



# LIBYA'S SOCIO-ECONOMIC AND PFM CHALLENGES AND OPPORTUNITIES

UN-ESCWA and The World Bank

E/ESCWA/EDID/2015/WP.6

## Libya's Socio-economic and PFM Challenges and Opportunities

UN-ESCWA and The World Bank

### Contents

General Overview	8
State Building and Governance	10
Human and Early Childhood Development in Libya	15
Perceptions on Key Socio-economic Issues in Libya	31
Macroeconomic and Public Financial Management Issues	41
Conclusions and Recommendations	56
Annex I: Data And Methods for ECD Measurements	62
Annex II: In Depth Analysis and Disaggregation of Perception-based Data	67
Annex III: Libya National Budget (2012-2015)	78

### Figures

Figure 1: Oil Production and Violence in Libya (2010-2015)	9
Figure 2: Governance Indicators for Libya (Percentile Rank)	10
Figure 3: Relationship between GNI per Capital and Political Stability Indicator	11
Figure 4: GNI Per Capital and Government Effectiveness	11
Figure 5: GNI per Capita and Voice and Accountability Indicator	12
Figure 6: GNI per Capita and Regulatory Quality Indicator	12
Figure 7: GNI per Capita and Rule of Law Indicator	13
Figure 8: GNI per Capita and Control of Corruption Indicator	13
Figure 9: Unemployment Rate: Gender Disparities (%)	16
Figure 10: Anthropometric Indicators of Child Development	29
Figure 11: Anthropometric Indicators by Children's Age	29
Figure 12: People Able to Get Ahead by Working Hard	31
Figure 13: Respect for Human Rights	32
Figure 14: People Feeling Free	33
Figure 15: Children Having the Opportunity to Grow and Learn	34
Figure 16: Confidence in the Judiciary	35
Figure 17: Confidence in Military	36
Figure 18: Confidence in the National Government	37
Figure 19: People Having Gone without Food	38
Figure 20: How the People Rated Economic Conditions	39
Figure 21: Expectations for the Future	40

Figure 22:	Annual Oil Production and GDP (1994-2014)4	1
Figure 23:	Oil Production and Main Events in Libya (Jan 2011-Feb 2015)4	2
Figure 24:	Libya's Trade Balance (1994-2014) as % of Real GDP44	4
Figure 25:	FDI, Remittances, Imports and Exports (2010-2014)4	5
Figure 26:	GNI Per Capita and Global Competitiveness Index4	6
Figure 27:	Indicators of Private Sector Lending4	7
Figure 28:	Composition of Libyan Government Revenues (1989-2013)5	0
Figure 29:	Libya Total Budget Expenditures (2012-2015)5	1
Figure 30:	Composition of Libyan Government Expenditure as % of Total Spending52	2
Figure 31:	Budgetary versus Extra Budgetary Expenditure (1993-2014)	2
Figure 32:	Gross Fixed Capital Formation (% of GDP)5	5
Figure A1:	Results Questions on the Perception of Inequality6	8
Figure A2 l	How would you evaluate the current economic situation in your country?6	9
Figure A3 V (3-5 years)	What do you think will be the economic situation in your country during the next few year compared to the current situation?79	s 0
Figure A4. services?	How would you evaluate the current government's performance on improving basic healt 7	h 1
Figure A5.	Taking all things together, would you say you are:7	6
Figure A6.	All in all, how would you describe your state of health these days? Would you say it is:.7	6
Figure A7.	What is the highest educational level that you have attained?	7

### Tables

Table 1: Humanitarian Situation in Libya (2011-2015)	9
Table 2: Distribution of Household Wealth Across Regions	19
Table 3: Prevalence of Access to Selected Utilities and Appliances Across Regions	20
(% of Households)	20
Table 4: Share of Children or Women with Access to Various ECD Opportunities	24
(in %, in 2007)	24
Table 5: Children or Women with Access to Various ECD Opportunities Across Regions (%)	25
Table 6: Access to ECD between Demographic Groups	26
(Children and Women with Access to ECD, Bottom%-Top%)	26
Table 7: Decomposition of Inequality in ECD Opportunities	27

Table 8: Libya's Economy SWOT Analysis	43
Table 9: Actual Revenues from 1/1/2015 to 30/9/2015 in LYD Billion	48
Table 10: Actual Expenditure from 1/1/2015 to 31/9/2015 in LYD Billion	50
Table A1. Probit regression results	66
Table A2. Perception of inequality and income-classes	72
Table A3. Perception of inequality and social-classes	73
Table A4 Perception of inequality and political and religious views	74
Table A5. Perception of inequality and freedom, trust, cheating, work, and gender role	74

## Acknowledgments

This paper is the result of joint effort by UN-ESCWA and The World Bank under the leadership of Vito Intini (UN-ESCWA) and Michael Schaeffer (The World Bank) and benefits from inputs provided by Vladimir Hlasny, George Willcoxon, Lea Batal, Lida El-Ahmadieh (all ESCWA) and by Francesca Recanatani, Khalid El Massnaoui, Wesal Ashur, and Marouane El Abassi (all World Bank).

Note: This document has been reproduced in the form in which it was received, without formal editing. The opinions expressed are those of the authors and do not necessarily reflect the views of the respective institutions.

## Introduction

After over a year of civil war, almost four years of fraught transition, and months of intensive U.N.led negotiations, Libyans are poised to form a Government of National Accord (GNA) and begin the process of reunifying the country. However, without swift and bold action by the GNA the situation in Libya will remain prone to reform reversal and instability due to fragmented state institutions, disrupted oil exports, shrinking government revenues, local political monopolies, and violence from radical groups. Indeed, the GNA and the Libyan institutions will be put to a difficult test as they will have to quickly deliver in a time when demand from Libyans has never been so pressing, against a backdrop of weakened public services, under a global scenario of persistently low oil prices (and hence their revenues) and a regional context of increasing political instability and polarization.

This paper is intended to stimulate discussion and debate and is inspired by the holistic approach put forth in the 2011 World Development Report and the post-2015 SDG debate (particularly SDGs 1-5, 10 and 16). It aims to show how developmental and humanitarian aspects can be closely related to the institutional and governance ones, including public finance issues. Following a short overview, the paper is organized by chapters into four interrelated themes: Governance issues; Human and early childhood development (a critical topic with long-lasting development consequences); perceptions based on polling data to measure the Libyans' views, feelings, and expectations in critical socio-economic areas vis-à-vis the rest of the Arab region; and, Macroeconomic and Public Financial Management issues. The last section provides some conclusions and presents some key recommendations.

## GENERAL OVERVIEW

As this paper is being formulated, Libya is currently split between two rival governments and their allied coalitions, with significant parts of the country under the control of extremist groups that will continue acting as spoilers to the transition. With the 2011 uprising, Libyan polity lacked a common national vision and was further fragmented due to the rise of local groups and militias that polarized around two rival governments as well as over access to natural resources. The whole society lacked independent social institutions that could help manage a peaceful transition: Libya had no political parties, regional or local governments, trade unions, independent legislators or judges, independent or robust civil society groups, or even prominent religious or traditional organizations. To their credit, the civil society groups that did exist (or have since emerged) have been quite active, as have the newly independent media.

Libya's 2013 Human Development Index was relatively high compared to the rest of the Arab region, positioning the country in the 55<sup>th</sup> position out of 187 countries.<sup>1</sup> This can be explained in part by the relatively good performance in terms of education and health (at least from a merely quantitative perspective) as measured by schooling, life expectancy, literacy rates, infant mortality rate, and, according to the 2009 MDG report, Libya was well on track to achieve the MDGs by 2015 before the conflict erupted.<sup>2</sup>

The economy, traditionally dependent on oil, has suffered greatly from ongoing conflict and state fragmentation. The sabotage of port terminals and production facilities has caused significant fluctuations in oil exports, and hence government revenues, throughout the transitional period. Smuggling economies have developed. Economic growth is flat or negative, as the fighting has damaged infrastructure, and foreign investing has stopped. Strong economic, social, and security ties between Libya and its neighbors Tunisia and Egypt mean that instability in Benghazi and Tripoli are felt in Tunis and Cairo as well. The violence and economic instability in Libya has been increasingly correlated.

Indeed, one of the key drivers of the fragmentation of the Libyan transition was the issue of control over oil revenues. Political groups in Libya are understandably hesitant to allow their rivals to control these large revenue streams. Even if all the factions committed to the fair distribution and non-military use of oil revenues, there are few mechanisms to enforce such a deal.

<sup>&</sup>lt;sup>1</sup> Libya HDR data, HDR 2014

<sup>&</sup>lt;sup>2</sup> The Millennium Development Goals In the Great Socialist People's Libyan Arab Jamahiriya: Towards 2015: Achievements and Potentials (2009)



Figure 1: Oil Production and Violence in Libya (2010-2015)

Sources: US Energy Information System; ACLED; ESCWA staff calculations.

As a result, macroeconomic health has worsened as the fighting damaged infrastructure, and business and consumer confidence declined. The collapse in international oil prices since June 2014 has cut the country's foreign exchange revenues and the outlook based on protracted low prices is not encouraging for the country's economy.

The political instability and rise in violence following the 2011 uprising has markedly exacerbated the dire humanitarian situation, driving thousands into displacement or into seeking refuge. Overall, it is estimated that over 3 million people, about half of the total Libyan population, have been affected by conflict and around 2.44 million are in need of assistance (HCT, September 2015).

According to UNHCR, increased conflicts between militias and intra-tribal clashes have led to the mass displacement of approximately 434,000 people inside Libya as of July 2015. Comprehensive displacement data is incomplete since most international organizations left Libya in July 2014, and lack of security prevented access to areas of conflict.

Table 1: Humanitarian Situation in Libya (2011-2015)											
	2011	2012	2013	2014	2015						
Conflicts	715	292	594	1367	968						
Fatalities	6142	557	443	2635	2220						
Refugees	4384	5251	3314	4158							
IDPs	93565	59425	53579	363067	434000						

Sources: UNHCR; ACLED; ESCWA staff calculations. Note: Data on IDPs 2015 are based on July 2015 estimates by UNHCR. Data on 2015 fatalities and conflicts end in Sept 15.

## State Building and Governance

The Gaddafi regime was characterized by the concentration of political and economic power between selected offices and individuals placed at the center of the state to the detriment of a balanced and sustainable institutional capacity. This created a deeply centralized and clientelist system. As a result, while there are formal offices, ministries, and agencies, the real decision-making circles have been placed in informal structures which operate as arbiters of power and rents. A generalized mistrust exhibited in formal governing structures leading to a fragmentation of governance systems and ineffective policy-making has ensued.

The upheaval that swept in Libya gave the civil society a stronger voice which ever since the revolution has been demanding transparency and accountability from the government. However, the post-Gaddafi governments were unable to end armed conflict, stop the deterioration of the security situation and impose authority which resulted in the worsening of the governance situation. Indicators in the figure below show governance performance between 2009 and 2013. All indicators recorded significant drops except for voice and accountability which showed improvement.



### Figure 2: Governance Indicators for Libya (Percentile Rank)

Source: WGI, World Bank. Note: WGI capture Governance performance of Libya before, during and after the 2011 civil war.

Libya's government performance was deficient (Figures 3-8). Compared to other countries with an average GNI per capita higher than \$10,000, Libya scored lowest for all governance categories by at least two points for each of them. Transparency International's Corruption Perception Index (CPI), which ranks how corrupt a country's public sector is, also confirmed that Libya is relatively more

corrupt. In 2014, it ranked Libya 166/175 with a score of just 18 (on a scale 0-100, where 0 is very corrupt, 100 is very clean).



Figure 3: Relationship between GNI per Capital and Political Stability Indicator

Source: WGI, World Bank. Note: Estimate of governance (ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance)



Figure 4: GNI Per Capital and Government Effectiveness

Source: WGI, World Bank. Note: Estimate of governance (ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance)



Figure 5: GNI per Capita and Voice and Accountability Indicator

Source: WGI, World Bank. Note: Estimate of governance (ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance)



Figure 6: GNI per Capita and Regulatory Quality Indicator

Source: World Bank. Note: Estimate of governance (ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance).



Figure 7: GNI per Capita and Rule of Law Indicator







Source: WGI, World Bank. Note: Estimate of governance (ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance).

The two key elements of states – i.e. the monopoly on the use of force and the collection of taxes - are currently absent. The over-reliance on budget revenues proceeding from oil reserves has induced to

the absence of wide taxation base. In summary, the paramount task of any future transition government is to build rather than rebuild public administration, starting perhaps from a clearly articulated vision and policy that defines nature, mandates and roles of the country's governance system at central and local levels.

In the public administration apparatus, there is absence of transparency and accountability mechanisms. Policy processes remain confusing and arbitrary. In recent times there has been an intense discussion involving government agencies, international organizations, and others about the alternatives for improving the current system.

As far as the subnational level is concerned, some of the primary issues that have been identified in the debate as slowing down the consolidation of subnational local autonomy and the decentralization process could be summarized as follows: 1) the lack of an integrated vision on decentralization in policy formulation; 2) the influence of the central public authorities' representatives on the activity of local public authorities; 3) the lack of clarity with respect to the administration of services; 4) the lack of transfer of some competences to a local administrative authority; and, 5) the absence of an equitable transfer system. As a result, the level of interaction between deconcentrated government offices and municipalities is characterized by lack of clarity on roles and responsibilities.

## HUMAN AND EARLY CHILDHOOD DEVELOPMENT IN LIBYA

#### **Overview**

The population is reportedly facing a deterioration of their income situation due to cash and banking transaction shortfalls. Livelihoods of migrant workers are also impacted due to fewer job opportunities resulting from declining foreign investments.<sup>3</sup> Soaring food prices have become a major concern, particularly among IDPs.<sup>4</sup> By September 2015, 175,000 IDPs were found to be food insecure.<sup>5</sup> IDPs and the wider population are also confronted with electricity and water shortages.

Health and education systems have been severely disrupted.<sup>6</sup> The rate of functioning facilities reportedly stands at about 82 percent of healthcare facilities, and 80 percent of hospitals, with significant disparities across regions. The Eastern and the Southern regions have the lowest share of functioning schools due to the lack of teachers.<sup>7</sup> As a result, school attendance records lower percentages in the East. School attendance is sizably also lower for boys compared to girls.

The labor market situation, already dire before 2011, is likely to have worsened, particularly affecting youth. The overall unemployment rate in Libya increased from 13.5 percent in 2010 prior to the 2011 revolution to an estimated 19 percent as of 2012.<sup>8</sup> Youth unemployment is estimated at approximately 48 percent and female unemployment at 25 percent.<sup>9</sup> Gender disparities were higher among youths – 60.4 percent for young females against 36.4 percent for young males (Figure 9). These trends can partly be attributed to "lower labor market mobility among females" and "inefficient school to work transitions" (World Bank 2015).

According to the World Bank (2015) study, the lack of employment opportunities among all labor groups reflects low labor productivity, mismatch between labor skills and sector demands, and high rate of job queuing for public sector jobs. At the same time, the private sector has not been able to absorb the large pool of the unemployed, since the private sector in Libya accounts only for a small amount of employment. Corruption and nepotism in both the private and public sectors has further hindered competition and creation of adequate opportunities in the market for skills.

Prior to the conflict, approximately 40 percent (1.2-1.5 million) of the total labor force consisted of foreign workers who are an important source for Libya's labor market. Many Libyans do not accept

<sup>&</sup>lt;sup>3</sup> Libya, Interagency Rapid Assessment, December 2014 see

http://documents.wfp.org/stellent/groups/public/documents/ena/wfp271609.pdf

<sup>&</sup>lt;sup>4</sup> At end of 2014, 84 percent of IDPs were found to be at risk of food insecurity (reported in ACAPS, June 2015)

<sup>&</sup>lt;sup>5</sup>2015 Libya, Humanitarian Needs Overview.

<sup>&</sup>lt;sup>6</sup> Preliminary findings of Libya Multi-Sector Needs Assessment (MSNA, June 2015), as reported in ACAPS (Libya, Humanitarian Impact of the conflict, secondary data, June 2015), <u>http://acaps.org/img/documents/s-acaps-sdr-libya-humanitarian-impact-of-the-conflict-5-jun-2015.pdf</u>

<sup>7</sup> Ibid

<sup>&</sup>lt;sup>8</sup> Ibid. the lack of reliable labor market data from Libyan current labor information system is a major impediment for informed labor and employment policy making. Statistics have not been updated since the 2011 uprising - Other sources however suggest levels as high as 30 percent; see ACAPS – Libya report, June 2015

low-skill jobs which, as a result, are typically filled by foreign workers. High skill jobs, especially in the oil and gas sectors, are also often filled by foreign workers.

During the revolution, nearly one million foreigners left the country which forced private sector employers to fill openings with Libyan nationals. The revolution also gave rise to informal organizations that employed almost 300,000 Libyan nationals for combative militia roles. These roles provided employment opportunities for a large fraction of formerly unemployed men. This fact indicates that these organizations may well have provided temporary employment opportunities during the revolution for the unemployed (World Bank 2015).





Source: World Bank, WDI.

### Early Childhood Development in Libya

This section evaluates children's living conditions and opportunities for early childhood development (ECD) across Libya prior to the 2011 start of political turmoil. To this end we utilize the 2007 wave of the Libyan Pan-Arab Project for Family Health (PAPFAM) survey. Libyan PAPFAM survey contains several modules on the living conditions, education, health, nutrition and some time-use of national population, with emphasis on the living conditions of children and their mothers (League of Arab States 2009). This survey is thus ideal for the study of physical and cognitive development of newborns and young children. The 2007 survey is the last demographic survey conducted in Libya, and is thus our most recent source of insight on the living conditions of children and their mothers. While these conditions have surely worsened since 2011, we can view information from this survey as indicative, or as optimistic bounds, for the true conditions facing Libyan children today.

In what follows, we summarize the available data, evaluate children's access to various forms of ECD opportunities nationwide as well as across various socio-economic groups, and comment on the source of inequality in ECD access rates across households. Finally, we briefly discuss policy

implications of the identified trends. Previous Libyan administrations have shown interest in actively promoting children's welfare through appropriate policy interventions. Libya has signed a number of treaties under the Convention on the Rights of the Child (CRC). The trends identified here can be used to guide public policy toward children in the years to come.

### **Data Overview and Estimation Results**

The 2007 wave of Libyan PAPFAM survey covers a variety of indicators of children's education, health, nutrition and quality of life. Refer to the Appendix for details. The survey covers 18,629 households, 11,920 ever-married women 15–49 years of age in women's module, 12,550 children younger than 5 reported on by the responding women in children's module, and 9,734 live births in a birth register module. These sample sizes take only account of individuals responding to the survey completely. Samples sizes used in regression models may be lower than these numbers due to missing data for dependent or explanatory variables, or perfect prediction of outcomes among some explanatory variables for some observations.

### Economic development and distribution of resources

Household wealth and access to various essential utilities and appliances are important predictors of children's and mothers' welfare. Tables 2 and 3 report the distribution of wealth and appliance ownership across Libyan regions in FY2007 (the latest where data was readily available).<sup>10</sup> Because wealth in the survey is only measured in relative terms, Table 3 provides information on households' absolute levels of access to various resources.

Table 2 shows that, at the time of the survey, wealth was distributed very unequally across coastal vs. inland areas, provinces, and individual shabiyah<sup>11</sup>. Wealthy households are disproportionally concentrated in Fezzan Province, surprisingly even more so than in Tripolitania, while Cyrenaica province is the poorest. Also surprisingly, inland regions appear wealthier than coastal ones. This is due to a small number of shabiyah with exceptional wealth profiles. In the poorest region, El Batnan (coastal shabiya in Cyrenaica), over one-half of all households are in the bottom national quintile in terms of wealth, and fewer than 7 percent are in the top national quintile. By contrast, in the richest region, El Joufra (inland, in Fezzan province), nearly one-half of all households are in the top national quintile, while fewer than 7 percent are in the bottom quintile.

Table 3 shows the prevalence rates of households' access to various utilities and appliances by region. These data supplement those in Table 2, by informing on resources available to households, in absolute value. Besides studying relative distribution and inequality across regions, we can use these data to comment on the absolute level of economic development and children's living conditions in the country at large. Table 3 shows that availability of modern flushing toilets connected to sewer is generally low, at 63 percent nationwide. Households in some regions (such as El Joufra, Derna and

<sup>&</sup>lt;sup>10</sup> Shabiyah's were part of the Libyan Public Administration structure in FY2007, which this survey data reviews. Libyan's current public administration structure no longer includes Shabiyah's.

<sup>&</sup>lt;sup>11</sup> Shabiyah's were part of the Libyan Public Administration structure in FY2007.

Tripoli) enjoy near universal access to modern facilities, while in other regions prevalence rates are much lower (around 20% in Al Merqeb and Wadi El Haya). The poor level of access is problematic, because the lack of properly sanitized and convenient facilities increases children's and women's risk of contraction of various diseases. It also makes them vulnerable to other risks associated with the nighttime use of outdoor and other types of toilets.

Access to safe and convenient drinking water through public pipelines is low nationwide (at 41%) and subject to particularly large disparities. Access to pipeline infrastructure is spurious in coastal regions (at 38% of households), and particularly in Tripolitania (22%), while it is relatively high in Fezzan and Cyrenaica provinces (76–82%). Across individual shabiyah, rates of access to piped water vary from 7% (El Nikat El-Khams and El-Gabal El-Gharb) to 98% (El-Kufra). On the other hand, access to electricity for lighting and natural gas for cooking (through public pipeline or indoor tank) is universal in all regions of the country. This usage of clean energy sources is important as it prevents children from being exposed to carbon monoxide and other harmful particles produced by the burning of non-gas fuels.

In regard to appliances useful during child-rearing, Libyan households' ownership of a refrigerators, computers, and internet connections were evaluated. Nearly all households nationwide (95%) have a refrigerator, with only a few notable gaps in Al Merqeb and Wadi El Haya (87–90% access). Libyan children and women thus appear to have adequate access to properly stored food and medications.

Ownership of computers and connection to the internet is very low in Libya, at 14 percent and 4 percent of households nationwide, respectively. Large disparities in access to computers and the internet exist across regions. In El Joufra, 28 percent of households have a computer and one-tenth have internet connection, and in Tripoli, one-fifth of households have a computer and 7 percent have the internet. On the other end of the spectrum, in El Marj and Naloot, only 5–7.5 percent of households have a computer, and the internet-connection rate is a mere 0.2–0.4%.

Tables 2 and 3 thus suggest that there are substantial disparities in households' wealth across regions in Libya, which affect men's, women's and children's quality of life. This is a great policy concern. Political structures under which individuals face vastly unequal circumstances and unequal opportunities for self-improvement produce social insecurity, social exclusion and poverty traps, and polarization of society. These may lead up to open conflicts and even uprisings.

Region \ Wealth	Poorest	Second	Middle	Fourth	Richest
Inland shabiyah <sup>a</sup>	22.39	20.67	17.68	17.45	21.81
Coastal shabiyah	23.05	21.01	20.51	18.96	16.47
Provinces	20100	- 110 1	20101	10000	10111
Tripolitania	22 71	1992	1984	1913	18 39
Fezzan	22.71	14.39	16.46	16.93	29.91
Cyrenaica	22.51	25.14	21 37	18.11	11 73
	25.05	25.11	21.57	10.11	11.75
Shabiyah	50.44		4440	0 = 4	
1. El Batnan	53.44	17.17	14.19	8.54	6.65
2. Derna	28.10	26.59	20.67	14.64	10.01
3. Gebel Akhdar	25.61	25.35	18.76	12.57	17.71
4. El Marj	34.16	28.80	21.01	11.41	4.62
5. Benghazi	15.46	26.46	24.20	22.81	11.06
6. El-Wahat	18.45	21.62	19.61	21.64	18.69
7. El-Kufra	21.50	21.89	18.38	17.56	20.67
8. Sirt	11.71	16.57	23.18	26.63	21.92
9. El Joufra	6.60	10.85	15.86	18.55	48.15
10. Misurata	22.85	15.63	19.76	22.87	18.89
11. Al Merqeb	43.81	18.81	16.29	11.67	9.43
12. Tripoli	19.09	22.12	21.66	19.09	18.05
13. El Jafara	18.44	18.54	19.57	20.41	23.04
14. Zawia	19.93	19.60	20.67	22.30	17.50
15. El Nikat El-Khams	17.33	16.48	18.86	18.72	28.61
16. El-Gabal El-Gharb	24.67	27.72	17.70	15.13	14.77
17. Naloot	22.47	23.30	19.40	20.19	14.64
18. Sebha	24.34	14.23	20.14	17.99	23.30
19. Wadi El Shati	17.75	17.28	19.89	19.89	25.19
20. Wadi El Haya	28.35	15.06	12.81	14.76	29.02
21. Murzuk	26.37	12.18	12.84	14.18	34.43
22. Ghat	23.62	19.50	11.91	15.53	29.43
Libya	22.94	20.95	20.02	18.70	17.39
Sampled households	4,456	3,719	3,509	3,330	3,615

# Table 2: Distribution of Household Wealth Across Regions(% of Households)

Notes: Computed by authors based on 2007 Libyan PAPFAM data. Households weighted using population sampling weights.<sup>a</sup> Coastal shabiyah include: El Batnan, Derna, Gebel Akhdar, El Marj, Benghazi, Sirt, Misurata, Al Merqeb, Tripoli, El Jafara, Zawia and El Nikat El-Khams.

		(// 01 1100	ischiolas/				
	Flush toilet	Drinking	_	Cooking			
Region \ Weal	th connected	water	Electric	fuel:	Fridao	Computor	Intornat
Inland shahiyaha	61 4%	56.1%	99.5%	98 5%	95.2%	13.0%	3.4%
Coastal shabiyah	63.0%	37.7%	99.8%	98.7%	94.6%	13.8%	3.6%
	03.070	57.770	JJ.070	JU.7 70	9 1.0 70	15.070	5.070
Provinces							
Tripolitania	60.8%	21.9%	99.9%	98.6%	94.1%	13.7%	3.6%
Fezzan	59.5%	82.1%	100.0%	98.5%	95.7%	16.3%	4.6%
Cyrenaica	68.4%	75.7%	99.3%	98.8%	95.9%	12.7%	3.2%
Shabiyah							
1. El Batnan	49.9%	60.4%	99.9%	98.6%	92.9%	6.6%	3.1%
2. Derna	92.4%	88.1%	100.0%	99.2%	92.6%	13.3%	3.0%
3. Gebel Akhdar	75.2%	53.4%	97.9%	99.7%	97.3%	11.4%	4.7%
4. El Marj	44.3%	20.9%	100.0%	98.4%	94.7%	5.4%	0.2%
5. Benghazi	72.8%	90.9%	99.7%	98.9%	97.2%	15.2%	3.3%
6. El-Wahat	65.7%	85.4%	97.0%	97.2%	95.3%	15.9%	4.2%
7. El-Kufra	38.0%	98.4%	100.0%	98.6%	94.6%	8.8%	2.1%
8. Sirt	56.0%	77.9%	100.0%	88.8%	98.0%	13.7%	2.4%
9. El Joufra	99.4%	74.0%	100.0%	99.0%	98.5%	28.1%	10.3%
10. Misurata	63.9%	51.9%	99.8%	97.6%	94.3%	12.2%	2.1%
11. Al Merqeb	16.2%	10.4%	99.9%	98.9%	86.6%	6.7%	1.2%
12. Tripoli	91.1%	10.2%	100.0%	99.4%	95.1%	19.9%	6.8%
13. El Jafara	27.8%	10.8%	100.0%	99.4%	96.5%	14.8%	3.0%
14. Zawia	26.9%	47.9%	99.9%	99.5%	94.2%	10.7%	2.1%
15. El Nikat El-Khams	88.9%	6.8%	99.9%	98.7%	94.7%	11.5%	3.5%
16. El-Gabal El-Gharb	72.8%	6.7%	100.0%	99.3%	94.6%	9.2%	2.5%
17. Naloot	33.9%	33.7%	99.9%	98.2%	95.1%	7.5%	0.4%
18. Sebha	80.0%	76.6%	100.0%	98.8%	96.9%	20.9%	4.5%
19. Wadi El Shati	51.5%	89.8%	100.0%	97.8%	97.0%	9.4%	2.0%
20. Wadi El Haya	21.1%	87.9%	100.0%	98.6%	90.2%	11.3%	4.7%
21. Murzuk	44.7%	81.2%	99.9%	98.5%	95.9%	13.5%	3.9%
22. Ghat	72.2%	89.7%	99.7%	97.4%	97.8%	14.4%	3.3%
Libya	62.8%	40.8%	99.8%	98.7%	94.7%	13.6%	3.6%

# Table 3: Prevalence of Access to Selected Utilities and Appliances Across Regions(% of Households)

Notes: Computed by authors based on 2007 Libyan PAPFAM data. Households weighted using population sampling weights.<sup>a</sup> Coastal shabiyah include: El Batnan, Derna, Gebel Akhdar, El Marj, Benghazi, Sirt, Misurata, Al Merqeb, Tripoli, El Jafara, Zawia and El Nikat El-Khams.

#### Children's access to developmental opportunities

ECD indicators evaluated in this chapter fall under three broad categories: children's access to health, nutrition and a variety of pre-school cognitive-development activities. These indicators are selected

in agreement with the principles underlying the Human Development Index and Human Opportunity Index that essential health services, sufficient nutrition and adequate-quality primary education are basic human rights that should be available to all children without exception.

Health indicators evaluated here include mothers' prenatal care and child delivery by a trained attendant; adequate health-center visits during pregnancy; full immunization by age one, and neonatal and infant mortality. Nutrition indicators include children's access to iodized salt at home, and children's anthropometric status. Iodine is a fundamental element, adequate doses of which are important for the development and functioning of children's nervous system. Children's anthropometric status including stunting (low height for age), underweight (low weight for age) and wastage (low weight for height) are important outputs of food supply in early childhood. These are commonly used indicators of children's nutrition and balanced diet.

Table 4 presents the rates of access of Libyan children to the various ECD opportunities, as evidenced in the PAPFAM survey. These access rates can be compared to those in other Arab countries evaluated by El-Kogali and Krafft (2015), and Hlasny and Intini (2015). Refer to the three respective rows in Table 4.

Libya fares well on some measurements of ECD. Still, young children in Libya suffer inadequate access to a number of development opportunities that hinder their physical, emotional and cognitive growth.<sup>12</sup> Specifically, women's access to qualified physicians at the onset of pregnancy and at delivery is near universal (94% and 99%, respectively), but regular checkups during pregnancy are only available to 76 percent of women. In terms of full immunization for major preventable diseases, coverage of Libyan children, at 86 percent, is adequate for the protection of children themselves and of their peers, and significantly higher than the Arab regional average of 58 percent. Child mortality in Libya is also better than regional average – 1.1 and 1.7 percent for neonatal and infant mortality, respectively, compared to 1.9 and 3.3 percent region-wide. Access to adequately iodized salt, at 53 percent of children, is above the regional average (43%), and near levels observed in Algeria (58%). Libya is also doing well in terms of child labor – only 7 percent of children are reported to be forced to perform house chores (including working for family members, in jobs outside the household, or doing house chores), compared to 24 percent region-wide.

On the other hand, Libya underperforms in two dimensions of ECD: rate of stunting and access to early childhood care and education (ECCE) programs. Libyan children suffer from a high rate of stunting, 21 percent, above the regional mean of 19 percent, and significantly above what would be expected in a healthy population (2.3%). Another area where Libya needs significant improvement is access to institutionalized preschool education. Only 5.3 percent of Libyan 3–4 year-olds are enrolled. This compares to 17 percent region-wide, including 24 percent in Algeria, 32 percent in Egypt and 40 percent in Morocco (Hlasny and Intini, 2015).

<sup>&</sup>lt;sup>12</sup> Statistics reported in tables 3-6 differ slightly from those in El-Kogali & Krafft's (2015) book. This is because our study uses a different source of survey data, different definitions of selected variables, and different factors in regression specifications, in order to make results consistent with Hlasny and Intini's (2015) paper.

Table 5 shows the access rates to ECD opportunities for individual regions. This table indicates that the status of ECD varies across regions, particularly for children's mortality rates, children's physical growth (stunting, underweight and wasting), access to iodized salt, availability of preschool education programs, and families' norms regarding child labor.

Table 6 supplements the findings in Tables 4 and 5 by evaluating inequality in access to ECD opportunities across various demographic groups. ECD opportunities between the poorest one-fifth and the wealthiest one-fifth of households within each country are reported in the first row. We can see modest differences in ECD access rates between children in the poorest and those in the richest quintile households. However, across many forms of ECD, children in the richest quintile face somehow better conditions than those in the poorest quintile.

Row 2 in Table 6 reports on an exercise quantifying the *dissimilarity* in prevalence rates of various ECD activities across households with different socio-economic backgrounds. This table shows that, for most ECD indicators, between 0.76% and 28.58% of those ECD opportunities should be redistributed across socio-economic classes from more-advantaged to less-advantaged groups, if equality of opportunities were desired. These numbers are modest compared to regional trends (13% across all dimensions of ECD, compared to 16% across the Arab region), indicating that inequality in ECD opportunities in Libya is not high by regional standards (Hlasny and Intini, 2015). Finally, combining the information from the overall national access rates and the *dissimilarity indices* for individual forms of ECD, row 3 shows the so-called "human opportunity index" (HOI).

Table 7 decomposes the prevalence rates of ECD opportunities according to the contributions of individual background characteristics. Results in Table 7 can be interpreted as fractions of the ECD opportunities across population that can be attributed to particular household characteristics, such as household wealth, mother's education, father's education and province of residence.

Differences in household wealth, mother's education, and father's education are each found to account for around 20 percent of inequality in access to various ECD opportunities. Interestingly, differences across provinces play a more significant role, explaining approximately 40 percent of inequality in access to ECD opportunities. There are notable differences across individual forms of ECD. Mothers' education is a primary factor explaining differences in their prenatal care and children's immunization. Regional differences play primary role with regard to women's access to trained assistance with childbirth, incidence of underweight and wasting among children, availability of adequately iodized salt, enrolment in preschool education, and forced engagement of children in domestic or other work. This suggests that great disparities exist across regions in the availability of medical centers and preschool programs, as well as in norms regarding children's role in the household. Regions may also differ in the scale of their nutrition-monitoring programs and in the provision of iodized salt to disadvantaged families. Surprisingly, household wealth plays a primary role only in driving the inequality in the rate of stunting. It explains a third of the differences in stunting rates across households. Father's education is less influential in driving the disparities in the access to ECD, just as previous studies found (El-Kogali and Krafft, 2015; Hlasny and Intini, 2015), but has a primary role in explaining differences in child mortality. Approximately 40% of the

explainable differences in neonatal and infant mortality rates are attributable to fathers' education. (Table A1 in the Appendix reports the results of probit regressions of children's access to ECD opportunities. Coefficients estimated for individual explanatory variables agree qualitatively with the Shapley values discussed above.)

	Prenatal care	Prenatal visits: 4+	Skilled delivery	Full immun.	Neonatal mortality	Infant mort.	Stunted	Under- weight	Wasted	Iodized salt	ECCE 3–4yrs	Child labor
			-		-						-	
Fraction with ECD access	93.8	75.5	98.7	85.8	1.1	1.7	21.0	5.6	7.0	52.5	5.3	7.1
Hlasny & Intini (2015) sample												
Weighted avg. <sup>a</sup>	74.8	56.5	69.5	62.4	2.1	3.4	18.5	8.1	5.2	43.6	21.2	22.0
Range					1.0-							
-	53.0-	38.9-	23.3-	9.7–		1.7–	6.4–	1.4–	1.2-	1.5-	2.3-	12.3-
(min-max)	99.4	96.0	99.6	92.7	3.8	8.4	38.1	36.3	30.1	91.0	40.2	52.1
El-Kogali & Kraf	ft (2015) sa	mple										
Range	47.0-	30.6–	35.7–	30.7–	1.0-	1.5–	7.6–	6.9–	6.4–	0.4–	2.7–	7.0–
(min-max) <sup>b</sup>	99.1	94.5°	99.6	93.0	4.0	7.1	53.1	45.6 <sup>c</sup>	22.3°	87.7	40.2 <sup>d</sup>	24.0

# Table 4: Share of Children or Women with Access to Various ECD Opportunities(in %, in 2007)

Notes: Computed by authors based on 2007 Libyan PAPFAM data. Access to prenatal and delivery care is evaluated among women who gave birth in the past 2 years; the rest of indicators are evaluated among children.

<sup>a</sup> Average of countries' most recent waves for which indicator is available, weighted by estimated 2015 population size (UN-DESA, 2015) to represent approximately the ECD access rates across the Arab region. Sample includes: Algerian MICS 2006, Comorian DHS 2012, Djiboutian MICS 2006, Egyptian DHS 2005, Iraqi MICS 2006, Jordanian DHS 2007 and 2009, Mauritanian MICS 2007, Moroccan MICS/PAPFAM 2006 and PAPFAM 2011, Palestinian DHS 2004, PAPFAM 2006, MICS 2010 and 2014, Somalian MICS/PAPFAM 2006, Sudanese PAPFAM 2006, Syrian MICS 2006, and Tunisian MICS 2006.

<sup>b</sup> Sample includes: Algerian PAPFAM 2002, Djiboutian MICS 2006 and PAPFAM 2012, Egyptian DHS 2008, Iraqi MICS 2006 and 2011, Jordanian DHS 2012, Lebanese PAPFAM 2004, Libyan PAPFAM 2007, Moroccan DHS 2003/2004 and MICS/PAPFAM 2006, Palestinian PAPFAM 2006, Syrian MICS 2006 and PAPFAM 2009, Tunisian MICS 2011, and Yemen's PAPFAM 2003 and MICS 2006.

<sup>c</sup> in a subsample of 5–6 countries where the indicator is available.

<sup>d</sup> For Egypt, Libya and Syria, El-Kogali & Krafft report ECCE attendance for children 3–5 years of age.

								Under				
	Prenata	Prenatal	Skilled	Full	Neonatal	Infant		-		Iodized	ECCE3	Child
	l care	visits: 4+	delivery	immun.	mortality	mort.	Stunted	weight	Wasted	salt	-4yrs	labor
Inland shabiyah <sup>a</sup>	93.2%	71.0%	95.8%	86.6%	1.4%	2.4%	17.0%	6.7%	8.0%	53.3%	7.5%	14.1%
Coastal shabiyah	93.9%	76.5%	99.3%	85.7%	1.0%	1.6%	22.0%	5.3%	6.8%	52.3%	4.8%	5.4%
Provinces												
Tripolitania	93.8%	73.4%	99.7%	84.8%	1.0%	1.7%	22.3%	5.2%	6.5%	63.1%	5.9%	5.5%
Fezzan	91.7%	75.0%	91.5%	85.0%	2.4%	3.4%	18.4%	9.0%	11.3%	68.4%	10.3%	28.0%
Cyrenaica	94.3%	80.9%	98.0%	88.6%	0.9%	1.3%	18.7%	5.5%	7.0%	19.1%	2.1%	4.8%
Shabiyah												
1. El Batnan	93.0%	74.2%	96.9%	67.9%	0.0%	0.0%	29.5%	6.3%	7.8%	23.3%	2.1%	1.5%
2. Derna	96.5%	81.6%	99.7%	85.5%	0.7%	1.6%	22.3%	6.2%	4.8%	22.9%	1.1%	10.6%
3. Gebel Akhdar	85.4%	66.1%	91.2%	87.6%	0.0%	0.2%	16.7%	13.3%	18.9%	4.5%	3.0%	5.8%
4. El Marj	88.7%	64.3%	99.1%	95.2%	0.9%	1.7%	20.3%	4.2%	3.3%	3.0%	0.0%	10.0%
5. Benghazi	98.1%	92.7%	99.7%	90.8%	1.6%	1.8%	17.3%	3.2%	4.2%	28.0%	2.0%	3.5%
6. El-Wahat	96.5%	83.7%	98.6%	91.7%	0.3%	1.6%	13.0%	2.8%	4.2%	12.5%	3.9%	1.6%
7. El-Kufra	93.8%	73.6%	97.6%	84.4%	0.9%	1.4%	21.2%	9.8%	16.3%	7.9%	2.7%	8.3%
8. Sirt	97.6%	90.1%	97.8%	66.0%	0.6%	0.8%	13.8%	4.1%	6.2%	63.1%	3.6%	19.0%
9. El Joufra	95.7%	82.3%	96.9%	92.0%	0.6%	0.6%	24.7%	13.4%	10.8%	73.7%	13.0%	0.0%
10. Misurata	93.5%	74.5%	99.8%	81.8%	0.5%	0.6%	30.5%	5.1%	9.6%	60.0%	3.8%	2.7%
11. Al Merqeb	81.2%	64.8%	99.8%	75.9%	1.2%	2.0%	21.3%	3.9%	7.7%	64.0%	2.8%	3.7%
12. Tripoli	98.8%	87.2%	100.0%	97.1%	0.7%	1.3%	21.2%	4.4%	4.8%	69.1%	8.9%	4.4%
13. El Jafara	99.1%	80.1%	99.6%	82.7%	1.6%	3.9%	12.7%	2.8%	4.0%	61.5%	7.3%	14.3%
14. Zawia	89.1%	64.4%	100.0%	80.2%	1.6%	1.8%	33.5%	8.7%	9.1%	89.8%	6.1%	0.0%
15. El Nikat El-Khams	93.5%	44.6%	100.0%	84.1%	0.7%	0.7%	36.8%	11.8%	10.0%	24.2%	3.4%	0.0%
16. El-Gabal El-Gharb	93.0%	57.0%	99.2%	85.0%	0.6%	1.4%	16.2%	5.6%	3.8%	62.2%	5.7%	0.9%
17. Naloot	93.7%	63.3%	98.8%	87.9%	2.0%	3.0%	19.6%	4.7%	6.4%	60.2%	10.1%	23.8%
18. Sebha	96.3%	82.3%	96.9%	83.4%	2.3%	3.8%	14.5%	8.6%	8.4%	89.3%	10.4%	47.4%
19. Wadi El Shati	92.3%	72.9%	91.2%	86.1%	1.9%	2.7%	6.7%	4.6%	21.3%	70.6%	9.0%	7.8%
20. Wadi El Haya	79.2%	59.6%	87.8%	78.3%	5.3%	6.6%	18.9%	11.8%	10.9%	43.3%	14.8%	12.2%
21. Murzuk	95.3%	79.2%	87.2%	86.5%	0.7%	1.7%	30.4%	8.7%	7.6%	61.3%	3.8%	58.7%

### Table 5: Children or Women with Access to Various ECD Opportunities Across Regions (%)

22. Ghat	90.3%	64.3%	79.0%	87.4%	2.8%	4.4%	19.6%	8.6%	6.8%	60.4%	17.0%	28.6%
Libya	93.8%	75.5%	98.7%	85.8%	1.1%	1.7%	21.0%	5.6%	7.0%	52.5%	5.3%	7.1%

Notes: Computed by authors based on 2007 Libyan PAPFAM data. Households weighted using population sampling weights.

<sup>a</sup> Coastal shabiyah include: El Batnan, Derna, Gebel Akhdar, El Marj, Benghazi, Sirt, Misurata, Al Merqeb, Tripoli, El Jafara, Zawia and El Nikat El-Kham

	Prenatal	Prenatal	Skilled	Full	Neonatal	Infant		Under-		Iodized	ECCE	Child
	care	visits: 4+	delivery	immun.	mortality	mort.	Stunted	weight	Wasted	salt	3–4yrs	labor
Bottom–top wealth quintile <sup>a</sup>	89.7-	66.9–	98.2-	81.6-	1.1–	1.9–	21.9-	6.2–	7.9–	44.1-	2.7-	7.9–
	96.5	78.0	98.8	86.3	0.8	1.2	19.2	4.5	6.4	61.1	7.9	8.5
% if opportunities to be	1.98	5.14	0.76	2.96	28.58	23.22	5.11	11.13	9.04	16.14	28.36	25.80
redistributed – dissimilarity index	(0.77)	(1.45)	(0.34)	(2.06)	(17.94)	(13.52)	(3.81)	(7.54)	(6.45)	(1.98)	(12.05)	(19.68)
Human Opportunity Index <sup>b</sup>	91.93	71.53	97.87	83.17	1.36	2.14	22.07	6.21	7.67	44.06	3.78	8.82
	(0.40)	(0.69)	(0.15)	(1.12)	(0.17)	(0.20)	(0.59)	(0.28)	(0.32)	(0.55)	(0.34)	(0.67)
Hlasny & Intini (2015) sample												
Wealth-quintile range (wghtd. avg.	54.1-	32.3-	52.7-	53.2-	0.0.1.7	4.2-	23.6-	10.4-	5450	33.5-	6.2–	19.2–
bottom-top range) <sup>c</sup>	94.1	82.3	86.2	63.0	2.3–1.7	2.4	14.4	6.4	5.4–5.8	57.1	40.2	21.7
Weighted avg. HOI	69.7	50.0	68.5	65.2	4.8	4.2	24.0	9.6	10.0	36.6	22.8	25.0

# Table 6: Access to ECD between Demographic Groups (Children and Women with Access to ECD, Bottom%-Top%)

Notes: Standard errors are in parentheses.

<sup>a</sup> Reported numbers are the differences in average access rates between the bottom and the top wealth quintile.

<sup>b</sup> For negative indicators (child mortality, inadequate physical growth, violent disciplining & child labor), HOI for the corresponding opportunity is used: HOI =

 $1 - (1 - \tilde{D})\bar{p}$  where tildes are for the corresponding positive ECD opportunities, and lower HOI are preferred.

<sup>c</sup> Average of countries' most recent waves for which indicator is available, weighted by estimated 2015 population size (UN-DESA, 2015) to represent approximately the ECD access rates across the Arab region. Sample includes: Algerian MICS 2006, Comorian DHS 2012, Djiboutian MICS 2006, Egyptian DHS 2005, Iraqi MICS 2006, Jordanian DHS 2007 and 2009, Mauritanian MICS 2007, Moroccan MICS/PAPFAM 2006 and PAPFAM 2011, Palestinian DHS 2004, PAPFAM 2006, MICS 2010 and 2014, Somalian MICS/PAPFAM 2006, Sudanese PAPFAM 2006, Syrian MICS 2006, and Tunisian MICS 2006.

	Prenata l care	Prenatal visits: 4+	Skilled deliver y	Full immun.	Neonatal mortalit y	Infan t mort.	Stunted	Underweight	Wasted	Iodized salt	ECCE3 -4yrs	Child labor
Wealth	21.80	26.35	2.34	27.12	19.20	20.28	33.67	10.10	16.78	6.28	18.76	8.32
Mother's educ.	48.47	40.73	17.71	34.02	13.35	20.62	9.71	15.76	5.15	4.76	16.06	9.97
Father's educ	27.49	21.23	12.62	14.99	37.19	40.11	17.20	13.32	1.70	4.59	20.03	10.80
Province	2.24	11.69	67.32	23.87	30.27	18.99	18.48	44.92	72.07	84.31	40.76	70.81

### Table 7: Decomposition of Inequality in ECD Opportunities

Contribution of Selected Background Characteristics (Normalized Shapley Value, %)

Notes: Reported numbers are the Shapley decomposition values in percentage form – percentages of the differences in access to ECD opportunities across socio-economic groups that can be attributed to individual socio-economic characteristics – normalized to add up to 100% across the evaluated characteristics. Sex of children and of household heads is omitted from this table even though they serve as criteria in selected models.

#### Children's Physical Growth: Anthropometric measurements

To evaluate children's physical development in Libya more carefully, we next consider the entire distribution of health outcomes across all children covered by the Libyan PAPFAM survey. We restrict our attention to children's anthropometric status – their height for age, weight for age and weight for height as well as the corresponding stunting, underweight and wasting rates – and provide a snapshot across all children 0-60 months old, as well as a dynamic picture of the evolution of children's physical health across years. The entire distribution of children's anthropometric measurements is compared with a reference distribution with a healthy population mean and variance. This allows us to see the severity of nutritional deficiency across the entire children's sample. In addition, children's anthropometric measurements relative to a healthy population are shown by children's age in months. This allows us to identify crucial points in time when children's growth is impeded most severely.

Libyan children's height-for-age has fat tails and is distributed significantly lower than that of a reference healthy population. The heavy tails indicate the presence of an unexpectedly large number of children in the Libyan population with very low but also with very high height-for-age, compared to what would be expected in a healthy population. Children's weight-for-age is distributed the same way as a reference healthy population, with only slightly heavier tails. Weight for height is distributed slightly higher than the reference distribution, implying that insufficient body mass is not typically a problem among Libyan children. However, the heavy left tails of the weight-for-age and weight-for-height distributions still indicate that a disproportionally many Libyan children are officially classified as being underweight and wasted – 5.6% and 7.0%, respectively. These rates are marginally higher among children in the poorest quintile of the population (refer to Figure 2 for illustration). These results jointly suggest that the deficiency of growth is a critical problem among Libyan children overall, while the deficiency of body mass is a problem among a small number of children. The most significant drop in children's height occurs in the first 18 months of babies' lives. The rate of stunting jumps to 28 percent among children in the poorest families and rises above 20 even among children in the wealthiest.

#### Figure 10: Anthropometric Indicators of Child Development



Children Aged 0–59 Months vis-à-vis Reference Population, Libya 2007 (z-score deviations from reference distribution)

Notes: Computed by authors based on 2007 Libyan PAPFAM data.

The blue vertical line on the right shows the median of the reference healthy population, the standard normal distribution, while the red vertical line on the left shows the median less two standard deviations, serving as the official cutoff point for stunted, underweight and wasted population.





(Libya 2007)

Monthly means of the top, middle & bottom wealth-quintile groups are shown along with smoothed lines of the top (blue) & bottom (red dashed) quintiles.

Notes: Computed by authors based on 2007 Libyan PAPFAM data.

Each point represents the mean of values in a wealth-quintile group for a particular month. Fitted lines for the top and bottom wealth-quintiles are lowess-smoothed using a locally-weighted running-line least-squares method.

## PERCEPTIONS ON KEY SOCIO-ECONOMIC ISSUES IN LIBYA

This section utilizes the latest perception surveys that have been conducted in Libya and aims to show how the country is performing vis-à-vis the rest of the region during this delicate transition phase. People's aspirations and perceptions towards opportunities and justice are difficult to measure and monitor. Indeed, even if the overall macroeconomic trends were encouraging, it could well be the case that the combined effect of deterioration in the quality of public services and environmental degradation, and worsening of corruption practices may combine with one another to the point of worsening the overall well-being of a person and her perception of the State and of the fragile social contract that is to emerge. Hence, these subjective indicators are very useful due to their complementarity vis-à-vis the more traditional socio-economic indicators.

### Being Able to get Ahead by Working Hard

The GCC countries have overall a higher belief in meritocracy than the rest of the Arab region in general. The non-GCC countries in the pre-revolutions period, in 2008, attested a decline in the proportion of their population believing they can get ahead by working hard: from 83% in 2006 to 69% in 2008. In the following few years, people were regaining hope in meritocracy before experiencing the disappointing aftermath of the uprisings. However, since 2013, the proportion of people in the region increased – from 76% to 84% for the non-GCC countries – towards a greater belief of getting ahead by working hard. Libya was actually very close to the GCC countries average in 2012 and had 90% of its population believing they can get ahead by working hard.





Source: Gallup.

### **Being Treated with Respect**

Figure 13 below indicates that more than 63% of Libyans felt-low-to-no respect for individual human rights in 2013, while only 9% found they were respected. In GCC countries, people considered a much greater respect for the human rights (48%) in the 2010s, than in the 2000s (25%).

In the early 2000s, on average 13% of the people in the non-GCC countries believed in the respect for human rights in their country. This figure is relatively stagnant until 2014 when a rise appears at the time of the Arab Spring. Non-GCC inhabitants generally consider that their human rights are not being respected: 38% of them for the period 2005-2009 to 51% at the time of the revolutions in the region.





### **Feeling free**

In 2012, 52% of Libyans felt a "great deal of freedom" in their country compared to 55% of the average population of the GCC countries, and just 39% of the population of the rest of the non-GCC countries.

Source: World Value Survey.



#### Figure 14: People Feeling Free

Source: World Value Survey.

### Children can Learn and Grow

Since 2006, around 55% of the people in non-GCC countries have considered that most children in their country have the opportunity to learn and grow. However from 2009 to current, non-GCC countries experienced a decreasing rate in their population believing in the opportunity for their children to learn and grow, declining from 59% in 2006 to 48% in 2014. GCC countries perceive themselves as a place where children can thrive, supported by 81% of respondents. In 2012, Libya stood even lower than the non-GCC's trend with only 46% believing in the education of their children in the country.



Figure 14: Children Having the Opportunity to Grow and Learn

Source: Gallup.

### **Confidence in the Judiciary**

A fall in the confidence in the judiciary in non-GCC countries is clearly notable between the 2005-2009 period and in the aftermath of the Arab Spring. Libya was at the average of the rest of the non-GCC countries in 2013: 50% of high trust, 27% of average trust and 13% of low trust. Indeed, 53% of Libyans had a high trust in the judiciary, 28% an average trust and 13% a low trust. People from GCC countries seem to place a much higher trust.



### Figure 16: Confidence in the Judiciary

Source: World Value Survey.

### **Confidence in the Military**

During the period 2010-2014, the GCC countries are rather politically stable compared to Libya. That explains why a greater proportion of population in the GCC countries have a high confidence in their military (83%), when only 49% of Libyans expressed high trust in their military.

Before the downward trend driven by the Arab uprisings, non-GCC countries experienced a regaining in confidence of the population in their military. On the period 2010-2014, the population of the non-GCC countries has on average lost confidence in their military. In 2013, compared to the rest of the non-GCC countries, Libya stands at even a lower level in terms of trust in the military.



Figure 115: Confidence in Military

Source: World Value Survey.

### Confidence in the government

Unlike the GCC countries, Libya was part of the region affected by the Arab uprisings and therefore its people had a much lower trust in the national government than its GCC neighbors. In the non-GCC countries, the confidence of the population in their national government has significantly dropped (from 64% of high trust to 35%) after 2010 due to the disruptive raise of revolts against their respective political regime. The credibility of the national governments has been challenged, thus the trust in the regime fell during the Arab Spring in the non-GCC countries. In the same way, Libya experienced a loss in trust in its government. Only 23% of the population highly trusted their government in 2013, while 32% of them had an average confidence and 38% put a low trust in it.


Figure 18: Confidence in the National Government

Source: World Value Survey.

### Food security

Over the period 2010-2014, Libya seems to have better performed in terms of food security than the rest of the non-GCC countries and the region. More than 72.3% of Libyans declared that they never went without enough food to eat, while only 15.6% and 15% can say the same respectively in the rest of the region and in the rest of the non-GCC countries.



Figure 19: People Having Gone without Food

Source: World Value Survey.

#### **Economic conditions**

Approximately 73% of the people in the GCC countries gave a good to excellent rate to their economic conditions, while, and not surprisingly, less than half of the population of Libya gave a similar rate to their national economy. In 2012, Libyans' confidence in their national economic conditions is closer to, on average, the people's confidence in the overall region than to the one of the rest of non-GCC countries. One of the reasons is that the Libyan economy rebounded in 2012. Even though Libya had still to catch up with its pre-war economic level, this number boosted Libyans' opinion of their economy, while the major part of the rest of the non-GCC countries at that time was still suffering from a downward fall of their economy due to the Arab Spring destabilization.



Figure 20: How the People Rated Economic Conditions

Source: Gallup.

### **Expected Life in the Future**

In 2012, Libyans' expectations of a better life 5 years from there were high above the ones of the rest of the Arab region on average and even higher than the ones of the GCC countries. On a scale from 0 – corresponding to the worst possible life they expect; to 10 – the best possible life they think they can get – Libya has an overall rate of 8.4. The GCC countries are on average at 7.6; while the rest of the region is at 6.7; and the rest of the non-GCC countries at 5.8. These figures mean that expectations of the Libyan population are high, which poses further pressure to deliver on future governments.



Figure 21: Expectations for the Future

Source: Gallup.

Annex II reports a more in-depth analysis of Libyans' perceptions on social justice disaggregated by key social categories and regressed on critical correlates that might influence people's perceptions on this topic in the country.

# Macroeconomic and Public Financial Management Issues

### **OVERVIEW**<sup>13</sup>

With the ninth largest oil reserve in the world, Libya was well positioned to develop along the path of the resource-endowed Gulf States. However, the damages incurred by a year of civil war, and almost four years of continuous struggle to impose authority has lowered the prospects of such a development recording unsustainable volatile patterns. Indeed, Libya's economy relies heavily on crude oil sales which account for roughly 95 percent of export earnings, and over 60 percent of GDP. This dependency on exports of raw materials has made the economy vulnerable to production shocks as has been witnessed in the last four years (Figure 22).



Figure 22: Annual Oil Production and GDP (1994-2014)

Sources: World Bank; and, US Energy Information System.

Oil production declined by 72 percent from an average of 1,789 thousand barrels per day (bbl/d) in 2010 to 501 thousand bbl/d in 2011. As a result, GDP contracted by 62 percent. Following the large fall in production, Libya was able to regain control of the oil industry and restore production from the end of 2011 onward. Oil production in 2012 rose by 196 percent, to a reported average of 1,483 thousand bbl/d, peaking at around 1,630 thousand barrels per day but still remained lower than precivil war levels. The fast recovery led to a 104.5 percent GDP growth. The situation remained

<sup>&</sup>lt;sup>13</sup> This section benefited from discussions with the International Monetary Fund (IMF), Central Bank of Libya (CBL), Ministry of Finance (MOF) and Ministry of Planning (Libya).

relatively stable until mid-2013, when Libya was hit by a double shock arising from frequent shutdowns on its oil fields and a civil war.

In June 2013, a Libyan Militia seized control of eastern oil terminals which led to a collapse in exports and a fall in oil production to its lowest post-Gaddafi level of 239 thousand bbl/d in April 2014. The lifting of oil blockades in mid-2014 allowed oil production to recover and exports to resume as of the third quarter of 2014. However, that steady increase in production was interrupted by an outbreak of violence in July 2014 coupled with a drop in the international price of Brent crude from \$115/bbl in June 2014 to 45\$/bbl in January 2015 (US-EIA, 2015). These events aggravated the economic crisis in Libya and made it difficult for National Oil Corporation, a state-owned entity, to export oil. Real GDP shrank by 13.6 percent in 2013 and by 24.0 percent in 2014. On the whole, crude oil production in 2014 averaged around 516 thousand bbl/d, less than one third of the pre-crisis average rate. As the fight over oil supremacy continues, production of crude oil in Libya hovers around 385 thousand bpd as of Aug15 (World Bank, 2015).





Source: US Energy Information System.

This high volatility pattern is set to discourage investment and sustainable growth in the medium term, which is badly needed in order to provide economic opportunities to the national youth bulge. Indeed, it is estimated that a sustained growth of over 6% would be needed in order to gradually reduce youth unemployment in the long term.

Table 8 below, provides a snapshot of a Strength, Weakness, Opportunities and Threats (SWOT) analysis of the country's economy as it stands nowadays.

Strengths	Weaknesses
<ul> <li>Relatively skilled and young work force</li> <li>Abundant mineral sources</li> <li>Relatively high HDI</li> <li>Strong economic links with Europe and emerging Africa</li> <li>Solid infrastructure in coastal areas</li> <li>Independence of CBL</li> </ul>	<ul> <li>Significantly overstaffed public administration</li> <li>Economy dependent on oil</li> <li>Weak private and financial sector</li> <li>High unemployment, particularly youth</li> <li>Regional income and service delivery inequalities</li> <li>Weak and uncertain public administration and PFM</li> <li>Unsteady and unclear desire to move forward after several years of conflict and political strife</li> </ul>
Opportunities	Threats
<ul> <li>Relatively skilled and young work force</li> <li>Governance reform is at the top of the political and peace agenda</li> <li>FDI opportunities set to arise if reforms take place</li> </ul>	<ul> <li>Uncontrolled migration flows</li> <li>Youth bulge "in waithood'</li> <li>Continued political uncertainty</li> <li>Security situation unstable</li> <li>Divided society and increasing polarization</li> <li>Continued global oil price weakness will adversely impact public administration spending and improvement in service delivery</li> <li>Complex political economy implications of subsidy reform</li> <li>Political use of Sovereign Wealth Funds</li> </ul>

Table 8:	Libva's	Economy	SWOT	Analysis

Source: Elaboration from World Bank (2014)

# **CHALLENGES AND OPPORTUNITIES**

### **Macroeconomic Issues**

The main oil fields, export terminals, and pipelines are still not operational due to strikes, security breaches, and damages. However, due to a low base effect created by a very low production in 2014-H1, oil production increased by 30 percent during the first 7 months of 2015 to an average 0.41 million bpd (this production level represents a fourth only of the potential 1.6 million bpd). As a result, GDP is estimated to rise by 2.9 percent in 2015.

Disruptions in the distribution networks of subsidized commodities and of public services are putting pressures on prices. Inflation jumped by 7.6 percent over the first quarter 2015 vs. 0.6 percent the same period last year. The accelerating inflation is mostly explained by higher prices of food (up 14.3 percent). For the whole year 2015, inflation is estimated to average around 6 percent.

Monetary conditions have been impacted by cash shortages that emerged since last year and culminated this year by the inability to meet the needs of the budget spending and imports. Money supply decreased in the first quarter of 2015 by 0.8 percent, compared to its rise by 8.9 percent the same period last year. This is mainly driven by the steep decline in foreign reserves by 13.6 percent. At the same time, credit to the economy slowed down to 9.5 percent from 13.3 percent in 2014-Q1. After depreciating by 6.5 percent last year, the official exchange rate of the LYD against the US\$ continued to weaken in 2015, depreciating further by 3.1 percent in the first quarter 2015 (1.3996 LYD/US\$). However, the Libyan Dinar in the parallel market suffered a huge depreciation, exchanging at around 3.9 LYD for a dollar.

## **Current Account Balance**

Libya relies heavily on imports, particularly for food. Between 2001 and 2010, Libya's imports and exports earnings rose by an annual average of 9.6 and 9.9 percent, respectively. The conflict in 2011 caused a 72 percent cut in oil production and a 61 percent cut in exports and imports. The loss of oil income reduced exports from \$38.8 billion in 2010 to \$15 billion in 2011 and reduced imports from \$16.5 to \$6.4 billion. After reporting trade surpluses for many years, Libya's trade balance plunged into a \$12.7 billion deficit in 2014 (Figure 24).





Source: World Bank data.

Turmoil in the hydrocarbon sector and generous subsidy system continue impacting the balance of payments. The crisis that developed in the oil sector since mid-2013, exacerbated by declining world oil prices, took a heavy toll on the main exported product of Libya. Representing 97 percent of total exports, revenues from oil exports are estimated to continue their steep slide in 2015 to reach less than a fifth of their 2012 level. At the same time, consumption driven imports remained high. The

balanced 2013 current account turned into high deficits of 50 percent of GDP in 2014 and 70 percent of GDP estimated this year. To finance these deficits, CBL drew US\$25 billion from its foreign reserves in 2014, and is expected to draw an additional US\$28 billion by end 2015. As a result, foreign reserves are being depleted rapidly to an estimated US\$55 billion by end 2015 (down from US\$ 107.6 billion in 2013).

Libya had drawn a large amount of foreign direct investment (FDI) after economic sanctions were lifted in 2004. Most FDI was concentrated in the oil and gas sector, while FDI in other sectors has been relatively limited given the challenging business environment, pervasive corruption and weak legal system. The rise in FDI stopped abruptly after the country entered a state of turmoil in 2011. The disruption of the hydrocarbon sector as well as the drop in oil prices has made the business environment very challenging and slowed down incentives for investment. International oil companies returned to the country after the civil war, which helped to restore FDI levels in 2012 nearly to their pre-crisis figures. However, this recovery was not robust to the halt in oil exports in July 2013.

The economic upheaval had a significant impact on remittances too. A mass departure of foreign workers reduced remittances. Remittance outflows have dropped from \$1,609 million in 2010 to \$650 million in 2011. They picked again to \$1971million and \$3199 million in 2013 and 2014 respectively (Figure 25).





Sources: World Bank; UNCTAD (at current prices).

#### **Private and Financial Sector**

In the investment freedom category of the 2015 Index of Economic Freedom, which captures difficulty of investment, Libya scored 5 out of 100, where 100 is the best value (Heritage Foundation, 2015). In relation to the regulatory environment for private-sector activities, the Doing Business Index 2015 ranks Libya in 180th position (out of 189 countries). The business impact of the existing rules and regulation on FDI are extremely high, placing Libya in 135th position out of 144 countries in the world, according to the Global Competitiveness Index 2014-15. Compared to countries with similar levels of per-capita income, Libya scores around one third less (Figure 26).

Libya also ranks very poorly in terms of prevalence of foreign ownership of businesses. The "New Companies Law", which was introduced by the government in 2013, is bound to constrain the development of private-sector activity further. Under this law, Libyan shareholders can only issue up to 49% of a joint venture to a foreign partner.



Figure 26: GNI Per Capita and Global Competitiveness Index

Sources: WGI, World Bank; WEF. Note: Estimates of country competitiveness ranges from 1 to 7 (higher average score means higher degree of competitiveness)

Libya's financial system is composed of a network of few commercial banks, specialized credit institutions, insurance companies, and a very small stock market. Despite some attempts of reforms that led to a partial privatization of some financial institutions, the financial sector remains largely under government's control. Private sector lending spiked in the 90s and dropped drastically thereafter while non-performing loans have improved in the 2000s. Indeed, Doing Business ranked Libya 186 out of 189 countries on the 'ease of getting credit', which is further impeded by weak

collateral and bankruptcy laws. These trends might signal a crowding-out effect due to the dominant role of government spending that tends to marginalize the private sector role in the economy.





This negative performance has further been accentuated by the intensification of the conflict that has been felt by 77% of business, according to a recent World Bank's enterprise survey. Of the 44% of the businesses surveyed –particularly the medium-sized enterprises- had to reduce labor, while 60% had to cut down their investment plans. The businesses located in the regions of Tripoli, Benghazi, and the South seem to have particularly suffered from the ongoing crisis.

#### **Public Financial Management Issues**

Political deadlock and persistent struggle for power are preventing sound and timely preparation and implementation of a national budget. Currently, in the absence of a Government of National Accord, the country has two budgets adopted by the two parties to the conflict. These budgets have been adopted by the two opposing entities after several months of delay, but have not been confirmed by the Central Bank of Libya (CBL). Beyond the evident inconsistencies and waste of resources that would emerge from the parallel execution of these two budgets, there are serious management, implementation, and monitoring capacity gaps hindering providing needed basic services to the population.

The 2011 civil war resulted in a contraction in government revenues from 61.5 billion LYD to 16.6 billion LYD due to supply shocks. Petroleum export earnings dropped from \$47.25 to \$18.62 billion during that period, which accounts for the significant drop in revenues (OPEC, 2015). The restoration of oil production in 2012 coupled with the rise in oil prices and exports moved the overall Libyan balance from a budget deficit of 18.7 percent of GDP in 2011 to a surplus of 24.0 percent of GDP in 2012 (IMF, 2013).

Central Bank of Libya (CBL) has refused to support the proposed budget(s) and instead has been allocating funds to cover only public-sector salaries and wheat and petrol subsidies estimated to amount to LYD 38 billion (around USD 28 billion). All other ministerial expenditures have been suspended until a stable government is formed. Four years of instability have plunged Libya into one of the highest budget deficits in the world reaching 43.5 percent of GDP in 2014. The collapse of oil prices and fighting had reduced significantly oil revenues leading to a drop in fiscal revenues and putting further pressure on the country's dwindling foreign reserves.

#### Libyan Revenues

Libyan government revenues through September 30, 2015 are estimated at LYD 15.0 million (see Table 9). This figure includes hydrocarbon revenues of LYD 8,809.5 million, or 55.7% of total revenues, and sovereign revenues and local resources of about LYD 5,735 million, or 37.8% of total revenues. Total tax revenues are LYD 504 million, with revenues generated from customs collections at LYD 25 million for the eight month period ending September 30, 2015.

Revenue Categories	Estimated Total Revenues Through September 30 2015
Hydrocarbon revenues	8,809.5
Tax revenues	504.1
Customs Revenues	25.1
General Revenues <sup>14</sup>	5,734.6
Total	15,073.3

Table 9: Actual Revenues from 1/1/2015 to 30/9/2015 in LYD Billion

While low domestic tax burdens are common among natural resource producing countries, Libya stands out even in a comparison to other oil exporters where the average level of non-hydrocarbon revenues collection is near 10.6 percent of GDP. Libya's tax effort is also low, equal to 0.28, compared to an average of 0.44 among resource dependent countries.<sup>15</sup>Low levels of tax revenues in Libya are mainly due the country's loophole-ridden tax code and lack of modern and efficient tax administration.

Despite of the importance of the petroleum revenue for the fiscal stance and the need to increase the tax revenue, there is no Revenue Policy Unit (RPU) in the MoF in charge of revenue policy design and of the analysis of the fiscal regime for the petroleum sector. The MoF does not carry out analysis of tax system nor estimates of tax expenditures or the tax gap. Despite the high level of tax expenditures (revenue forgone from tax exemptions) there are no estimates of their magnitude and exemptions are not regularly reviewed to ensure their continued relevance and impact. Such an analysis of tax

<sup>&</sup>lt;sup>14</sup>Includes LYD 5,034.6 million remaining balances at bank accounts belong to spending units from previous fiscal years. <sup>15</sup> Tax effort is the relation between the actual tax revenue and the maximum level of tax revenue that the country can achieve.

gaps and review process for tax expenditures would be important to identifying options for revenue mobilization and diversification.

The National Oil Corporation (NOC) manages the fiscal regime and development program for Libya's oil sector. In developing and exploiting the petroleum reserves, NOC negotiates contracts and may enter into exploration production share agreements (EPSA) with other companies and corporations. A team in the MoF is in charge of reviewing initiatives introducing any changes in the tax system before submitting them to the Ministry of Finance and the legislature for approval.

The level of transparency regarding oil and tax revenue collections is relatively low. The MoF does not regularly publish details on the fiscal regime for the oil sector or regular bulletins on petroleum, tax, non-tax revenue collections. Annual bulletins typically include detailed information about: (i) tax and non-tax revenue (including analysis of productivity and performance of main taxes); (ii) petroleum revenue with comprehensive information on past, current, and projected activity (including the estimated value of petroleum and gas reserves and the plan for future exploitation); (iii) estimates of tax gaps and revenue loss from tax expenditures where this can be estimated.

Tax administration is characterized by poor capacity to collect revenues and weak compliance culture. Collection performance is low by regional standards. Several factors contribute to this including: absence of a comprehensive compliance strategy comprising a balanced mix of taxpayers' services and risk-based enforcement programs; lack of strategic and operational plans setting clear goals and indicators; lack of utilization of self-assessment and taxpayer segmentation; outmoded and redundant procedures with very limited computerization; and low human resources capacity. Key weakness of the tax collection cycle include, but are not limited to:

- The lack of effective taxpayer registration and national register has resulted in a very unclear picture of the taxpayer population.
- Filing and payment compliance rates are very low, procedures are cumbersome, and self-assessment is not applied.
- Audit productivity is low and not risk-based leading to ineffective enforcement. As a result, taxpayers are inclined to understate liabilities in their returns, and steps in the assessment and dispute resolution process provide opportunities for taxpayers and tax department officials to negotiate the tax liability.

Customs revenue has fallen dramatically in recent years and is well below the prevailing rate in comparable countries. After a period of modest growth from 2002 to 2008, customs revenue more than doubled from 2008 to 2009 and reached a historic record of 1,364 million LD in 2010. Following the revolution the customs revenue plummeted to 265 million in 2011 and the decline continued during the 2012 through 2015 period. It is likely that customs revenue collections will not cover the costs of customs administration. This drop in revenue can be attributed to changes in tax policy, the security situation, and inefficiencies in the customs system.



Figure 28: Composition of Libyan Government Revenues (1989-2013)

Total estimated budget expenditures for the four budget chapters was about LYD 23.8 billion (See Table 10). Total estimated Chapter 1 (Wages and Salaries) expenditures are estimated at LYD 13.6 billion, or 51.6% of total government outlays. Chapter 4 (Subsidies) represent the second largest budgetary outlay at LYD 6.1 billion (or 28.4%) of total spending year to date.

The national budget also bears the burden of a universal subsidy system. Indeed, chapter 4 (subsidies) represent the second largest budgetary outlay at LYD 6.1 billion (or 28.4%) of total spending year to date. Over time, subsidies (particularly fuel subsidies) have not only proved costly but also inefficient, as the poorest segment of the population derives the least benefit from them, and subsidized goods are too often smuggled across the country's porous borders. As a result, liquidity shortages surfaced, and the parallel market exchange rate depreciated.

Budget Spending Categories	Estimated Actual Expenditure					
	Through September 30 2015					
Chapter 1 (Wages and Salaries) <sup>16</sup>	13.6					
Chapter 2 (Recurrent expenses)	2.1					
Chapter 3 (Development Budget)	2.0					
Chapter 4 (Subsides) <sup>17</sup>	6.1					
Total	23.8					

Table 10:	Actual Ex	penditure	from 1	/1	/2015	to 31	/9	/2015	in LYD I	Billion
10010 101		perioreare		/ -			, -	/ 2020		

<sup>&</sup>lt;sup>16</sup>Salaries as of end September 30 2015. Some salaries have not been paid because a few sectors have failed to report the various employee national identity numbers.

<sup>&</sup>lt;sup>17</sup>The fuel item under chapter 4 (subsides) dropped by 29.5% from LYD650 Million monthly during 2014 to LYD458.1 Million in 2015. It's not clear whether this drop due to the decline on oil crude prices in international markets or less exported fuel quantities.

With only modest government revenue collections, the government deficit in 2014 has reached LYD 25.1 billion amounting to 46% of GDP, one of the largest deficits ever recorded (See Figure 29 and Annex III). Due to the compression in this year's budget expenditures, the expected budget deficit is not projected to be as large as FY2014. Current FY 2015 budget deficit estimates are projected at LYD19.7 Billion, or 21% less than in FY2014.





Figure 30 below illustrates the composition of total Libyan government spending. In FY2012, development budget spending accounted for slightly more than 52% of all government spending, with wages and salaries comprising 24%. Over the past several years, development spending has virtually collapsed, comprising an estimated mere 15% of total government spending in FY2015.



Figure 30: Composition of Libyan Government Expenditure as % of Total Spending

Source: Government of Libya Statistics, World Bank Staff Estimates.

Libya has made considerable progress over the past decade in reducing the number and size of extrabudgetary funds. Extra-budgetary activity fell from around 20 percent of total central government spending in early 2000s to only 2 percent in FY2013 (Figure 31).



Figure 31: Budgetary versus Extra Budgetary Expenditure (1993-2014)

Source: World Bank (2014)

Weak governance processes and the quality of public staff are major challenges. The strongly centralized and opaque decision-making system of the previous regime led to the creation of a cadre of civil servants that has limited capacity and skills to design and implement policies based on solid data and exchange of information. This limited capacity problem is aggravated by substantial

overstaffing of government agencies. It is estimated by Libya's Vision 2030 Team that approximately 500,000 out of the recorded 1.8 million civil servants, or 28%, of Libya's Civil Service, are surplus to the country's needs or requirements. There is also a profound imbalance between professional and administrative staff, in favor of the latter. Finally, the management of human resources is not based on performance making more difficult to increase capacity within the public sector.

Libyan budget formulation remains largely fragmented and is guided by a bottom-up, incremental approach, especially with recurrent spending. This approach does not enable policy makers to assess the full picture of how policy goals and objectives will be financed and how today's financial decisions will affect the availability of non-renewable resources for future generations.

There are a number of key weaknesses in the current budget preparation process. These weaknesses can be broadly defined into a few key categories: the lack of a coherent macro-economic framework and medium term budgetary perspective; little guidance is provided to budget agencies as to how to prepare their budget submissions (e.g. lack of spending ceilings); and inconsistent coverage of spending unit's across budget chapters. As a result, the national budget is largely short-term in its focus, and. does not allow sectoral line ministries to present and align their spending plans according to national priorities. In effect, there is no analytical and meaningful view of fiscal policy and its linkages with the national economy. More specifically:

- The formulation of Libya's budget remains fragmented. The Ministries of Finance and Planning each submit budget call circulars in mid-year (June) providing the contours of the budget submission process. Ministries are requested to submit their budget submissions by September.
- Although capital projects (included in Chapter III) are prepared and authorized on a multi-year basis, capital spending is not generally guided by an overall spending ceiling as determined by a Medium Term Budget Framework (MTBF). In other words, capital spending does not appear to be aligned to the government's fiscal policy objectives, nor are projects selected on the grounds of development priorities. In 2013, MOP sought to extend the development budget planning cycle (preparation and appropriation) on a two-year basis. This was a very important step forward, but it was not clear how the annual phasing of the two-year appropriation would have been updated and integrated into the annual budget.<sup>18</sup>
- The preparation of the recurrent (operational) budget and development budgets follows two separate and uncoordinated processes with institutional separation both at the central and line ministries (budget) agency levels. The recurrent budget (Chapters 1, 2, and 4) formulation is purely incremental, (i.e. it is formulated on the basis of past budget outturns without due attention to expected macro-economic developments). In addition, there is no distinction (or inadequate distinction) between ongoing and new policy initiatives in Chapters 1 and 2.

<sup>&</sup>lt;sup>18</sup> In previous budgets, the Budget Law allowed carry-over of unspent annual appropriations of Chapter 3, without going through re-appropriation. As a result, the annual spending on the development budget could end up being higher than presented in the budget, without due analysis of its impact on the economy.

- The budget classification does not follow internationally accepted standards and the distinction between 'current' (operational) and 'capital' (development) allocations is blurred.
- The Libyan national budget is yet to become an effective policy tool. The linkage between government's policy priorities and budgetary allocations remains weak and are not articulated in a budget policy statement. The lack of a consistent medium-term framework means that the budget does not take into account the future impact of today's decisions; and that the government enters into commitments whose deferred effects are not assessed.
- Line ministries do take into account inflation and growth when they prepare their budget submissions, but since the budget circular does not provide any guidance as to the macro-economic assumptions, there may be discretion from one ministry to the other, making the budgeting exercise inconsistent.
- While the coverage of the budget appears adequate, its presentation lacks transparency as it does not provide any information about the assumptions used to formulate the budget, in particular oil price and production volume; it presents primarily only the portion of oil revenue used to finance expenditure, and hence does not show any fiscal balances that should allow assessment of the fiscal policy stance.

Prior to the most recent domestic turmoil, limited progress was being made in adopting a common budget structure encompassing both development and recurrent expenditures with a single subfunctional and economic classification. However, this initiative will take some time to effectively complete and ingrain in Libya's public financial management institutions. Without such an integrated structure, it has been nearly impossible to develop an effective set of budget performance indicators, or to focus budget planning around results.

The lack of basic legal infrastructure and the inability to control and monitor public spending converged into areas of heightened concern by the international community over the past several months. In effect, the question that was/and continues to be asked is what happens when a middle-income (ostensibly wealthy) country loses control of its financial assets. Effective public administration reporting systems are a core element in improving public sector accountability – especially in post conflict environments. The risk to achieving any PFM Governance objectives largely rests on the following premises: 1) whether a unity government can be established; 2) acceptance of the public administration in Eastern Libya and the Tripoli Public Administration to work for common goals in public financial management.

### **Public Capital Spending**

Public capital spending has fallen drastically compared to its pre-revolution level, when it used to be among the highest in the Arab region (Figure 32). As a result, the composition of Libya's budget continues to deteriorate in favour of the wage bill.



Figure 32: Gross Fixed Capital Formation (% of GDP)

Source: UNstat. Note: countries used were Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, UAE and Yemen. \* excluding Libya

Investment spending instructions issued by the Ministry of Planning do not appear to provide sufficient strategic guidance to facilitate credible priority setting and an informed policy-based budget formulation. While sufficient information on the broad expenditure priorities is provided, the guidelines fall short of issuing constructive instructions required to assist the following undertakings: (i) prioritization and determination of indicative shares of resources over the medium term; and (ii) appraisal of new budget requests or policies beyond the medium term ceiling.

There is inadequate instruction on how to strengthen the alignment of resources to national objectives and improve operational efficiency in use of funds. The ensuing lack of clear instructions undermines usefulness of the current guidelines, adversely affects the quality of budget requests and medium term expenditure submissions and hampers informed and rational budgetary decisions. As a consequence, the quality of budget submissions has not been able to provide strategic guidance for budgetary decision making.

# **CONCLUSIONS AND RECOMMENDATIONS**

### **Overarching Issues**

The greatest challenge confronting Libya's transition in the immediate, short- and medium-term is the utmost priority of establishing a legitimate and functioning state, both at central and subnational level. Accelerating the resumption of some satisfactory levels of service delivery and participation in decision-making is critical from the start of the transition. But immediate short-term measures and prioritization of service delivery restoration should be consistent with progress toward a common vision of what inclusive governance and state/society relations ought to look like. Improvement in the quality and coverage of basic service delivery will be instrumental to address the humanitarian situation in the country. This will also be critical in order to show immediate results and establish a climate of trust that would allow advancement in the transition process.

To this effect, an inclusive dialogue is needed between policy-makers, key stakeholders, and the wider public. A regular monitoring of people's perceptions could be one of the tools that could be used to have the pulse of the public opinion on key socio-economic issues and thereby inform policy-making. This report aimed to show how some developmental and humanitarian aspects could be closely related to the institutional and governance ones, including apparent merely technical PFM issues.

#### **Inequality and Human Development**

Given the sizable geographic inequalities characterizing the country, policymaking must start with a clear understanding of the factors contributing to the marked differences in regional welfare in order to achieve sustainable development in the long-term.

The ECD results that we have analyzed in chapter two have direct implications for welfare policy. First, they suggest that a nutritional intervention is warranted to promote physical growth among children throughout the country, since the problem of stunting is widespread. Second, such a nutritional intervention should be undertaken in the early months of children's lives. Third, nutritional interventions helping children increase their body mass are needed for the minority of children in the bottom tail of the weight distribution. Fourth, better identification of children in need and targeting them with nutritional supplements are needed. Finally, early childhood education seems to be an area where the national government and development stakeholders need to bring more to the fore.

#### Public Financial Management Short- And Medium-Term Policy Options

Policy priorities should focus on helping build the capacity of the Government to operate, manage resources and address short, medium and longer term policy issues. To achieve this, some of the key components critical for an effective functioning of a democratic government and the delivery of public services to citizens and businesses are the following:

1. Management of public financial resources;

- 2. Coordination and collaboration among government institutions and between government and citizens; and,
- 3. Management of information and human resources.

Establishing an effective and inclusive government and policy structure entails the following: Coherence of the policy-making and public investment management framework; Inter-ministerial consultation on policy proposals, including public investment priorities; Agenda planning and strategic policy coordination; Involvement of various actors in the public administration with respect to budget decisions to improve budget preparation and execution, as well as to improve public expenditure efficiency and effectiveness.

Collaboration and coordination among different parts of a government are critical for the effective functioning of a government starting from promoting coordination between the center of the government and line Ministries, among line Ministries and between the center of the government and local governments. This series of activities should discuss the role of line ministries in the design of the policy process, making better communication among ministries and between ministries and the political administration.

The Libyan Public Administration should continue working to tighten up financial controls to maintain prudent, and transparent budget formulation and execution processes through-out the recent political difficulties. Immediate macroeconomic challenges are to manage fiscal spending pressures without compromising the need for rapid restoration and improvements in basic services and infrastructure. Current expenditures need to be brought under control. The CBL needs to enhance and generalize the use of the Personal Identification Number (PIN) in the payment of salaries in local governments and in the public establishments and enterprises.

The Libyan Budget Law is in need of revamping, once a stable public agreement is in place. During the first seven months of FY2014 year (until a budget is passed), the Government of Libya engages in Article 8 payments (1/12 wages salaries payment). However, the current law does not require ministries to routinely acquit (report) on their actual disbursements until an actual budget is passed. Ministries largely did not routinely report on their spending resulting in some cash accruing in banks without a full accounting to MOF. This has led to substantial concern within the Libyan public administration and in the international community as to how these funds are being fully accounted.

The installation of an interim basic financial management system in the MOF (until a more detailed system requirement study can be tabled) is essential. During the past several months, substantial concerns have been raised with regards to commitment control, use of funds, and the level of cash on hand. With the continued introduction of a basic system, these concerns would have largely been eliminated. Among feasible policy options one should include the implementation of programs for (i) the introduction of a small scale management information system (Bisan Government Ed) linking treasury, accounts, and budget departments at MOF; (ii) the introduction of a modified budget coding structure (but still not being used), and, (iii) the preparation of the primary elements of public investment guidelines and guidelines for dealing with the build-up of legacy infrastructure projects.

To effectively carry out its functions, the Libyan government and its agencies need to be able to rely and use reliable information and data. Information is critical to ensure accountability and transparency of the government processes. It also allows governments to identify priority areas for actions and to improve the effectiveness of existing policies and processes. Often however the role of information in government's functioning is overlooked. There needs to be strong links and collaboration between the work on institution strengthening and the program on statistical capacity building.

Another critical element of this PFM component is to build capacity and knowledge of civil servants on public procurement systems. The Government of Libya had a public procurement system in place before the crisis of July 2014 that was relatively opaque. The GNA should focus on building knowledge of civil servants on the basic principles of transparent and effective procurement systems looking at the experience of other transition and post-conflict countries.

A main urgent measure has to do with the launch of the first phase of the subsidy reform, through gradual adjustments of fuel prices. Given the current political and social situation, it is necessary to put in place a cash transfer scheme to households to overcome resistance to the reform.

Libya needs to put in place a better strategy to manage its oil wealth that would maximize its economic and social benefits for both the current and future generations. To this end a World Bank study considered four alternative broad stylized policies for government spending in Libya: i) increasing public spending on employment, ii) saving abroad, iii) investing domestically and iv) combining domestic investment and foreign savings. The results of the study show that option iv) is the most desirable, allowing - all else equal - real non-oil GDP to rise steadily over time, and foreign savings to accumulate comfortable reserves that would face any internal and external shock in the future.

Over the medium term, the country needs broader and deeper structural reforms. First, there is a need to improve tax revenues through extending the tax base to the non-hydrocarbon sectors, including reforming income and profit tax systems and removing existing exonerations on incomes. Customs administration must be overhauled and reorganized to improve its enforcement of tax regulations on trade. It is also necessary to improve the management of public financial and human resources, inter alia through continuing the PFM and PIM reforms and launching a civil service reform, to reduce the size of the public sector.

Public financial management program responsibilities should also include national and subnational levels. Public financial management support at the subnational level will initially include involve a detailed review and analysis of the public sectors flows to subnational government entities (detailing any potential bottlenecks) and will provide guidance as to how the national subnational financial flows can be strengthened to ensure greater transparency and accountability. As part of the enhancement of PFM at the subnational level, there is a need to enhance subnational government capacity with respect to public financial management and public investment management. This will

include a number of areas including but not limited to training, public investment guidelines, guidance on an effective subnational local government law.

In the absence of an IT-based information system to support and keep track of expenditures going through various stages from commitment to final payment, there is duplication (and, sometimes inconsistencies in the application of financial controls). This delays budget execution and undermines the credibility for financial performance. The World Bank did introduce the Bisan Government Edition software into the MOF with a revised budget coding structure in 2014. However, due to the conflict this financial management software has been underutilized.

Libya does not have a treasury single account and cash resources have been inherently disbursed through numerous bank accounts. The Libyan government banking arrangement is fragment with about 1,800 accounts of agencies/ministries at various commercial accounts. There is no end-of-day sweep or zero balancing of cash held in these various bank accounts. The balances of these accounts have not inherently been monitored on a daily or monthly basis. The balances at the CBL are also substantial, but as the balances are not consolidated and are distributed across several accounts, there have been instances of negative balances in some accounts. In brief, the cash management function remains underdeveloped and cash flow forecasts are not routinely prepared.

The accounting system, which is based on manual single entry, remains weak with substantial delays in the production of annual accounts. In the absence of a comprehensive chart of accounts and an ITbased general ledger, cash receipts and payments are recorded manually in cash books against respective budget chapters.

Specific recommendations for further Public Financial Management reforms are as follows:

- Bringing the budget classification and chart of accounts into line with international standards.
- Automating the collection and compilation of data from budgetary data into comprehensive monthly reports.
- Revising the financial regulations to define the stage of commitment in the expenditure chain and associated control requirements.
- Clarifying and implementing virement rules to prohibit reallocation between chapters without legislative approval.
- Implementing an IT based financial management information system to automate controls at various stages of the expenditure chain.
- Bringing all balances in ministries commercial accounts into the treasury account at Central Bank of Libya. Reconfiguring the treasury's expenditure accounts at the CBL as sub accounts which will clear daily into a parent account that will hold all treasury cash balances.

- Preparing cash flow projections with inputs from revenue and spending agencies and coordinating with Central Bank of Libya.
  - Boosting tax collection will require a comprehensive modernization plan with clear targets, political commitment, and sound governance framework.
  - Restructuring the Tax Department: Establish strategies and operational plans including performance measurement systems. Establish a medium sized tax payer offers and develop simplified schemes for small tax payers.
  - The MoF/Customs Administration should implement a full diagnostic of the customs administration in order to identify gaps in the customs administration, develop a comprehensive reform strategy and plan, and ensure implementation of reforms and coordination of support to reforms
  - Develop a revenue mobilization strategy with special focus on application of excise duty and consumption tax, eliminating unnecessary exemptions and reduced rates, and improving revenue collection capacities particularly in valuation.

# References

ACAPS, 2015, Libya- Humanitarian Impact of the conflict, secondary data, June 2015, <u>http://acaps.org/img/documents/s-acaps-sdr-libya-humanitarian-impact-of-the-conflict-5-jun-2015.pdf</u>

- Azevedo, J. P., S. Franco, E. Rubiano, and A. Hoyos. 2010. "HOI: Stata Module to Compute Human Opportunity Index," Version 1.7. *Statistical Software Components S457191, Boston College Department of Economics*. http://ideas.repec.org/c/boc/bocode/s457191.html.
- Barros, Ricardo Paes de, Francisco H.G. Ferreira, Jose R. Molinas Vega, Jaime Saavedra Chanduvi, et al. (2009). Measuring Inequality of Opportunities in Latin America and the Caribbean, Washington, DC: World Bank.
- Barros, Ricardo Paes de, Jose R. Molinas Vega, and Jaime Saavedra. 2008. Measuring Inequality of Opportunities for Children. Washington, DC: World Bank.
- Chavez-Juarez, Florian Wendelspiess (2015), *"Shapley2*: Stata Module to Compute Additive Decomposition of Estimation Statistics by Regressors or Groups of Regressors", Version 1.5. 10-June 2015. *Statistical Software Components S457543, Boston College Department of Economics.* https://ideas.repec.org/c/boc/bocode/s457543.html.
- El-Kogali, Safaa, and Caroline Krafft (2015). Expanding Opportunities for the Next Generation: Early Childhood Development in the Middle East and North Africa. Washington DC: World Bank Publications.
- Gallup Poll Data (various years).
- Hlasny and Intini (2015), Opportunities for Early Childhood Development in Arab Countries: Profile and Evolution of Inequality and Its Sources, UN-ESCWA Working Paper.
- League of Arab States (2009), Libya Family Health Survey 2007, Final Report (Arabic).
- Shorrocks, Anthony F. (1982). Inequality Decomposition by Factor Components, Econometrica 50(1):193–211.
- Shorrocks, Anthony F. 2013. "Decomposition Procedures for Distributional Analysis: A Unified Framework Based on the Shapley Value." Journal of Economic Inequality 11(1):99–126.
- Roemer, J.E. (1998) Equality of Opportunity. Cambridge, MA: Harvard University Press.
- UNDP (2009), The Millennium Development Goals in the Great Socialist People's Libyan Arab Jamahiriya: Towards 2015: Achievements and Potentials.

United Nations (2014), <sup>1</sup>Libya, Interagency Rapid Assessment, <u>http://documents.wfp.org/stellent/groups/public/documents/ena/wfp271609.pdf</u>

United Nations Department of Economic and Social Affairs/Population Division (UN-DESA, 2015), World Population Prospects: The 2015 Revision; Key Findings and Advance Tables, New York.

- United Nations Food and Agriculture Organization (FAO 2005), Nutrition Country Profile: Libyan Arab Jarmahiriya.
- World Bank (2015). Labor Market Dynamics in Libya: Reintegration for Recovery. Washington, DC.
- World Bank (2015), Simplified Enterprise Surveyand Private Sector Mapping Libya 2015.

World Value Survey Data (various years).

# ANNEX I: DATA AND METHODS FOR ECD MEASUREMENTS

The 2007 Libyan PAPFAM survey covers a variety of indicators of the living conditions, education, health, nutrition and some time-use of national population, with emphasis on the living conditions of children and their mothers (League of Arab States 2009). This section describes in detail the variables utilized.

#### Variables of interest

ECD indicators evaluated in this report fall under three broad categories: children's access to health, nutrition and a variety of pre-school cognitive-development activities. These indicators are selected in agreement with the principles underlying the HOI that essential health services, sufficient nutrition and adequate-quality primary education are basic human rights that should be available to all children without exception.

Health indicators include mothers' prenatal care and child delivery by a trained attendant; adequate health-center visits during pregnancy; full immunization by age one, and neonatal and infant mortality. Nutrition indicators include children's access to iodized salt at home, and children's anthropometric status. Iodine is a fundamental element, adequate doses of which are important for the development and functioning of children's nervous system. Children's anthropometric status including stunting (low height for age), underweight (low weight for age) and wastage (low weight for height) are important outputs of food supply in early childhood. These are commonly used indicators of children's nutrition and balanced diet. Children's height for age, weight for age, and weight for height can be analyzed across cohorts of children, at different ages, to gauge stability of food supply. Access to cognitive-development activities in the early childhood is viewed as crucial to leading children to higher education and lifetime achievement. It is measured using children's enrolment in pre-primary education, and forced engagement in domestic chores or other work.

Specifically, for prenatal and child-delivery care, only health checkups performed by doctors, trained nurses or qualified midwives are accepted as adequate. Four or more visits to a qualified physician or health care center during pregnancy is taken as an adequate rate of prenatal visits. This is evaluated among women who gave birth in the past two years, ensuring accurate recollection. Full immunization entails vaccination for all six preventable child diseases, namely tuberculosis, diphtheria, whooping cough, tetanus, polio and measles. These are covered by vaccinations for Bacillus Calmette-Guérin (BCG), three subsequent vaccinations for diphtheria, pertussis and tetanus (DPT), three subsequent vaccinations for polio, and vaccination for measles. These vaccinations must be undertaken in the first year of children's life. To ensure accurate recollection by mothers, this variable is evaluated only among children between the ages of 12 and 24 months.

Neonatal mortality is death rate within the first month of life, while infant mortality is death rate within the first year of life. Stunting (underweight and wastage, respectively) are the conditions of having a height-for-age (weight-for-age and weight-for-height) ratio lower than the reference healthy population median (and mean under symmetry of the distribution) by two standard

deviations or more. Stunting, underweight and wastage, as well as the corresponding *anthropometric* ratios – in z-scores or standard deviations relative to the reference healthy population – are evaluated over time to track children's development from birth to five years of age. Iodization of household salt of fifteen parts per million or more (15+ ppm) is taken as adequate in households with children aged four years or less.

This study follows El-Kogali and Krafft (2015) at evaluating children's attendance of pre-school educational programs at the ages of 3–4 years (early childhood care and education, ECCE). Child labor is taken here to entail work for a family member or someone outside the home regardless whether for pay or not, fetching of wood or water, or other business and domestic household chores within the past week (regardless of the number of hours involved). To ensure comparability across children, this variable is evaluated only among five-year old children.

Among explanatory variables, we account for households' wealth, achievement of various levels of education by mothers, by their partners (or children's fathers) or by household heads, residence in three provinces (Tripolitania, Fezzan and Cyrenaica), and sex of the child and of the household head. Wealth is defined by the quintile among the universe of all households into which a household falls in terms of the asset index of durable goods. All explanatory variables are transformed into sets of mutually-exclusive binary variables. These variables, in their binary form, are used to clearly demarcate the least versus the most advantaged households in regard to each ECD indicator. The corresponding coefficients estimated in probit regressions are used to quantify the contribution of each explanatory variable to the prevalence of ECD opportunities at different types of households, and to quantify the cumulative degree of inequality in ECD opportunities between the least and the most advantaged households. In the case of Libya, no clear patterns seem to emerge across ECD indicators.

In particular, the least advantaged households are those where the woman and her partner have received no formal education, in the bottom wealth quintile, in the country's least developed region (i.e., Cyrenaica). Additionally, in models explaining ECD opportunities of live children, female children are taken to be less advantaged, due to possible discrimination by family members or others. Finally, in addition, in the model explaining iodization of salt, households with female heads are taken to be less advantaged. In models explaining other ECD opportunities, sex of the household head is accounted for but is not used as a criterion for demarcating the least and the most advantaged households. Women who are household heads are arguably more in control of their prenatal-health and child-health activities, even if they are less economically empowered and less able to purchase higher-quality food products such as iodized salt.

### Methodology

Applying a method initially proposed by Roemer (1998), and following the approach taken by El-Kogali and Krafft (2015), we use multivariate regressions to estimate the effects of various household circumstances on children's opportunity for early childhood development. Child *i*'s access to a particular dimension of early childhood development  $y_i$  can be written as  $E(y_i|x_i) = f(x_i,\beta)$ , where  $f(\cdot)$ 

is an appropriate parametric function. For continuous outcome variables (anthropometric ratios), linear functional form is used,  $y_i = x_i\beta + \varepsilon_i$ , which is estimable by the ordinary least squares method. Here  $\varepsilon_i$  accounts for latent factors including the child caretakers' efforts and luck. For binary outcome variables (the remaining indicators), this linear functional form is assumed for an underlying latent variable that is related to the observed dependent variable  $\dot{y}_i$  as follows:  $\dot{y}_i = 1[y_i>0] = 1[\varepsilon_i> -x_i\beta]$ . Under the assumption that  $\varepsilon_i$  is distributed as normal, probit regression model is appropriate for estimating  $\dot{y}_i$  and  $\Pr(\dot{y}_i=1|x_i)$ . Regression models account for population sampling weights, and coefficient standard errors are corrected for heteroskedasticity and autocorrelation within sampling clusters of households.

Estimated probit coefficients are used to predict access to the various dimensions of ECD (those in binary form) for children in least advantaged versus most advantaged circumstances, by evaluating  $Pr(\dot{y}=1|x)$  for x fixed at the respective extreme counterfactual values. Setting all explanatory variables at their extreme values simultaneously is appropriate, as it accounts for the likely positive correlation among factors used to describe household circumstances. For example, poor households are likely to be rural and to reside in less developed administrative regions.

To measure inequality of opportunity for ECD, a dissimilarity index for binary-outcome variables is used (Barros et al. 2008, 2009), defined as follows:

$$D = \frac{1}{2\bar{p}} \sum_{i=1}^{K} w_i |p_i - \bar{p}|$$

where  $p_i$  is the prevalence of the particular dimension of ECD in a group possessing a particular set of circumstances (aka, circumstance group) *i*, *K* is the number of such groups, $\bar{p}$  is the prevalence in the overall population, and  $w_i$  is a population sampling weight of each group *i*. *D* ranges from 0 (perfect between-group equality) to 1 (perfect inequality), and can be interpreted as the fraction of the overall access to ECD opportunities that would have to be reallocated to obtain equality of opportunities.

Human Opportunity Index for each dimension of ECD can be computed as  $HOI = (1 - D)\bar{p}$ . For indicators of lack of ECD opportunity (including child mortality, inadequate physical growth and child labor), we compute HOI by accounting for unequal access to the corresponding opportunity (i.e., survival rate, healthy physical growth, childhood free of forced labor) as follows:  $HOI = 1 - (1 - \tilde{D})\bar{p}$  where characters with tildes are for the corresponding positive ECD opportunities.

Empirically,  $p_i$  and  $\bar{p}$  are estimated using a logistic regression of the ECD indicator in question on a set of household characteristics that define circumstance groups. This regression is at the level of individuals (children or mothers). For each individual *i*, probability of access to that ECD opportunity is predicted as  $\hat{p}_i$ . Overall coverage is imputed from across all individuals as  $\hat{p} = \sum_i w_i \hat{p}_i$ , where  $w_i$  is individuals' sampling weight. The dissimilarity index is estimated as

$$\hat{D} = \frac{1}{2\hat{p}}\sum\nolimits_{i} w_{i} |\hat{p}_{i} - \hat{p}|$$

where the summation is over all individuals. To understand the impact of each household characteristic on children's access to ECD, Shorrocks-Shapley decomposition is used and Shapley values are estimated. The individual marginal impact of a characteristic *j* is estimated as the average of all changes that occur to *D* when *j* is added to all possible subsets of circumstances that exclude from consideration characteristic *j* (subset *S* of *K* household characteristics, each subset drawn, *s*, numbering  $n_s$  characteristics) among the set of all *K* existing circumstances (Shorrocks 1982, 2013):

$$D_{j} = \sum_{s \in S} \frac{n_{s}! (K - n_{s} - 1)!}{K!} [D(s, j) - D(s)]$$

Here D(s) is the dissimilarity index without the consideration of characteristic *j*, and D(s,j) is the index with *j* considered in the delineation of circumstance groups. The summation is over all *s* possible subsets of characteristics. Normalized Shapley values in percentage form are reported, computed as:  $M_j = D_j/D$ . These normalized Shapley values are interpreted as fractions of inequality explainable by observable household characteristics that is due to characteristic *j*. By design, they sum up to unity across all considered characteristics.

Estimation was performed in Stata program. Dissimilarity index was computed using the *hoi* automatic do-file program (Azevedo et al. 2010). *hoi* computes the coverage of an economic opportunity in an overall population, dissimilarity index of the coverage across population groups as well as the Human Opportunity Index itself (Barros et al. 2008). Among the many alternatives for computing these statistics in Stata, *hoi* is used to facilitate comparison with El-Kogali and Krafft (2015). Shorrocks-Shapley decomposition (Shorrocks 1982, 2013) and estimation of Shapley values was performed using the *shapley2* automatic do-file program (Chavez-Juarez 2014), customized by Caroline Krafft as *shapley3*, Version 1.0 3.21.13.

#### Regression results

Table A1 reports the results of probit regressions of children's access to ECD opportunities. Coefficients estimated for individual explanatory variables agree qualitatively with the normalized Shapley values discussed in the main text.

		<b>D</b> 1				0					<b>B66F</b>	<u></u>
	Prenatal	Prenatal	Skilled	Full	Neonatal	Infant				lodized	ECCE	Child
	care	visits: 4+	delivery	immun.	mortality	mort.	Stunted	Underweight	Wasted	salt	3-4yrs	labor
Father's education:	0.188	0.092	0.315*	-0.125			0.003	-0.001	-0.057	0.104	0.078	-0.103
Complete primary	(0.123)	(0.095)	(0.144)	(0.193)			(0.059)	(0.079)	(0.071)	(0.072)	(0.141)	(0.156)
Secondary	0.242*	0.141	0.325*	-0.449*			-0.044	-0.070	0.018	0.118	0.333*	-0.073
	(0.114)	(0.089)	(0.136)	(0.198)			(0.052)	(0.073)	(0.067)	(0.065)	(0.131)	(0.139)
	0.310*	0.279**	0.333	-0.269			0.080			0.058		
University/diploma	(0.132)	(0.100)	(0.176)	(0.217)			(0.554)			(0.478)		
Mother's education:	0.337***	0.478***	0.293*	0.748***	3.010***	3.171***	0.057	-0.137	-0.076	0.150*	0.060	-0.499***
Complete primary	(0.102)	(0.091)	(0.128)	(0.193)	(0.182)	(0.139)	(0.055)	(0.078)	(0.069)	(0.075)	(0.150)	(0.150)
Secondary	0.638***	0.652***	0.584***	0.753***	3.096***	3.192***	-0.003	0.001	-0.084	0.139*	0.234*	-0.063
	(0.095)	(0.084)	(0.109)	(0.180)	(0.169)	(0.134)	(0.049)	(0.061)	(0.062)	(0.060)	(0.110)	(0.124)
	0.776***	0.795***	0.575***	0.827***	2.692***	2.865***				0.743		
University/diploma	(0.114)	(0.093)	(0.160)	(0.195)	(0.191)	(0.170)				(0.741)		
Female child					-0.293**	-0.247**	-0.082*	-0.135**	-0.076	-0.008	0.079	0.084
					(0.094)	(0.076)	(0.037)	(0.044)	(0.047)	(0.031)	(0.078)	(0.089)
Female household	-0.293	-0.080	0.010	-0.418	-0.192	0.191	0.209	-0.003	0.181	-0.233	0.308	-0.865*
	(0.168)	(0.134)	(0.144)	(0.247)	(0.335)	(0.232)	(0.179)	(0.254)	(0.212)	(0.189)	(0.314)	(0.380)
Second WIQ	0.106	0.138*	-0.012	0.220	0.076	0.021	0.003	-0.001	-0.016	0.202**	0.122	-0.162
	(0.075)	(0.058)	(0.112)	(0.130)	(0.140)	(0.119)	(0.056)	(0.076)	(0.066)	(0.069)	(0.145)	(0.164)
Third WIQ	0.266***	0.272***	-0.049	0.387**	0.140	0.106	-0.050	-0.049	-0.053	0.181*	0.297*	-0.049
	(0.080)	(0.059)	(0.109)	(0.127)	(0.136)	(0.115)	(0.058)	(0.075)	(0.072)	(0.071)	(0.138)	(0.145)
Fourth WIQ	0.241*	0.315***	-0.048	0.084	-0.325	-0.253	-0.021	-0.090	-0.145	0.225**	0.250	-0.067
	(0.096)	(0.066)	(0.117)	(0.131)	(0.166)	(0.132)	(0.061)	(0.078)	(0.074)	(0.073)	(0.134)	(0.163)
Highest WIQ	0.349***	0.217**	0.092	0.159	-0.156	-0.203	-0.084	-0.160	-0.127	0.248**	0.330*	-0.028
	(0.105)	(0.070)	(0.126)	(0.152)	(0.136)	(0.126)	(0.069)	(0.087)	(0.085)	(0.077)	(0.147)	(0.158)
Tripolitania	-0.058	-0.294***	0.734***	-0.111	0.071	0.109	0.143**	-0.018	-0.039	1.216***	0.411***	0.021
•	(0.077)	(0.058)	(0.121)	(0.100)	(0.131)	(0.104)	(0.050)	(0.065)	(0.066)	(0.070)	(0.107)	(0.120)
Fezzan	-0.173*	-0.186**	-0.651***	-0.074	0.477***	0.442***	0.015	0.266***	0.272***	1.380***	0.671***	0.995***
	(0.086)	(0.064)	(0.098)	(0.123)	(0.140)	(0.110)	(0.059)	(0.072)	(0.078)	(0.084)	(0.122)	(0.122)
Constant	0.822***	0.047	1.399***	0.575**	-5.307***	-5.213***	-0.826***	-1.436***	-1.324***	-1.233***	-2.632***	-1.444***
	(0.110)	(0.097)	(0.144)	(0.192)	(0.209)	(0.167)	(0.066)	(0.084)	(0.081)	(0.087)	(0.203)	(0.163)
Model signif. (F stat)	0.000	0.000	0.000	0.000	0.000	0.000	0.106	0.000	0.000	0.000	0.000	0.000
N (Observations)	7,762	7.229	7,760	1.907	9.734	9,734	10.283	11.230	10.213	11.350	4.766	2.143
(Pseudo) R-squared	0.079	0.048	0.198	0.047	0.047	0.035	0.004	0.013	0.009	0.123	0.065	0.095

Table A1. Probit regression results

Notes: Reported numbers are probit coefficients. Standard errors robust to heteroskedasticity and correlation within household clusters in parentheses. For clarity of presentation, additional explanatory variables for father's and mother's education (some primary, some secondary/preparatory, unknown/missing) are not reported.

# ANNEX II: IN DEPTH ANALYSIS AND DISAGGREGATION OF PERCEPTION-BASED DATA

The aim of this Annex is to explore perceptions of inequality and social justice around 2012. By performing a detailed analysis for each sub-group of the population, mainly defined according to the most relevant socio-economic characteristics, this section also seeks to identify the determinants of such perceptions. This could help us to understand why we should not constrain ourselves to the mere measurement of inequality. The analysis contained here is realized by making use of two surveys. The first is the Sixth World Value Survey (WVS), the most recent available survey, for 11 Arab countries, including Libya. The second is the Arab Barometer (AB) for 12 Arab countries, including Libya. The analysis is performed looking at the whole population and at the main reference groups, defined on the base of gender, educational level and income status.

We start our analysis by having an immediate look at the perception of inequality in the population. We do this by using the WVS, which does not ask direct questions on whether the interviewed individuals feel the level of inequality to be high/low. It rather asks respondents whether they feel that the income distributions should made more or less equal. The question is phrased as follows: "Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between. (Code one number for each issue)."

The distribution of the answers across the population, overall in the Arab world and in Libya, is reported in FiguresA1. Here, in both cases, this distribution appears to have an asymmetric U-shape. The answer with the highest density is the last one, that is, most of the population feels that inequality should be increased. However, notice that, the second answer with the highest density is the first answer, that is individuals feel that inequality should be reduced.



#### **Overall Arab Countries**



## Libya



We then shift our analysis to the perception of social justice across the population, using the AB. The first variable we examine is the perceptions of Arab citizens about the economic situation of their country. Figure A2 reports the results for the whole population. It shows that most of the Arab citizens have a negative perception of the economic situation in their own country. A similar picture appears even when the population is partitioned according to gender or area of residence, with males

and people living in rural areas having a slightly more negative perception than females and people living in urban areas. In Libya the percentage of males or urban people having a negative perception of the actual economic situation is slightly higher than the percentage respectively of females and rural people.



Figure A2. How would you evaluate the current economic situation in your country?

Despite the negative perception of the economy, respondents are somehow optimistic about the future. As reported in Figure A3, at the time of the survey, Libyans showed a more rosy picture about their expectations about the future, particularly when it comes to women and rural residents. Such expectations have been unaddressed, thereby likely leaving a lot of grievances about the present.

Figure A3. What do you think will be the economic situation in your country during the next few years (3-5 years) compared to the current situation?



**Overall Arab countries** 

To have a wide view on the perception of individuals about social justice, in what follows, we focus on a set of "institutional" indicators. The first indicator concerns the respondents' evaluation of the current government's performance in improving basic health services. From an overview of the results reported in Figure A4, it immediately stands out that this aspect is correlated to the individuals' evaluation of the actual economic situation. In fact, about two thirds of the Libyan population evaluates "bad" or "very bad" the current government's performance in improving basic health, vis-à-vis 56% of the regional average. We seem to find evidence of consistent differences between individuals living in urban and rural areas and between male and female populations, given that men and urban residents tend more than women and rural residents to evaluate negatively this governmental task.





Given these preliminary results, it is then interesting to look more into the details on the determinants of such perceptions and on the existence of possible differences among the different groups of the population. In particular, by employing again the data provided by the WVS, we test the association between income and social class and the perception of inequality. We do this by estimating an ordinary least squares (OLS) regression using perception of inequality (pi) as dependent variable and income classes and social classes as independent variables separately; we also control for a number of variables including gender, age, marital status, education, employment status, location (town size larger or smaller than 50,000 people), and savings<sup>19</sup>. The results, reported in Table A2 and A3, reveal several insights into the relation between income and social status and the taste for inequality. The first observation is that income or social status (together with the controls) explain a small part of the variance of perception of inequality. Unlike many other countries in the region, in Libya, the coefficients explaining the impact of being in a given income class are lower than those explaining the impact of being in a given social class. Gender appears to matter for inequality perceptions for Libya. Males perceive income to be more equally distributed than women do.

We can also observe that the number of children does not have a clear impact on the perception of inequality for Libya. Moreover, it is interesting to note that the level of education matters for the perception of inequality, in particular if individuals have a higher degree of education. We can then

<sup>&</sup>lt;sup>19</sup>The variable savings indicates whether the household has managed to save during the past 12 months and is meant to control for the recent performance of the household as opposed to income and social status, which are more permanent conditions.

infer that the feeling that income differences should be increased is stronger the higher is the level of education.

However, different contributions in the literature show that many other factors, which may be unrelated to observed inequality, seem to drive perceptions on inequality. Two of these factors are political orientations and religion (Alesina et al., 2004), especially in countries where religion plays an important role in every aspect of life. The WVS provides a number of variables that measure political and religious views, that we use as regressors in a taste for inequality equation. The results are shown in Table A4. Thinking that it is very good or fairly good to have a strong political leader have a lower appreciation of inequality in the case of Libya. The factor religion seems to decrease the perception that income should be more equally distributed for Libya.

Last, we investigate on other possible determinants of inequality perception. In particular, we consider sentiments on freedom, trust, attitudes toward work, and opinions about gender roles. Results of the taste of perception of inequality regressions with these variables are shown in TableA5. In the Libyan case, people who trust others feel that income should be less equally distributed. Finally, those who have strong feelings about university education being more important for boys rather than girls are also those more inequality averse, as we find a negative and significant sign for Libya.

	Libya
VARIABLES	pi
income_scale2	0.15
	(0.29)
income_scale3	0.42*
	(0.24)
income_scale4	0.73***
	(0.27)
income_scale5	0.45
	(0.50)
saving_12months	0.10
	(0.17)
male	-0.77***
	(0.17)
age	-0.026
	(0.037)
Age^2	0.00014
	(0.00043)
married	-0.10
	(0.22)
children	0.061
	(0.044)

Table A2. Perception of inequality and income-classes.
secondary_education	0.99***	
	(0.22)	
tertiary_education	1.20***	
	(0.25)	
full_time	0.15	
	(0.20)	
town_size	-0.12	
	(0.21)	
Constant	6.29***	
	(0.79)	
Observations	2,059	
R-squared	0.036	

## Table A3. Perception of inequality and social-classes.

	Libya
VARIABLES	pi
working_class	0.42
	(0.43)
lower_middle_classes	0.65
	(0.40)
upper_middle_class	0.70*
	(0.41)
upper_class	1.03
	(0.69)
saving_12months	0.16
	(0.17)
male	-0.75***
	(0.17)
age	-0.024
	(0.038)
agesq	0.00013
	(0.00043)
married	-0.12
	(0.22)
children	0.058
	(0.044)
secondary_education	1.00***
	(0.22)
tertiary_education	1.22***
	(0.26)
full_time	0.17
	(0.20)
Constant	6.02***
	(0.85)
Observations	2,059
R-squared	0.034
Standard errors	in
parentheses	

```
*** p<0.01, ** p<0.05, *
p<0.1
```

#### Table A4. Perception of inequality and political and religious views.

	Libya
VARIABLES	pi
Very or somewhat interested in politics	0.28
	(0.17)
Very good or fairly good to have a strong	
leader	-0.36**
	(0.17)
Very good to have a democratic political	
system	0.26
	(0.17)
Attend religious premises at least once a	
week	0.28*
	(0.16)
Christian	-0.90
	(0.71)
Controls	Yes
Constant	6.59***
	(0.77)
Observations	2,059
R-squared	0.039

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Table A5. Perception of inequality and freedom, trust, cheating, work, and gender role.

	Libya
VARIABLES	рі
Feel free and in control	0.097***
	(0.029)
Most people can be trusted	0.10
	(0.26)
Never justifiable to cheat on taxes	-0.11**
	(0.046)
Work is very important	0.34*
	(0.20)
University is more important for a boy than	
for a girl	-0.54***
	(0.18)
Controls	Yes

Constant	6.30*** (0.78)
Observations	2,059
R-squared	0.047
Standard errors in parentheses	

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1



## Figure A5. Taking all things together, would you say you are:

Figure A6. All in all, how would you describe your state of health these days? Would you say it is:



**Overall Region** 





#### **Overall Region**

<u>Libya</u>

# ANNEX III: LIBYA NATIONAL BUDGET (2012-2015)

	2012	2013	2014	2015 YTD
Total Revenues	70.1	54.7	20.9	20.2
Total Expenditures				
Chapter 1: Wages and Salaries	19.3	24.9	23	18.9
Chapter 2: Goods and Services	13.5	17.4	3.3	7.8
Chapter 3: Development (Investment)	10.3	14.7	4.5	5
Chapter 4: Subsidies	11.7	10.7	14.5	8.2
Public Debt	3.304	2.6	0.7	0
Public Budget Reserves	3.9	0	0	0
Total Expenditure	62.004	70.3	46	39.9
Surplus or Deficit	8.096	-15.6	-25.1	-19.7