

**Republic of Djibouti**

**Poverty and Social Impact Analysis: Strengthening Safety Nets  
in Djibouti**

## **EXECUTIVE SUMMARY**

February 2015



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## Motivation

1. This Poverty and Social Impact Analysis (PSIA) is part of a broader dialogue on energy tax reform and strengthening social safety nets in Djibouti. As part of a possible reform of energy taxes in Djibouti, the government of Djibouti has sought the support of the World Bank to better understand how such a policy reform can be pro-poor. Through this technical assistance, a cross-sectoral Bank team, in close cooperation with the International Monetary Fund (IMF), has supported the government of Djibouti to help understand the following questions:

- What is the Current Nature of Tax Exemptions in Djibouti?
- What is the Impact of the Current Tax Exemptions on Household Welfare?
- What is the Context of such Reform: Winners and Losers?
- What is the Current Role of Social Safety Nets in Djibouti?
- What is the Impact of the Reforming Tax Exemptions and Safety Nets on Poverty?

2. The study was designed and implemented by a multisectoral committee composed of various stakeholder institutions, including the Ministry of Economy and Finance, the Ministry of Budget, the Secretary of State responsible for National Solidarity (SESN), the Department of Statistics and Demographic Studies (DISED), the Ministry of Energy, and the Ministry of Transport, with whom the teams of the Bank and the IMF collaborated throughout the process of preparation of the study. Technical meetings were held on January 30, February 2, May 25, May 28, and May 29, 2014, in Djibouti to discuss the various scenarios of reform, obtain additional information, and present preliminary quantitative results. Consultation meetings were held on July 2 and November 15, 2014, to present the findings and discuss possible reform options.

3. This executive summary condenses the main findings of the study. The study is available as a separate report with more analyses and background information. The study is based on data from a representative household survey which includes detailed information on household expenditures and receipt of certain cash and in-kind benefits (EDAM 3-2012). The tables in this executive summary show 2014 prices, with inflation rates of 2.5 and 2.9 for 2013 and 2014, respectively.

4. The third *Enquête Djiboutienne auprès des ménages* (EDAM 3) was conducted in 2012 and has a nationally representative sample of the sedentary population composed of 5,880 households with 31,686 individuals. The EDAM 3 questionnaire covers many aspects: demography, education, employment, mortality, governance, housing, access to basic social services, durable goods ownership, and finally, expenditures and revenues. Of particular importance for this study is information on household expenditure on tax-exempt food (flour, rice, oil, sugar, and milk); certain fuel items (kerosene, butane, and fuel expenditure on transport); and electricity, as well as information on cash and in-kind benefits. The EDAM 3 dataset has been used to compute total expenditure aggregates of households based on which the DISED has produced their recent poverty profile, yielding 40.8 percent of poverty and 23 percent of extreme poverty.<sup>1</sup>

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<sup>1</sup> The EDAM 3 sample slightly underestimates the size of households, and the level of average per capita total household expenditure is therefore slightly overvalued in this survey. Since this study focuses primarily on expenditure quintiles, the effect of this general overvaluation is marginal. Furthermore, and in contrast to the recently updated national poverty profile that combines data from EDAM 3 and the Budget and Consumption Survey (EBC), this study uses data from EDAM 3 and its expenditure aggregate only. The aggregate used in this study, however, is highly correlated with that used for the poverty profile produced by the DISED and we do not see any conflict between the analysis in this study and the figures recently approved by the government.

5. As is common for household surveys, the EDAM 3 data is representative only of the sedentary population. The EDAM 3 sample leaves out the nomad and homeless populations (*population flottante*) and individuals living in collective households (hotels, prison, military camps, and orphanages). According to the most recent census conducted in 2009, Djibouti's total population was 818,159 individuals, of which 161,132 were nomads and 149,022 either lived in collective households or were homeless. Having household surveys solely covering the sedentary population is standard practice since surveying nomad and homeless populations creates important conceptual and logistic issues.

6. Five quintiles based on per capita expenditure have been constructed based on the per capita expenditure welfare index. The first quintile includes the poorest 20 percent of the sedentary Djibouti population; the second quintile includes the next 20 percent, and so on up to the top quintile with the richest 20 percent of the population. For the purpose of this study, the destitution<sup>2</sup> line is defined as the upper limit of the first quintile. Therefore the destitution head-count rate is de facto set to 20 percent.

## What is the Current Nature of Tax Exemptions in Djibouti?

7. Djibouti is vulnerable to major risks to growth and macroeconomic stability, including fuel and food price shocks and natural disasters such as droughts and floods. Poverty has been exacerbated by drought conditions since 2007—the worst in 60 years. The drought is estimated to have affected at least half the rural population, with annual economic losses of 3.9 percent of gross domestic product (GDP) over the period 2008–2011 and a substantial flow of refugees from neighboring countries that also suffer from drought.

8. Universal tax exemptions were introduced in response to the food crisis and to shield the population from price shocks on essential food products. Djibouti depends massively on imports to meet its food needs and a large fraction of the population faces food insecurity. Practically all food items are imported and increases in international food prices directly affect Djibouti's poor people, who spend up to three-quarters of their income on food. Due to severe and prolonged droughts, at least 20 percent of the capital's population and three-quarters of rural households are vulnerable to severe or moderate food insecurity, according to the Emergency Food Security Assessment carried out by the World Food Programme in 2013. In response to the stark food price increases, the government has exempt five essential food items from domestic consumption tax since 2008.

9. Similarly, discretionary price adjustments on certain energy products (super, kerosene, and diesel) have been in operation since 2009. The government's Department of Customs and Excise, after consultation with oil companies, performs a monthly adjustment of prices at the pump to minimize the negative impact of fluctuating international prices of super, kerosene, and diesel. According to estimates of the IMF, Djibouti foregoes an estimated 2 percent of GDP (2011) on certain energy products.<sup>3</sup>

10. The government is currently considering abandoning the use of the discretionary tax element on certain fuel products (super and diesel) for private consumers; the privileges for other exempt groups such as the military and embassies would remain. At the time of analysis (based on prices of December 2013), such a reform would have resulted in a small fall in super prices and an increase of around 13 percent for diesel. Crude oil prices have recently fallen substantially and this is relevant to the calculations shown. In December 2013, Brent crude sold for about US\$110 a barrel and it remained around that level until July 2014. Since then it has steadily declined until falling to around US\$50 a barrel in January 2015. There is

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<sup>2</sup> In this report we try to avoid the terms “poverty line” and “poverty headcount” in order to differentiate our analysis from the poverty profile produced by the DISED

<sup>3</sup> De Broek, M., A Kangur, and R. Kpodar. 2012. *Djibouti: Fuel Price Subsidy Reform*. IMF.

considerable uncertainty about the course of prices in 2015.

11. Before the drop in oil prices, the government had not taken any firm decision, in part due to fears of increasing inflation with increasing fuel prices (based on the previously higher oil prices). In addition, there are concerns over the impact on the poor as well as the middle class and on certain sectors (transport, fisheries, and bakeries) in particular. The impact of fuel subsidy reforms on the transport sector is of particular concern to the government. Ticket prices for public transport are set by the state and have more or less been stable since 2006. The bus and taxi fleet is outdated and current discussions center on decreasing the cost of transport by updating the fleet. The government is considering pre-financing new vehicles, which the bus and taxi operators would pay back over time, thereby reducing the consumption of fuel.

12. If the government wanted to abandon the discretionary tax, this would be the time for action. With falling oil prices, an elimination of the discretionary tax elements would not necessarily lead to higher prices for consumers. In fact, given the low prices seen in early 2015, removal of discretionary tax on diesel would be small in comparison to the fall in underlying costs—so that the effect of its removal will be negligible and the effect on bus prices will be easily absorbed. If bus operators do not lower their prices at all then their margins will increase.

13. However, with the elimination of discretionary tax on fuel products, the government would relinquish a tool to smooth fuel prices in times of price increases and decreases. With falling oil prices, government tax revenues will decrease accordingly. The removal of discretionary tax at this point would lower the tax revenue further. It is likely that the government has adjusted the magnitude of the discretionary tax since January 2014, which would warrant further analysis. Furthermore, going forward, an analysis of the optimal tax structure would be warranted.

14. Overall, the following analysis based on December 2013 prices confirms that a negative tax on fuel products effectively subsidizes the better-off. Any reform of the current energy tax system should be pro-poor and social safety nets would be the channel to reinvest savings in pro-poor policies.

## **What is the Impact of the Current Tax Exemptions on Household Welfare?**

### **Distribution of Subsidies on Energy Products**

15. The following analysis includes all the tax-exempt fuel products available in the household survey. The survey does not differentiate between diesel and super (lumped together as carburant in the EDAM 3 questionnaire), but data from the *Enquête de Budget et Consommation* (EBC) survey (an urban-only survey done in 2013) show that around two-thirds of spending by households on carburant is on diesel. Furthermore, the survey shows that almost all direct spending on carburant is by the richest quintile. The simulations assume that the price of fuel purchases will increase from DF 215 to DF 242 per liter.

16. Car ownership and utilization of public transport is a strong indication of welfare. Car ownership is not widespread in Djibouti—only 6 percent of households own a car and 1 percent owns a motorcycle. One-fourth of the richest quintile owns a car while car ownership is basically negligible in the other quintiles (see Table 1). Most cars are owned by urbanites. Not surprisingly, carburant is essentially consumed by urban households and the richest quintile (see Table 2). Utilization of public transport (buses, taxis, and school buses) is also highest among the richer quintiles. Only 12 percent of the poor

(first quintile) use public transport compared with 60 percent in the richest two quintiles. More than half of the population in urban areas makes use of public transport but less than 10 percent in rural areas. Utilization of school transportation is also highly skewed toward richer and urban households.

Djibouti households spend about DF 7.96 million on subsidized fuel products (that is, fuel at the pump, pump, public, and school transport), about 6.75 percent of their total annual expenditure (Table 3). On an average, households spend DF 25,400 on fuel at the pump, DF 27,400 on public transport, and DF 30,600 on school transport (Table 2). Tax exemptions on fuel products do not benefit the poorest as they consume little fuel and hardly use public transportation. As shown in Table 1, possession of cars and motorbikes is essentially limited to the fifth quintile, which consumes DF 96,847 per household on fuel at the pump, about 4 percent of the total annual household expenditure. Spending on public and school transport is also considerably lower in the poorest quintile (DF 2,142 and DF 2,381 per household, respectively) than in the the richest quintile (DF 49,837 per household). Already the second quintile spends considerably more on public transport than the very poor (see Table 1: Percentage of Households Owning a Car or Motorbike, or Using Buses

	Quintile					Area		Total
	Poorest	Second	Third	Fourth	Richest	Urban	Rural	
<b>Car</b>	0.0	0.4	1.7	3.0	25.3	7.1	0.7	6.1
<b>Motorbike</b>	0.1	0.5	0.6	1.3	3.3	1.3	0.2	1.2
<b>Public Transport</b>	12.4	37.6	53.2	62.0	58.0	51.4	9.7	44.6
<b>School Transport</b>	6.9	21.9	37.2	47.0	41.9	36.7	1.2	31.0

Source: World Bank calculation based on the EDAM 3.

17. 2). For the poor, expenses on fuel and public and school transport amount to less than 2 percent each of the overall household expenses (DF 4,522), whereas the richest quintile spends about 8 percent of total household expenditure (DF 197,643) on these fuel products.

**Table 1: Percentage of Households Owning a Car or Motorbike, or Using Buses**

	Quintile					Area		Total
	Poorest	Second	Third	Fourth	Richest	Urban	Rural	
<b>Car</b>	0.0	0.4	1.7	3.0	25.3	7.1	0.7	6.1
<b>Motorbike</b>	0.1	0.5	0.6	1.3	3.3	1.3	0.2	1.2
<b>Public Transport</b>	12.4	37.6	53.2	62.0	58.0	51.4	9.7	44.6
<b>School Transport</b>	6.9	21.9	37.2	47.0	41.9	36.7	1.2	31.0

Source: World Bank calculation based on the EDAM 3.

**Table 2: Expenditures per Household (in 2014, DF)**

	Fuel	Public Transport	School Transport	Total
<b>Poorest</b>	0	2,142	2,381	4,523
<b>Second</b>	499	13,196	13,192	26,887
<b>Third</b>	617	25,352	31,755	57,724
<b>Fourth</b>	4,093	38,002	46,889	88,985
<b>Richest</b>	96,874	49,837	50,932	197,643
<b>Total</b>	25,422	27,381	30,622	83,425

Source: World Bank calculation based on the EDAM 3 (2014 prices).

**Table 3: Expenditure on Subsidized Products over Total Expenditures (in %)**

	<b>Fuel</b>	<b>Public Transport</b>	<b>School Transport</b>	<b>Total</b>
<b>Poorest</b>	0.00	0.79	0.88	1.67
<b>Second</b>	0.07	1.89	1.89	3.86
<b>Third</b>	0.06	2.57	3.22	5.85
<b>Fourth</b>	0.31	2.87	3.54	6.72
<b>Richest</b>	3.93	2.02	2.07	8.02
<b>Total</b>	2.06	2.22	2.48	6.75

*Source:* World Bank calculation based on the EDAM 3 (2014 prices).

## Distribution of Subsidies on Food Products

18. Poor households spend relatively more on tax-exempt food products than richer households. Household expenses on tax-exempt food products amount on average to DF 153,629 per household, which is equivalent to 12.4 percent of total household spending. Table 4 shows household expenses on tax-exempt food products and Table 5 shows the proportion of annual household spending. Of these basic food items, sugar is the most consumed item in terms of expenditure (DF 37,622). Although rice consumption is higher, only a tiny fraction of rice is actually tax exempt and therefore has been excluded from our analysis. Tax-exempt products are relatively more important for the poor, as the expenditure share of these products is much higher for the very poor than for the very rich. In the poorest households, 19 percent of the total expenses correspond to tax-exempt food products, while these products account for less than 7 percent of the richest households' total expenses.

**Table 4: Expenditures per Household (in DF)**

	<b>Powder Milk</b>	<b>Flour</b>	<b>Cooking Oil</b>	<b>Sugar</b>	<b>Total</b>
<b>Poorest</b>	4,250	17,455	8,262	22,193	52,161
<b>Second</b>	17,189	27,000	17,573	36,717	98,480
<b>Third</b>	26,579	25,541	20,486	40,253	112,858
<b>Fourth</b>	35,266	28,348	23,782	41,760	129,156
<b>Richest</b>	55,248	31,814	33,213	45,082	165,357
<b>Total</b>	29,529	26,350	21,450	37,622	114,951

*Source:* World Bank calculation based on the EDAM 3 (2014 prices).

**Table 5: Expenditure on Subsidized Products over Total Expenditures (in %)**

	<b>Powder Milk</b>	<b>Flour</b>	<b>Cooking Oil</b>	<b>Sugar</b>	<b>Total</b>
<b>Poorest</b>	1.57	6.46	3.06	8.22	19.31
<b>Second</b>	2.47	3.88	2.52	5.27	14.14
<b>Third</b>	2.69	2.59	2.08	4.08	11.43
<b>Fourth</b>	2.66	2.14	1.80	3.15	9.75
<b>Richest</b>	2.24	1.29	1.35	1.83	6.71
<b>Total</b>	2.39	2.13	1.74	3.04	9.30

Source: World Bank calculation based on the EDAM 3.

## What is the Context of such Reform: Winners and Losers?

### Impact of Abandoning the Discretionary Tax on Retail Prices of Fuel Products

19. The proposal to abandon the use of discretionary tax on certain fuel products is currently under consideration by the government. Other tax rates could be varied by legislation, as at present, but would normally be stable for lengthy periods. Allowable costs along the supply chain could also be varied if justified by the circumstances of the entities involved. To simulate the effect of removing the discretionary tax element on prices, it is assumed that all other tax rates and costs remain at the levels of December 2013. The removal of discretionary tax would have resulted in a small fall in gasoline and kerosene prices but an increase of around 13 percent for diesel. The comparison between the before and after prices in December 2013 is possible because the government's action with respect to the determination of the retail price (and the associated discretionary tax) is a known fact. Simulating the effect of removing the discretionary tax under different circumstances is possible, but it is not possible to give a 'before' calculation since it is not known what the government would have decided to do with retail prices had it kept the discretionary tax.

#### *Impact of Fuel Subsidy Reform on Household Welfare, Government Budget, Poverty, and Inequality*

20. Abandoning discretionary tax on super and diesel retail prices would imply a loss of DF 510.8 million (or 0.2 percent of GDP<sup>4</sup>) for the population (Table 6). Table 6 shows the impact of the reform on the welfare of the population for each quintile, Table 7 shows the impact of the reform on the per capita welfare of each quintile, and Table 8 shows the impact on well-being as a proportion of expenditure.

21. For fuel bought directly at a pump, the impact of the reform on poor households is negligible, but it increases with welfare and represents the highest loss among rich households (DF 2,734 per capita), equivalent to 0.5 percent of household spending. The poorest two quintiles spend considerably less on public transport than the richer quintiles; this is partly due to the fact that the poor live in areas with no public transport available, such as the rural areas. However, the same conclusion holds when restricting the analysis only to urban areas. The impact of the reform on the poorest 40 percent is less than DF 80 per capita on public transport, compared to more than DF 400 among the richest 20 percent. In terms of household spending, this would amount to a loss of 0.3 percent of welfare for the poorest 20 percent and 0.8 percent for the richest quintile. The middle class would experience the largest reduction in well-being—about 0.12 percent.

**Table 6: The Total Impact on the Population's Well-Being (in DF, millions)**

	Fuel	Public Transport	School Transport	Total
<b>Poorest</b>	0.0	-1.5	-1.7	-3.1
<b>Second</b>	-1.0	-8.1	-8.1	-17.3
<b>Third</b>	-1.3	-16.3	-20.4	-38.0
<b>Fourth</b>	-9.7	-26.8	-33.0	-69.5
<b>Richest</b>	-292.7	-44.6	-45.6	-382.8
<b>Total</b>	-304.8	-97.3	-108.8	-510.8

<sup>4</sup> GDP for 2013 is estimated at US\$1.456 billion.

Source: World Bank calculation based on the EDAM 3 (2014 prices).

**Table 7: The Impact on the Per Capita Well-Being (in DF)**

	Fuel	Public Transport	School Transport	Total
<b>Poorest</b>	0	-14	-15	-29
<b>Second</b>	-10	-76	-76	-161
<b>Third</b>	-12	-152	-190	-354
<b>Fourth</b>	-90	-249	-307	-646
<b>Richest</b>	-2,734	-417	-426	-3,576
<b>Total</b>	-568	-181	-203	-951

Source: World Bank calculation based on the EDAM 3 (2014 prices).

**Table 8: The Impact on Well-Being (in %)**

	Fuel	Public Transport	School Transport	Total
<b>Poorest</b>	0.00	-0.03	-0.03	-0.06
<b>Second</b>	-0.01	-0.07	-0.07	-0.15
<b>Third</b>	-0.01	-0.10	-0.12	-0.22
<b>Fourth</b>	-0.04	-0.11	-0.13	-0.28
<b>Richest</b>	-0.49	-0.08	-0.08	-0.65
<b>Total</b>	-0.26	-0.08	-0.09	-0.43

Source: World Bank calculation based on the EDAM 3.

22. The impact of the reform on government budget would result in a gain, the highest coming from fuel bought directly at the pump. Table 9 shows the impact of the reform on government budget from the different subsidized products. The impact of the reform on government budget would result in a total gain of DF 408.6 million (or 0.16 percent of GDP). Sixty percent of that gain would come from fuel sold at the pump (96 percent of the gain from fuel will originate from the richest households) and the remaining 40 percent from public transport. It should be noted that since we assume a price elasticity of 0.2, the amount gained by the government is less than the loss incurred by the different households.

**Table 9: The Impact of the Reform on the Government Revenue (in DF, millions)**

	Fuel	Public Transport	School Transport	Total
<b>Poorest</b>	0.0	1.2	1.3	2.5
<b>Second</b>	0.8	6.5	6.5	13.8
<b>Third</b>	1.1	13.0	16.3	30.4
<b>Fourth</b>	7.8	21.4	26.4	55.6
<b>Richest</b>	234.1	35.7	36.5	306.3
<b>Total</b>	243.8	77.8	87.0	408.6

Source: World Bank calculation based on the EDAM 3 (2014 prices).

23. As the poor spend most of their income on food-related products, the elimination of tax exemptions on fuel products would reduce inequality but with no apparent impact on poverty. The

elimination of tax exemptions on fuel would not affect the poorest because the consumption of this product is negligible among the poor. On the other hand, the consumption of this product is one of the highest among the subsidized products in rich households, and an elimination of tax exemption would result in a reduction in inequality by 0.12 percentage points.

24. Results of the PSIA show that an elimination of tax exemption on fuel at the pump offers potential for higher government revenues without impacting poverty. An increase of prices on public transport would increase poverty, but at a lower rate than increases on school transport.

## Impact of Introducing Consumer Tax on Basic Food Items

25. The government is not considering levying consumer tax on basic food items and the simulations below are merely for illustrative purposes. As mentioned above, among the basic food items that are tax exempt, only a certain quality/type is exempt (for example, broken rice). For rice, only 6 percent of the imported rice is exempt, but about 88 percent of flour, about 60 percent of sugar and edible oil, and about 50 percent of powdered milk products are exempt. The implicit subsidy represents 7 percent of the unsubsidized price.

26. Introducing consumer taxes would imply a loss of DF 558.7 million (or 0.22 percent of GDP) for the population. The per capita values indicate that the loss would be considerably higher for the richest in absolute terms (Table 10). Overall, the impact of the reform on the poorest 20 percent would imply a decrease in well-being by DF 500 or 1.06 percent of household spending. For the richest quintile, the loss would be equivalent to DF 1,836 or 0.33 percent of household spending. This comparison shows that the poor spend more in relative terms on tax-exempt food products. Therefore, introducing consumer taxes would affect poverty.

**Table 10: The Total Impact on the Population's Well-Being (in DF, millions)**

	<b>Powder Milk</b>	<b>Flour</b>	<b>Cooking Oil</b>	<b>Sugar</b>	<b>Total</b>
<b>Poorest</b>	-3.1	-24.8	-7.3	-18.4	-53.6
<b>Second</b>	-11.2	-34.0	-13.8	-27.0	-86.0
<b>Third</b>	-18.1	-33.4	-16.7	-30.8	-99.0
<b>Fourth</b>	-26.3	-40.8	-21.3	-35.1	-123.5
<b>Richest</b>	-52.4	-58.1	-37.8	-48.2	-196.6
<b>Total</b>	-111.2	-191.0	-96.8	-159.6	-558.7

*Source:* World Bank calculation based on the EDAM 3 (2014 prices).

**Table 11: The Impact on the Per Capita Well-Being (in DF)**

	<b>Powder Milk</b>	<b>Flour</b>	<b>Cooking Oil</b>	<b>Sugar</b>	<b>Total</b>
<b>Poorest</b>	-29	-231	-68	-172	-499
<b>Second</b>	-104	-316	-128	-251	-800
<b>Third</b>	-169	-312	-156	-288	-924
<b>Fourth</b>	-245	-379	-198	-326	-1,148
<b>Richest</b>	-490	-543	-353	-450	-1,836
<b>Total</b>	-207	-356	-180	-297	-1,041

*Source:* World Bank calculation based on the EDAM 3 (2014 prices).

**Table 12: The Impact on Well-Being (in %)**

	<b>Powder Milk</b>	<b>Flour</b>	<b>Cooking Oil</b>	<b>Sugar</b>	<b>Total</b>
<b>Poorest</b>	-0.06	-0.49	-0.14	-0.37	-1.06
<b>Second</b>	-0.10	-0.29	-0.12	-0.23	-0.75
<b>Third</b>	-0.11	-0.20	-0.10	-0.18	-0.58
<b>Fourth</b>	-0.11	-0.16	-0.08	-0.14	-0.49
<b>Richest</b>	-0.09	-0.10	-0.06	-0.08	-0.33
<b>Total</b>	-0.09	-0.16	-0.08	-0.14	-0.47

*Source:* World Bank calculation based on the EDAM 3.

**Table 13: The Impact of the Reform on the Government Revenue (in DF, millions)**

	<b>Powder Milk</b>	<b>Flour</b>	<b>Cooking Oil</b>	<b>Sugar</b>	<b>Total</b>
<b>Poorest</b>	2.5	19.8	5.8	14.7	42.9
<b>Second</b>	9.0	27.2	11.0	21.6	68.8
<b>Third</b>	14.5	26.7	13.4	24.7	79.2
<b>Fourth</b>	21.1	32.6	17.0	28.1	98.8
<b>Richest</b>	42.0	46.5	30.2	38.6	157.2
<b>Total</b>	89.0	152.8	77.5	127.7	447.0

Source: World Bank calculation based on the EDAM 3.

## What is the Current Role of Social Safety Nets in Djibouti?

27. A public safety net typically consists of publicly sponsored programs that provide income or in-kind support and access to basic social services to the poorest and vulnerable members of society. In addition, there are other types of transfers such as contributory social insurance like pensions, labor market programs, subsidies on food and fuel products, and private transfers (remittances) among households. To assess the effectiveness of these transfers to protect the poorest and vulnerable from shocks, a number of indicators are presented, for example, coverage, targeting accuracy, and generosity.

28. Untargeted tax exemptions (implicit subsidies) reach a wider part of the population than targeted programs. Table 14 shows the percentage of the population (by welfare quintile) receiving seven types of transfers: pensions (private or public), compensation for health care expenditure, food rations, cash transfers from the government or nongovernmental organizations (NGOs), publicly provided food and fuel subsidies, and private transfers received from family and friends. Tax exemptions on basic food items reach the majority of the poor (77.3 percent in the first quintile) and almost the majority of individuals in the other quintiles. Tax exemptions on certain fuel products, on the other hand, benefit only 17 percent of the poorest quintile but more than 82 percent of the richest. About a quarter of the population in the poorest quintile benefits from food rations, making it a program with relatively effective targeting. Compensation for health expenditure disproportionately benefits the richer quintiles. Very few households (less than 10 percent) benefit from pensions. Finally, 21 percent of Djibouti households receive private transfers (international or national) and these transfers mainly benefit the poorest households.

**Table 14: Coverage of Transfer Programs**

	<b>Pensions</b>	<b>Compensation for Health Care Expenditure</b>	<b>Food Rations</b>	<b>Transfers from Government or NGOs</b>	<b>Food Subsidies</b>	<b>Fuel Subsidies</b>	<b>Remittances</b>
<b>Total</b>	8.5	4.3	8.1	2.1	94.7	58.2	21.0
<b>Quintiles of per capita consumption</b>							
Q1	5.3	1.3	27.0	5.8	77.3	17.1	29.7
Q2	8.6	3.5	8.6	1.3	98.1	48.2	23.6
Q3	10.5	4.2	2.5	1.5	99.7	66.9	20.2
Q4	8.5	5.5	1.3	0.9	99.3	76.2	18.3
Q5	9.6	6.9	1.1	0.8	99.2	82.5	13.5

Source: World Bank calculation based on the EDAM 3.

29. The intended beneficiaries of social safety net programs should be the poor. Therefore, the performance of such programs can be assessed by estimating program leakage. One way to measure such leakage is by determining the share of total transfers received by non-poor beneficiaries. In a well-targeted progressive program, the poor (bottom quintile) receive the highest share of transfers; this share declines as welfare increases. Table 15 shows the distribution of benefits by area and welfare quintile. In Djibouti, food rations and cash transfers generally fit this description as the poor receive most of the transfers. Over half of the transfers for food rations are received by the poor (bottom quintile). In contrast, tax exemptions on food and fuel items predominantly benefit the urban population and non-poor, making these programs regressive. In fact, the majority of food and fuel subsidy resources (85 percent and 97 percent, respectively) are received by those living in urban areas and by those from the richest two quintiles (57 percent and 89 percent, respectively). However, only 15 percent of food subsidy benefits and less than 3 percent of fuel subsidy benefits go to beneficiaries living in rural areas and only 10 percent and less than 1 percent, respectively, are received by those in the poorest quintile. Pensions and compensation for health care expenditure transfers are received mainly by non-poor beneficiaries and the population living in urban areas.

**Table 15. Distribution of Benefits (Targeting Accuracy)**

	Area of Residence		Quintiles of Per Capita Consumption				
	Urban	Rural	Q1	Q2	Q3	Q4	Q5
Pensions	85.6	14.4	4.5	10.9	17.5	19.3	47.9
Compensation for health care expenditure	88.0	12.0	3.5	11.1	17.2	23.4	44.9
Food rations	15.8	84.2	56.2	21.2	10.7	4.3	7.5
Transfers from government or NGOs	44.7	55.3	45.1	16.9	13.6	11.7	12.7
Food subsidies	84.9	15.1	9.5	15.4	17.8	22.0	35.3
Fuel subsidies	97.2	2.8	0.6	3.4	7.5	13.5	75.0
Remittances	75.6	24.4	20.8	15.4	20.7	15.0	28.1

*Source:* World Bank calculation based on the EDAM 3.

*Note:* Benefits' incidence is the transfer amount received by the group as a percentage of total transfers received by the population. Specifically, benefits' incidence is (Sum of all transfers received by all individuals in the group)/(Sum of all transfers received by all individuals in the population). Aggregated transfer amounts are estimated using household size-weighted expansion factors.

30. The generosity of social safety net programs in Djibouti is generally very low. The lower the generosity, the less important the value of the transfer is for the welfare of the beneficiaries. On the other hand, the higher the generosity, the higher its importance as a source of welfare for the beneficiaries. The generosity and size of transfers are, therefore, important design features of social safety net programs as they will have an impact on the poverty and other intended objectives of the programs. In fact, low generosity will limit the impact on poverty. Only two programs (pensions and private transfers from family and friends—which strictly speaking are not social assistance programs), out of the seven types of programs available, seem to have an impact on the consumption levels of the population in general. On the contrary, by focusing on the poorest quintile, food rations also have a significant effect even if private transfers are by far the most efficient vehicle. In fact, the impact of cash transfers from the government or NGOs and tax exemptions on food on the welfare of the poorest quintile is extremely modest and that of tax exemptions on fuel items is negligible.

31. In line with low targeting accuracy and low generosity, social safety net programs in Djibouti are generally small and inadequate in reducing the poverty gap. Table 16 shows the generosity ratio, the ratio between the average transfers and the poverty gap, and the program size of each of the seven transfer

programs in Djibouti. The ratio is above 1 for pension, which means that the average transfer is higher than the poverty gap and a strong indication that beneficiaries depend on this transfer as a source of income, which is usually expected for social insurance programs. On the other hand, the generosity of subsidies (both fuel and food) is negligible in closing the poverty gap; hence, a ratio of less than 0.1.

**Table 16. Decomposition of the Impact of the Different Programs**

	<b>Targeting</b>	<b>Average Transfers (in DF)</b>	<b>Poverty Gap (in DF)</b>	<b>Ratio</b>
Pensions	0.60	78,987.7	35,238.5	2.2
Compensation for health care expenditure	0.06	9,294.2	33,424.6	0.3
Food rations	0.76	8,684.8	34,942.9	0.2
Transfers from government or NGOs	0.63	9,342.8	33,814.5	0.3
Food subsidies	0.10	1,068.9	33,716.6	0.0
Fuel subsidies	0.01	1,550.6	33,490.3	0.0
Remittances	0.68	36,839.3	36,733.6	1.0

*Source:* World Bank calculation based on the EDAM 3 (2012 prices).

## What is the Impact of the Reforming Tax Exemptions and Safety Nets on Poverty?

32. Discretionary energy taxes have benefitted the better-off in times of higher fuel prices (the analysis in this study is based on December 2013 prices). An elimination of tax exemptions on fuel products would reduce inequality but would not have any apparent impact on poverty. To reduce poverty, savings from a possible tax reform and other funding resources could be rechanneled toward the poor and vulnerable. To reduce poverty, however, effective targeting of the poor is key. The government with the support of the Bank is currently developing a social registry to increase equity in the distribution of resources, and promoting greater social inclusion for the most vulnerable groups. Over the course of the technical assistance provided to the government of Djibouti, a number of policy recommendations have emerged and some have already been taken into consideration in the design of a stronger social protection system. These recommendations are derived from the sections below and include:

- Savings on energy tax reforms and other funding resources, including those spread over a number of very small safety net programs, should be channeled to a cash-transfer program targeting the poorest;
- A Proxy Means Test (PMT) should be used to determine the households' poverty score, and all safety net programs should target the poorest (as defined by the PMT) rather than targeting rural households based on geography;<sup>5</sup>
- Similarly, current and future safety net programs should first target poor households based on the relative poverty score, and then use other (categorical) factors to determine program eligibility.

<sup>5</sup> This functionality will be part of the forthcoming social registry which will be used to identify, classify, and target households that would be considered poor or vulnerable, to improve the delivery of assistance to them.

## Impact of Tax Reform on Household Welfare and Government Revenue

33. As the poor spend most of their income on food-related products, the elimination of tax exemptions on such products would have the highest impact on destitution and inequality, while the elimination of tax exemptions on fuel products would reduce inequality but with no apparent impact on destitution. However these effects would be minimal, almost negligible. Table 17 shows the impact of the reform on destitution and inequality. Globally, a reform of taxes on fuel and food products alone would not have a very significant impact on destitution and no impact on inequality. In particular, the destitution rate would increase by 0.17 percentage points from 20.00 to 20.17 percent. The elimination of tax exemptions on flour would increase destitution by 0.05 percentage points (from 20.00 to 20.05 percent), and inequality by 0.05 percentage points (from 45.13 to 45.18 percent). The effect of the elimination of the discretionary tax adjustment on fuel would not affect the poorest and would in fact result in a reduction of inequality by 0.12 percentage points. This is explained by the fact that the consumption of this product is negligible among the poor, while it is one of the highest consumed products among the subsidized products in rich households.

**Table 17: The Reform, the Destitution Head Count, and the Gini Index**

	Destitution Level	Change in destitution	Gini Index	Variation in Gini
<b>Pre Reform</b>	20.00	-	45.13	-
<b>Powdered Milk</b>	20.00	0.00	45.13	0.00
<b>Flour</b>	20.05	0.05	45.18	0.05
<b>Cooking Oil</b>	20.01	0.00	45.15	0.01
<b>Sugar</b>	20.01	0.01	45.17	0.04
<b>Fuel</b>	20.00	0.00	45.01	-0.12
<b>Public Transport</b>	20.00	0.00	45.13	0.00
<b>School Transport</b>	20.00	0.00	45.14	0.00
<b>Post Reform</b>	20.17	0.17	45.13	-0.02

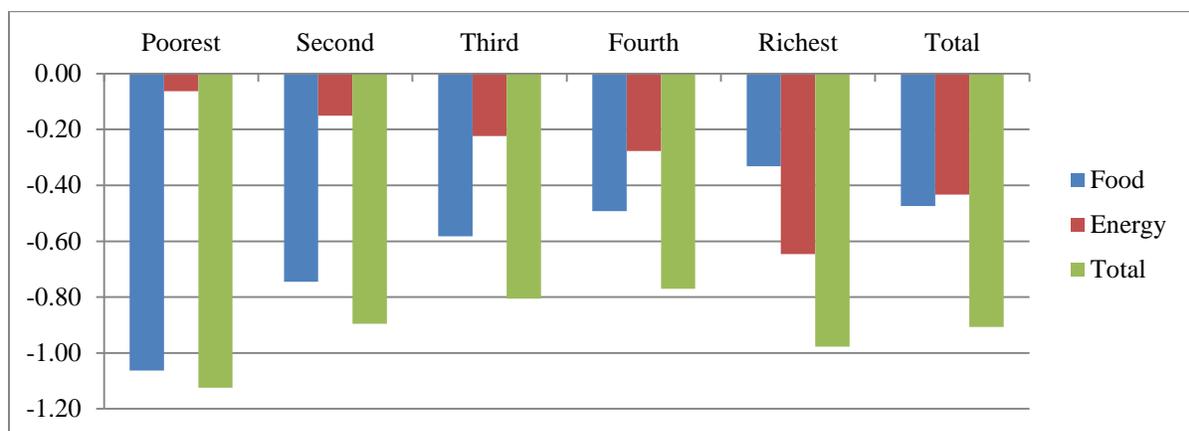
Source: World Bank calculation based on the EDAM 3.

34. Among the poorer quintiles, the loss in welfare as a result of the reform would be the highest on food-related items; while it would be the highest on fuel products among the richer quintiles. **Error! Reference source not found.** shows the impact of the reform on the welfare of the population as a proportion of the total spending by quintile and for each subsidized product group. In terms of food-related products, the reform would result in a significant loss of welfare among the poorest quintile (1.12 percent of total spending) but this loss decreases as welfare increases. On the other hand, the reform would result in a minimal loss among the top quintile for fuel products, and this loss decreases as welfare decreases and becomes negligible for the first quintile.

35. The impact of the reform on government budget would result in a gain, the highest coming from fuel. The impact of the reform on government budget would result in a total gain of DF 856 million (or 0.33 percent of GDP): 28 percent of that gain would come from fuel (96 percent of the gain from fuel will originate from the richest households), 18 percent from flour, and 15 percent from sugar. The highest gain in the government budget will come from the richest households (54 percent). This decreases as welfare decreases to reach the lowest share among poor households (5 percent). This is consistent with the previous finding that the highest loss of welfare in the population would come from fuel, and particularly among the rich. Figure 2 shows the impact on government revenues as the price of each subsidized

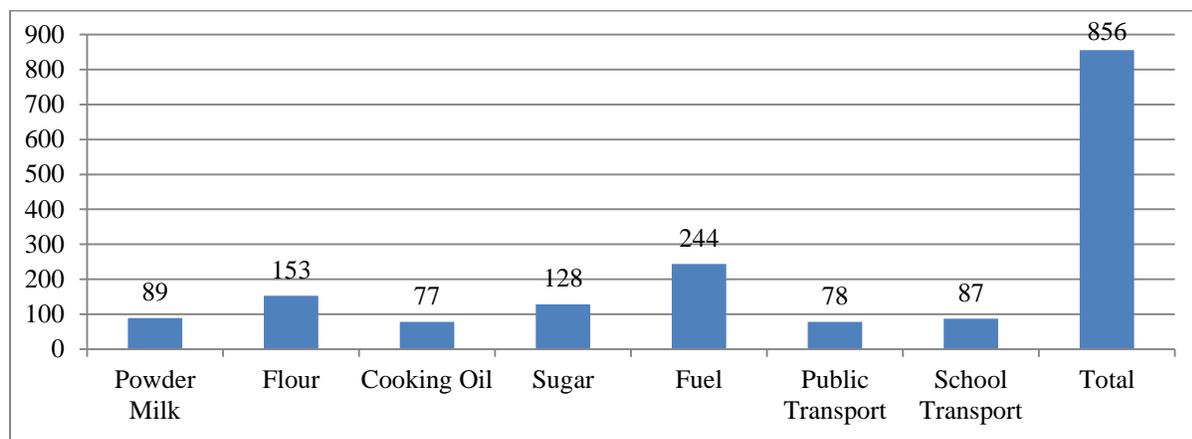
product increases. The most important revenue gain to the government would come from increasing the price of fuel, while the least would come from increasing the price of cooking oil.

**Figure 1: The Impact on Well-Being (in %)**



Source: World Bank calculation based on the EDAM 3.

**Figure 2: The Impact of the Reform on the Government Revenue (in DF)**



Source: World Bank calculation based on the EDAM 3 (2014 prices).

## Likely Impact of Compensation Policies through Social Safety Nets Programs

36. Any reform necessitates an efficient system for targeting the poor and vulnerable. The government, with support from development partners, is currently in the process of reforming the social protection system. A key element to strengthening social safety nets in Djibouti is the creation of a social registry of poor and vulnerable households, which will be used to target the poor and serve as a single platform used by all social assistance programs, resulting in significant cost savings and substantial improvements in targeting the poorest households.

37. The preceding analysis has shown that tax exemptions on food and fuel items are regressive, and that the poor benefit the least. The government is considering strengthening the social protection system through a targeted cash-transfer system. Based on discussions with the SESN, reform options based on a number of transfer schemes and budget envelopes are presented in table 18. The transfer schemes are defined in Table 18 and could be implemented at an individual or household level. In the latter case, the amount transferred is the same for any household meeting the selection criteria irrespective of the household size. On the other hand, the ‘individual schemes’ depend on household size. For example, a

nine-member household would receive three times the amount received by a three-member household. An intermediate measure is based on a calorie requirement-based equivalence adult scale (Eq.Ad.).

**Table 18: Definition of the Different Transfer Schemes**

Transfer No.	Selection Criteria	Beneficiary	Amount Transferred Per Unit (in DF)
1	Rural + urban outside Djibouti-ville	Individual	6,935
2		Individual (in Eq.Ad.)	9,268
3		Household	35,826
4	Rural only	Individual	11,560
5		Individual (in Eq.Ad.)	15,717
6		Household	54,940
7	Rural + urban in first quintile	Individual	7,675
8		Individual (in Eq.Ad.)	10,259
9		Household	42,550
10	First quintile with unique transfer	Individual	9,306
11		Individual (in Eq.Ad.)	12,418
12		Household	58,748
13	First quintile with 2 steps	Individual	Percentile 10: 13,960 Percentile 20: 4,673
14		Individual (in Eq.Ad.)	Percentile 10: 18,811 Percentile 20: 6,176
15		Household	Percentile 10: 90,133 Percentile 20: 28,863
16	First quintile with 4 steps	Individual	Percentile 5: 15,245 Percentile 10: 12,670
17		Individual (in Eq.Ad.)	Percentile 5: 20,629 Percentile 10: 17,001
18		Household	Percentile 5: 110,709 Percentile 10: 73,607 Percentile 15: 42,777 Percentile 20: 14,417

Source: World Bank calculation based on the EDAM 3 (2012 prices).

### *Destitution Head Count*

38. The largest decline in destitution head count is achieved when targeting the first quintile. The destitution head count (P0) is defined as the first quintile. Overall, with a total budget of DF 1 billion, the effect on destitution head count is limited if we concentrate mainly on rural households without taking into account urban households from the first quintile. The largest decline in destitution head count with a budget of DF 1 billion targets the first quintile and transfers a uniform amount.

39. With a larger budget of DF 3 billion, it would be possible to almost halve the destitution head count using any of the schemes that target the first quintile. By using such a destitution head count as a measure of efficiency, however, it is not clear whether an individual- or a household-based scheme is

more efficient at reducing destitution. The main problem in using a poverty head count to assess the different schemes is that no weight is given when an extremely poor household receives an important transfer while remaining below the poverty line. Actually, we can imagine an extreme case where all the poorest households would be much better off but still poor if none of the amount transferred makes them go over the poverty line. Due to this, we should focus on destitution gap as a measure of destitution.

### *Destitution Gap*

40. To reduce the destitution gap, targeting the first quintile is more efficient than any of the schemes focusing on rural households. The destitution gap index (PGI or P1) estimates the depth of destitution by considering how far, on average, the poor are from that destitution line. It is defined as the average destitution gap in the population as a proportion of the destitution line. In a graph presenting the cumulative welfare function, this is the area below the destitution line and on the left-hand side of the function. Before any transfer, the destitution gap index associated with the destitution line is measured as 6.9 percent (last line in Table 19). On average, the poor individual has expenditures (as measured by the PMT) 6.9 percent below the destitution line (DF 77,926 per capita in 2012 prices). The preferred scheme to reduce the destitution gap would be targeting the first quintile with a four-step transfer amount depending on destitution. Schemes 16 or 17 would be by far the best—focusing on the first quintile but with the amount transferred being dependent on destitution (as defined by the PMT). In this case, the poorest 5 percent would receive more than the poorest 10 percent, and so on (see Table 18).

**Table 19: Effect on Destitution Gap of the Different Transfer Schemes**

<b>Transfer No.</b>	<b>Selection Criteria</b>	<b>Beneficiary</b>	<b>DF 1 billion</b>	<b>DF 2 billion</b>	<b>DF 3 billion</b>
1	Rural + urban outside Djibouti ville	Individual	5.5	4.3	3.3
2		Individual (in Eq.Ad.)	5.6	4.4	3.4
3		Household	5.7	4.6	3.8
4	Rural only	Individual	5.0	3.4	2.2
5		Individual (in Eq.Ad.)	5.0	3.5	2.3
6		Household	5.3	4.0	3.1
7	Rural + urban in first quintile	Individual	5.0	3.4	2.2
8		Individual (in Eq.Ad.)	5.0	3.5	2.3
9		Household	5.1	3.8	2.7
10	First quintile with unique transfer	Individual	4.6	2.9	1.6
11		Individual (in Eq.Ad.)	4.7	3.0	1.7
12		Household	4.6	2.9	1.8
13	First quintile with 2 steps	Individual	4.4	2.1	0.6
14		Individual (in Eq.Ad.)	4.5	2.2	0.8
15		Household	4.3	2.3	1.1
16	First quintile with 4 steps	Individual	4.4	1.9	0.3
17		Individual (in Eq.Ad.)	4.4	2.0	0.4
18		Household	4.2	2.0	0.8

<b>Transfer No.</b>	<b>Selection Criteria</b>	<b>Beneficiary</b>	<b>DF 1 billion</b>	<b>DF 2 billion</b>	<b>DF 3 billion</b>
	Without transfer		6.9	6.9	6.9

*Source:* World Bank calculation based on the EDAM 3.