking a training course requires money even when provided for free, because they live far from the city (especially when they live in companies dorms) and have often to cover themselves the costs of transportation.

Table 28 - Barriers preventing workers to upgrading their skills

Town	Lack of training services	Lack of time	Lack of money	All	Lack of training and lack of time	Lack of training and money	Lack of time and money	Nothing	Total
Asmara	0	11	6	1	0	1	6	2	27
Massawa	15	3	4	6	4	4		0	36
Total	15	14	10	7	4	5	6	2	63

Source: field data

Lastly, in order to assess the need in terms of professional training, employees were asked what specific training is needed to upgrade their competences and skills in their respective sector of employment. Comparatively speaking, there were more people interested in hospitality and ICT training in Asmara than in Massawa and more people interested in refrigeration in Massawa than in Asmara. With regards to Tourism/Hospitality sector, employees interviewed reported as their priority cooking, English language, accounting and management training. With regards to ICT sector, during focus groups employees highlighted Microsoft office as well more advanced trainings such as audio-visual, programming, servering, networking and computer engineering. With regards to Refrigeration/Air-cooling sector, employees interviewed reported electricity, electronics, mechanics and cooling systems control training. Employees in the Refrigeration/Air conditioning sector also highlighted the need to improve their knowledge with regards to safety measures to be taken when dealing with refrigerants. In general, employees involved in focus groups all agreed that professional training should also involve onsite training and should be followed by ongoing upgrade and continuous training. The table below summarizes the training needs, training demand and training level (basic/intermediate/advanced) as reported in questionnaires and interviews.

Table 29 - Formal workers' professional training needs

Sector	Training needs	Training level	Training Demand	
			Asmara	Massawa
ICT	Microsoft office	Basic	Medium	Low
	Audio-visual	Intermediate	Low	Low
	Computer Applications	Intermediate	Medium	Medium
	Networking	Intermediate	Medium	Low
	Computer Maintenance	Intermediate	High	Medium
	Softwaring	Advanced	Medium	Low
	Servering	Advanced	Medium	Low
Tourism	Computer engineering	Advanced	Low	Low
	General Hospitality	Basic	Medium	Medium
	Cooking	Basic/Intermediate	High	High
	English language	Basic/Intermediate	High	Medium
	Accounting	Intermediate	High	Medium
Refrigeration	Management	Advanced	Medium	Low
	Occupational and Safety Health	Basic	Medium	High
	Electricity	Intermediate	Medium	High
	Electronics	Intermediate	Medium	High
	Industrial cooling systems control (PLC)	Advanced	Low	High
	Electrical engeneering	Advanced	Medium	Medium
	Electronic engeneering	Advanced	Medium	Medium

Source: field data

4.3 Informal workers interviews

From the tables listed under this section on informal workers, it is evident that the survey was only conducted in Asmara. As already noted, in Asmara the informal economy employs a significant share of the labour force; most informal works require low skills and qualifications and they concentrate in commerce/trading and tourism/hospitality. A sample size of 25 persons was captured. Even then, they did not respond fully to all the questions. Therefore, the picture which this survey may provide on the informal sector workers is not informative enough.

Table 30 - Sex composition and location of the interviewees

<i>Town</i>	<i>Female</i>	<i>Male</i>	<i>Total</i>
Asmara	10	15	25
Massawa			
<i>Total</i>	<i>10</i>	<i>15</i>	<i>25</i>

Source: field data

Among the informal workers sampled, the great majority is involved in the tourism sector and employed in low skilled jobs in the catering services (such as waiters/waitresses, cooks, cleaners, etc.) on a temporary or part-time basis. The duration of employment is expected to be short; the existing practices are that they are hired for few months and laid off before they reach the threshold of claiming compensations or benefits which formal workers are entitled. Only one worker is employed in ICT and one in Refrigeration sector. Since the ICT and Refrigeration sectors need skilled workers, it is rarely likely that they would employ skilled workers informally.

Table 31 - Sector of occupation of interviewees

<i>Town</i>	<i>Tourism</i>	<i>ICT</i>	<i>Refrigeration</i>	<i>Total</i>
Asmara	23	1	1	25
Massawa				
<i>Total</i>	<i>23</i>	<i>1</i>	<i>1</i>	<i>25</i>

Source: field data

However, in Asmara there seem to be also a small but high-skilled informal labour market developing with the increase of international tourist arrivals and the still limited but growing availability of information and communication technologies (computers and internet). Indeed, during the fieldwork some young and high-skilled informal workers were found to be working in ICT, Tourism and to a lesser extent Refrigeration/Air conditioning sectors: they are self-employed workers dealing with small scale computer maintenance, softwaring and servering; working as tour guides for one or more of the tour operators of the city; or dealing with air conditioning and refrigerators maintenance, repairing and installation. In Massawa, this kind of

high skill-informal labour market is much less developed; ICT sector is extremely limited (there is no internet service available) and the tourism increase recorded in the past year has not translated into service expansion yet (all tourists arrive having already organized their tour/plan with tour operators in Asmara).

Informal workers sampled we asked how they got the current job. The overwhelming majority (22) reported to have found the job through friends/acquaintances; only 2 have found the job through direct application and 1 through newspaper. Nearly 50% of the informal workers (12 out of 25) have reported more than one working experience in the informal economy.

Table 32 - Recruitment channel

<i>Town</i>	<i>Through friend</i>	<i>Newspaper</i>	<i>Direct application</i>	<i>Total</i>
Asmara	22	1	2	25
Massawa				
<i>Total</i>	<i>22</i>	<i>1</i>	<i>2</i>	<i>25</i>

Source: field data

Informal workers were asked also their opinion about what is preventing them to access the formal sector. Many did not answer the question in the questionnaire (9 out of 25). However, during interviews some of the «high-skilled» informal workers have reported to be involved in the informal economy because they have not completed their national service and thus cannot get a «formal» job; others have reported that they are earning more money in this way rather than being employed by the government in Ministries or public enterprises. Overall, among those who answered the question in the questionnaire, the most-reported «barrier» to get a formal job is the lack of skills, followed by lack of money and lack of job opportunities. This suggests that professional training might be a good driver to sustain the transition from «informal» to «formal».

Table 33 - Barriers preventing access to formal job

<i>Town</i>	<i>Lack of skills</i>	<i>Lack of job opportunities</i>	<i>No answer</i>	<i>Lack of Money</i>	<i>Under age</i>	<i>Total</i>
Asmara	6	4	9	4	2	25
Massawa						
<i>Total</i>	<i>6</i>	<i>4</i>	<i>9</i>	<i>4</i>	<i>2</i>	<i>25</i>

Source: field data

Indeed, when asked their opinion about professional training, the overwhelming majority recognized the great importance in career building, upskilling and leading decent livelihoods. However, while most of informal workers showed to be aware of training services, there are some factors which prevented them to undertake professional training.

Table 34 - Opinion on the importance of professional training in career development

<i>Town</i>	<i>Very much</i>	<i>Important</i>	<i>Not important</i>	<i>Total</i>
Asmara	21	3	1	25
Massawa				
<i>Total</i>	<i>21</i>	<i>3</i>	<i>1</i>	<i>25</i>

Source: field data

Informal workers were asked to specify up to three «barriers» preventing them to engage in professional training: the most-reported barriers are lack of financial resources and lack of time. Most of informal workers were engaged in poorly remunerated jobs and argued during interviews that cannot afford professional training; others argued that it's difficult to find the time for professional training while working; the most skilled workers in the tourism sector such as the tour guides highlighted that in the high season they might be working outside the city as they take tourists to other destinations (Keren, Massawa, Dalhak islands, etc.). This means that beside providing low-cost or free training courses, the training programs should be adapted to the needs and availability of such workers.

Table 35 - Barriers that are preventing access to professional training

<i>Town</i>	<i>Lack of training services</i>	<i>Lack of time</i>	<i>Lack of money</i>	<i>Lack of time and money</i>	<i>Lack of money and training</i>	<i>Total</i>
Asmara	5	8	10	2		25
Massawa						
<i>Total</i>	<i>5</i>	<i>8</i>	<i>10</i>	<i>2</i>		<i>25</i>

Source: field data

Overall, however, most respondents in Asmara (21 out of 25) indicated their willingness and availability to become trained in order to upgrade their skills. Unfortunately, very few respondents have specified which kind of training they would like to undertake, so it is not possible to quantify the training needs and demand. It can be suggested that highest demand is among low-skilled informal workers employed in tourism sector, for which competences and skills might be improved and formalized through basic and intermediate level trainings (waitressing, coking, languages) in order to facilitate the transition to «formal» jobs. For high-skilled informal workers, such transition might be sustained through intermediate/advanced training programs in ICT (software, programming, servering, etc.) and tourism (tour guiding, languages for tourism, etc.), which could also stimulate self-entrepreneurship and the creation of small business (tour operators, computer centers, etc.) in such growing sectors.

4.4 Job Seekers interviews

A total of 57 job seekers were interviewed, of which 48 were in Asmara and 9 in Massawa. Job seekers are people who have applied to the Labour Office of the Ministry of Labour and

Social Welfare for job placements and carry registration cards issued to them by the Office. The job seekers interviewed were contacted through the Labour Offices. Normally job seekers come to the Labour Office on Tuesdays and Thursdays to see if they have been listed in the notice board, or to inquire at the office. As already mentioned, job seekers are very few in Eritrea as the national service system is utilized to channel young people in the labour market and registration at LabourOffice is reserved for those who have been released from it or exempted. Therefore, getting job seekers was time consuming and dependent on luck if they appear at the Labour Office.

Table 36 - Age of respondents

<i>Town</i>	<i>Age clusters</i>									<i>Total</i>
	<i>15-20</i>	<i>21-25</i>	<i>26-30</i>	<i>31-35</i>	<i>36-40</i>	<i>41-45</i>	<i>46-50</i>	<i>51-55</i>	<i>56-60</i>	
Asmara	6	14	9	8	5	1	2	2	1	48
Massawa	1		4	1	2		1			9
<i>Total</i>	<i>7</i>	<i>14</i>	<i>13</i>	<i>9</i>	<i>7</i>	<i>1</i>	<i>3</i>	<i>2</i>	<i>1</i>	<i>57</i>

Source: field data

The majority (75%) of the job-seeker respondents are young below 35 years of age. The sex composition is equitably distributed between males and females, with the latter slightly scoring greater ratio standing at 57%.

Table 37 - Sex of respondents

<i>Town</i>	<i>Female</i>	<i>Male</i>	<i>Total</i>
Asmara	24	23	47
Massawa	8	1	9
<i>Total</i>	<i>32</i>	<i>24</i>	<i>56</i>

Source: field data

Almost 82% of the job seeker respondents have been looking for jobs for one year or lesser duration. In Asmara, job seekers look for jobs through a variety of means including the labour office, friends, vacancy announcements in newspapers and private mediators. In Massawa, job seekers have not reported other channel but labour office when they look for a job.

Table 38 - Time spent looking for a job

<i>Town</i>	<i>Less than 6 months</i>	<i>6 months to 1 year</i>	<i>1 year to 2 years</i>	<i>Over 2 years</i>	<i>Total</i>
Asmara	26	17	2	3	48
Massawa	2	2	1	4	9
<i>Total</i>	<i>28</i>	<i>19</i>	<i>3</i>	<i>7</i>	<i>57</i>

Source: field data

Table 39 - Channels used when looking for a job

Town	Labor office	Friends acquaintances	News paper	Other			Total
				All	Mediator	Labor office / friends	
Asmara	21	10	7	5	5	1	48
Massawa	9						9
Total	30	10	7	5	5	1	57

Source: field data

Job seekers were also asked if they had ever been employed before. About 46% have ever been employed while 54% have never been employed. It is interesting to note that out of those who have ever been employed, the majority were employed in tourism/hospitality, followed by ICT. In Asmara, about 31% of all job seekers sampled have a former experience in the tourism sector, 10% in ICT sector and only one in refrigeration sector. In Massawa, on the opposite, about 44% of the jobseekers have a former experience in ICT jobs and 11% in tourism sector; none has reported former experiences in refrigeration sector.

Table 40 - Previous work experiences

Town	Tourism	ICT	Refrigeration	No	Total
Asmara	15	5	1	27	48
Massawa	1	4	-	4	9
Total	16	9	1	31	57

Source: field data

It is not surprising that over half (60%) of the respondents told that it is currently looking for jobs in the tourism sector. ICT ranked second with 16% of the job seekers. Especially in Asmara, as already noted, both tourism and ICT sectors are slowing but increasingly developing, and this is reflected in the previous work experiences as well in the current aspirations of jobseekers. The capital city is experiencing a sharp growth of international tourism (especially from 2018 onwards) and its home to the great majority of computer and internet users. Job seekers seem to be less interested in refrigeration and air conditioning, as only 2 out of 55 have reported to look for a job in such sector.

Table 41 - Desired sectors of future job

Town/ sector	Tourism/ hospitality	ICT	Refrigeration/ air conditioning	Other*	Total
Asmara	29	7	2	8	46
Massawa	4	2		3	9
Total	33	9	2	11	

Source: field data. * Includes «Pharmacy, Business, Mechanics, Store keeping, Cleaning, Driving, all kind of jobs».

In order to understand the constraints to the participation in the labour market, job seekers were asked to specify up to three «barriers» that are preventing them to get a job. The most-reported barrier (over 75% of respondents) is by far the lack of job opportunities, followed by (and sometimes combined with) lack of skills (26%) and lack of information (9%). Lack of job opportunities was reported more often in Asmara (81,7%) when compared to Massawa (55,5%); on the opposite, lack of skills/knowledge was reported more frequently in Massawa (55,5%) than Asmara (20,8%).

Table 42 - Barriers that are preventing access to labor market (multiple answers, single count)

<i>Town</i>	<i>Lack of job opportunities</i>	<i>Lack of skill/ knowledge</i>	<i>Lack of information</i>
Asmara	39	10	3
Massawa	5	5	2
<i>Total</i>	<i>44</i>	<i>15</i>	<i>5</i>

Source: field data

More than half (60%) of the respondents did not have any backgrounds of training. Among those who have taken some sort of training, the fields are very diverse, spreading from college level to short courses such as hair dressing and computer applications; overall, there is a significant relevance of basic ICT (48%) and tourism/hospitality-related training (17%), while only one job seeker has got training in refrigeration/air conditioning.

Table 43 - Professional training experience

<i>Town</i>	<i>Yes</i>	<i>No</i>	<i>Total</i>
Asmara	20	28	48
Massawa	3	6	9
<i>Total</i>	<i>23</i>	<i>34</i>	<i>57</i>

Source: field data

Table 44 - Type of training undertaken by jobseekers (multiple answer allowed, single count)

<i>Town/ Sector</i>	<i>ICT</i>	<i>Tourism</i>	<i>Refrigeration</i>	<i>Other</i>	<i>Total</i>
Asmara	11	5	1	9	26
Massawa	1	-	-	1	2
<i>Total</i>	<i>12</i>	<i>5</i>	<i>1</i>	<i>10</i>	<i>28</i>

Source: field data

Job seekers were asked what they usually do in order to upskill and upgrade their skills and knowledge. The majority reported (58%) learning by doing things and only 31% answered that they look for professional training, with a significant variation between Asmara (35,4%) and Mas-

sawa (11%). This means that the majority do not have access to training facilities, especially in Massawa. School dropouts have very rare opportunity to any formal skill building training or education. There are limited private training enterprises, and many people cannot afford to be enrolled in them. Indeed, when asked to state their opinion about professional training, almost all, except two said that it is important to get a job.

Table 45 - Measures taken to upgrade competencies and knowledge (multiple answers, single count)

<i>Town</i>	<i>Learn by doing</i>	<i>Professional training</i>	<i>Nothing</i>
Asmara	35	17	2
Massawa	5	1	3
<i>Total</i>	<i>38</i>	<i>18</i>	<i>5</i>

Source: field data

Such positive attitude towards professional training is confirmed by the fact that all job seekers sampled (57 out of 57) would be willing to take part to a training program. Job seekers were thus further asked in which sector they would like to enroll for a training. In Asmara, over 50% of the respondent reported tourism/hospitality as the preferred sector, followed by ICT (24,5%) and refrigeration (15%). In Massawa, most of respondent would like to engage in ICT sector (50%), followed by tourism (30%) and refrigeration (20%).

Table 46 - Preferred sector of training

<i>Town</i>	<i>Tourism/ hospitality</i>	<i>ICT</i>	<i>Refrigeration</i>	<i>Other*</i>	<i>Total</i>
Asmara	28	13	8	4	53
Massawa	3	5	2		10
<i>Total</i>	<i>31</i>	<i>18</i>	<i>10</i>	<i>4</i>	<i>63</i>

Source: field data. * Includes Music, Pharmacy, Make-up art, Hair dressing

However, when asked to express specific training needs, the majority seems to like to pursue computer related training skills, since in some cases they might be used in the tourism sector or even in the cold chain sector. For this reason, a clear-cut between sectors cannot be easily established. Therefore, the table below shows «basic» level and «advanced level» training needs for each sector considering the specific training program that should be provided. Jobseekers were asked to specify up to three trainings they would like to engage in. The table below clearly shows a high need of ICT and Tourism related training in both Asmara and Massawa. In the capital city, ICT related training is the most requested by jobseekers (20 out of 48, 41%), followed by tourism (35%) and refrigeration (6,2%). In Massawa the highest request is for tourism-related trainings (5 out of 9, 55%), followed by ICT (33%) and refrigeration (11%).

Table 47 - Jobseekers' training needs

Sector/Town	ICT	Tourism	Refrigeration	Other*
Asmara	20	17	3	31
Massawa	3	5	1	6
Total	23	23	4	37

Source: field data. * Other includes agriculture, music, hair dressing, art and design, make-up art, mechanics, pharmacy, driving

Taking into consideration the demand and the level (basic/intermediate/advanced) of the required trainings, in Asmara there is a high demand for basic ICT and tourism, a medium demand for intermediate and advanced ICT and Tourism, and a low demand for advanced ICT, advanced and basic refrigeration-related trainings. In Massawa there is a high demand for basic tourism, a medium demand for basic ICT and Refrigeration, and a low demand for advanced ICT, Tourism and Refrigeration. Basic level in ICT includes computer literacy, internet browsing and basic office application; intermediate level includes video editing and computer maintenance; advanced level includes computer engineering. In tourism/hospitality basic level includes food serving, cooking and basic English; intermediate level includes tour guiding and accounting; advanced level includes management. In refrigeration, basic level includes basic training in air conditioning installation and repair; intermediate level includes electronics; advanced level includes cooling system maintenance.

Table 48 - Job seekers' training demand and training needs

Sector	Training needs	Training level	Training Demand	
			Asmara	Massawa
ICT	Computer literacy	Basic	High	Medium
	Microsoft Office	Basic	High	Medium
	Internet browsing	Basic	Medium	Low
	Video editing	Intermediate	Low	Low
	Computer Maintenance	Intermediate	Medium	Medium
	Computer engineering	Advanced	Low	Low
Tourism	General Hospitality	Basic	High	Medium
	Waitressing	Basic	High	Medium
	Cooking	Basic/Intermediate	High	High
	English language	Basic/Intermediate	Medium	Low
	Tour guiding	Intermediate	Low	Low
	Accounting	Intermediate	Medium	Medium
	Management	Advanced	Low	Low
Refrigeration	Air conditioning and refrigerators installation and repair	Basic	Medium	Low
	Electronics	Basic/Intermediate	Low	Low
	Industrial cooling systems control	Advanced	Low	Low

Source: field data

4.5 Students interviews

The survey has been conducted among 100 students living in Asmara and Massawa attending different education levels, i.e. secondary level schools, corresponding to high school, and college. Initially, the project intended to sample 100 students equally distributed between Asmara and Massawa, but due to the limitation the research encountered (see above) the final sample was mainly formed by 68 students living in Asmara (68) and 32 students living in Massawa.

About sex, 59 interviewed students are males, 41 are females, with an equal gender distribution in Asmara (70% males) and Massawa (65% males). The sample also reflects data about enrolled in the secondary education (high schools) in Eritrea, where males predominate⁴.

Table 49 - Students sample per residence and sex

<i>Town</i>	<i>Sex</i>		<i>Total</i>
	<i>Female</i>	<i>Male</i>	
Asmara	20	48	68
Massawa	21	11	32
<i>Total</i>	<i>41</i>	<i>59</i>	<i>100</i>

Source: field data

The largest part of the sample, 55 out of 97, attended high schools, 42 were enrolled in a College program with a difference in the two geographical areas: all interviewed students in Massawa were attending high schools courses; about Asmara, 42 students were attending college courses, 23 enrolled in high schools.

Table 50 - Students sample per residence and education level

<i>Town</i>	<i>Level</i>		<i>Total</i>
	<i>High school</i>	<i>College</i>	
Asmara	23	42	65
Massawa	32	0	32
<i>Total</i>	<i>55</i>	<i>42</i>	<i>97</i>

Source: field data

Asked about the educational program that they were taking, 52 out of 100 students sampled provided such information. Among college students, the 14 respondents showed a high variability; 2 students attended study programs focused on accounting; 6 on Medicine and health science (Public health, Medicine, Clinical Laboratory Technology, health science). The remaining 6 students attended different courses related to Psychology, Law, Computer science -1, Automotive Laboratory, Electrical engineering - 2). According to the sample, only the three students attended programs such as Computer science and Electrical engineering showing coherence with two of the three economic sectors considered strategic, i.e. ICT and Refrigeration/Air conditioning.

⁴ See above «females are more prone to be out of school (57,5%) compared to their male counterparts (46,7%) at this level of education».

Table 51 - College students – enrolment frequency

<i>College Programs</i>	<i>Enrolment frequency</i>
Accounting	2
Automotive technology	1
Clinical laboratory science	1
Computer Science	1
Electrical engineering	2
Health science (Medical School)	2
Law	1
Medical Laboratory Technology	1
Psychology	1
Public health	2
<i>Total</i>	<i>13</i>

Source: field data

Considering pupils of the sample enrolled in the secondary schools, 35 responded to the question about programs. The overwhelming majority (32) attended science high school in Massawa, providing programs coherent with economic sector of ICT and Refrigeration/Air conditioning and which could be employed in professional training and job related to the those; 3 students gave information about the level (2 attending the 10th level, 1 attending the 9th level).

Table 52 - Secondary school students – enrolment frequency

<i>Secondary school</i>	<i>Enrolment frequency</i>
10th grade	2
9th grade	1
High school science stream	32
<i>Total</i>	<i>35</i>

Source: field data

Out of a total of 100 interviewed pupils, only 73 provided information about career *desiderata*, i.e. the job they would choose, 58 of them lived in Asmara, 15 in Massawa. Among those in Asmara, 36 gave their preference to tourism, 6 preferred ICT sector, and 16 would prefer a job in the sector related to refrigeration/air conditioning. Among students living in Massawa, only a student expressed a specific preference for tourism, 8 would prefer to work in ICT sector, finally 6 desired a job in the sector related to refrigeration/air conditioning.

Table 53 - Students responding to the question: «in which sector would you like to work?»

<i>Town</i>	<i>Sector</i>			<i>Total</i>
	<i>Tourism</i>	<i>ICT</i>	<i>Refrigeration/ Air conditioning</i>	
Asmara	36	6	16	58
Massawa	1	8	6	15
<i>Total</i>	<i>37</i>	<i>14</i>	<i>22</i>	<i>73</i>

Source: field data

When asked about the relevance and quality of the education system preparing to enter the labour market, 73 students gave a positive response, 27 gave a negative response. It should be considered the different percentage of negative response according to the city; only 6% of the students living in Massawa has a negative perception of the job perspective according to education. In Asmara, the percentage is much higher, 37% of interviewed students has a negative perception of the effectiveness of the education respect to skilled required by labour market.

Only five of those believing the educational system is not adequate to get a job gave reasons and it mainly referred to the lack of practice and training.

Table 54 - Students responding to the question: «Is the education system good at preparing to get a job?»

<i>Town</i>	<i>Education System</i>		<i>Total</i>
	<i>Yes</i>	<i>No</i>	
Asmara	43	25	68
Massawa	30	2	32
<i>Total</i>	<i>73</i>	<i>27</i>	<i>100</i>

Source: field data

About the importance of professional training to get a job, almost all the interviewed students gave a response (98); 87 of them believe into the relevance of gaining practical experience through a professional training, once completed the educational path. According to the sample, students living in Asmara are more skeptical about the relevance of a professional training, 15% expressed a negative evaluation about training experience; in Massawa, out of 32 sampled students, only one expressed a negative evaluation.

Table 55 - Students responding to the question: «Importance of professional training after the secondary school/ college to get a job»

<i>Town</i>	<i>Professional training</i>		<i>Total</i>
	<i>Yes</i>	<i>No</i>	
Asmara	56	10	66
Massawa	31	1	32
<i>Total</i>	<i>87</i>	<i>11</i>	<i>98</i>

Source: field data

When asked about What professional sector they would be trained, over 98 responding to the question, 47 provided information; of those, 30 were from Massawa and 16 from Asmara; moreover 34 attended high school, 10 were enrolled in a High Education programs, 3 attended other courses (commercial school). If considering the first response⁵, students provided a wide range of

⁵ The question «Do you think professional training after school/college is important to get a job?» «If yes, what kind of professional training?» was an open question and gave the chance to provide one or more answer.

professional sectors they would undertake. Of those, 8 high school pupils expressed a preference for Computer science and technology, added to 4 pupils indicating generic ICT sector; 4 pupils were interested in electricity and 2 in electronics; 4 high school students were interested in tourism and 3 in the sector of Refrigeration/air conditioning. The remaining high school students (9) showed interest in professional training related to other professional sectors (mainly: medical science⁶, nursing, accounting and management, technology).

Table 56 - Students' Preference about professional training – First response

Professional training sector	Asmara	Massawa	Total
Computer science and technology		8	8
Electricity		4	4
ICT		4	4
Tourism/Hospitality	3	1	4
Doctor/Medical science		3	3
Refrigeration/Air conditioning		3	3
Accounting and Management	1	1	2
Business management	2		2
Electronics		2	2
Trasversal skills	2		2
Acting/ playing as actor		1	1
Administration	1		1
Constant training	1		1
Diving/biodiversity		1	1
Ethics	1		1
Hostess (flight steward)	1		1
Internet based training	1		1
management system	1		1
Medical training	1		1
Nursering		1	1
practical training	1		1
Technology		1	1
Video Editing/camera operator		1	1
<i>Total</i>	<i>16</i>	<i>31</i>	<i>47</i>

Source: field data

If we consider the aggregation of all the responses provided by secondary school pupils, general ICT sector is the most interesting professional sector to the interviewed students (20 preferences) considering general ICT, computer science and technology, computer engineering, internet and networking, video editing. Electronics represents the second most interesting professional sector, counting 9 preferences, followed by accounting and business management (7 preferences), electricity (5 preferences), medicine/ health science (5 preferences), Tourism (4 preferences), Refrigeration/ air conditioning (3 preferences).

A higher variability is evident among college students; only 10 indicated a *desiderata* professional

⁶ Medical and health science professions are highly considered among students.

training, with the exception of a student indicating internet training, no one else showed interest in the economic sector of ICT, Tourism and Refrigeration/air conditioning⁷.

Table 57 - Students' Preference about professional training – aggregate responses

<i>Professional training</i>	<i>Asmara</i>	<i>Massawa</i>	<i>Total</i>
Computer science and technology		12	12
Electronics		9	9
Accounting and Management	4	3	7
Electricity		5	5
Health care/Medical science/Nursing	1	4	5
Tourism/Hospitality	3	1	4
ICT		4	
Refrigeration/Air conditioning		3	3
Trasversal skills	2	1	3
Mechanics		2	2
Technology		2	2
Computer basic training		1	1
Computer engineering		1	1
Internet based training	1		1
Network management		1	1
Wifi networking		1	1
Stewardess	1		1
Video Editing/ Camera operator		2	2
Other	5	16	21
<i>Total</i>	<i>17</i>	<i>68</i>	<i>85</i>

Source: field data

Asked about their own perspective about getting a job, out of 94 responses, 48 students thought that «Lack of opportunities» represented the most relevant limit they will find in their professional development. «Lack of skills and knowledge» represented the main limit for 22 students; «Lack of information» about labour market opportunities represented the main limit for 16 students. Only 2 of those perceived the multi-factorial limits and 6 thought that being under legal age would prevent them to get a job.

Table 58 - Factors that prevent getting a job

<i>Town</i>	<i>Factors that prevent getting a job</i>					<i>Total</i>
	<i>Lack of skills/ knowledge</i>	<i>Lack of job opportunities</i>	<i>Lack of information</i>	<i>All</i>	<i>Under age</i>	
Asmara	16	34	4	2	6	62
Massawa	6	14	12	0	0	32
<i>Total</i>	<i>22</i>	<i>48</i>	<i>16</i>	<i>2</i>	<i>6</i>	<i>94</i>

Source: field data

⁷ College students indicated a preference in sectors: accounting and business management; transversal skills, ethics.

Asked if available to be engaged in professional training, 71 students gave a positive response out of a total of 72 responding students.

Table 59 - Availability for training after completing high school/ college

<i>Town</i>	<i>Availability for training</i>		<i>Total</i>
	<i>Yes</i>	<i>No</i>	
Asmara	39	1	40
Massawa	32	0	32
<i>Total</i>	<i>71</i>	<i>1</i>	<i>72</i>

Source: field data

About the question if they would be available for a training programme after completing high school or college, out of 71 students giving a positive response, 56 also provided indication about economic sectors they would prefer to be trained, with an almost equitable division between Tourism (18 preferences), ICT (17 preferences), Refrigeration/air conditioning (17 preferences). It is also be considered that 21 students responded «other» in addition to the three referring sectors and indicated a wide range of professions (business administration and management, medical science/health care, biology, electricity, electronics).

Table 60 - Students' survey - Professional training sector

<i>Town</i>	<i>Sector chosen by those who are available for training</i>				<i>Total</i>
	<i>Tourism</i>	<i>ICT</i>	<i>Refrigeration/ Air conditioning</i>	<i>Other</i>	
Asmara	15	11	9	4	39
Massawa	3	6	8	0	17
<i>Total</i>	<i>18</i>	<i>17</i>	<i>17</i>	<i>4</i>	<i>56</i>

Source: field data

Comparing the responses about *desiderata* job, i.e. the job students would choose among ICT, Tourism and Refrigeration/ Air conditioning, and responses about professional training, survey discloses results apparently in contradiction. As seen in the above, out of 73 responding students, 37 would be employed in Tourism, 14 in ICT and 22 in Refrigeration/ Air conditioning. If we look at training opportunities, otherwise, sampled students would be equitably divided among the three sectors. It could be considered that students are more prone to consider access to labour market through a professional training, encouraging different choice respect of a direct access to labour market, if the existing job opportunities are considered. In this sense, professional training could contribute to differential choice and implement a more equitable job market, balancing labour supply and demand.

A further comparison is to be done between student's preference about professional training and the opportunity to choose among specific sectors. If we compare 60 and 61, generally ICT sector would be considered as the most relevant choice, according to survey results, for students living in Massawa. Professional training in ICT sector can be enlisted as top choice for students and could satisfy their learning needs.

Furthermore, professional training in Tourism and Refrigeration/Air conditioning is relevant only if considered a concrete alternative.

The table here below is a summary of the main training needs relieved through the survey, considering the reporting the desired professional training of sample students.

Table 61 - Students' training needs and demand

<i>Sector</i>	<i>Training needs</i>	<i>Training Level</i>	<i>Training Demand</i>	
			<i>Asmara</i>	<i>Massawa</i>
ICT	Computer application (basic)	Basic		Low
	General ICT	Intermediate		High
	Computer science and technology	Intermediate		High
	Video editing	Intermediate		Low
	Networking	Intermediate		Low
	Internet basic training	Basic	Low	
	Computer engineering	Advanced		Low
Tourism	Generic Tourism	Basic	High	Low
	Stewardess	Intermediate	Low	
Refrigeration	Refrigeration and Ventilation	Basic		Medium
	Electricity	Basic		High
	Electronics	Intermediate		High
	Mechanics	Advanced		Medium

Source: field data

Conclusions

The aim of the research was to carry out a needs analysis about professional training in Eritrea, specifically in the urban areas of Asmara and Massawa, considering the labour market both on the demand and supply sides. Once elaborated target groups' needs, the analysis intended to provide a road map to set up training courses for the development of professional skills, with the ultimate aim of enhancing formal workers' career, supporting informal workers and job seekers entering the formal labour market, facilitating the access of students and young bachelor/graduates to the labour market, matching supply/demand dynamics of the labour market.

The needs analysis is specifically targeted on three economic/vocational sectors identified by AID 11604 project: ICT, Tourism, Refrigeration/Air conditioning. The research identified five target groups interested by professional training: on the demand side (i) companies; on the supply side (ii) formal workers; (iii) informal workers; (iv) job seekers; (v) students. Moreover, some trainers, professionals, experts working in TVET centres have been interviewed.

As policy mainstream, the research should have considered target groups with lower opportunities, specifically women and persons with disabilities. In front of the pre-fixed objectives, the research encountered some limits on relevant issues. About the secondary research, the lack of academic literature, recent census in the country represented a challenge and made the research based on few national surveys on population and labour force. Unfortunately, limited data are available about demand side, i.e. the status and development of the economic sectors, companies, and economic growth. About primary research, the main limits referred to impossibility to reach all the intended target groups. Moreover, the outbreak of COVID-19 pandemic limited the direct interviews to stakeholders, policy makers and civil society and, consequently, the focus of the transversal target groups of women and disabled persons.

Despite the limitations encountered during the research, relevant results have been achieved.

The secondary research focused on Eritrea labour market force, i.e. the structure and the composition of Eritrean population and its involvement in the labour market. According to main sources, the demographic structure of the Eritrean population follows the model of developing countries, with the largest part of the population (53.3%) below 19 years of age. Females outnumbered males, 51.6% of the overall population are women. About geographical distribution, Eritrea is facing up the phenomenon of the growing urban population, with an estimated growth of 4.8% per year, mainly due to migration flow from rural areas.

Working age population represented 60% over the total; labour force represented 77.5% of the WAP. The analysis showed the low capacity of the Eritrean labour market to assimilate female workers. According to data, male rate of Working age population was 46%, but the male labour force rate was 49.2%. The analysis of Labour force participation rate confirms the higher involve-

ment of males in the labour market, since the rate of active males is about 82.9% compared to about 72.9% of females.

The percentage of labour force population is different considering the urban areas of Asmara and Massawa. In Asmara, LFP was 58.4%, considerably lower than the national figure. At the opposite, in the Zoba Semienawi Kayih Bahri, including Massawa, the labour force population was 81.4%.

National employment rate was 96.5%. Apparently, Eritrea does not suffer from a shortage of job opportunities, since unemployment rate attested at 3.5%.

Looking at the specific urban areas, the trend of the unemployment rate follows the trend of Labour force. In the Zoba Semienawi Kayih Bahri, including Massawa the unemployment rate was about 2.5%, lower than national figure; in Asmara it was about 9%.

The informal economy absorbs a large part of the labour force, 31% of the employees were informal workers, with a higher proportion among women and in urban areas. The survey conducted in 2010 disclosed that 84.6% of informal workers do not have any professional or vocational skills related to the job they are employed in; moreover, 59.6% of the interviewed persons admitted they acquired job-related skills after their employment; none of them received professional training before or during their employment period.

The education system in Eritrea faces the dual challenge of increasing access to educational opportunities and improving the quality of education at all levels in the school system. The issue of «decent work» represents a prominent challenge in Eritrea. Also the group of persons with disabilities represented a vulnerable category.

According to evidence drawn from the analysis of the labour market force, some conclusions could be drawn. The development of professional training programs could encourage the transition of workers from informal to formal economy, providing them with skills and competencies. The analysis of informal workers target group outlined the close relation between the low level of skills and competencies of the workers and the informal/vulnerable positions they occupy. In this sense, professional training can be a stimulus to the emersion of the informal side of the labour force and the general amelioration of job situation. The professional growth of women and disabled persons through specific training programs can enhance their capabilities, supporting their progressive independence and their inclusion in the labour market. Furthermore, the growth of urban population can overbalance the labour market. Setting up well tailored professional training programs could foster employment mechanism and discourage the exclusion of persons from the labour market. It also should be considered the youth of the Eritrean population, the overwhelming part of the population below 30 years of age with a higher propensity to learning and undertaking professional career according to emerging opportunities.

Overall, this research has shown that all the three target sectors of the AID project – Tourism, Refrigeration and ICT – are gradually developing and are likely to keep growing in the future, following the gradual opening of the economy to private investors and the peace agreement with Ethiopia. The three sectors are almost new entrant economic sectors in terms of skilled work force. The study revealed that the country's educational and vocational skills development is limited to the formal structures of schools starting from preschool to colleges, and the quality of the training offered is negatively affected by multiple factors including poor infrastructure, inadequate equipment facilities, shortage of materials, training tools and qualified instructors. There is not enough

opportunity that would enable adults and youths who are out of school to learn new skills or upgrade their competencies. The few existing private entities involved in one or another type of vocational training are only available for those who can afford to pay. Very few respondents among the target groups had ever taken training in the three vocational sectors. This in itself attests that the opportunities available for training in these fields are very limited.

In Eritrea, tourism sector is still at a nascent stage of development. The border war with Ethiopia and the following state of war known as no-peace-no-war-situation severely hampered the development of a sizable tourism industry in the country. However, the research has shown that the peace agreement is having positive effects on international tourism and the sector is expected to experience a sharp growth in the near future; at the same time the current employees in tourism are largely untrained, and there seem to be less availability of specific professional training in tourism/hospitality. Therefore, the need for tourism-related trainings is great among all the target groups of the project and both in Asmara and Massawa. Moreover, given that a large share of the labour force in the sector is composed of women (84%), professional training is expected to improve women's livelihoods and decent work creation. Many women are employed in the informal sector, thus professional training might also help the transition from informal to formal work. The research has also shown that in Asmara there is a growing informal labour market which involves skilled youths as tour guides; however, such workers have rarely received any formal professional training. Therefore, the provision of intermediate/advanced training might help them to formalize and improve their skills, while at the same time favouring young entrepreneurship and small business creation.

Refrigeration is kind of new area in Eritrea and most of the people employed in the sector do not have proper formal training. So far, refrigerators and air conditioners are used only to a limited extent in private houses, offices, shops, business, and production processes. Yet, as the economic and living conditions of the country improve, the potential need for skilled workers in domestic, commercial and industrial refrigeration/air conditioning is great. The research has shown that refrigeration/air conditioning-related activities are currently affected by the lack of qualified technicians and spare parts, especially at industrial level; many enterprises in Massawa have slowed down their operations because of the problems with maintenance of machineries and cooling systems, which also depend on the expertise and know-how of high skilled computer engineers/technicians (for which there is a shortage of). Overall, the demand for refrigeration/air conditioning training is higher in Massawa than Asmara. In the capital city there is however no availability of professional training in the field of refrigeration/air conditioning; in Massawa, the only training provider is the NCEW training center, which can only train a limited number of students. Given that the latter is already providing basic and intermediate training in refrigeration, it is advised also the provision of advanced industrial-related trainings.

Like tourism and refrigeration, the ICT sector has been slowly developing over the last years. Currently, ICT is limited to basic computer applications, secretarial functions and internet communication applications; few companies have introduced ICT technologies in their operations. Lack and unreliability of electricity supply and telecommunication networks, limited availability of ICT infrastructures and facilities, critical shortage of qualified ICT trainers and technicians were frequently reported during the research and are hampering the ICT development in the country. The need for basic and intermediate ICT training is therefore great in Eritrea. At industrial-level,

some enterprises reported difficulties with the maintenance and updating of computers, servers and software used in production processes and production systems control (specifically PLC). Yet, especially in Asmara where the availability of computers and internet services is moderately increasing, there is an indefinite but growing number of self-employed workers in the computer-related activities (maintaining, repairing, programming), suggesting that ICT sector is creating a small informal high-skilled labour market. Like for tourism sector, high quality professional training might facilitate the transition from informal to formal work, stimulate small business and entrepreneurship particularly for youths, and – together with formal workers upskilling - ultimately contribute to industrial development by solving the current problems that companies are facing.

Recommendations

Considering the findings of the research in relation to labour market and all the target groups included in the study – companies, formal and informal workers, jobseekers, and students – some recommendation can be drawn.

1. After identifying training needs, a technical cooperation programme with the support of the social partners and the government could be envisaged. This programme would support social dialogue efforts in developing a national employment and decent work policy, in the context of the implementation of Employment and Decent Work for Peace and Resilience Recommendation, 2017 (No. 205) on Transition from War to Peace, and in line with International Labour Standards. This comes also in the context of the recent initiatives undertaken by the Horn of Africa Confederation of Trade Unions (HACTU) to strengthen the role of trade unions in peace building and fostering democracy.
2. The development of tools devoted to enhancing professional skills and, consequently, to improve vulnerable workers' status, can represent a stimulus to build NCEW unionization in ICT, Hospitality, Refrigeration sectors and targeted companies.
3. According to research results, trainings programs should consider vulnerable target groups, specifically women, persons with disabilities, informal workers, suffering from low level or no education at all, as they are more exposed to informal economy and inadequate employment situations.
4. TVET courses should provide career opportunities fostering matching between labour demand and supply.
5. Since the involvement of NCEW in the governance of the professional development and the overall improvement of workers' state, it can be envisaged to set up targeted TVET trainings via NCEW training centres to address the training needs identified in the research and further defined by NCEW. Specifically, according to research findings, the table below shows the specific trainings needs, levels and demand according to sectors and locations.

Table 62 - Training needs in the three sectors

Sector	Training needs	Training level	Training Demand	
			Asmara	Massawa
ICT	Microsoft Office	Basic	High	Medium
	Internet browsing	Basic	Medium	Low
	Social Media	Basic/Intermediate	Medium	Low
	Audio-visual	Intermediate	Medium	Low
	Computer Applications	Intermediate	Medium	Low
	Networking	Intermediate	Medium	Low
	Computer Maintenance	Intermediate	High	Medium
	Softwaring	Advanced	Medium	Medium
	Servering	Advanced	Medium	Low
	Computer engineering	Advanced	Low	Low
Tourism	Waitressing	Basic	High	High
	Cooking	Basic/Intermediate	High	High
	Customer care	Basic/Intermediate	High	High
	Languages	Basic/Intermediate	Medium	Medium
	Tour guiding	Intermediate	High	Medium
	Diving	Intermediate	Low	High
	Accounting	Intermediate	High	Medium
	Store keeping	Intermediate	Low	Low
	Management	Advanced	Medium	Low
Refrigeration	Refrigeration and air-conditioning installation and repairing	Basic	Medium	Medium
	Occupational and Safety Health	Basic	Medium	Medium
	Mechanics	Basic/Intermediate	Low	Medium
	Electricity	Basic/Intermediate	Medium	High
	Electronics	Basic/Intermediate	Medium	High
	Industrial cooling systems control (PLC)	Advanced	Low	High
	Electrical engeneering	Advanced	Medium	Medium
	Electronic engeneering	Advanced	Medium	Medium

Source: field data

List of Abbreviation

AfDB African Development Bank
AIDI Africa Infrastructure Development Index
CEACR Committee of Experts on the Application of Conventions and Recommendations (ILO)
CeVoT Centre for Vocational Training
CIA Central Intelligence Agency
EASO European Asylum Support Office
EriTel Eritrea Telecommunication Services Corporation
ESECE Eritrean School Leaving Certificate Examination
GDP Gross Domestic Product
HCFC Hydrochlorofluorocarbons
HTTC Hotel and Tourism Training Centre
ICT Information and Communications Technology
IIR International Institute of Refrigeration
ILO International Labour Organisation
ITU International Communication Union
LFP Labour Force Population
LFPR Labour Force Participation Rate
MoA Ministry of Agriculture
MoE Ministry of Education
MoF Ministry of Fisheries
MoH Ministry of Health
MoLG Ministry of Local Government
MoT Ministry of Tourism
MLHW Ministry of Labour and Human Welfare
NCEW National Confederation of Eritrean Workers
NEP National Educational Program
NUEYS National Union of Eritrean Youth and Students
NUEW National Union of Eritrean Women
ODP Ozone-Depleting Substances
PFDJ People's Front for Democracy and Justice
PLC Programming Logical Controller
PTR Pupil–Teacher ratio
SMAP Institute of Training, Education, Research and Consultancy
TVET Technical and Vocational Education and Training

UNCTAD United Nations Conference on Trade and Development
UNEP United Nations Environment Programme
UNESCO United Nations Educational, Scientific and Cultural Organization
UNDP United Nations Development Programme
UNWTO United Nations World Tourism Organization
WAP Working Age Population
WB The World Bank

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