Food Subsidies and Direct Social Assistance: Towards Better Targeting of Monetary Poverty and Deprivations in Tunisia
# Table of contents

1. EXECUTIVE SUMMARY

2. INTRODUCTION
   2.1 Overview of Poverty in Tunisia
   2.2 Universal Food and Direct Transfers in Tunisia
      2.2.1 Universal Food Subsidies
      2.2.2 Direct Targeting
      2.2.3 Scope of the Report

3. LESSONS LEARNED FROM INTERNATIONAL EXPERIENCE
   3.1 Iranian Experience
   3.2 Indian Experience
   3.3 Moroccan Experience
   3.4 Conclusions

4. DEFINITION OF A LIVING STANDARDS INDEX TO IDENTIFY THE BENEFICIARIES OF DIRECT TRANSFERS
   4.1 Introduction: Targeting Deprivation or Poverty?
   4.2 FIRST APPROACH-Definition of a Basic Deprivation and Living Conditions Index
      4.2.1 Selection of Deprivation Indicators – A Descriptive Approach
      4.2.2 Automatic Inclusion Criteria
      4.2.3 Preparation of an Initial Overall Household Classification Index
      4.2.4 Limitations of the Descriptive Approach
   4.3 SECOND APPROACH-Optimization of Index Performance Using the Multiple Deprivation Method
      4.3.1 Formulation of the Index on the basis of a Multiple Deprivation Score
      4.3.2 Results of the Multiple Deprivation Approach
   Overall Analysis
      a. Analysis using the Deprivation Index
   Analysis by Region
      a. Regional Disparities
      b. Deprivation Rate by Region versus the Monetary Poverty Rate
   Analysis by Area
   Analysis by Degree of Disability and Professional/Vocational Qualifications
   4.4 THIRD APPROACH-Optimization of Index Performance by Proxy Means Tests
   4.5 FOURTH APPROACH-Combination of the Proxy Means Test and Multiple Deprivation Method
      4.5.1 Description
      4.5.2 Performance of the Proposed Indicator
5. DETERMINATION OF THE BENEFICIARY ALLOCATION LEVEL

5.1 Proposed Method

5.2 Theoretical Performance in Terms of Poverty Reduction

6. PUBLIC POLICY PROPOSALS

6.1 OPTION 1: Modification of Procedure for Allocation of Direct Transfers and Related Budget

6.2 OPTION 2: Modification of Direct Transfer Method and Budget Allocated to Food Subsidies

6.3 OPTION 3: Subsidies Abolished and Part of Subsidy Budget Allocated to PNAFN

6.4 OPTION 4: Part of Subsidy Budget Allocated to PNAFN and Total Budget Remaining Constant

6.5 OPTION 5: Subsidy Budget Varying and Part is Allocated to PNAFN

6.6 OPTION 6: Some Food Products are no Longer Subsidized and the Gains are Partly Transferred to PNAFN and Other Subsidies

7. CONCLUSIONS

ANNEXE I: Direct Targeting Statistics

ANNEXE II: The Indian Experience

ANNEXE III: Statistical Prerequisites for Direct Targeting

ANNEXE IV: Econometric Estimation

ANNEXE V: Optimization of Targeting by a Multiple Deprivation Score

ANNEXE VI: Assessment of Impact of Existing Indirect Subsidies on Basis of two Standard of Living Classifications

ANNEXE VII: Social Assistance Transmission Channels

ANNEXE VIII: Detailed Results of Impact of Abolition of Subsidies on Targeted Products and the Transfer of part or all of budget to PNAFN
1. EXECUTIVE SUMMARY

The 2011 Revolution and ensuing social unrest highlighted the inequalities in Tunisia and increasing social demands. The expectations brought to the fore the issue of poverty and called into question the performance of social transfer systems. Against this backdrop, and based on the 2010-2011 household expenditure survey, the National Institute of Statistics (INS) in collaboration with the Center for Research and Social Studies (CRES) and international partners including the African Development Bank (ADB) revealed that 15.5% of the population was living below the poverty line (BPL) in 2011.

Social transfers in Tunisia are conducted directly and indirectly. Indirect (and universal) assistance is transferred through the General Compensation Fund, established in May 1970 to control the prices of certain food staples, in particular, cereal products1 by introducing subsidies to contain price increases and preserve the purchasing power of the most deprived segments of the population. Targeted assistance is transferred through the National Programme of Assistance to Needy Families (PNAFN), Free Medical Assistance (AMG1) and the Programme for Access to Reduced-Price Health Care (AMG2). Beneficiaries are identified through field surveys organized by the Department of Social Advancement at the Ministry of Social Affairs.

In 2013, the INS, CRES and ADB carried out an initial analysis2 of the impact of food subsidies and direct social transfers on the poor and vulnerable segments of the population. This study concluded that the existing consumption subsidy system had fairly significant redistributory effects in favour of the poorest sections of society. However, the universal nature of food subsidies seriously undermines the effectiveness of this instrument as a mechanism to reduce inequalities and poverty. While recommending the transfer of resources allocated to universal subsidies towards targeted social assistance programmes, the study underscored, with respect to the PNAFN and AMG2 programmes, the existence of fairly significant exclusion and inclusion indicators. Only 48.9% of the beneficiaries of at least one of the programmes are poor and only 51% of the poor are enrolled in the PNAF or AMG2.

Improving the performance of social transfers is particularly important as the relative volume of these transfers in the Tunisian government’s budget has considerably increased in recent years. This rise is partly due to the hike in the prices of subsidized products on the international markets and also to the need to meet social expectations in the transition context.

In this context, social programme administrators must meet a dual objective: to alleviate poverty and reduce inequalities while optimizing the budget allocated to them for the purpose.

This report proposes an initial analysis of ways to optimize direct transfers in order to fine-tune the social transfer procedures adopted by the Ministry of Social Affairs. This report draws on the lessons learned from international experience, in particular, the Iranian, Indian and Moroccan experiences.

Theoretically, in order to achieve this objective, it is necessary to first define an aggregate indicator of living standards.

It will then be necessary to define the amount(s) of transfers to households that will result in a significant reduction in the number of needy people.

Furthermore, the decision-maker may, after optimizing the direct transfer procedure, try to revise/reallocate the budgets allocated to the different transfer programmes, in order to enhance the efficacy of the social action. This report will explore different public policies.

First, the report stresses the fundamental idea that decision-makers in Tunisia do not always share the same understanding of what a

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1 http://www.commerce.gov.tn/Fr/presentation-de-la-caisse-generale-de-compensation_11_32
potential beneficiary is. The large majority of decision-makers and the population define a potential beneficiary as being a poor person in the monetary sense of the term, i.e. an individual with a low income below a fixed value. This is readily understandable, since the poverty indicators communicated by the INS are calculated using that logic. However, the existing direct social transfer system is based more on the notion of deprivation, which is closer to multidimensional poverty. The beneficiary is not defined in terms of income or consumption, but by a set of factors reflecting the constraints on his/her way of life and living standards. Since these two interpretations are not one hundred percent interchangeable, the decision-maker must be selective. This report proposes a methodology that will optimally meet this dual objective (monetary poverty and deprivation).

Four approaches are considered in this study. To facilitate their adoption, these approaches rely on the existing context. They use easily observable and non-modifiable indicators during the operation to identify poor people carried out by the social worker, while ensuring a careful estimation of the living conditions of individuals or households concerned by social assistance. 15 living standard indicators are used that take into account the many deprivations households are reported to suffer from. They synthesize three household living standard criteria: (1) living conditions (including housing), (2) the capacity of household members to generate a decent income, (3) The burden borne by active household members. All these indicators may be easily assessed by government representatives in the field during household surveys.

These approaches are also based on internationally recognized methodologies such as the multiple deprivation method and the Proxy Means Test method. These approaches take into account the interdependence of the impacts of the 15 indicators, household behaviours, and the heterogeneity associated with different milieus and regions of residence and which may aggravate targeting errors.

The analysis has retained the approach which best combines the objective of reducing deprivation and reducing poverty. The methodology then proposed to determine the allocation made to the beneficiary will thus help to ensure a better allocation of resources to those at the bottom of the list, in particular those suffering from multiple deprivations and/or extreme poverty.

To conclude the report, a series of public policy scenarios is presented. These scenarios analyze the impact on poverty of i) a change in the budgetary envelope allocated to the CGC and the PNAFN ii) trade-offs between direct and indirect transfers if the procedure presented in this report is adopted, which will allow us to create a model that will serve as a basis for determining transfers and the government budget allocated for that purpose.

The results underscore the effectiveness of the approach.

Without affecting the subsidies, the new targeting procedure will result in an extreme poverty rate of 1.5% even after a 50% reduction in the PNAFN budget. With a constant PNAFN budget, the new targeting procedure would eradicate extreme poverty and lower the poverty rate to 8%. If the PNAF budget remains unchanged, households affected by extreme poverty would receive 2525.6 dinars (47 dinars per person per month, if we consider that the standard family size is 4 to 5 persons) per year for all transfers combined, i.e. 2276.8 dinars (equivalent to an increase of 42 dinars per person per month) more than using the existing method. The poorest segments of the population would then receive 52% of the total budget allocated to direct and indirect transfers.

The use of this new procedure would also help to eradicate extreme poverty while abolishing food subsidies. The number of poor households would, in that case, remain virtually stable at 16%. However, it is worth noting that if the food subsidy budget is reallocated to PNAFN, the results will be spectacular. Transferring the entire subsidy budget to PNAFN using the new targeting method would bring down the extreme poverty rate to 0% and the poverty rate to 4.1%.

Finally, in a context where dialogue on subsidies could be difficult, it might be possible to abolish subsidies on a number of products, starting with those on products that have been identified as having little impact on poverty\(^3\). These analyses show that, with close monitoring, several objectives may be reconciled: eradicating extreme poverty, reducing poverty and preserving part of the subsidies, in

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\(^3\) Analysis of the Impact of Food Subsidies and Social Assistance Programmes on the Poor and Vulnerable Segments of the Population

particular, those which have a confirmed distributory effect, while abolishing the least effective ones in order to minimize the impact on the purchasing power of the other population segments.

However, the policy scenarios presented in this report, which explore different combinations of budget allocation and reduction, all concur that nothing justifies the maintenance of indirect subsidies if the main objective is to reduce poverty. No public policy scenario results in a stronger performance than the abolition of subsidies and the reallocation of the related budget to direct transfers.
2. INTRODUCTION

2.1 Overview of Poverty in Tunisia

The study on the levels of monetary poverty and inequality in Tunisia (conducted by the INS in collaboration with the ADB and WB in 2012/2013) estimated the poverty rate at 15.5% in 2010 and the extreme poverty rate at 4.6%. However, these rates vary significantly depending on geographical criteria (areas and regions) and social criteria (socio-professional categories and education levels) –Box 1–.

Analysis by Area: Poverty rates vary according to the level of urbanization. The monetary poverty rate in rural areas is 22.6% compared to only 9% in the major towns and cities. Extreme poverty is 1.3% in the major towns and cities compared to 9.2% in rural areas, i.e. seven times higher.

Analysis by Region: With poverty rates above 20%, the regions of the West are more disadvantaged than those of the East. The economic centres, in particular, Greater Tunis and the Sahel Region, where a high proportion of job applications are concentrated, have poverty rates below 10%.

Analysis according to Socioprofessional Category (SPC): The highest poverty rates are found in families where the heads are unemployed (40.3% of poor people) and in families where the breadwinners do not live in the household (28.9%). The second group of households hardest hit by poverty is that where the household head does not need qualifications and is subject to uncertainties, mainly the vagaries of the weather or uncertainties regarding the economic situation. In this second group, the poverty rates are above 24%. Leading this group are households whose heads are farm workers (28.9%) followed by those headed by non-farm workers (24.2%).

Analysis by Level of Education: The poverty rate drops as the level of education improves. The poverty level is 23.4% in households whose heads are uneducated. It falls to about 7.2%, where the household head has had a secondary education and only 0.4% if he/she has attended university.

At first sight, geographical targeting could be envisaged to reduce poverty levels and reduce inter-area and inter-regional disparities. However, poverty is also highly dependent on the socioeconomic characteristics of households.

Box 1: Poverty Rate in 2010

<table>
<thead>
<tr>
<th>Areas</th>
<th>Extreme Poverty Rate (%)</th>
<th>Official Poverty Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Towns and Cities</td>
<td>1.3</td>
<td>9.0</td>
</tr>
<tr>
<td>Average-Size Communes</td>
<td>2.9</td>
<td>14.0</td>
</tr>
<tr>
<td>Non-Communal Areas</td>
<td>9.2</td>
<td>22.6</td>
</tr>
<tr>
<td>Total</td>
<td>4.6</td>
<td>15.5</td>
</tr>
</tbody>
</table>

### Regions

<table>
<thead>
<tr>
<th>Regions</th>
<th>Extreme Poverty Rate (%)</th>
<th>Official Poverty Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater Tunis</td>
<td>1.1</td>
<td>9.1</td>
</tr>
<tr>
<td>North-East</td>
<td>1.8</td>
<td>10.3</td>
</tr>
<tr>
<td>North-West</td>
<td>8.8</td>
<td>25.7</td>
</tr>
<tr>
<td>Centre-East</td>
<td>1.6</td>
<td>8.0</td>
</tr>
<tr>
<td>Centre-West</td>
<td>14.3</td>
<td>32.3</td>
</tr>
<tr>
<td>South-East</td>
<td>4.9</td>
<td>17.9</td>
</tr>
<tr>
<td>South-West</td>
<td>6.4</td>
<td>21.5</td>
</tr>
<tr>
<td>Total</td>
<td>4.6</td>
<td>15.5</td>
</tr>
</tbody>
</table>

### Socio-Professional Categories

<table>
<thead>
<tr>
<th>Socio-Professional Categories</th>
<th>Extreme Poverty Rate (%)</th>
<th>Official Poverty Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Executives and Liberal Professionals</td>
<td>0</td>
<td>0.7</td>
</tr>
<tr>
<td>Middle-Level Executives and Liberal Professionals</td>
<td>0</td>
<td>3.6</td>
</tr>
<tr>
<td>Other Employees</td>
<td>1.3</td>
<td>8.4</td>
</tr>
<tr>
<td>Owner-operators of Small Trades in Industry, Commerce and Services</td>
<td>1.3</td>
<td>7.4</td>
</tr>
<tr>
<td>Craftspersons and Self-Employed persons in Industry, Commerce and Services</td>
<td>2.9</td>
<td>10.8</td>
</tr>
<tr>
<td>Non-Farm Workers</td>
<td>6.7</td>
<td>24.2</td>
</tr>
<tr>
<td>Farm Operators</td>
<td>6.7</td>
<td>20.0</td>
</tr>
<tr>
<td>Farm Workers</td>
<td>13.3</td>
<td>28.9</td>
</tr>
<tr>
<td>Unemployed</td>
<td>20.8</td>
<td>40.3</td>
</tr>
<tr>
<td>Pensioners</td>
<td>1.2</td>
<td>5.8</td>
</tr>
<tr>
<td>Other Non-Working Persons</td>
<td>4.1</td>
<td>15.2</td>
</tr>
<tr>
<td>Breadwinners resident outside Household</td>
<td>13.1</td>
<td>28.9</td>
</tr>
<tr>
<td>Total</td>
<td><strong>4.6</strong></td>
<td><strong>15.5</strong></td>
</tr>
</tbody>
</table>

### Level of Education

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>Extreme Poverty Rate (%)</th>
<th>Official Poverty Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Education</td>
<td>8.4</td>
<td>23.4</td>
</tr>
<tr>
<td>Primary</td>
<td>4.7</td>
<td>18.1</td>
</tr>
<tr>
<td>Secondary</td>
<td>1.5</td>
<td>7.2</td>
</tr>
<tr>
<td>Higher</td>
<td>0.1</td>
<td>0.4</td>
</tr>
<tr>
<td>Total</td>
<td><strong>4.6</strong></td>
<td><strong>15.5</strong></td>
</tr>
</tbody>
</table>
In addition, the subsidy on vegetable oil is 50% of its cost price and sugar and milk were subsidized to the tune of 31.9% and 4.9% of their respective cost prices in 2011.

Table 2.2 (Box 1) shows that the budgets allocated to indirect subsidies on food products reached significant proportions in the wake of the cereal product price hikes on the international market, then following a political decision by the President of the Republic to reduce the prices of these products in order to ease the social tensions that had affected Tunisia in early 2011.

They are about TND 64 per person per year for poor households and TND 87 for non-poor households. They are TND 89 per person for households in the 3rd and 4th income quintiles.

On average, the subsidy received corresponds to 8.4% of the income of a first quintile household (average of 8.1% of poor peoples’ incomes) compared to an average of only 3% of non-poor incomes and 1.5% of the income of a last quintile household.

But what is really significant is the role played by this subsidy in stabilizing the living standards of the middle class which benefits from over 60% of the resources allocated by the central government to indirect subsidies.

There are two types of instruments for social transfers in Tunisia. One is the universal (or indirect) food subsidies for products mainly consumed by the poorest people (at least theoretically) in order to provide them with a minimum calorie intake at an affordable price, without international price fluctuations drastically altering their purchasing power. Subsidies also concern energy products but only food subsidies are considered in this study. These are managed by the General Compensation Fund (CGC).

There is also a direct transfer policy (the PNAFN or National Programme of Assistance to Needy Families) for the poorest families, involving the allocation of free health care cards or reduced-price health care cards, and the allocation of monthly financial assistance and assistance depending on the number of children enrolled in school. The list of families eligible for such assistance is decided upon by the Ministry of Social Affairs on the basis of social surveys prepared for each family.

The previous study, the results of which are presented in Box II, analyzed the importance of indirect subsidies in the real price of food products as well as their impacts on the Tunisian population’s standards of living. Energy subsidies are not included in this analysis.

Modalities for Implementing Indirect Transfers by Food Products: The CGC provides subsidies to producers and distributors of basic commodities. These subsidies mainly concern cereal products (large loaves, French bread (baguette), semolina, pasta and couscous) in order to lower their prices and facilitate access to them by the neediest, to help them meet their calorie requirements. In 2011, subsidies on these products fluctuated between 30% of the cost price for a loaf of French bread, which is mainly purchased by the non-poor, and 56.3% for semolina, which is a product mostly purchased by poor households5.

Budget Allocated to Indirect Transfers through Food Products: The bulk of the budget allocated in 2011 by central government to food subsidies was earmarked for cereal products (77%) and the vegetable oil subsidy (19%). Subsidies represented 6% of public expenditure and 1.87% of GDP in 20116.

Ineffectiveness of ‘indirect transfers through food product subsidies: in absolute terms, food subsidies benefit the poorest households less7. However, in relative terms, it is noted that these subsidies represent a fairly high proportion of the income levels of the poorest households8.

In addition to errors of targeting between the different social categories, other targeting errors have been observed with the diversion of 22.8% of subsidized foods from households (to restaurants for example). Ultimately, the poor for whom the subsidy is intended benefit from only 9.2% of the total allocated budget amount9.

The budgets originally allocated to food subsidies ought, therefore, to be channeled through a more effective targeting policy directly affecting the neediest families. However, this will require the establishment of adequate direct transfer channels with the right balance between the targeting costs and performance.
## Table 2.1: Share of Subsidies in different Subsidized Products in 2010 (in millimes)

<table>
<thead>
<tr>
<th>Product</th>
<th>Selling Price</th>
<th>Cost Price</th>
<th>Subsidy Amount</th>
<th>Subsidy Rate in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Loaves (400 gr)</td>
<td>230</td>
<td>430</td>
<td>200</td>
<td>46.5%</td>
</tr>
<tr>
<td>French Bread (220 gr)</td>
<td>190</td>
<td>272</td>
<td>82</td>
<td>30.1%</td>
</tr>
<tr>
<td>Semolina (kg)</td>
<td>450</td>
<td>1030</td>
<td>580</td>
<td>56.3%</td>
</tr>
<tr>
<td>Flour (kg)</td>
<td>630</td>
<td>1190</td>
<td>560</td>
<td>47.1%</td>
</tr>
<tr>
<td>Processed Tomatoes (800g)</td>
<td>1600</td>
<td>1670</td>
<td>70</td>
<td>4.2%</td>
</tr>
<tr>
<td>Semi-Skimmed Milk (liter)</td>
<td>970</td>
<td>1020</td>
<td>50</td>
<td>4.9%</td>
</tr>
<tr>
<td>Couscous (kg)</td>
<td>795</td>
<td>1415</td>
<td>620</td>
<td>43.8%</td>
</tr>
<tr>
<td>Pasta (kg)</td>
<td>805</td>
<td>1425</td>
<td>620</td>
<td>43.5%</td>
</tr>
<tr>
<td>Seed Oil (liter)</td>
<td>900</td>
<td>1800</td>
<td>900</td>
<td>50.0%</td>
</tr>
<tr>
<td>Sugar (kg)</td>
<td>970</td>
<td>1420</td>
<td>450</td>
<td>31.7%</td>
</tr>
</tbody>
</table>

Source: Ministry of Commerce

## Table 2.2: Trend of Compensation Costs for Food Products

<table>
<thead>
<tr>
<th>Year</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals and Cereal Products</td>
<td>170.9</td>
<td>239.5</td>
<td>474.2</td>
<td>873</td>
<td>687.3</td>
<td>466.7</td>
<td>887.4</td>
</tr>
<tr>
<td>Vegetable Oils</td>
<td>57.8</td>
<td>69</td>
<td>111.5</td>
<td>167.5</td>
<td>108.4</td>
<td>112.7</td>
<td>214.4</td>
</tr>
<tr>
<td>Milk</td>
<td>6.7</td>
<td>7.3</td>
<td>7.3</td>
<td>2.8</td>
<td>-</td>
<td>-</td>
<td>23.1</td>
</tr>
<tr>
<td>Sugar</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>10.8</td>
</tr>
<tr>
<td>School Paper</td>
<td>7.7</td>
<td>5.6</td>
<td>5</td>
<td>4.6</td>
<td>4.3</td>
<td>4.3</td>
<td>4.3</td>
</tr>
<tr>
<td>Seed Oil (liter)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>9.6</td>
</tr>
<tr>
<td>Others</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>243.1</td>
<td>321.4</td>
<td>598</td>
<td>1 047.9</td>
<td>800</td>
<td>730</td>
<td>1 149.6</td>
</tr>
</tbody>
</table>

Source: Ministry of Commerce

## Table 2.3: Trend of the Costs of the General Compensation Fund

<table>
<thead>
<tr>
<th>Year</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Costs</td>
<td>247.9</td>
<td>226.2</td>
<td>203.9</td>
<td>261.7</td>
<td>243.1</td>
<td>321.4</td>
<td>598</td>
<td>1 047.9</td>
<td>800</td>
<td>730</td>
<td>1 149.6</td>
</tr>
</tbody>
</table>

Source: Ministry of Commerce

## Table 2.4: Estimated Values of the Average Annual Subsidy per Capita in 2010/2011

<table>
<thead>
<tr>
<th>Category</th>
<th>Quintile 1</th>
<th>Quintile 2</th>
<th>Quintile 3</th>
<th>Quintile 4</th>
<th>Quintile 5</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Subsidies per capita/year</td>
<td>68.156</td>
<td>84.159</td>
<td>87.458</td>
<td>89.873</td>
<td>89.121</td>
<td>83.752</td>
</tr>
<tr>
<td>Total Expenditure per capita/year</td>
<td>815</td>
<td>1422</td>
<td>2008</td>
<td>2871</td>
<td>5890</td>
<td>2601</td>
</tr>
<tr>
<td>Indirect Transfer Rate</td>
<td>8.4%</td>
<td>5.9%</td>
<td>4.4%</td>
<td>3.1%</td>
<td>1.5%</td>
<td>3.2%</td>
</tr>
</tbody>
</table>

Source: Ministry of Commerce
2.2.2 Direct Targeting

The PNAFN Programme (National Programme of Assistance to Needy Families) is being implemented under the responsibility of the Department of Social Advancement at the Ministry of Social affairs. It provides direct assistance to needy families selected by the Department. This assistance is intended to improve families’ sanitary and financial conditions.

Two criteria are used in establishing the list of the programme’s beneficiary households. The first criterion is the death of the household head or his/her inability to perform a professional activity/trade due to a physical handicap, a chronic illness or old age. To meet this first criterion, the household must not be receiving any assistance from any other family member and must be in unacceptable living conditions. This information is supposed to be obtained from the social survey. Further details of the PNAFN programme are presented in Annex VII.

The funds allocated to the PNAFN represent 1.18% of GDP. Two types of assistance are provided by the PNAFN. In 2012, 183,000 families benefited from AMG 1. Each family accepted in the programme receives an allowance of TND 100 per month plus an allowance of TND 10 per child attending school (up to a maximum of 3 children). These families also receive a free health care card. In 2012, 583,000 families benefited from AMG 2. It provides them with a card allowing partial coverage of health care costs.

Direct Targeting Errors: The main challenges for direct targeting lie in: i) the high cost of obtaining information on household characteristics and ii) the subjective aspect of assessment of living standards and income sources by social assistants. The complexity of living standard assessment criteria leads to targeting errors due to the asymmetry of information between the social worker and the families. There are two types of targeting errors: (1) inclusion errors, due to the fact that non-poor households manage to benefit from social assistance to the detriment of needier families; (2) exclusion factors due to the fact that poor families who are unable to justify their low standard of living are deprived of social assistance (in addition to households who are not covered by surveys and do not, therefore, benefit from assistance).

According to the 2010 INS survey data, poor families only benefited from 51% of the allocations under the PNAFN programmes, whereas 20% of the beneficiaries were among the richest 40% of the population (Annex I). In addition, 40% of households suffering from extreme poverty are excluded from this programme.

<table>
<thead>
<tr>
<th>Table 2.5: Estimated Values of the Average Annual Subsidy per capita according to Population Category (poor/non poor)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Non Poor</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>Total Subsidies per capita/year (1)</td>
</tr>
<tr>
<td>Real Expenditure/year (2)</td>
</tr>
<tr>
<td>Relative Indirect Transfer Rates (1)/(2)</td>
</tr>
<tr>
<td>Total Subsidies Received per capita/year</td>
</tr>
</tbody>
</table>

Source: INS 2013, Technical Note ‘Distribution and Impact of Indirect Subsidies on Poor Households’.

---

10 i.e. 7.2% of all households in Tunisia and 6.6% of the Tunisian population.
11 i.e. 19.8% of all households in Tunisia and 21.8% of the Tunisian population.
12 Table 3.3 estimates exclusion errors at 48% for the two programmes combined. Thus, 48% of poor people benefit neither from the AMG 1 nor AMG 2, and 40% of extremely poor households are excluded from one or other of the two programmes.
13 This rate reaches 64% in India (Saxona 2006).
2.2.3 Scope of the Report

The objective of any effectively targeted social transfer programme is to reduce the number of people considered to be needy, ideally for a fixed total transfer amount, denoted as (so that expenditure remains controlled and is not subject to international price fluctuations, for example).

Theoretically, to achieve this objective, it is first necessary to define an aggregate living standard indicator (reflecting poverty/vulnerability/deprivation). This will be the subject of Chapter 4.

It will then be necessary to define the amount(s) of transfers to households that will result in a significant reduction in the number of needy people (this will be the subject of Chapter 5).

Furthermore, the decision-maker may, following optimization of the direct transfer system, seek to revise/reallocate the budgets allocated to the different transfer programmes in order to enhance the efficacy of its social action. These aspects are explored from the standpoint of different public policies in Chapter 6.
3. Lessons Learned from International Experience

In the context of poverty reduction, better targeting may result in an improvement in the cost/benefit ratio (allocated budget/poverty reduction). A necessary but insufficient condition for any effective targeting policy is to allocate assistance to the most impoverished households.

In the following chapters, the selection of standard of living indicators and their aggregation into a single indicator is based on three notable experiences in terms of direct targeting: Iranian, Indian\(^{14}\), and Moroccan. The lessons learned from these countries’ experiences for the construction of an overall living standard indicator have then been adjusted to take into account the specificities of Tunisian households.

3.1 Iranian Experience

Aware of the burden of the oil products subsidies and some food products on central government finances, the Iranian Authorities decided to shift from a universal subsidy to direct targeting. However, to offset the losses that would be suffered by households in the event of an increase in the prices of subsidized products and maintain the living standards of households at their original level, the Iranian Authorities decided to transfer funds directly into each household’s bank account. The amount would be considered sufficient to offset any possible losses in real income levels. The Iranian Authorities also preceded the launching of this reform by a vast communication campaign on the benefits of the reform.

Though it was cut short one year after its launching, a number of recommendations may be made based on the Iranian experience:

a. The specification of an adequate living standard proxy to be assessed on the basis of observable indicators is a necessary condition prior to the launching of any new direct targeting policy.

b. Since indirect subsidies do not only benefit households, but other economic agents as well, their reactions to any sudden removal of the subsidy must be anticipated. In Iran, this reaction assumed the form of sharp increases in the retail prices of food products.

c. It is essential to undertake a prior communication campaign.

3.2 Indian Experience

The Indian experience comprised four phases between 1992 and 2011, with a series of adjustments made to improve transparency and effectiveness in the selection of standard of living indicators and in order to reduce targeting errors (see Annex II for further details). Another benefit of this experience is that it reduces the incompatibilities between procedures for estimating poverty and identifying poor people and then with regard to the respective assessments of the planner and field worker\(^{15}\).

Initially, the Indian planner noted the difficulty in verifying information on the incomes of a number of households working in the informal sector. The targeting policy was therefore implemented in two stages. Initially, visibly non-poor households were identified, then, in a second stage, assistance was allocated to the other households on the basis of their respective expenditure levels, starting with those households with the lowest levels of total spending up to the exhaustion of the budget earmarked for such assistance.

In the third stage, the planner noted the subjectivity of criteria for the exclusion and assessment household living standards. Total expenditure was replaced by a synthetic indicator, based on a multidimensional approach during the living standards assessment, in order to classify households by order of eligibility for social assistance.

In the last stage, the Indian planner addressed corruption in the granting of assistance by reducing information asymmetry. He selected verifiable indicators which reduce the scope for manipulation. The new targeting procedure, prepared in 2009, comprises three stages:

---

\(^{14}\) Other experiences are worth mentioning, especially the Indonesian and South American experiences. However, the Iranian and Indian experiences are in keeping with the objectives of, and in fairly similar environments to the present Tunisian case, in addition to the ease of implementing them.

\(^{15}\) This problem characterizes the divergent points of view regarding the selection of tools for analyzing living standards among actors.
1. Automatic exclusion of those who are visibly non-poor on the basis of observable non-falsifiable indicators.
2. Automatic inclusion of those who are visibly poor and ensuring they are the first to benefit from the subsidies.
3. Classify the other families by awarding scores reflecting their respective deprivation levels for each of the agreed criteria, and grant assistance to those with the lowest overall scores within the limitations of the available budget.

3.3 Moroccan Experience

The Moroccan planner opted for geographical targeting. Using a fairly detailed poverty map, he carried out universal targeting in each sub-locality but without taking into account the socio-demographic characteristics of the households benefiting from the subsidies. The most recent World Bank report published in 2012 confirms the persistence of the targeting error despite efforts made to fine-tune geographical targeting.

This report affirms that geographical targeting is frequently used and has become more widespread with the introduction of increasingly sophisticated poverty maps but does not help to identify the end-beneficiaries. In most cases, the final selection of beneficiaries is, however, the responsibility of commissions or individuals that decide on the basis of criteria with considerable leeway for interpretation or weighting. This lack of transparency means that the population has no recourse in the event of error or fraud (abusive exclusion or inclusion in the programme).

The World Bank experts therefore concluded that a better use of the poverty maps on the basis of international experience will help to build an accurate and coherent targeting system combining geographical targeting and direct targeting of households and that the creation of a register of beneficiaries will, in a second stage, help to foster intersector coordination to address the multidimensional aspects of poverty and vulnerability.

3.4 Conclusions

The analysis of the Indian, Moroccan and Iranian experiences has guided us in identifying the main variable criteria for a more accurate assessment of the living standards of needy families and in pinpointing the pitfalls to be avoided during the implementation of a more effective pro-poor direct targeting policy. Based on the Iranian, Indian and Moroccan experiences, it is noted that, in order to promote a targeting policy aimed at reducing poverty, without increasing the cost to central government, it is necessary to have the maximum amount of information on different statistical indicators characterizing the poor. These indicators must be easily observable and non-modifiable during the process of identification of poor people carried out by the social worker, while allowing a careful estimation of individuals or households concerned by social assistance.

The search for such indicators and the formulation of an overall indicator are the subjects of the following chapter.

4. Definition of a Living Standards Index to Identify the Beneficiaries of Direct Transfers

4.1 Introduction: Targeting Deprivation or Poverty?

First of all, before formulating an index to target the beneficiaries of direct assistance, it is essential to realize that decision-makers in Tunisia do not always share the same understanding of what a potential beneficiary (and, therefore a needy person) is.

The large majority of decision-makers and the population define a potential beneficiary as a poor person in the monetary sense of the term, i.e. an individual with a low income, below a fixed value. This is readily understandable since the poverty indicators communicated by the INS are calculated using this method (though consumption and not income is measured).

The existing direct social transfer system is based more on the idea of deprivation, which is closer to multi-dimensional poverty. The beneficiary is not defined in terms of income or consumption, but by a set of factors reflecting the constraints on his/her way of life and living standards (a disability for example).

This is a fundamental difference for it will directly influence: a) the formulation of a living standards index that will be used to identify the beneficiaries; but also b) how the performance of the index will be perceived by the different actors: either in terms of monetary poverty eradication or in terms of alleviating deprivations.

Using a monetary poverty reduction approach and, in absolute terms, the transfer could be optimal if the decision-maker accurately observed the income \( y_i \) of each household. Income could then be used to classify households by order of priority for receiving social assistance. However, implementation of such policies is difficult in the absence of observable and accurate income assessments. Furthermore, households are inclined to underestimate their respective incomes, in order to be able to benefit from central government transfers.

The lack of perfectly observable information on household income levels may then lead to errors in targeting monetary poverty. We have observed inclusion factors where some non-poor households misrepresent their levels of income and succeed in benefiting from social assistance, to the detriment of needier households. On the other hand, there are exclusion errors where poor families who are unable to establish their cases are deprived of social assistance.

Furthermore, income is not the only factor in determining the living conditions of a family, which leads us to the concept of deprivations and multidimensional poverty. For example, the presence of one or more disabled members in a family increases medical expenditure while the number of children in a family (and their ages) strongly influences education-related expenditure. Consideration of these specificities which generate greater non-food product requirements must not be neglected.

Consequently, some households with incomes close to, or below the poverty threshold are compelled to reduce their food consumption to meet other urgent needs. Food which is the basis for calculation of the poverty threshold is desired by the household but is not necessarily sought by it, as the household is required to cover several other non-food needs relating to health, education, transport, sanitation or electricity. A planner who estimates living standards solely on the basis of income (generally estimated by total expenditure) as the only living standard indicator (which would correspond to an approach based on the monetary assessment of poverty, considering the shares of non-food expenditure as fixed), could not take into account these differences between households.

To resolve this problem and attempt to combine the two objectives (monetary poverty and deprivations), it is necessary to rely on visible, verifiable and tangible living standard indicators other than household income, which are strongly correlated with the socio-demographic or

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17 For example, it was noted that, since education has become accessible to all, a poor person also wants to send his/her children to school, which creates more expenditure in terms of the purchase of books and clothing, despite the fact that State schools are free. These expenses will absorb part of the household revenue and consequently compel him/her to curtail spending on food consumption which will result in a drop in living standards compared to a household with no children but which earns the same income. Controlling disease also leads to the emergence of two new types of expenditure. It is also worth mentioning spending on electricity and sanitation as well as on transport to the place of work which have become necessary, mainly for the urban poor.
geographic characteristics of those of households and possibly (if the intention is to combine the objective of reducing deprivations with a reduction in monetary poverty) with their income levels.

The aim of the following sections is to identify a list of indicators that could serve as a living standard proxy while being easily observable and non-falsifiable. Consequently, different methodologies have been proposed and tested to construct an aggregated living standard indicator that would permit the classification of households which would “potentially” benefit from direct assistance.

4.2 First Approach—definition of a Basic Deprivation and Living Conditions Index

In this phase, an initial methodology is defined which is aligned as closely as possible on the methodology used by the Ministry of Social Affairs.

The procedure currently used by social workers (who are in direct contact with the families) for identifying people eligible for social assistance is based on an approach involving the assessment of deprivations (or multidimensional approach). However, this living standards assessment procedure assigns a major role to the personal assessment of social workers (Annex VII). This assessment could be subjective in the absence of objectively verifiable indicators (applied by the social worker or a control officer).

While based on the existing system, the approach presented below aims to identify a series of readily observable and objectively verifiable indicators that will help to identify households with the lowest living conditions (Annex III— for statistical pre-requisites). It will subsequently be possible to fine-tune this new approach while maintaining its basis in the existing system.

4.2.1 Selection of Deprivation Indicators — a Descriptive Approach

a) Selection of Indicators

Deprivations have several origins. Some institutions insist on a series of deprivations more than others. For example, the PNAFN programme gives precedence to families where one or more members suffer from physical disabilities or chronic diseases limiting the ability of the household head to easily carry out a professional activity/trade and have a normal social life18.

To make an approximate estimation of living standards, household deprivations will be analyzed by selecting from the 2010 INS household survey, 15 indicators which are classified into four criteria: (1) housing conditions, (2) possession of sufficient capacity to generate a decent income, (3) the burden borne by active adults and (4) family living conditions (see Table 1).

The selection of standard of living indicators took into account Tunisian specificities summarized in Tables III.1, III.2 and III.3 in Box III. The fifteen selected indicators presented in Table I are easy to define, easy to collect and easily verifiable. The four criteria adopted include the main standard of living determinants used by most of the studies in this area19. These criteria have also been adopted by the Ministry of Social Affairs during the selection of needy families under the PNAFN programme. Their average frequencies have been estimated on the basis of the 2010 INS household survey in accordance with the deprivation thresholds decided upon for each indicator, set out in the 4th column of Table 1. Taken individually, these deprivations are more frequently encountered in communities affected by monetary poverty (or extreme monetary poverty) which allows us to try to combine this dual objective of reducing deprivations and monetary poverty.

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18 The PNAFN considers that if the household head is disabled, he/she will experience tremendous difficulty in achieving financial autonomy and therefore meeting the family’s needs. It also states that the existence of the handicap will lead to additional costs (care, equipment, …) and consequently a further deterioration in the living standards of these households. Such a household should therefore top the list of households eligible for social assistance.

19 We have (among others) drawn on the selection procedure of the Indian planners as presented in Annex II.
Analysis of the household standard of living indicators according to area and region also reveals significant intra-national inequalities\(^{20}\). Irrespective of the indicator, deprivations are greater in the interior regions than in the coastal regions. The same finding applies to rural areas as compared to urban areas.

### Table 1: Observable Indicators of Household Deprivations

<table>
<thead>
<tr>
<th>No</th>
<th>Dimension</th>
<th>Indicators</th>
<th>Deprivation Thresholds</th>
<th>% of households suffering from deprivations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Housing Conditions</td>
<td>Wall</td>
<td>= 1 if wall not made of bricks</td>
<td>0.5%</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Roof</td>
<td>= 1 if the roof is not of stable material</td>
<td>3.3%</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Running Water</td>
<td>= 1 if not connected to SONEDE (only well or public standpipe water)</td>
<td>17%</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Lighting</td>
<td>= 1 if not STEG (Primus, kerosene lamp, others)</td>
<td>0.8%</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Bathroom</td>
<td>= 1 if there is no bathroom or shower in the house</td>
<td>36.8%</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Sanitation</td>
<td>= 1 if not connected to the sanitation network</td>
<td>3.5%</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Type of housing</td>
<td>= 1 if oukala, makeshift housing, grotto or non-decent housing</td>
<td>0.4%</td>
</tr>
<tr>
<td>8</td>
<td>Ability of the Household Head to generate a decent income</td>
<td>No qualif</td>
<td>= 1 if worker or labourer with no qualifications</td>
<td>16.3%</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Disabled</td>
<td>= 1 if the household head is unable to work because of a physical handicap or old age.</td>
<td>10.5%</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>No primary</td>
<td>= 1 if the household head has not advanced beyond primary level (kouteb or other type of education)</td>
<td>33%</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>Dependency</td>
<td>= 1 the ratio (young+old) per adult is &gt; 2</td>
<td>11%</td>
</tr>
<tr>
<td>12</td>
<td>Burden supported by active adults</td>
<td>Overcrowding</td>
<td>= 1 if there are more than three people to a bedroom</td>
<td>6.5%</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>Widow(er)</td>
<td>= 1 if the household head is a widow (er)</td>
<td>11.7%</td>
</tr>
<tr>
<td>14</td>
<td>Family’s Living Conditions</td>
<td>No basic amenities</td>
<td>= 1 if no TV or refrigerator</td>
<td>2.5%</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>Cooking Energy</td>
<td>= 1 if the household does not use gas or electricity (uses oil or wood)</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

#### b) The cumulative impact of deprivations

Recent studies on the determinants of poverty are not confined to a sole and single deprivation in assessing a family’s level of poverty, but rather concern an accumulation of several deprivations which exacerbate poverty and consequently compel the household to live in unacceptable conditions\(^{21}\). In other words, these indicators may appear constraining when considered individually, but combined, they significantly affect household living conditions.

In this regard, Table 2 shows that the proportion of houses affected by deprivation falls as the number of deprivations considered rises\(^{22}\).

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\(^{20}\) Tables 3.1, 3.2 and 3.3, in Box 3 give the deprivations in percentages of these 15 indicators, broken down by region, area and strata of monetary poverty on the basis of the 2010 household survey statistical data.

\(^{21}\) The visible deprivation indicators of standards of living include housing conditions, the household dependency and overcrowding ratios as well as access to networks of running water and electricity networks, sanitary conditions characterizing the home occupied by the family as well as its comfort.

\(^{22}\) The result is clear in accordance with the principle of cross-cutting deprivations since the more deprivation criteria are applied, the fewer the households which meet all the criteria.
The proportion of households affected by a single deprivation exceeds 24%. However, under 5% of households suffer from four deprivations. From the Table it is also possible to analyze the frequency of deprivations. Thus 60% of households suffered from at least one deprivation in 2010, whereas only 2% of households suffered from 5 deprivations or more in 2010.

Table 2: Degrees of Deprivation in the Population in 2010

<table>
<thead>
<tr>
<th>Number of Deprivations</th>
<th>Frequency</th>
<th>Number of Deprivations</th>
<th>Cumulative Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>24%</td>
<td>≥1</td>
<td>60%</td>
</tr>
<tr>
<td>2</td>
<td>18%</td>
<td>≥2</td>
<td>36%</td>
</tr>
<tr>
<td>3</td>
<td>12%</td>
<td>≥3</td>
<td>18%</td>
</tr>
<tr>
<td>4</td>
<td>4%</td>
<td>≥4</td>
<td>6%</td>
</tr>
<tr>
<td>5</td>
<td>2%</td>
<td>≥5</td>
<td>2%</td>
</tr>
</tbody>
</table>

C) Relationship between the cumulative effect of deprivations and monetary poverty

Furthermore, even though considered separately, deprivation indicators appear to be found more frequently in poor communities, it is also important to determine whether the cumulative frequency of deprivations appears to reflect monetary poverty. To that end, the entire population is classified according to their degree of deprivation (from households most affected by deprivations to households least affected by deprivations – the first five percentiles corresponding, therefore, to households most affected by deprivations – (Graph 1). The distribution of the 3 sub-populations is considered: that suffering from extreme poverty, that suffering from poverty and that not affected by poverty. A strong correlation is noted between monetary poverty and deprivation:

- The entire population affected by extreme poverty forms part of the 15% of the population most affected by deprivation.
- 92% of the poor population forms part of the 20% of the population most affected by deprivation.
- The 5% affected most by deprivation includes the 87% of the population suffering from extreme monetary poverty, 35% of the population suffering from monetary poverty and no non-poor persons.

At first sight, there is an identical progression between the level of monetary poverty and the degree of deprivation. However, among the 35% of the population most affected by deprivations, we have included almost one quarter of the population not affected by poverty. This is a good illustration of the complexity involved in defining an indicator to achieve the dual objective of reducing deprivations while fighting poverty. If we only seek to reach the most impoverished 5% (either in monetary terms or in terms of deprivation) there will be few inclusion errors. However, very rapidly inclusion errors relating to the other objective (monetary poverty or deprivations) are virtually unavoidable. It will then be necessary to determine what is tolerable by the central government in accordance with the set objective.

Graph 1: Relationship between “deprivations” and “monetary poverty”

All these conclusions (possibility of defining groups of deprivations; existence of deprivations that are more critical than others; cumulative impact of deprivations; absence of perfect correlation between poverty and deprivations; existence of disparities in the types and levels of deprivations) should be taken into consideration when defining the standard of living index.
Box 3: Frequency of Deprivations

Table 3.1: Deprivation Rate on the basis of the 2005 Household Budget and Consumption Survey

<table>
<thead>
<tr>
<th>N°</th>
<th>Dimension</th>
<th>Indicators</th>
<th>Total Population</th>
<th>Vulnerable Population</th>
<th>Poor Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Housing Conditions</td>
<td>Wall</td>
<td>0.7%</td>
<td>1.2%</td>
<td>1.6%</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Roof</td>
<td>5.1%</td>
<td>7.4%</td>
<td>8.2%</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Running Water</td>
<td>17.1%</td>
<td>27.1%</td>
<td>37.4%</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Lighting</td>
<td>1.7%</td>
<td>3.8%</td>
<td>5.7%</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Bathroom</td>
<td>50.3%</td>
<td>78.2%</td>
<td>88.8%</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Sanitation</td>
<td>50.2%</td>
<td>62.7%</td>
<td>76.6%</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Type of housing</td>
<td>0.9%</td>
<td>1.6%</td>
<td>2.6%</td>
</tr>
<tr>
<td>8</td>
<td>Capacity of the</td>
<td>No qualif</td>
<td>15.5%</td>
<td>29.5%</td>
<td>33.9%</td>
</tr>
<tr>
<td></td>
<td>Household Head to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>generate a decent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>income</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Disabled</td>
<td>10.1%</td>
<td>11.7%</td>
<td>11.7%</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>No education</td>
<td>33.6%</td>
<td>38.4%</td>
<td>41.8%</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Burden borne by</td>
<td>Dependency</td>
<td>14.1%</td>
<td>18%</td>
<td>25.2%</td>
</tr>
<tr>
<td></td>
<td>active adults</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>Overcrowding</td>
<td>9.4%</td>
<td>25.3%</td>
<td>42.2%</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>Widow(er)</td>
<td>13%</td>
<td>9.7%</td>
<td>8.5%</td>
</tr>
<tr>
<td>14</td>
<td>Family’s Living</td>
<td>No basic amenities</td>
<td>16.7%</td>
<td>33.6%</td>
<td>49.1%</td>
</tr>
<tr>
<td></td>
<td>Conditions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>Cooking Energy</td>
<td>0.7%</td>
<td>1.3%</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

Table 3.2: Deprivation Rate on the basis of the 2010 Household Budget and Consumption Survey

<table>
<thead>
<tr>
<th>N°</th>
<th>Dimension</th>
<th>Indicators</th>
<th>Total Population</th>
<th>Poor</th>
<th>Extreme Poverty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Housing Conditions</td>
<td>Wall</td>
<td>0.5%</td>
<td>1.2%</td>
<td>1.7%</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Roof</td>
<td>3.3%</td>
<td>5.5%</td>
<td>7.1%</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Running Water</td>
<td>17.3%</td>
<td>33.9%</td>
<td>50.7%</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Lighting</td>
<td>0.7%</td>
<td>2.8%</td>
<td>5.2%</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Bathroom</td>
<td>36.8%</td>
<td>72.9%</td>
<td>85.8%</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Sanitation</td>
<td>3.5%</td>
<td>9.4%</td>
<td>17%</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Type of housing</td>
<td>0.4%</td>
<td>1.1%</td>
<td>2.2%</td>
</tr>
<tr>
<td>8</td>
<td>Capacity of the</td>
<td>No qualif</td>
<td>16.3%</td>
<td>31.1%</td>
<td>35.0%</td>
</tr>
<tr>
<td></td>
<td>Household Head to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>generate a decent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>income</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Disabled</td>
<td>10.5%</td>
<td>12.4%</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>No education</td>
<td>33.1%</td>
<td>44.7%</td>
<td>53%</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Burden borne by</td>
<td>Dependency</td>
<td>11%</td>
<td>23.9%</td>
<td>34.1%</td>
</tr>
<tr>
<td></td>
<td>active adults</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>Overcrowding</td>
<td>6.5%</td>
<td>20.6%</td>
<td>53.6%</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>Widow(er)</td>
<td>11.7%</td>
<td>8.8%</td>
<td>7.5%</td>
</tr>
<tr>
<td>14</td>
<td>Family’s Living</td>
<td>No basic amenities</td>
<td>2.5%</td>
<td>6.9%</td>
<td>11.4%</td>
</tr>
<tr>
<td></td>
<td>Conditions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>Cooking Energy</td>
<td>0.5%</td>
<td>1.2%</td>
<td>3%</td>
</tr>
</tbody>
</table>
4.2.2 Automatic Inclusion Indicators

The first approach proposed to define a beneficiary selection method draws on the Indian experience. First, we identify the households that must be selected directly using an automatic inclusion criterion. Second (in Section 4.2.3), we define an overall score in order to classify the other households.

Two automatic inclusion criteria are proposed: (1) the presence of one (or more) physically disabled persons, (2) extremely precarious living conditions.

On the basis of the results of Tables 3.1, 3.2 and 3.3 (Box 3) four indicators of extremely precarious living conditions are considered:

a. **Households living in houses made of fragile materials.** In Tunisia, unlike the rural areas of India, most houses are permanent constructions. Less than 1% of families live in houses built of non-permanent materials in both rural and urban areas. However, among poor families, this type of housing is more frequent. In 2005, it represented 8% of this population’s housing and 7% of houses in 2010. Thus, living in a house with walls and roofing of non-solid, therefore easily perishable, materials is a clear sign of a household’s vulnerability.

b. **Households using cooking energy other than electricity or LPG.** LPG gas is very widely used by Tunisian households (99% of households) as cooking energy. However, despite the ease of access to this source of energy, some families do not have access because of extreme poverty.

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23 In addition, according to Tables 3.1, 3.2 and 3.3 (Box 3), the proportion of households living in houses the roofs of which are not made of solid materials was about 5% in 2005, but dropped to 3% in 2010.

24 Table 3.1 (Box 3) also shows that the proportions of deprivations increase from urban to rural areas, then from the Greater Tunis region to the other regions.

25 The use of which is due to a drop in its selling price which had benefited from a long tradition of excessive subsidies (over 80% of its selling price in 2012). The choice of this cooking energy is also due to the fact that it benefits from a vast distribution network and the availability of LPG bottles throughout the Tunisian territory.
c. **Access to the national electricity grid:** On average, under 1% of Tunisian households were not connected to the STEG electricity network in 2010\(^26\). However, this percentage exceeds 5% in the case of households suffering from extreme poverty.

d. **Type of Housing:** The proportion of “non-decent” homes is very low amongst dwellings occupied by the different types of Tunisian households. Thus families living in ‘Oukala’\(^27\), in grottos or ‘gourbis’, all of which are not considered as decent housing, must be prioritized for social assistance.

One working assumption would be that every household for which one of the four indicators\(^28\) indicates a situation of fragility should be considered as a needy household. These households should then benefit from direct assistance in the same manner as families with disabled household heads.

Analysis of the data in Tables 3.1, 3.2 and I3.3 (Box 3), and Graph 2 confirms the selection of these four indicators of extreme precarity since households living in extreme poverty are most affected by them.

It is, therefore, proposed to consider the two groups of automatic inclusion criteria when determining the list of needy families:

1. **Households whose heads are disabled or have a chronic disease\(^29\)** preventing their participation in active life\(^30\). Table 3.3 (Box 3) confirms the selection of physical disability as a determining factor of poverty.

2. **Households deprivation relates to at least one of the four indicators of extreme precarity** (permanent housing, clean cooking energy, connection to the electricity network, decent housing).

Households in these categories should be the first to benefit from direct assistance.

### 4.2.3 Preparation of an Initial Overall Household Classification Index

Table III.1 shows that 37% of households live in poor sanitary conditions, 33% of household heads are without qualifying education and 16% do not have professional/vocational qualifications. In relation to the first automatic inclusion criteria, the frequencies of the last three deprivations are very high among the Tunisian population. This could prompt us to exclude these criteria from the list of signs of a low standard of living. However, it will be recalled that it is the accumulation of deprivations which exacerbates the precarity of the living conditions of households affected by them.

An analysis of Graph 3 and Tables 3.1, 3.2 and 3.3 (Box 3), reveals three indicators of major importance:

a. **Socio-professional qualifications** which are used to identify families whose heads are labourers or unskilled workers. Without qualifications the household head incurs the risk of weak and unstable incomes. The percentage of households meeting this criterion is about 16% among all households and climbs to 35% among households affected by extreme poverty. The main problem, however, is that this proportion rose between 2005 and 2010, which increases the deterioration in the living standards of houses in extreme poverty.

b. **The Dependency Rate** is measured by the ratio between the number of persons who are theoretically not of working age and the number of persons of working age in the household. The number of people who, theoretically, are not of working age...
Food Subsidies and Direct Social Assistance: Towards Better Targeting of Monetary Poverty and Deprivations in Tunisia

comprises young people under 18 years of age and the elderly over 60 years of age. It is considered that the higher the number of dependents in the family in relation to the number of active persons, the greater the likelihood of the family experiencing financial difficulties reflected in a drop in its living standards. This ratio calculated for all households averaged about 11% in 2010, but rose to 34% for households in extreme poverty. This factor is fairly specific to households in extreme poverty where the ratio was higher in 2010 compared to 2005.

c. Sanitary Conditions which deteriorate where there is no bathroom or where households only have access to outside toilets. These conditions are particularly relevant indicators of poverty in urban areas. Furthermore, the percentage of households in extreme poverty in this situation is about 85%, compared to under 30% for the total population.

As mentioned above, taken individually, these three sources of deprivation may not be constraining but when combined, they represent particularly constraining obstacles for the household.

The deprivation index is the calculated by adding the value taken by the different second order indicators.

4.2.4 Limitations of the Descriptive Approach

This descriptive approach has the advantage of being easily implemented. However, it has three major shortcomings.

First, the indicator produced is a discrete indicator with a limited number of values: on the basis of 15 initial indicators and deducting 5 automatic inclusion indicators, the classification index may, therefore, only take 12 values (automatically included, 10 secondary deprivation values not included). It does not therefore permit an accurate classification of households in Tunisia and therefore, close targeting of social assistance.

Second, it would be an over-simplification to believe that there is total independence among the different indicators proposed, or to assume that household behaviour will remain unchanged following a modification of the programme eligibility criteria. Consequently, it is necessary to be able to assess the frequency of targeting measures using the proposed approach and discuss procedures to minimize them on the assumption of the dependency of the indicators and changes in household behaviour. Optimization will, therefore, result in the identification of more adequate indicators and the assessment of their respective weights in the assessment of the final score.

Third, the weights of deprivation levels change from urban to rural areas and between regions. It is, therefore, important to assign adequate weights in the calculation of our standard of living scoring, to obtain a criterion for the identification of needy families which is consistent with the different degrees of deprivation of households and on the basis of habits and ways of life.

Different optimization approaches may be used to reduce targeting errors and improve the living standards of the neediest.

4.3 Second Approach-Optimization of Index Performance using the Multiple Deprivation Method

Two approaches stand out in the literature to optimize beneficiary identification. The first is called the Proxy Means Test and the second is the formulation of a multiple deprivation index. We shall first consider

31 We include the elderly among the dependents as they are generally cared for by their respective families.
32 These factors are easily observed, however, they can only be considered in urban areas. Over three quarters of rural households are deprived of certain sanitary conditions (no properly equipped bathroom in the house or access to the sanitation network). This high proportion means that this factor cannot be considered in the selection of needy families in rural areas.
the second approach which is closest in its design to the one currently adopted by the Ministry of Social Affairs for it focuses solely on the notion of deprivation.

4.3.1 Formulation of the Index on the Basis of a Multiple Deprivation Score

As a direct continuation of the previous method, this approach is based on a synthetic score for deprivation levels. This approach is underpinned by a process of allocating assistance to each household depending on the number of its deprivations and their respective weights. It entails the construction of an aggregated deprivation index.

From a theoretical standpoint, in order to take into consideration the interactions between indicators when assessing the level of a household’s deprivation, the multidimensional approaches identify people in a situation of poverty by the holistic or cross sectional approach, in order to identify interactions between indicators during the assessment of a household’s level of deprivation. The multidimensional approaches identify people in a situation of deprivation using the union approach or intersection approach. The union approach stipulates that a household is in a situation of deprivation if it is deprived of at least one dimension. The intersection approach argues that a household is in a situation of deprivation if it is deprived of all its dimensions.

The Alkire Foster approach (2007) (or the A&F approach), identifies a household as being in a situation of deprivation if it is deprived of at least k dimensions \((k=1,..,D)\). This multiple deprivation approach considers therefore that it is the accumulation of deprivations which determines a family’s level of poverty. Multiple deprivation levels of a household are established on the basis of aggregated periodic levels of deprivation which are ranked according to their respective weights.

The selection of indicators and identification of the appropriate weights for each of these indicators with a view to determining an overall score requires an optimization procedure that will reduce targeting errors as well as the adjusted overall poverty levels developed by A&F. A synthetic household living standard indicator summarizing the overall level of deprivation suffered by each household is thus established. Furthermore deprivation thresholds corresponding to the maximum number of deprivations tolerated are thus defined. This helps to define the allocation processes by types of households classified according to their respective deprivation levels and suffering from minimum deprivation (further explanations in Annex V).

From a practical standpoint two indices have been defined to implement this method:  

a) an unweighted deprivation index: in this case a single weight is assigned to each of the 15 indicators awarding a score to each household of 1 to 15. A weight of 1/15 is assigned to each indicator. The final score, therefore, is between 0 and 1. The neediest households in terms of direct targeting are those with the highest scores. This first approach enables us to carry out an initial analysis on the basis of the number of deprivations (which can only be done if the weights associated with the different indicators are identical).

b) a weighted deprivation index: the 15 deprivation indicators are used to define an overall score for each household. However, the indicators are assigned different weights which are defined exogenously on the basis of a UNDP-defined approach. Three groups of indicators are defined: ‘family housing conditions and living standards’, ‘capacity to generate a decent income’ and ‘burden borne by the family’. The weight of each of these groups in the calculation of the final index is 1/3. The ‘family housing

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33 Where \(k=1\) this identification criterion corresponds to that of the union approach but where \(k = D\) it corresponds to the intersection approach.

34 Alkire and Foster (2007) propose the family of adjusted FGT measures defined by \(M = \mu(I)\) where \(\alpha\geq 0\), \(\mu\) which meets all the multidimensional axiomatic properties while being easy to calculate and adapted to ordinal data. Indices of the \(\mu\) family are decomposable by population groups. In addition, all members of this family may be subdivided into groups of standard of living indicators. This decomposition property is interpreted as the contribution of the \(d\)th indicator to multidimensional poverty.

35 However, it should be noted that the classification of households by deprivation levels is an ordinal approach. Thus it is impossible to use as an objective function the usual overall levels of monetary poverty. Consequently, during the optimization operation we will rather minimize the adjusted A&F poverty levels to ensure the consistency of our analysis (see Annex V).

36 Developed by Alkire and Foster (2007).

37 We consider the case of \(N\) households and \(D\) living standard indicators where \(z_{di} = \text{defined as the threshold (or line) specifying the level of deprivation of indicator } d\) (\(d = 1,..,D\)). We note \(s_i\) the status of indicator \(d\) in household \(i\), and we give a scalar of \(q_{di}\) to each household \(i\) so that \(q_{di} = 1\) where \(s_{di} = 2\) and \(q_{di} = 0\) otherwise. Thus household \(i\) is considered to be deprived of indicator \(d\) if \(q_{di} = 1\).

38 It highlights each of the three dimensions: ‘the family’s housing and living conditions’, ‘capacity to generate a decent income’ and ‘burden borne by the family’. It assigns the same weight (1/3) to each dimension, then it highlights within each dimension a series of indicators to which it assigns similar weights. Thus to each indicator of the ‘family housing and living conditions’ it assigns a weight of 1/27, but, on the other hand to each indicator of the other two dimensions ‘capacity to generate a decent income’ and ‘burden borne by the family’ it assigns a weight of 1/9.
conditions and living standards’ deprivation indicator group comprises 9 sub-indicators. The weight of each of these sub-indicators will be 1/27 in the calculation of the final index. In an identical manner for the other two dimensions ‘capacity to generate a decent income’ and ‘burden borne by the family’ it assigns a weight of 1/9 to each sub-indicator. Since the final score is also between 0 and 1 in this case, the neediest households in terms of direct targeting are those with the highest score.

4.3.2 Results of “Multiple Deprivation Approach”

Calculation of the adjusted Alkire and Foster poverty indices on the basis of the 2010 INS household budget consumption survey makes it possible to analyze multidimensional levels of poverty for different levels of deprivation and different deprivation percentages.

The analyses are carried out at the global level initially and in a second phase by region, area and on the basis of certain socio-demographic characteristics relating to the household head and outlining the main inequalities of opportunity between households.

<table>
<thead>
<tr>
<th>Deprivation Index Threshold</th>
<th>Unweighted Deprivation Index</th>
<th>Weighted Deprivation Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1</td>
<td>43%</td>
<td>58%</td>
</tr>
<tr>
<td>0.2</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>0.3</td>
<td>4%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Overall Analysis

a. Analysis on basis of the Deprivation Index

Households are classified according to their deprivation indexes.39 The following three deprivation thresholds are defined: 0.10, 0.20 and 0.30. The further the relative deprivation threshold falls the faster the number of people considered to be suffering from deprivation rises.

For a deprivation threshold of 0.1, the percentage of families considered to suffer from deprivations is 43 %, according to the overall unweighted index and 58% when the overall weighted deprivation index is considered (Table 3). For a deprivation threshold of 0.30, the proportions of needy families according to the two overall indices are about 4% and 9% respectively.

Table 3 and Graphs 4 and 5 show that the cumulative frequencies of households suffering from deprivations are fairly sensitive to the deprivation thresholds and weights adopted for the calculation of each living standard indicator.

39 The percentage of a household’s deprivation corresponds to the weighted sum of the deprivations. Thus when the weights are standard for all the indicators, the percentage (or proportion of privations) equals the sums of 15 g_i divided by 15. Where g_i is equal to 1 if the household is deprived of indicator i, but is otherwise equal to zero. However, when the weights denoted w_i differ among the 15 indicators, the percentage of deprivations is obtained by the weighted average by the w_i of the 15 g_i. These deprivation percentages, calculated for each household h, make it possible to classify the latter in ascending order of their respective deprivations even though the indicators have the same impacts on household living standards.

40 On the basis of international experience.
Analysis by Region

a. Regional Disparities

There are many clear inter-regional disparities according to the aggregated deprivation indices. The Centre-West and North-West regions have the highest frequencies of deprivation compared to the regions of Greater Tunis and the Centre-East (Sahel and Sfax regions). This result is confirmed for all deprivation thresholds and for all overall deprivation indices (weighted and unweighted).

Table 4 shows that, for a deprivation threshold of 10%, the overall unweighted deprivation index rises from 26% in Greater Tunis to 71% in the Centre-West. However, for a 30% deprivation threshold, this index is 0.4% in Greater Tunis compared to 11.3% in the Centre-West. These figures corroborate the analyses of regional inequalities raised by the INS-ADB-WB study in terms of poverty.

This result confirms the conclusions based on the overall deprivation indices.

Income is not easily observed in the real world. However, the overall deprivation index (based on the 15 observable indicators and an appropriate calculation of their weights) gives conclusions at the aggregated level in terms of inequality similar to those deduced by observing total expenditure collected from the 2010 INS household budget and consumption survey.
Table 4: Relative Deprivation Rates Broken Down by Region

<table>
<thead>
<tr>
<th>Region</th>
<th>Weighted Score &lt;10%</th>
<th>Unweighted Score &lt;10%</th>
<th>Weighted Score &lt;20%</th>
<th>Unweighted Score &lt;20%</th>
<th>Weighted Score &lt;30%</th>
<th>Unweighted Score &lt;30%</th>
<th>Vulnerable</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater-Tunis</td>
<td>46.1%</td>
<td>26%</td>
<td>16.7%</td>
<td>9.9%</td>
<td>4.6%</td>
<td>0.4%</td>
<td>7.9%</td>
<td>1%</td>
</tr>
<tr>
<td>Centre-Est</td>
<td>48%</td>
<td>26.4%</td>
<td>18.8%</td>
<td>11.5%</td>
<td>5.5%</td>
<td>1%</td>
<td>6.8%</td>
<td>1.2%</td>
</tr>
<tr>
<td>North-East</td>
<td>57.6%</td>
<td>41.7%</td>
<td>23.4%</td>
<td>22.7%</td>
<td>8%</td>
<td>3.5%</td>
<td>9.5%</td>
<td>1.6%</td>
</tr>
<tr>
<td>South-West</td>
<td>59.3%</td>
<td>39.2%</td>
<td>23.9%</td>
<td>18.9%</td>
<td>7.2%</td>
<td>1.8%</td>
<td>17.3%</td>
<td>4.4%</td>
</tr>
<tr>
<td>South-East</td>
<td>60.9%</td>
<td>37%</td>
<td>26%</td>
<td>19.1%</td>
<td>7.7%</td>
<td>2.7%</td>
<td>14.5%</td>
<td>4.2%</td>
</tr>
<tr>
<td>North-West</td>
<td>69.5%</td>
<td>66.7%</td>
<td>33.2%</td>
<td>45.2%</td>
<td>12.6%</td>
<td>10.2%</td>
<td>20.9%</td>
<td>6.6%</td>
</tr>
<tr>
<td>Centre-West</td>
<td>71.9%</td>
<td>70.6%</td>
<td>39.2%</td>
<td>50.1%</td>
<td>15.6%</td>
<td>11.3%</td>
<td>27.8%</td>
<td>11.1%</td>
</tr>
</tbody>
</table>

The inequalities are even more obvious in Graphs 6 and 7, which show that the regions of the interior suffer from the greatest deprivations irrespective of the overall deprivation index.

Graph 6: Overall unweighted index

Graph 7: Overall weighted index

b. Deprivation rate by region versus the monetary poverty rate

Graphs 8 and 9 compare the levels of multiple deprivations with those for monetary poverty for the 7 major regions of Tunisia and on the basis of two overall deprivation indices.

The poverty (vulnerable) distribution curve is below the curve corresponding to a deprivation threshold index of 0.2, but above that relating to the 0.3 deprivation index. However, the extreme poverty curve (Poor) merges with the 30% deprivation curve of the overall unweighted index, while remaining below the overall weighted deprivation index curve.

The weighted index curves appear similar to those for monetary poverty and result in a fairly close classification of the seven regions. However, the unweighted index curves appear fairly different to those for monetary poverty resulting in different classification in terms of the regions.
Table 5: Relative Deprivation Rates broken down by Area

<table>
<thead>
<tr>
<th></th>
<th>Urbain</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unweighted Index &lt;0.1</td>
<td>27.3%</td>
<td>71.8%</td>
</tr>
<tr>
<td>Unweighted Index &lt;0.2</td>
<td>11.5%</td>
<td>48.8%</td>
</tr>
<tr>
<td>Unweighted Index &lt;0.3</td>
<td>0.6%</td>
<td>11.2%</td>
</tr>
<tr>
<td>Weighted Index &lt;0.1</td>
<td>48%</td>
<td>76.3%</td>
</tr>
<tr>
<td>Weighted Index &lt;0.2</td>
<td>18.2%</td>
<td>38.6%</td>
</tr>
<tr>
<td>Weighted Index &lt;0.3</td>
<td>5.5%</td>
<td>14.2%</td>
</tr>
<tr>
<td>Extreme Poverty</td>
<td>2.2%</td>
<td>7.5%</td>
</tr>
<tr>
<td>Poverty</td>
<td>11.7%</td>
<td>19.2%</td>
</tr>
</tbody>
</table>

Graph 8: Overall unweighted index & poverty index

Graph 9: Overall weighted index & poverty index

Analysis by Area

Thus, the selection of appropriate indicators results in a reduction in the assessment differences between the estimation and identification of poverty using deprivation indicators as a starting point.

Deprivation frequencies are higher in rural areas irrespective of the deprivation threshold and the deprivation index (Table 5).

The inter-area differences between the proportions of people suffering from deprivations increase as the deprivation threshold falls. This leads to the conclusion that there is a much larger middle class in urban areas.

It was noted that the analysis in terms of deprivations places greater emphasis on the differences in terms of living standards between regions and even more so between areas than is revealed in the analysis using monetary poverty rates.

Analysis by Degree of Disability and Professional/vocational Qualifications

The presence of a disability is used by the PNAFN as an automatic inclusion criterion. It is also worth noting how households affected by deprivations are distributed on the basis of this indicator.

Furthermore, when defining the baseline index we also suggested the incorporation of the automatic inclusion indicator reflecting life styles. We will, therefore focus on the household head’s qualifications.

Table 6 shows that households with disabled heads have considerably higher deprivation rates than other households. Similarly, if household heads do not have any qualifications, their families also suffer from significant deprivation in absolute terms compared to other households.
Table 6 shows that all households with a disabled head as well as households with a head who has no qualifications, have an index > 0.1. These percentages fall for higher deprivation thresholds. Thus 90% of households with a disabled head have deprivation indices above 0.2 and 50% have deprivation indices above 0.3.

This type of detail is not revealed if we confine our analysis to monetary poverty rates, since the poverty rates of households with a disabled head are virtually the same as the average monetary poverty rates. This is one of the main sources of differences in the results between a monetary poverty type approach and a deprivation type approach.

<table>
<thead>
<tr>
<th></th>
<th>Not disabled</th>
<th>Disabled</th>
<th>Unqualified</th>
<th>Qualified</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unweighted Index &lt;0.1</strong></td>
<td>37%</td>
<td>95%</td>
<td>76%</td>
<td>37%</td>
</tr>
<tr>
<td><strong>Unweighted Index &lt;0.2</strong></td>
<td>19%</td>
<td>73%</td>
<td>46%</td>
<td>21%</td>
</tr>
<tr>
<td><strong>Unweighted Index &lt;0.3</strong></td>
<td>3%</td>
<td>17%</td>
<td>8%</td>
<td>4%</td>
</tr>
<tr>
<td><strong>Weighted Index &lt;0.1</strong></td>
<td>53%</td>
<td>100%</td>
<td>100%</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Weighted Index &lt;0.2</strong></td>
<td>18%</td>
<td>90%</td>
<td>49%</td>
<td>21%</td>
</tr>
<tr>
<td><strong>Weighted Index &lt;0.3</strong></td>
<td>4%</td>
<td>48%</td>
<td>15%</td>
<td>7%</td>
</tr>
<tr>
<td><strong>Extreme Poverty</strong></td>
<td>4%</td>
<td>4%</td>
<td>9%</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Poverty</strong></td>
<td>14%</td>
<td>17%</td>
<td>28%</td>
<td>32%</td>
</tr>
</tbody>
</table>

### 4.4 Third Approach-Optimization of Index Performance by Proxy Means Tests

From a theoretical standpoint, this approach is based on the definition of a proxy (or estimator) as a standard of living indicator. This method makes it possible to classify households on the basis of predicted consumption levels.

The index corresponds to the poverty gap which, in turn, corresponds to the difference between estimated consumption and the poverty line. In other words, this gap corresponds to the transfer amount required to lift a needy family above the poverty threshold.

In theory, this approach makes it possible to establish a link between monetary poverty (for the aim is to determine their consumption) and multiple deprivations (for these deprivations are used to determine consumption).

In practice, this will initially be necessary to perform an econometric regression on the basis of the household budget and consumption survey, in order to determine for the deprivation indicators – the role they play as determinants of monetary poverty. In a subsequent stage, this will permit the construction of a model that will facilitate estimation of the living standards of this family during the collection of household deprivation indicators by the employees of the Ministry of Social Affairs. Finally, an index will be defined for each household corresponding to

---

41 Our analysis is based on approximate income values, denoted $y^i$ estimated by observing certain living standard indicators, denoted by $X$. Our problem, therefore, is to minimize the anticipated level of poverty $E[Pi + t_i z(X)]$, when selecting optimal direct transfer levels $t_i$, associated with each household $i$.

The least squares estimation of the income equation parameters will predict total expenditure, $y$. This value may then be used to decide whether the household can benefit from the subsidy by verifying whether $y^i$s below the poverty threshold $z$ and if so, how much that subsidy will be. The amount of the subsidy, equal to $t_i = z - y^i$, is consequently correlated with $y^i$.

42 It should be noted that our choice of poverty index will focus on the FGT indices defined by: $P_0 = \frac{1}{n} \sum (\frac{y_i}{z})^a$ So that: $t_i = z - y^i$ if $y^i < z$ and $t_i = 0$ if $y^i \geq z$ where $a$ is the level of poverty aversion. When the value of $a$ increases the weight assigned by the public decision-maker to the poorest of the poor becomes more significant. Thus, the decision-maker is considered to be more averse to poverty if it selects $a > 1$. 
the gap between the living standards of the household as predicted by the model and the poverty line. This index will classify in descending order the neediest families in terms of direct targeting.

The INS household budget and consumption surveys (the most recent survey was in 2010) provide considerable information on households which could be used to carry out the Proxy Means Test\footnote{Information may also be obtained from the survey to be carried out by CRES or from a vast database which the Ministry of Social Affairs is compiling in collaboration with several national organizations.}. Indeed, the 2010 Survey, in addition to information on each household’s total expenditure, contains a set of over 100 variables outlining the socio-demographic, geograpical and institutional characteristics of each household in the sample.

The Tables in Annex IV present the results of econometric regressions of the logarithm of total expenditure per capita\footnote{Used as a proxy for income per capita.} of each household on a series of explanatory variables for all households in 2005 and 2010 (Table IV.1 in Annex IV), then for households in the first quintile (the poorest) in 2010 (Table IV.2 in Annex IV)\footnote{This distinction between regressions for all first quintile households helps to identify the behavioural specificities of the neediest households which as our estimates show do not have the same behaviour.}.

These variables first of all include the 15 indicators defined in Table 1, summarizing the main observable characteristics of households.

The analyses also take into account the impacts relating to households’ areas and regions of residence. The inclusion of these variables takes into account the heterogeneity of behaviour between living environments and regions.

The results of the econometric regressions show that:

1. **Concerning the variables relating to housing conditions**, those relating to ‘the absence of a permanent wall and roofing’, ‘non-connection to the STEG electricity networks’ or the fact of living in a ‘non-decent house’ are not significantly linked (from a statistical standpoint) to the level of total expenditure for 2005 and 2010\footnote{The non-significance of these coefficients is explained by the low number of households deprived of the last three indicators in relation to the total population. This confirms the need to isolate these households in the operation to determine the list of needy families.}. However, ‘the absence of a connection to the sanitation network’ and the ‘absence of bathroom or equipped shower in the house’ are significantly linked to the standard of living. Deprivation of these two housing conditions is a strong indicator of household living standards\footnote{This finding is confirmed by the conclusions of Table VII.}.

The results of Table IV.2 (in Annex IV), show that, for households in the first quintile, the same conclusions may be drawn as for the total population. However, the ‘access to an electricity network’ variable plays a significant role in this case, indicating that the poorest people do not have access to the STEG network, justifying the use of this criterion to automatically include these families in the list of social assistance beneficiaries.

2. **Regarding the variables associated with the capacity of the household head to generate a decent income**, the three indicators associated with this dimension are significantly correlated with the standard of living. This confirms that, in Tunisia, the household heads’ lack of qualifications, disability or low level of education are significantly correlated with a drop in living standards. The lack of qualifications has a serious impact on falling living standards. Education levels are usually strongly correlated with living conditions, since individuals with the highest levels of education are those with the highest income levels.

3. **The relative weight of dependents in the household has a statistically significant impact on living standards**. However, the intensity effect for dependency only became significant in 2010. In addition, living conditions represented by a lack of comfort and the use of a dirty cooking energy source in the home have statistically significant impacts on living standards which intensified between 2005 and 2010.

4. **Finally, the results associated with the impact of the area and region of residence on living standards are significant**\footnote{In our model we consider the coastal region as the reference area.}. There is a significant decline in income levels in rural areas. Similarly, the regions of the interior are disadvantaged.
The results of these estimations help to identify the indicators that best reflect household income levels. Their observation and use within a predictive model immediately makes it possible to identify the poor and vulnerable among the population.

4.5 Fourth Approach—Combination of the Proxy Means Test and the Multiple Deprivation Method

4.5.1 Description

The minor shortcoming of the previous approach is that it doesn’t place sufficient emphasis on deprivations, which are the starting point for the Ministry of Social Affairs transfer policy. In order to more effectively rechannel resources to households experiencing deprivations and to ensure that these households are correctly targeted (thereby minimizing exclusion errors), it is proposed to combine the Proxy Means Test (PMT) approach with the results of the multiple deprivation approach.

To that end, we normalize the index obtained using the PMT method by multiplying it by an index inversely proportional to the percentage of weighted deprivations. This gives:

Adjusted PMT = PMT index \( \times (1 - \text{weighted deprivation index}) \)

This index places even greater emphasis on households suffering from a significant level of deprivation by proportionally lowering the value of the PMT index.

4.5.2 Performance of the Proposed Index

As previously mentioned, the decision-maker is split between dual objectives: that of reducing poverty and that of reducing the impact of deprivations.

In this analysis, we propose to adopt the methodology that will result in the best compromise between these two objectives so that the population as a whole has a deeper understanding of the strategy adopted for social transfers and more readily accepts any possible injustices.

To do so, we will, therefore, compare the performances of the four previously described methodologies (combined method, Proxy Means Test, weighted multiple deprivations and unweighted multiple deprivations) regarding: a) identification of the poor from a monetary standpoint; and b) identification of those suffering most from deprivations.

The four methodologies result in the classification of all the families in the sample by order of eligibility for social assistance. We will then look at that part of the population we wish to target and classified among the very first beneficiaries according to a given methodology. This will enable us to understand the exclusion errors and the effectiveness of a given method in identifying a family which is poor or suffering deprivation. We will also consider the part of the population that should not be affected by the transfer mechanism – included among the highest ranked in the classification. This will give us the inclusion errors – and the effectiveness of the methodology in not transferring assistance to those who do not need it.

The Proxy Means Test is logically seen to be (Graph 10) the most effective approach in identifying those suffering from extreme poverty as well as the poor segments of the population.

More surprisingly, it is the unweighted multiple deprivation method which is best adapted for the identification of families suffering from most deprivations.
All the methods are valid in terms of inclusion errors. On the other hand, if the best possible compromise is sought between monetary poverty and deprivations – the combined method undoubtedly produces the best results and is the method which we will subsequently retain.

**Graphic 10: Effectiveness of Approaches**

- **Performance towards the population suffering from extreme poverty**
  - % of person in the sub-population suffering from extreme income poverty identified by the method
  - Proposed approach
  - Proxy mean test
  - Weighted multiple deprivation
  - Unweighted multiple deprivation

- **Performance towards the population suffering from more 4 deprivations**
  - % of person in the sub-population suffering from extreme income poverty identified by the method
  - Proposed approach
  - Proxy mean test
  - Weighted multiple deprivation
  - Unweighted multiple deprivation

- **Performance towards the population suffering from 3 deprivations**
  - % of person in the sub-population suffering from extreme income poverty identified by the method
  - Proposed approach
  - Proxy mean test
  - Weighted multiple deprivation
  - Unweighted multiple deprivation

- **Performance towards the population suffering from 2 deprivations**
  - % of person in the sub-population suffering from extreme income poverty identified by the method
  - Proposed approach
  - Proxy mean test
  - Weighted multiple deprivation
  - Unweighted multiple deprivation

- **Performance towards the population suffering from 1 deprivation**
  - % of person in the sub-population suffering from extreme income poverty identified by the method
  - Proposed approach
  - Proxy mean test
  - Weighted multiple deprivation
  - Unweighted multiple deprivation

- **Performance towards the population not suffering from poverty**
  - % of person in the sub-population suffering from extreme income poverty identified by the method
  - Proposed approach
  - Proxy mean test
  - Weighted multiple deprivation
  - Unweighted multiple deprivation

- **Performance towards the population not suffering from any deprivation**
  - % of person in the sub-population suffering from extreme income poverty identified by the method
  - Proposed approach
  - Proxy mean test
  - Weighted multiple deprivation
  - Unweighted multiple deprivation
5. Determination of the Beneficiary Allocation Level

5.1 Proposed Method

Having established the household classification by order of priority for social assistance using the previously established index (derived from the combined method, associating the Proxy Means Test and weighted multiple deprivations), it is now necessary to determine how much central government must transfer and to whom.

On the basis of a purely monetary approach and from a purely theoretical standpoint, it would be necessary to seek to achieve ‘perfect targeting’, which would assume the perfect observation by the decision-maker of each household’s income. Theoretically, the aim of this method is to allocate to each household an amount of social assistance corresponding to the difference between its income (estimated by total expenditure) and the poverty threshold (corresponding to the income of the last household benefiting from that assistance). The weighted sum of these amounts corresponds to the amount of the initial overall subsidy.

Households would therefore be classified in ascending order of their respective incomes. In the first phase, the income of the household with the lowest level of income is increased by an initial amount equal to the difference between its income and that of the household immediately above it in the general classification. An iterative process is then initiated within which is added to each of the two most impoverished households an income supplement equal to the difference between the incomes of the 2\textsuperscript{nd} and 3\textsuperscript{rd} household. The process continues by allocating to each of the \(n\) most impoverished households an income supplement equal to the difference between the net incomes of the households \((n+1)\).

The compensation process ends when the cumulative income supplements allocated to the different households corresponds to the total amount decided upon by central government for direct or indirect subsidies.

However, this method obviously cannot be implemented and the amount to be allocated must be determined by ‘imperfect direct targeting’. This method repeats the ‘perfect targeting’ process but using the previously defined living standard indicator in order to classify households by order of priority for direct assistance which takes into account both monetary poverty and deprivations.

Individuals then receive an amount calculated using the same allocation procedure as for direct targeting.

This method would thus determine for each beneficiary a specific allocation based on its ranking. To simplify this procedure, the decision-maker may also define a set of 10 (or 5) household groups. It will allocate to each group the same transfer (or assistance) amount corresponding to the average poverty gap of the group.

It should be noted that, by adopting the proposed approach, the more the total amount allocated by central government to subsidies and social assistance increases, the higher the number of beneficiaries and amounts transferred to households also increases. However, these amounts become zero (i) when the overall budget is fully distributed among the households before reaching households above the poverty threshold; or (ii) when all households with a living standard below the poverty threshold are lifted above the poverty threshold\(^{49}\).

5.2. Theoretical Performance in terms of Poverty Reduction

In order to evaluate the theoretical performance of the proposed approach (and compare it with the existing situation) in terms of monetary poverty, four theoretical scenarios must be considered for the allocation of indirect subsidies:

(1) Scenario 1 or Status Quo: In this scenario, universal targeting through consumer goods (indirect targeting) is preserved. The decision-maker grants indirect subsidies in order to lower the selling prices of certain staple prices.

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\(^{49}\)This threshold is the same as the value for the index of the adjusted PMT method of the household with the lowest transfer. This threshold will change if the central government budget allocated to subsidies changes.
(2) 

**Scenario 2:** This scenario corresponds to ‘uniform direct targeting’ reallocating amount "T" equitably among all the households irrespective of their original income levels. Each member of the different households will receive a direct transfer equal to T/N (N being the size of the Tunisian population).

The other two scenarios are the previously presented methods of ‘perfect direct targeting’ and ‘imperfect direct targeting’.

### Table 7: Targeting Effectiveness for a Fixed Total Transfer Amount

<table>
<thead>
<tr>
<th>Scenarios</th>
<th>Poverty Gap (PG)</th>
<th>Square of Gaps (FGT2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rate Value</td>
<td>Change in Rate</td>
</tr>
<tr>
<td>Scenario 1: Status Quo “universal targeting”</td>
<td>0.064</td>
<td></td>
</tr>
<tr>
<td>Scenario 2: “uniform targeting”</td>
<td>0.063 (-2.1%)</td>
<td></td>
</tr>
<tr>
<td>Scenario 3: “perfect targeting”</td>
<td>0.0380 (-40.1%)</td>
<td></td>
</tr>
<tr>
<td>Scenario 4: “imperfect targeting”</td>
<td>0.0381 (-40%)</td>
<td></td>
</tr>
</tbody>
</table>

Table 7 assesses the levels of the poverty gap (PG) and the square of the gaps (FGT2), for the four scenarios based on a constant central government budget, corresponding to a total direct transfer amount equal to “T”.

The results of Table 7 confirm that universal targeting (‘status quo’) is sub-optimal. For the same total transfer amount "T", it results in an amount less specifically targeting the poor (monetary) than the other three transfer scenarios (the values of the poverty gap and square of gaps are the highest).

A direct lumpsum transfer, ‘uniform targeting’, directly allocating an equal amount to all households is better than universal targeting (indirect). But this type of transfer only contributes to a very slight narrowing of the poverty gap (PG) of 2.1% and of the FGT2 of 4.2% for the same total transfer “T” as the universal transfer.

If it were possible to observe income perfectly and then give each person what was due, this would represent ‘perfect targeting’ which would further reduce the poverty gaps by 40.1% and the FGT2 by 62.7%.

But, since income is not observable, it is noted that the ‘new targeting method’ based on observable household characteristics defined by the multiple privations method results in targeting that is very close to perfect targeting and far more effective than universal or uniform targeting. The proposed method results in 40% and 36% reductions of the poverty gap and FGT2 respectively.
6. Public Policy Proposals

It was previously shown that when defining the targeting procedure, two factors should be taken into consideration: a) The beneficiary household identification method; and b) The amount to be allocated to beneficiary households.

The decision-maker must, therefore:

a) Fix the total amount to be allocated to direct and indirect subsidies. This amount is fixed at a level T (1080 million dinars in 2012).

b) Allocate this total amount on the basis of families’ needs and poverty levels.

The following paragraphs present the impacts on the extreme and official poverty levels of a series of public policies aimed at modifying targeting policies by changing:

a) The budgets allocated to direct and indirect targeting;

b) The targeting procedures (by shifting from the existing targeting to the proposed targeting).

We therefore define 6 potential policies (Table 8) and define for each of these policies:

a) The budget savings made by central government. However, it should be noted that these savings do not take into account the cost related to the implementation of new procedures following the reform. However since these procedures make use of existing resources, these costs will be controlled;

b) The extreme and official poverty rates;

c) The number of additional dinars per household (that is, the average additional amount of money received annually per household as a result of the public policy);

d) The breakdown of the beneficiaries in a given category as a result of the public policy (50 % means that the living conditions of half of the people living in conditions of extreme poverty will be improved);

e) The total number of dinars received by household per year; and

f) How the budget allocated to social assistance is broken down among the social categories.

Table 8: Public Policy Scenarios

<table>
<thead>
<tr>
<th>Option 1 A</th>
<th>Method</th>
<th>Budget</th>
<th>Total Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Subsidies</td>
<td>Unchanged</td>
<td>Unchanged</td>
<td>Variable</td>
</tr>
<tr>
<td>Direct Transfers</td>
<td>Unchanged</td>
<td>Variable</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Option 2 A</th>
<th>Method</th>
<th>Budget</th>
<th>Total Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Subsidies</td>
<td>Unchanged</td>
<td>Unchanged</td>
<td>Variable</td>
</tr>
<tr>
<td>Direct Transfers</td>
<td>Unchanged</td>
<td>Variable</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Option 3 A</th>
<th>Method</th>
<th>Budget</th>
<th>Total Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Subsidies</td>
<td>Abolished</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct Transfers</td>
<td>Unchanged</td>
<td>Part of the budget allocated to subsidies is added to the direct transfer budget</td>
<td>Variable</td>
</tr>
</tbody>
</table>
### Method

**Option 4 A**

<table>
<thead>
<tr>
<th>Food Subsidies</th>
<th>Method</th>
<th>Budget</th>
<th>Total Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unchanged</td>
<td>Variable</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Direct Transfers</th>
<th>Method</th>
<th>Budget</th>
<th>Total Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unchanged</td>
<td>Variable – the total budget withdrawn from subsidies is added to the direct transfer budget</td>
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**Option 5 A**

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<thead>
<tr>
<th>Food Subsidies</th>
<th>Method</th>
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<th>Total Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unchanged</td>
<td>Variable</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Direct Transfers</th>
<th>Method</th>
<th>Budget</th>
<th>Total Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unchanged</td>
<td>Variable – part of the budget withdrawn from subsidies is added to the direct transfer budget</td>
<td>Variable</td>
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</table>

**Option 6 A**

<table>
<thead>
<tr>
<th>Food Subsidies</th>
<th>Method</th>
<th>Budget</th>
<th>Total Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Only some products are subsidized</td>
<td>Variable</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Direct Transfers</th>
<th>Method</th>
<th>Budget</th>
<th>Total Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unchanged</td>
<td>Variable – part of the budget withdrawn from subsidies is added to the direct transfer budget</td>
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</table>

**Option 1 B**

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<th>Food Subsidies</th>
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<th>Total Budget</th>
</tr>
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<tbody>
<tr>
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<td>Unchanged</td>
<td>Unchanged</td>
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<table>
<thead>
<tr>
<th>Direct Transfers</th>
<th>Method</th>
<th>Budget</th>
<th>Total Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>New methodology adopted</td>
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<td></td>
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**Option 2 B**

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</thead>
<tbody>
<tr>
<td></td>
<td>Unchanged</td>
<td>Variable</td>
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<table>
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<th>Method</th>
<th>Budget</th>
<th>Total Budget</th>
</tr>
</thead>
<tbody>
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**Option 3 B**

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<th>Total Budget</th>
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</thead>
<tbody>
<tr>
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<td>Abolished</td>
<td>Variable</td>
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<table>
<thead>
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<th>Direct Transfers</th>
<th>Method</th>
<th>Budget</th>
<th>Total Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>New methodology adopted</td>
<td>Variable – part of the budget withdrawn from subsidies is added to the direct transfer budget</td>
<td>Variable</td>
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</table>

**Option 4 B**

<table>
<thead>
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<th>Food Subsidies</th>
<th>Method</th>
<th>Budget</th>
<th>Total Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>Direct Transfers</th>
<th>Method</th>
<th>Budget</th>
<th>Total Budget</th>
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<tbody>
<tr>
<td></td>
<td>New methodology adopted</td>
<td>Variable – the total budget withdrawn from subsidies is added to the direct transfer budget</td>
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</tbody>
</table>
Food Subsidies and Direct Social Assistance: Towards Better Targeting of Monetary Poverty and Deprivations in Tunisia

African Development Bank

### Method

<table>
<thead>
<tr>
<th>Budget</th>
<th>Total Budget</th>
</tr>
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<tbody>
<tr>
<td>Variable</td>
<td>Variable</td>
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#### Option 5 B

<table>
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<tbody>
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#### Option 6 B

<table>
<thead>
<tr>
<th>Food Subsidies</th>
<th>Direct Transfers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only some products are subsidized</td>
<td>New methodology adopted</td>
</tr>
</tbody>
</table>

### 6.1 OPTION 1: Modification of Procedure for Allocation of Direct Transfers and the Related Budget

This section compares the poverty levels resulting from a modification of the direct targeting method and a variation in the budget allocated to it. Food and energy subsidies remain unaffected.

Table 9 and Graphs 12 and 13 show that with a constant budget, a change in direct targeting procedures will result in a drop in the levels of poverty from 15.5% to 8% and of extreme poverty from 4.6% to 0%.

With a constant budget and retaining subsidies, this new direct targeting methodology will contribute to the eradication of extreme poverty and halving of the population living below the poverty threshold.

In another approach, the change in targeting procedure may offset the negative impact linked to a reduction in the budget allocated to the direct transfer. The new targeting procedure will result in an extreme poverty level of 1.5% even after a 50% reduction in the PNAFN budget.

In particular, the new procedure will ensure that people living in extreme poverty benefit more from direct transfers.

If the PNAFN budget remains unchanged, households suffering from extreme poverty would receive TND 2526.6 dinars per year for all transfers combined, i.e. 2276.8 dinars more than under the existing method. The poorest segments of the population would then receive 52% of the total budget allocated to direct and indirect transfers.

However, the reallocation of the PNAFN budget according to the new direct targeting procedure only results in a drop in the poverty rate (official) when the budget remains constant. A reduction in the budget results in a 15.5% to 16.3% increase in the official poverty rate. This is due to the fact that the budget allocated will only cover a small proportion of the less poor among the poor.

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50 The amount of direct transfers is based on information provided in the INS-ADB-CRES (2013) report. In 2010 a subsidized household received TND 70 per month, i.e. TND 840 per year plus TND 10 for each child up to a maximum of three children. Thus the amount of the direct transfer is estimated at TND 10 (TND 70 + TND 30) by beneficiary household per month, i.e. TND 120 per beneficiary household per year. These subsidies affect 183,012 households out of a total of 2548165 households (i.e. 7.18% of the total). Thus, the total amount of direct subsidies stands at TND 219.614 million, i.e. an average subsidy of TND 86.185 per household. But the allocation of PNAFN subsidies is not uniformly applied to all households. The following Table presents its breakdown by quintile

<table>
<thead>
<tr>
<th>Quintile</th>
<th>1st quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
<th>Total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>% beneficiaries</td>
<td>37.2%</td>
<td>23.5%</td>
<td>19.2%</td>
<td>14%</td>
<td>6.1%</td>
<td>20%</td>
</tr>
<tr>
<td>Average allocation per household per year (TND)</td>
<td>160.304</td>
<td>101.267</td>
<td>82.738</td>
<td>60.330</td>
<td>26.286</td>
<td>86.185</td>
</tr>
</tbody>
</table>
Graph 12: Modification of the allocated budget to PNAFN (Extreme poverty rate)

Graph 13: Modification of the allocated budget to PNAFN (Official poverty rate)

Table 9: Budget for Constant Indirect Transfers, Change in the Amounts Allocated by Central Government to Direct Transfers

<table>
<thead>
<tr>
<th>Constant Budget</th>
<th>10% Reduction in the PNAFN Budget</th>
<th>20% Reduction in the PNAFN Budget</th>
<th>50% Reduction in the PNAFN Budget</th>
<th>80% Reduction in the PNAFN Budget</th>
<th>100% Reduction in the PNAFN Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Savings on the Central Government Budget (million TND)</td>
<td>0</td>
<td>22</td>
<td>44</td>
<td>110</td>
<td>176</td>
</tr>
</tbody>
</table>

Option 1.A: Former Direct Allocation Procedure

<table>
<thead>
<tr>
<th>Constant Budget</th>
<th>10% Reduction in the PNAFN Budget</th>
<th>20% Reduction in the PNAFN Budget</th>
<th>50% Reduction in the PNAFN Budget</th>
<th>80% Reduction in the PNAFN Budget</th>
<th>100% Reduction in the PNAFN Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty Rate</td>
<td>4.6%</td>
<td>4.6%</td>
<td>4.7%</td>
<td>4.7%</td>
<td>4.9%</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>15.5%</td>
<td>15.5%</td>
<td>15.6%</td>
<td>15.7%</td>
<td>16.2%</td>
</tr>
</tbody>
</table>

Additional Dinars per Household

| Extreme Poverty | 0 | -15.4 | -30.8 | -77 | -123.2 | -154 |
| Remaining Poor | 0 | -12.7 | -25.4 | -63.4 | -101.5 | -126.9 |
| Remainder of First Quintile | 0 | -16 | -32.1 | -80.2 | -128.2 | -160.3 |
| 2nd quintile | 0 | -10.1 | -20.3 | -50.6 | -81 | -101.3 |
| 3rd quintile | 0 | -8.3 | -16.5 | -41.4 | -66.2 | -82.7 |
| 4th quintile | 0 | -6 | -12.1 | -30.2 | -48.3 | -60.3 |
| 5th quintile | 0 | -2.6 | -5.3 | -13.1 | -21 | -26.3 |
### Percentage of Beneficiary Households in a Category

<table>
<thead>
<tr>
<th>Category</th>
<th>0%</th>
<th>0%</th>
<th>0%</th>
<th>0%</th>
<th>0%</th>
<th>0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remaining Poor</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd quintile</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd quintile</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th quintile</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>5th quintile</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

### Total Number of Dinars Received by Household

<table>
<thead>
<tr>
<th>Category</th>
<th>395.2</th>
<th>379.8</th>
<th>364.4</th>
<th>318.2</th>
<th>271.9</th>
<th>241.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>434.9</td>
<td>422.2</td>
<td>409.5</td>
<td>371.4</td>
<td>333.3</td>
<td>308</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>451.2</td>
<td>435.2</td>
<td>419.2</td>
<td>371.1</td>
<td>323</td>
<td>290.9</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>436.8</td>
<td>426.6</td>
<td>416.5</td>
<td>386.1</td>
<td>355.8</td>
<td>335.5</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>441.9</td>
<td>433.6</td>
<td>425.3</td>
<td>400.5</td>
<td>375.7</td>
<td>359.1</td>
</tr>
<tr>
<td>4th quintile</td>
<td>423.4</td>
<td>417.4</td>
<td>411.3</td>
<td>393.2</td>
<td>375.1</td>
<td>363.1</td>
</tr>
<tr>
<td>5th quintile</td>
<td>374.9</td>
<td>372.3</td>
<td>369.7</td>
<td>361.8</td>
<td>353.9</td>
<td>348.6</td>
</tr>
</tbody>
</table>

### Breakdown of Budget Allocated to Social Transfers between Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>13%</th>
<th>13%</th>
<th>13%</th>
<th>12%</th>
<th>11%</th>
<th>11%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remaining Poor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd quintile</td>
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</tr>
<tr>
<td>3rd quintile</td>
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</tr>
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<td>4th quintile</td>
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<td></td>
</tr>
<tr>
<td>5th quintile</td>
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<td></td>
</tr>
</tbody>
</table>

### Option 1.B: New Direct Allocation Procedure

<table>
<thead>
<tr>
<th>Category</th>
<th>Constant Budget</th>
<th>10% Reduction in the PNAFN Budget</th>
<th>20% Reduction in the PNAFN Budget</th>
<th>50% Reduction in the PNAFN Budget</th>
<th>80% Reduction in the PNAFN Budget</th>
<th>100% Reduction in the PNAFN Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>1.5%</td>
<td>5%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>8%</td>
<td>16.3%</td>
<td>16.3%</td>
<td>16.3%</td>
<td>16.3%</td>
<td>16.4%</td>
</tr>
</tbody>
</table>
### Additional Dinars per Household

<table>
<thead>
<tr>
<th>Category</th>
<th>2nd Quintile</th>
<th>3rd Quintile</th>
<th>4th Quintile</th>
<th>5th Quintile</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>-86.9</td>
<td>-86.9</td>
<td>-86.8</td>
<td>-86.8</td>
<td>-86.9</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>-86.9</td>
<td>-86.9</td>
<td>-86.9</td>
<td>-86.9</td>
<td>-86.9</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>-86.8</td>
<td>-86.8</td>
<td>-86.8</td>
<td>-86.8</td>
<td>-86.8</td>
</tr>
<tr>
<td>2nd Quintile</td>
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<td>-86.8</td>
<td>-86.8</td>
<td>-86.8</td>
<td>-86.8</td>
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<td>-86.9</td>
<td>-86.9</td>
<td>-86.9</td>
<td>-86.9</td>
</tr>
<tr>
<td>5th Quintile</td>
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<td>-86.8</td>
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<td>-86.8</td>
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</tbody>
</table>

### Percentage of Beneficiary Households in a Category

<table>
<thead>
<tr>
<th>Category</th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd Quintile</th>
<th>3rd Quintile</th>
<th>4th Quintile</th>
<th>5th Quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>92%</td>
<td>69%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>51%</td>
<td>46%</td>
<td>39%</td>
<td>19%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>3%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>2nd Quintile</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>3rd Quintile</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>4th Quintile</td>
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<tr>
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<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Total Number of Dinars received per Household

<table>
<thead>
<tr>
<th>Category</th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd Quintile</th>
<th>3rd Quintile</th>
<th>4th Quintile</th>
<th>5th Quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>2,525.6</td>
<td>2,381.4</td>
<td>2,219.3</td>
<td>1,640.5</td>
<td>807.8</td>
<td>162</td>
<td></td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>692.9</td>
<td>624.4</td>
<td>554.2</td>
<td>383.6</td>
<td>295.7</td>
<td>295.7</td>
<td></td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>355.4</td>
<td>350.1</td>
<td>349.2</td>
<td>349.9</td>
<td>349.9</td>
<td>349.9</td>
<td></td>
</tr>
<tr>
<td>2nd Quintile</td>
<td>356.2</td>
<td>356.2</td>
<td>356.2</td>
<td>356.2</td>
<td>356.2</td>
<td>356.2</td>
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</tr>
<tr>
<td>3rd Quintile</td>
<td>354.1</td>
<td>354.1</td>
<td>354.1</td>
<td>354.1</td>
<td>354.1</td>
<td>354.1</td>
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</tr>
<tr>
<td>4th Quintile</td>
<td>318.4</td>
<td>318.4</td>
<td>318.4</td>
<td>318.4</td>
<td>318.4</td>
<td>318.4</td>
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</tr>
<tr>
<td>5th Quintile</td>
<td>267.7</td>
<td>267.7</td>
<td>267.7</td>
<td>267.7</td>
<td>267.7</td>
<td>267.7</td>
<td></td>
</tr>
</tbody>
</table>

### Breakdown of Budget Allocated to Social Transfers between Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd Quintile</th>
<th>3rd Quintile</th>
<th>4th Quintile</th>
<th>5th Quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>52%</td>
<td>5,1%</td>
<td>50%</td>
<td>45%</td>
<td>29%</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>14%</td>
<td>13%</td>
<td>13%</td>
<td>10%</td>
<td>11%</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>7%</td>
<td>8%</td>
<td>8%</td>
<td>10%</td>
<td>13%</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>2nd Quintile</td>
<td>7%</td>
<td>8%</td>
<td>8%</td>
<td>10%</td>
<td>13%</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>3rd Quintile</td>
<td>7%</td>
<td>8%</td>
<td>8%</td>
<td>10%</td>
<td>13%</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>4th Quintile</td>
<td>7%</td>
<td>7%</td>
<td>7%</td>
<td>9%</td>
<td>12%</td>
<td>15%</td>
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</tr>
<tr>
<td>5th Quintile</td>
<td>5%</td>
<td>6%</td>
<td>6%</td>
<td>7%</td>
<td>10%</td>
<td>13%</td>
<td></td>
</tr>
</tbody>
</table>

Note: In the “constant budget” column, the budget remains the same for both the former and new targeting procedure, but the allocation procedure changes.
6.2 OPTION 2: Modification of the Direct Transfer Method and the Budget Allocated to Food Subsidies

Under this scenario, the subsidy system remains in place but the allocated budget varies. Only the PNAFN budget earmarked for direct targeting is reallocated on the basis of our new direct targeting procedure.

Since the new targeting procedure attaches greater importance to the poorest of the poor, it would contribute to the eradication of extreme poverty even after the abolition of subsidies (Table 10 and Graphs 14 and 15).

However, the living standards of some vulnerable people deteriorate if indirect transfers are lowered with no equivalent compensation. The percentage of poor households thus increases from 16% to 20%. In fact only 49% of them (and none of the remainder of the first quintile) would benefit from the new allocation procedure, which means that a number of vulnerable families or those who only live above the poverty threshold because of subsidies would immediately sink into poverty.

Finally, it should be noted that all the other households would experience a drop in their purchasing power of between 590 dinars per year for the remainder of the first quintile to 380.8 dinars per year for the richest quintile (in the case where subsidies are completely abolished and the new method of transfers in favour of the poorest is adopted).

Graph 14: Modification of the budget allocated to subventions (Extreme poverty rate)

![Graph 14: Modification of the budget allocated to subventions (Extreme poverty rate)](image)

Graph 15: Modification of the budget allocated to subventions (Official poverty rate)

![Graph 15: Modification of the budget allocated to subventions (Official poverty rate)](image)

Table 10: Change in the Fixed Budget for Indirect Transfers with Fixed PNAFN Transfer’ Budget

<table>
<thead>
<tr>
<th>Option 2.A: Former Direct Allocation Procedure</th>
<th>Constant Budget</th>
<th>10% Reduction in the Subsidy Budget</th>
<th>20% Reduction in the Subsidy Budget</th>
<th>50% Reduction in the Subsidy Budget</th>
<th>80% Reduction in the Subsidy Budget</th>
<th>100% Reduction in the Subsidy Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Savings on Central Government Budget (million TND)</td>
<td>0</td>
<td>172</td>
<td>344</td>
<td>516</td>
<td>688</td>
<td>860</td>
</tr>
<tr>
<td>Extreme Poverty Rate</td>
<td>4.6%</td>
<td>4.7%</td>
<td>4.8%</td>
<td>5.1%</td>
<td>5.6%</td>
<td>5.8%</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>15.5%</td>
<td>15.8%</td>
<td>16.1%</td>
<td>16.9%</td>
<td>17.6%</td>
<td>18.3%</td>
</tr>
</tbody>
</table>
### Additional Dinars per Household

<table>
<thead>
<tr>
<th>Category</th>
<th>0</th>
<th>-24.1</th>
<th>-48.2</th>
<th>-120.6</th>
<th>-192.9</th>
<th>-241.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>0</td>
<td>-30.8</td>
<td>-61.6</td>
<td>-154</td>
<td>-246.4</td>
<td>-308</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>0</td>
<td>-29.1</td>
<td>-58.2</td>
<td>-145.5</td>
<td>-232.7</td>
<td>-290.9</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>0</td>
<td>-33.5</td>
<td>-67.1</td>
<td>-167.7</td>
<td>-268.4</td>
<td>-335.5</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>0</td>
<td>-35.9</td>
<td>-71.8</td>
<td>-179.6</td>
<td>-287.3</td>
<td>-359.1</td>
</tr>
<tr>
<td>4th quintile</td>
<td>0</td>
<td>-36.3</td>
<td>-72.6</td>
<td>-181.5</td>
<td>-290.5</td>
<td>-363.1</td>
</tr>
<tr>
<td>5th quintile</td>
<td>0</td>
<td>-34.9</td>
<td>-69.7</td>
<td>-174.3</td>
<td>-278.9</td>
<td>-348.6</td>
</tr>
</tbody>
</table>

### Percentage of Beneficiary Households within a Category

<table>
<thead>
<tr>
<th>Category</th>
<th>0%</th>
<th>0%</th>
<th>0%</th>
<th>0%</th>
<th>0%</th>
<th>0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>3rd quintile</td>
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### Total Number of Dinars Received per Household

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<td>280.9</td>
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<td>305.8</td>
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### Breakdown of Budget Allocated to Social Transfers between Categories

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</thead>
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<td></td>
<td></td>
<td></td>
</tr>
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<td>13%</td>
<td>13%</td>
<td>24%</td>
<td>16%</td>
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</tr>
<tr>
<td>Remainder of First Quintile</td>
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<td>14%</td>
<td>15%</td>
<td>28%</td>
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<td>21%</td>
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<td>20%</td>
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</tr>
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</tr>
<tr>
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</table>
### Option 2.B: New Direct Allocation Procedure

<table>
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<tr>
<th>Category</th>
<th>Constant Budget</th>
<th>10% Reduction in the Subsidy Budget</th>
<th>20% Reduction in the Subsidy Budget</th>
<th>50% Reduction in the Subsidy Budget</th>
<th>80% Reduction in the Subsidy Budget</th>
<th>100% Reduction in the Subsidy Budget</th>
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<td>0 %</td>
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<tr>
<td>Extreme Poverty</td>
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<td>18.3 %</td>
<td>19.4 %</td>
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</table>

#### Additional Dinars per Household

<table>
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<tr>
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<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>2 194.1</td>
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<td>2 144.3</td>
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<td>1 995</td>
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<tr>
<td>Remaining Poor</td>
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<td>-142.7</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
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<td>-590.9</td>
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<td>-384.6</td>
<td>-465.6</td>
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<td>-380.8</td>
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#### Percentage of Beneficiary Households within a Category

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<th>Category</th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>100%</td>
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<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>49%</td>
<td>47%</td>
<td>45%</td>
<td>40%</td>
<td>36%</td>
<td>32%</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
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<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
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<td>0%</td>
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<td>0%</td>
</tr>
<tr>
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<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>4th quintile</td>
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<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
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<tr>
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<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

#### Total Number of Dinars Received per Household

<table>
<thead>
<tr>
<th>Category</th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>2 443</td>
<td>2 418.1</td>
<td>2 393.2</td>
<td>2 318.5</td>
<td>2 243.9</td>
<td>2 194.1</td>
</tr>
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<td>545.9</td>
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<td>-154.2</td>
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<td>-82.7</td>
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<tr>
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<td>304.4</td>
<td>263.9</td>
<td>142.3</td>
<td>20.7</td>
<td>-60.3</td>
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<tr>
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</table>

#### Breakdown of Budget Allocated to Social Transfers between Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
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</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>52%</td>
<td>54%</td>
<td>57%</td>
<td>69%</td>
<td>88%</td>
<td>109%</td>
</tr>
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<td>13%</td>
<td>13%</td>
<td>13%</td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>6%</td>
<td>5%</td>
<td>5%</td>
<td>2%</td>
<td>-3%</td>
<td>-8%</td>
</tr>
<tr>
<td>2nd quintile</td>
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<td>7%</td>
<td>6%</td>
<td>4%</td>
<td>0%</td>
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<td>8%</td>
<td>7%</td>
<td>6%</td>
<td>4%</td>
<td>0%</td>
<td>-4%</td>
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<tr>
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<td>6%</td>
<td>4%</td>
<td>1%</td>
<td>-3%</td>
</tr>
<tr>
<td>5th quintile</td>
<td>7%</td>
<td>7%</td>
<td>6%</td>
<td>4%</td>
<td>2%</td>
<td>-1%</td>
</tr>
</tbody>
</table>

NB: the negative subsidy amounts are due to the fact that initially, the PNAFN subsidies were allocated to the poorest households.
6.3 OPTION 3: Subsidies are Abolished and Part of the Subsidy Budget Reallocated to the PNAFN

Under this scenario, the budget amount allocated by central government to direct transfers corresponds to PNAFN’s existing budget plus all or part of the budget allocated to subsidies. Subsidies are abolished.

The removal of all subsidies would increase the extreme poverty rate from 4.6% to 5.9% (Table 11) if the decision-maker maintains the existing PNAFN targeting procedure.

The poverty rate would rise from 15.5% to 17.5% and 19.8% depending on the targeting procedure (Table 12 and Graphs 16 and 17).

However, the transfer to PNAFN of part or all of the budget allocated to subsidies would lead to a very sharp reduction in poverty, especially when the new targeting procedure is adopted.

The transfer of the entire subsidy budget using the new targeting method would bring down the extreme poverty rate to 0% and the poverty rate to 4.1%.

It was noted that a 40% reduction in the subsidy budget and its reallocation to the PNAFN while maintaining the existing allocation procedure would produce the same performances as the existing system in terms of poverty reduction (extreme poverty rate of 4.6% and poverty rate of 15.5%). However, if the new allocation system is used, extreme poverty will be abolished and official poverty would then be below 10%.

### Table 11: Abolition of Indirect Subsidies and Transfer of Part of them as Direct Transfers

<table>
<thead>
<tr>
<th>Without Transfer</th>
<th>With 40% Transfer</th>
<th>With 60% Transfer</th>
<th>With 100% Transfer</th>
</tr>
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<tbody>
<tr>
<td>Savings on the Central Government Budget (million TND)</td>
<td>860</td>
<td>516</td>
<td>344</td>
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### Option 3A: Former Direct Allocation Procedure

<table>
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<th>Extreme Poverty Rate</th>
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<tr>
<td>Poverty Rate</td>
<td>17.5%</td>
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<td>15.2%</td>
<td>13.6%</td>
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<tr>
<td>Additional Dinars per Household</td>
<td>Extreme Poverty</td>
<td>Remaining Poor</td>
<td>Remainder of First Quintile</td>
<td>2nd quintile</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------------</td>
<td>----------------</td>
<td>----------------------------</td>
<td>--------------</td>
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<tr>
<td>-290.9</td>
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<table>
<thead>
<tr>
<th>Percentage of Beneficiary Households within a Category</th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
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<td>93%</td>
<td>79%</td>
<td>56%</td>
<td>28%</td>
<td>63%</td>
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<td>77%</td>
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<td>0%</td>
<td>41%</td>
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</table>

<table>
<thead>
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<th>Total Number of Dinars Received per Household</th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Breakdown of Budget Allocated to Social Transfers between Categories</th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
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<td>11%</td>
<td>11%</td>
<td>11%</td>
</tr>
<tr>
<td>4%</td>
<td>9%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
</tr>
</tbody>
</table>
### Option 3B: New Direct Allocation Procedure

<table>
<thead>
<tr>
<th>Abolition of subsidies without transfer</th>
<th>Abolition of subsidies and transfer of 40% of the remaining budget to PNAFN</th>
<th>Abolition of subsidies and transfer of 60% of the remaining budget to PNAFN</th>
<th>Abolition of subsidies and transfer of 100% of the remaining budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty Rate</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>19.8%</td>
<td>9.8%</td>
<td>9.8%</td>
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</tbody>
</table>

### Additional Dinars Per Household

<table>
<thead>
<tr>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>1 962.6</td>
<td>3 538.1</td>
<td>4 147</td>
<td>5 029</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>-44.3</td>
<td>952.6</td>
<td>1 448.6</td>
<td>2 217.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>-508.4</td>
<td>164.4</td>
<td>648.8</td>
<td>1 404.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd quintile</td>
<td>-529.9</td>
<td>-529.9</td>
<td>-528.9</td>
<td>-405.3</td>
<td>-405.3</td>
<td>-405.3</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>-527.8</td>
<td>-527.8</td>
<td>-527.8</td>
<td>-527.8</td>
<td>-527.8</td>
<td>-527.8</td>
</tr>
<tr>
<td>4th quintile</td>
<td>-492.1</td>
<td>-492.1</td>
<td>-492.1</td>
<td>-492.1</td>
<td>-492.1</td>
<td>-492.1</td>
</tr>
<tr>
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<td>-441.4</td>
<td>-441.4</td>
<td>-441.4</td>
<td>-441.4</td>
<td>-441.4</td>
<td>-441.4</td>
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</tbody>
</table>

### Percentage of Beneficiary Households in a Category

<table>
<thead>
<tr>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>39%</td>
<td>73%</td>
<td>85%</td>
<td>98%</td>
<td>98%</td>
<td>98%</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>39%</td>
<td>73%</td>
<td>85%</td>
<td>98%</td>
<td>98%</td>
<td>98%</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>0%</td>
<td>55%</td>
<td>79%</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd quintile</td>
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<td>0%</td>
<td>0%</td>
<td>12%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th quintile</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5th quintile</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Total Number of Dinars Received per Household

<table>
<thead>
<tr>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>2 298.3</td>
<td>3 873.8</td>
<td>4 482.7</td>
<td>5 364.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>425.1</td>
<td>1 422</td>
<td>1 918</td>
<td>2 687.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>15.2</td>
<td>688</td>
<td>1 172.4</td>
<td>1 928</td>
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<td></td>
</tr>
<tr>
<td>2nd quintile</td>
<td>0</td>
<td>0</td>
<td>0.9</td>
<td>124.6</td>
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</tr>
<tr>
<td>3rd quintile</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
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<tr>
<td>4th quintile</td>
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<td>0</td>
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<td></td>
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<tr>
<td>5th quintile</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Breakdown of Budget Allocated to Social Transfers between Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>84%</th>
<th>65%</th>
<th>59%</th>
<th>53%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>16%</td>
<td>24%</td>
<td>25%</td>
<td>27%</td>
</tr>
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<td>Remainder of First Quintile</td>
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<td>11%</td>
<td>15%</td>
<td>19%</td>
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<tr>
<td>2nd quintile</td>
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<td>0%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>4th quintile</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>5th quintile</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

### 6.4 OPTION 4: Part of the Subsidy Budget is Allocated to PNAFN, the total budget remaining constant

Under this scenario; it is assumed that the totality of the central government budget allocated to direct and indirect subsidies remains constant. However, the budget allocated to subsidies varies; since the savings made are reallocated to the PNAFN. The subsidies however, are maintained; but to a lesser extent (Table 12 and Graphs 18 and 19). The reallocation of subsidy budgets as direct transfers contributes to a significant reduction in poverty levels. These reductions are even more significant if the new direct targeting procedure is adopted.

The reductions become increasingly significant as the transfer percentage increases. This simulation shows that there are no grounds for maintaining indirect subsidies since no scenario results in a better performance than the abolition of subsidies and the reallocation of the related budget to direct transfers.

**Graph 18:** Subsidies are maintained but part of their budget is transferred to PNAFN (Extreme poverty rate)

**Graph 19:** Subsidies are maintained but part of their budget is transferred to PNAFN (Official poverty rate)
### Table 12: Transfer of Part of the Indirect Transfer Budget to Direct Transfers (constant Central Government Budget)

<table>
<thead>
<tr>
<th>Scenario 4A: Direct Transfer using the former procedure</th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty Rate</td>
<td>3.9%</td>
<td>4%</td>
<td>3.8%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>14.5%</td>
<td>14.6%</td>
<td>14.2%</td>
<td>13.6%</td>
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<tr>
<td><strong>Additional Dinars per Household</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extreme Poverty</td>
<td>0</td>
<td>82.9</td>
<td>124.4</td>
<td>207.4</td>
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<tr>
<td>Remaining Poor</td>
<td>0</td>
<td>99.8</td>
<td>149.7</td>
<td>249.4</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>0</td>
<td>49.4</td>
<td>74.1</td>
<td>123.5</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>0</td>
<td>51.7</td>
<td>77.6</td>
<td>129.3</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>0</td>
<td>15.8</td>
<td>23.7</td>
<td>39.5</td>
</tr>
<tr>
<td>4th quintile</td>
<td>0</td>
<td>-9.7</td>
<td>-14.6</td>
<td>-24.3</td>
</tr>
<tr>
<td>5th quintile</td>
<td>0</td>
<td>7.8</td>
<td>11.7</td>
<td>19.5</td>
</tr>
<tr>
<td><strong>Percentage of Beneficiary Households within a Category</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extreme Poverty</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>100%</td>
<td>77%</td>
<td>77%</td>
<td>77%</td>
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<tr>
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<td>100%</td>
<td>79%</td>
<td>79%</td>
<td>79%</td>
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<td>56%</td>
<td>56%</td>
<td>56%</td>
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<td>100%</td>
<td>28%</td>
<td>28%</td>
<td>28%</td>
</tr>
<tr>
<td>5th quintile</td>
<td>100%</td>
<td>63%</td>
<td>63%</td>
<td>63%</td>
</tr>
<tr>
<td><strong>Total Number of Dinars Received per Household</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extreme Poverty</td>
<td>395.2</td>
<td>478.1</td>
<td>519.6</td>
<td>602.5</td>
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<tr>
<td>Remaining Poor</td>
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<td>534.6</td>
<td>584.5</td>
<td>684.3</td>
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<tr>
<td>Remainder of First Quintile</td>
<td>451.2</td>
<td>500.7</td>
<td>525.4</td>
<td>574.8</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>436.8</td>
<td>488.5</td>
<td>514.3</td>
<td>566</td>
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<tr>
<td>3rd quintile</td>
<td>441.9</td>
<td>457.7</td>
<td>465.6</td>
<td>481.4</td>
</tr>
<tr>
<td>4th quintile</td>
<td>423.4</td>
<td>413.7</td>
<td>408.8</td>
<td>399.1</td>
</tr>
<tr>
<td>5th quintile</td>
<td>374.9</td>
<td>382.7</td>
<td>386.6</td>
<td>394.4</td>
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</tbody>
</table>
## Breakdown of Budget Allocated to Social Transfers between the Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>13%</th>
<th>15%</th>
<th>15%</th>
<th>16%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remaining Poor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd quintile</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd quintile</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4th quintile</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5th quintile</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

### Scenario 4B: Direct Transfer using the new procedure

<table>
<thead>
<tr>
<th>Category</th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Poverty Rate</td>
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<td>8.9%</td>
<td>3.5%</td>
</tr>
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</table>

### Additional Dinars per Household

<table>
<thead>
<tr>
<th>Category</th>
<th>2 276.8</th>
<th>3 791.7</th>
<th>4 311.4</th>
<th>5 029</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>310.3</td>
<td>1 184.4</td>
<td>1 595.3</td>
<td>2 217</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>-81.3</td>
<td>398.8</td>
<td>789.6</td>
<td>1 404.4</td>
</tr>
<tr>
<td>2nd quintile</td>
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<td>-264.1</td>
<td>-351.9</td>
<td>-405.3</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>-86.9</td>
<td>-263.2</td>
<td>-351.4</td>
<td>-527.8</td>
</tr>
<tr>
<td>4th quintile</td>
<td>-86.9</td>
<td>-249</td>
<td>-330</td>
<td>-492.1</td>
</tr>
<tr>
<td>5th quintile</td>
<td>-86.8</td>
<td>-228.7</td>
<td>-299.6</td>
<td>-441.4</td>
</tr>
</tbody>
</table>

### Percentage of Beneficiary Households within a Category

<table>
<thead>
<tr>
<th>Category</th>
<th>100%</th>
<th>100%</th>
<th>100%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>51%</td>
<td>76%</td>
<td>89%</td>
<td>98%</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>3%</td>
<td>65%</td>
<td>85%</td>
<td>100%</td>
</tr>
<tr>
<td>2nd quintile</td>
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<td>0%</td>
<td>0%</td>
<td>12%</td>
</tr>
<tr>
<td>3rd quintile</td>
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<tr>
<td>4th quintile</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>5th quintile</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Total Number of Dinars received per Household</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extreme Poverty</td>
<td>2,612.5</td>
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<td>5,613.5</td>
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<td>779.7</td>
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<td>3,069.9</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>442.3</td>
<td>1,097.2</td>
<td>1,575.3</td>
<td>2,364.7</td>
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<td>2nd quintile</td>
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<td>443</td>
<td>443.8</td>
<td>567.6</td>
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<tr>
<td>3rd quintile</td>
<td>440.9</td>
<td>440.9</td>
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<tr>
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<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Breakdown of Budget Allocated to Social Transfers between Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
</tr>
<tr>
<td>Remaining Poor</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
</tr>
<tr>
<td>2nd quintile</td>
</tr>
<tr>
<td>3rd quintile</td>
</tr>
<tr>
<td>4th quintile</td>
</tr>
<tr>
<td>5th quintile</td>
</tr>
</tbody>
</table>

6.5 OPTION 5: The Subsidy Budget Varies and Part of It is Allocated to PNAFN

Under this scenario, different levels of cuts in the budget allocated to indirect subsidies are envisaged. These subsidies are retained but part of the remaining subsidy budget is transferred to the PNAFN. An initial cut is made in the budget allocated to subsidies under this scenario which returns to the government coffers, and a second cut which goes to the PNAFN.

These simulations allow us to determine whether it is possible to find intermediate solutions that will produce identical results to the current ones while maintaining subsidies but significantly reducing the related budget (Table 13).

In particular, implementation of the new targeting procedure would make it possible to:

a) Obtain similar performances to the present ones while achieving a 50% reduction in the budget allocated to subsidies if 40% of this new budget is reallocated to the PNAFN;

b) Obtain an absolute poverty rate of 1.7% by reducing the budget allocated to subsidies by 50% – provided it is then reallocated to the PNAFN.
Table 13: Transfer of part of the budget of indirect transfer direct transfers under the old formula

<table>
<thead>
<tr>
<th>Scenario 5A: Reallocation of Part of the indirect subsidy budget in the form of direct transfers under the former formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant Central Government Budget Allocated to Subsidies</td>
</tr>
<tr>
<td>Budget fully allocated to subsidies</td>
</tr>
<tr>
<td>Extreme Poverty Rate</td>
</tr>
<tr>
<td>Poverty Rate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10% Cut in Central Government Budget Allocated to Subsidies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget fully allocated to subsidies</td>
</tr>
<tr>
<td>Extreme Poverty Rate</td>
</tr>
<tr>
<td>Poverty Rate</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>20% Cut in Central Government Allocated to Subsidies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget fully allocated to subsidies</td>
</tr>
<tr>
<td>Extreme Poverty Rate</td>
</tr>
<tr>
<td>Poverty Rate</td>
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</tbody>
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<table>
<thead>
<tr>
<th>50% Cut in Central Government Allocated to Subsidies</th>
</tr>
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<tbody>
<tr>
<td>Budget fully allocated to subsidies</td>
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<tr>
<td>Extreme Poverty Rate</td>
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<tr>
<td>Poverty Rate</td>
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</tbody>
</table>
Scenario 5A.1: Reallocation of Part of the Remaining Budget for Indirect Subsidies in the form of direct transfers using the former procedure (constant direct targeting budget) + (different levels of the indirect subsidy budget)

10% cut in central government budget allocated to subsidies

<table>
<thead>
<tr>
<th>Category</th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>43.3</td>
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<td>Remaining Poor</td>
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<td>Remainder of First Quintile</td>
<td>44.4</td>
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<tr>
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<tr>
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</table>

Total Number of Dinars Received per Household

<table>
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<tr>
<th>Category</th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
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<tr>
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<td>270.7</td>
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</table>

Breakdown of Budget Allocated to Social Transfers between the Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>13%</td>
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<td>15%</td>
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<td>12%</td>
</tr>
<tr>
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<td>15%</td>
<td>17%</td>
<td>16%</td>
<td>15%</td>
<td>14%</td>
<td>12%</td>
<td>11%</td>
</tr>
<tr>
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<td>16%</td>
<td>16%</td>
<td>16%</td>
<td>15%</td>
<td>13%</td>
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<td>10%</td>
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<tr>
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<td>16%</td>
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<td>15%</td>
<td>13%</td>
<td>11%</td>
<td>10%</td>
</tr>
<tr>
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<td>15%</td>
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<td>15%</td>
<td>15%</td>
<td>13%</td>
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<td>10%</td>
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<td>11%</td>
<td>10%</td>
<td>10%</td>
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<tr>
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<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
</tr>
</tbody>
</table>
**Scenario 5A.2: Reallocation of Part of the Remaining Budget for Indirect Subsidies in the form of direct transfers using the former procedure**
(constant direct targeting budget) + (different levels of the indirect subsidy budget)

**20% Cut in Central Government Budget Allocated to Subsidies**

<table>
<thead>
<tr>
<th></th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Additional Dinars per Household</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extreme Poverty</td>
<td>19.4</td>
<td>85.3</td>
<td>118.5</td>
<td>184.9</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>-11.8</td>
<td>60.9</td>
<td>100.2</td>
<td>178.9</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>15.3</td>
<td>55</td>
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<tr>
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<td>-52.7</td>
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<td>34.6</td>
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<tr>
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<td>2.4</td>
<td>7.5</td>
<td>17.7</td>
</tr>
<tr>
<td>4th quintile</td>
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<td>0</td>
<td>0.6</td>
<td>1.9</td>
</tr>
<tr>
<td>5th quintile</td>
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<td>0</td>
<td>0</td>
<td>0.1</td>
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<tr>
<td><strong>Total Number of Dinars received per Household</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Extreme Poverty</td>
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<td>344.9</td>
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</tr>
<tr>
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<td>302.1</td>
<td>314.8</td>
</tr>
<tr>
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<td>256.2</td>
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</tr>
<tr>
<td>5th quintile</td>
<td>218.4</td>
<td>224.6</td>
<td>227.7</td>
<td>233.9</td>
</tr>
<tr>
<td><strong>Breakdown of Budget allocated to Social Transfers between Categories</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extreme Poverty</td>
<td>14%</td>
<td>15%</td>
<td>16%</td>
<td>17%</td>
</tr>
<tr>
<td>Remaining Poor</td>
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<td>Remainder of First Quintile</td>
<td>16%</td>
<td>16%</td>
<td>16%</td>
<td>16%</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>15%</td>
<td>15%</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>3rd quintile</td>
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<td>11%</td>
<td>10%</td>
<td>10%</td>
<td>9%</td>
</tr>
</tbody>
</table>
### Scenario 5A.3: Reallocation of Part of the Remaining Budget for Indirect Subsidies in the form of direct transfers using the former procedure (constant direct targeting budget) + (different levels of the indirect subsidy budget)

#### 50% Cut in Central Government Budget Allocated to Subsidies

<table>
<thead>
<tr>
<th>Category</th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>52.4</td>
<td>7.3</td>
<td>16.5</td>
<td>51.2</td>
</tr>
<tr>
<td>Remaining Poor</td>
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<td>1.2</td>
<td>3.9</td>
<td>25.3</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
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</tr>
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<tr>
<td>5th quintile</td>
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</tbody>
</table>

#### Additional Dinars per Household

<table>
<thead>
<tr>
<th>Category</th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>187.8</td>
<td>194</td>
<td>218.9</td>
<td>182.2</td>
<td>175.4</td>
<td>155</td>
<td>113.8</td>
</tr>
</tbody>
</table>
| Total Number of Dinars Received per Household

<table>
<thead>
<tr>
<th>Category</th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>150.2</td>
<td>117.7</td>
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<tr>
<td></td>
<td>250</td>
<td>286.9</td>
<td>256</td>
<td>221</td>
<td>187.3</td>
<td>147.7</td>
<td>119.6</td>
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<tr>
<td></td>
<td>291.4</td>
<td>318.7</td>
<td>280.7</td>
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<td>142.9</td>
<td>123.5</td>
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</table>

#### Breakdown of Budget Allocated to Social Transfers between Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
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<tbody>
<tr>
<td></td>
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<td>16%</td>
<td>18%</td>
<td>15%</td>
<td>14%</td>
<td>13%</td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td>17%</td>
<td>18%</td>
<td>18%</td>
<td>15%</td>
<td>13%</td>
<td>11%</td>
<td>9%</td>
</tr>
<tr>
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<td>17%</td>
<td>19%</td>
<td>18%</td>
<td>15%</td>
<td>13%</td>
<td>10%</td>
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<td>15%</td>
<td>12%</td>
<td>9%</td>
<td>8%</td>
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</tbody>
</table>
**Scenario 5B: Reallocation of Part of the Remaining Budget for Indirect Subsidies in the form of direct transfers using the new procedure**

(constant direct targeting budget) + (different levels of the indirect subsidy budget)

<table>
<thead>
<tr>
<th>Constant Central Government Budget Allocated to Subsidies</th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty Rate</td>
<td>3%</td>
<td>2.1%</td>
<td>1.5%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>17.4%</td>
<td>13.5%</td>
<td>13.3%</td>
<td>9.7%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10% Cut in Central Government Budget Allocated to Subsidies</th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty Rate</td>
<td>3%</td>
<td>2.4%</td>
<td>1.5%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>15%</td>
<td>13.9%</td>
<td>13.6%</td>
<td>9.9%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>20% Cut in Central Government Budget Allocated to Subsidies</th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty Rate</td>
<td>3.7%</td>
<td>2.4%</td>
<td>2.2%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>15.2%</td>
<td>14.1%</td>
<td>13.6%</td>
<td>12.7%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>50% Cut in Central Government Budget Allocated to Subsidies</th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty Rate</td>
<td>4%</td>
<td>3.2%</td>
<td>2.7%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>16.1%</td>
<td>15.4%</td>
<td>14.7%</td>
<td>13.9%</td>
</tr>
</tbody>
</table>

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51 It should be remembered that the amounts of reallocated direct transfers are defined by:

<table>
<thead>
<tr>
<th>Transfer</th>
<th>PNAFN Transfer</th>
<th>Indirect Transfer</th>
<th>Constant Budget</th>
<th>10% budget cut</th>
<th>20% budget cut</th>
<th>50% budget cut</th>
<th>80% budget cut</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%</td>
<td>220</td>
<td>172</td>
<td>392</td>
<td>375</td>
<td>358</td>
<td>306</td>
<td>254</td>
</tr>
<tr>
<td>40%</td>
<td>220</td>
<td>344</td>
<td>564</td>
<td>530</td>
<td>495</td>
<td>392</td>
<td>289</td>
</tr>
<tr>
<td>60%</td>
<td>220</td>
<td>516</td>
<td>736</td>
<td>684</td>
<td>633</td>
<td>478</td>
<td>323</td>
</tr>
<tr>
<td>80%</td>
<td>220</td>
<td>688</td>
<td>908</td>
<td>839</td>
<td>770</td>
<td>564</td>
<td>358</td>
</tr>
<tr>
<td>100%</td>
<td>220</td>
<td>860</td>
<td>1080</td>
<td>994</td>
<td>908</td>
<td>650</td>
<td>392</td>
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</table>

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Overall amounts transferred
### Scenario 5B.1: Reallocation of Part of the Remaining Budget for Indirect Subsidies in the form of direct transfers using the former procedure
(constant direct targeting budget) + (different levels of the indirect subsidy budget)

<table>
<thead>
<tr>
<th>10% Cut in Central Government Budget Allocated to Subsidies</th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Additional Dinars per Household</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extreme Poverty</td>
<td>2 244.1</td>
<td>3 622.4</td>
<td>4 089.7</td>
<td>4 833.2</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>336.7</td>
<td>1 123.9</td>
<td>1 450.7</td>
<td>2 051.1</td>
</tr>
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<td>Remainder of First Quintile</td>
<td>0.2</td>
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<td>661.6</td>
<td>1 236.6</td>
</tr>
<tr>
<td>2nd quintile</td>
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<td>0</td>
<td>0</td>
<td>5.9</td>
</tr>
<tr>
<td>3rd quintile</td>
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<td>0</td>
</tr>
<tr>
<td>5th quintile</td>
<td>0</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td><strong>Total number of dinars received per household</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extreme Poverty</td>
<td>2 468.1</td>
<td>3 846.4</td>
<td>4 313.6</td>
<td>5 057.1</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>681</td>
<td>1 468.2</td>
<td>1 795.0</td>
<td>2 395.4</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>393.2</td>
<td>779.7</td>
<td>1 054.7</td>
<td>1 629.7</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>398.7</td>
<td>398.7</td>
<td>398.7</td>
<td>404.6</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>396.8</td>
<td>396.8</td>
<td>396.8</td>
<td>396.8</td>
</tr>
<tr>
<td>4th quintile</td>
<td>364.8</td>
<td>364.8</td>
<td>364.8</td>
<td>364.8</td>
</tr>
<tr>
<td>5th quintile</td>
<td>319.1</td>
<td>319.1</td>
<td>319.1</td>
<td>319.1</td>
</tr>
<tr>
<td><strong>Breakdown of Budget Allocated to Social Transfers between Categories</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extreme Poverty</td>
<td>49%</td>
<td>51%</td>
<td>50%</td>
<td>48%</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>14%</td>
<td>19%</td>
<td>21%</td>
<td>23%</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>8%</td>
<td>10%</td>
<td>12%</td>
<td>15%</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>8%</td>
<td>5%</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>8%</td>
<td>5%</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>4th quintile</td>
<td>7%</td>
<td>5%</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>5th quintile</td>
<td>6%</td>
<td>4%</td>
<td>4%</td>
<td>3%</td>
</tr>
</tbody>
</table>
## Scenario 5B.2: Reallocation of Part of the Remaining Budget for Indirect Subsidies in the form of direct transfers using the new procedure
(constant direct targeting budget) + (different levels of the indirect subsidy budget)

### 20% Cut in Central Government Budget Allocated to Subsidies

<table>
<thead>
<tr>
<th>Category</th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Extreme Poverty</strong></td>
<td>2 229.9</td>
<td>3 445.9</td>
<td>3 896.7</td>
<td>4 553.7</td>
</tr>
<tr>
<td><strong>Remaining Poor</strong></td>
<td>330.1</td>
<td>1 007.9</td>
<td>1 310.9</td>
<td>1 818.2</td>
</tr>
<tr>
<td><strong>Remainder of First Quintile</strong></td>
<td>0</td>
<td>301.1</td>
<td>539.5</td>
<td>999.0</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4th quintile</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5th quintile</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Total Number of Dinars received per Household

<table>
<thead>
<tr>
<th>Category</th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Extreme Poverty</strong></td>
<td>2 429</td>
<td>3 645</td>
<td>4 095.8</td>
<td>4 752.8</td>
</tr>
<tr>
<td><strong>Remaining Poor</strong></td>
<td>636.2</td>
<td>1 314</td>
<td>1 617</td>
<td>2 124.2</td>
</tr>
<tr>
<td><strong>Remainder of First Quintile</strong></td>
<td>349.4</td>
<td>650.5</td>
<td>888.9</td>
<td>1 348.4</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>354.4</td>
<td>354.4</td>
<td>354.4</td>
<td>354.4</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>352.7</td>
<td>352.7</td>
<td>352.7</td>
<td>352.7</td>
</tr>
<tr>
<td>4th quintile</td>
<td>324.2</td>
<td>324.2</td>
<td>324.2</td>
<td>324.2</td>
</tr>
<tr>
<td>5th quintile</td>
<td>283.6</td>
<td>283.6</td>
<td>283.6</td>
<td>283.6</td>
</tr>
</tbody>
</table>

### Breakdown of Budget Allocated to Social Transfers between Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>51%</th>
<th>53%</th>
<th>52%</th>
<th>50%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Remaining Poor</strong></td>
<td>13%</td>
<td>19%</td>
<td>20%</td>
<td>22%</td>
</tr>
<tr>
<td><strong>Remainder of First Quintile</strong></td>
<td>7%</td>
<td>9%</td>
<td>11%</td>
<td>14%</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>7%</td>
<td>5%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>7%</td>
<td>5%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>4th quintile</td>
<td>7%</td>
<td>5%</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>5th quintile</td>
<td>6%</td>
<td>4%</td>
<td>4%</td>
<td>3%</td>
</tr>
</tbody>
</table>
**Scenario 5B.3: Reallocation of Part of the Remaining Budget for Indirect Subsidies in the form of direct transfers using the new procedure**
(constant direct targeting budget) + (different levels of the indirect subsidy budget)

50% Cut in Central Government Budget Allocated to Subsidies

<table>
<thead>
<tr>
<th>Additional Dinars per Household</th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>2 111.9</td>
<td>2 909.4</td>
<td>3 198.9</td>
<td>3 633.1</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>277.9</td>
<td>683.1</td>
<td>853.6</td>
<td>1 131</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>0</td>
<td>99.9</td>
<td>195.5</td>
<td>392.1</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4th quintile</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5th quintile</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Total Number of Dinars Received per Household**

<table>
<thead>
<tr>
<th></th>
<th>2 236.4</th>
<th>3 033.8</th>
<th>3 323.4</th>
<th>3 757.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>469.1</td>
<td>874.4</td>
<td>1 044.9</td>
<td>1 322.3</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>218.4</td>
<td>318.3</td>
<td>413.9</td>
<td>610.5</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>221.5</td>
<td>221.5</td>
<td>221.5</td>
<td>221.5</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>220.5</td>
<td>220.5</td>
<td>220.5</td>
<td>220.5</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>202.6</td>
<td>202.6</td>
<td>202.6</td>
<td>202.6</td>
</tr>
<tr>
<td>5th quintile</td>
<td>177.3</td>
<td>177.3</td>
<td>177.3</td>
<td>177.3</td>
</tr>
</tbody>
</table>

**Breakdown of Budget Allocated to Social Transfers between Categories**

<table>
<thead>
<tr>
<th></th>
<th>60%</th>
<th>60%</th>
<th>59%</th>
<th>58%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>13%</td>
<td>17%</td>
<td>19%</td>
<td>20%</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>6%</td>
<td>6%</td>
<td>7%</td>
<td>9%</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>6%</td>
<td>4%</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>6%</td>
<td>4%</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>6%</td>
<td>4%</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>4th quintile</td>
<td>5%</td>
<td>4%</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>5th quintile</td>
<td>5%</td>
<td>4%</td>
<td>3%</td>
<td>3%</td>
</tr>
</tbody>
</table>
6.6 OPTION 6: Some Food Products are No Longer Subsidized and the Savings Transferred to PNAF and Other Subsidies (the central government budget remains constant)

Under this scenario, it is intended to remove the subsidies on a number of products starting with products having been identified as having little impact on poverty. Part of the budget allocated to these subsidies is then transferred to PNAFN or to other subsidies – the central government budget remaining constant (Table 14 – the detailed results are presented in Annex VIII).

These analyses show that, with effective steering, it is possible to reconcile several objectives: eradicate extreme poverty, reduce poverty and preserve part of the subsidies especially those with a confirmed distributory effect while abolishing the most ineffective ones in order to minimize the impact on the purchasing power of the other segments of the population.

These analyses also show that the removal of those subsidies with the lowest redistributory impact and the reallocation of that budget to the PNAFN will have a highly significant impact on the extreme poverty rate and poverty rate, even though the new PNAFN methodology is not adopted. Thus, removal of the subsidy on the French loaf alone and the transfer of that budget to PNAFN results in a 1.1 point reduction in extreme poverty and a 2.2 percentage drop in the poverty rate. However, if the new PNAFN methodology is not adopted, abolition of virtually all subsidies and the reallocation of that budget to the PNAFN would exacerbate the situation.

If the new method is adopted, as in the case of the previous simulations, extreme poverty will be eradicated and poverty spectacularly reduced. However, there is no better scenario in terms of poverty reduction than the abolition of all subsidies and the transfer of that budget to the PNAFN. On the other hand, the removal of targeted products produces sound performances (poverty rate of around 8%) while having negligible impact on the purchasing power of the 2nd and 3rd quintiles of the population (often translating into a net gain or a drop of between TND 100 to 200 per year).

---

Table 14: Reallocation of part of the subsidy budget in the form of direct transfers using the former formula

<table>
<thead>
<tr>
<th>Scenario 6A: Reallocation of part of the subsidy budget in the form of direct transfers using the former formula</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Abolition of subsidies on the French « loaf »</strong></td>
</tr>
<tr>
<td>Budget for abolished subsidies fully reallocated to other subsidies</td>
</tr>
<tr>
<td>Extreme Poverty Rate</td>
</tr>
<tr>
<td>Poverty Rate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Abolition of subsidies on the French « loaf » + « canned tomatoes »</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget for abolished subsidies fully reallocated to other subsidies</td>
</tr>
<tr>
<td>Extreme Poverty Rate</td>
</tr>
<tr>
<td>Poverty Rate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Abolition of subsidies on the French « loaf » + « canned tomatoes » + « milk » + « flour »</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget for abolished subsidies fully reallocated to other subsidies</td>
</tr>
<tr>
<td>Extreme Poverty Rate</td>
</tr>
<tr>
<td>Poverty Rate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Abolition of subsidies on the French « loaf » + « canned tomatoes » + « milk » + « flour » + « couscous » + « pasta » + « sugar »</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget for abolished subsidies fully reallocated to other subsidies</td>
</tr>
<tr>
<td>Extreme Poverty Rate</td>
</tr>
<tr>
<td>Poverty Rate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Budget for abolished subsidies fully reallocated to other subsidies</th>
<th>Transfer of 40% of abolished subsidies to PNAFN and 60% reallocated to other subsidies</th>
<th>Transfer of 60% of abolished subsidies to PNAFN and 40% reallocated to other subsidies</th>
<th>Transfer of 100% of abolished subsidies to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty Rate</td>
<td>5.6%</td>
<td>5.1%</td>
<td>4.9%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>18.1%</td>
<td>17.7%</td>
<td>17.2%</td>
<td>16.1%</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th></th>
<th>Budget for abolished subsidies fully reallocated to other subsidies</th>
<th>Transfer of 40% of abolished subsidies to PNAFN and 60% reallocated to other subsidies</th>
<th>Transfer of 60% of abolished subsidies to PNAFN and 40% reallocated to other subsidies</th>
<th>Transfer of 100% of abolished subsidies to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty Rate</td>
<td>5.9%</td>
<td>5.8%</td>
<td>5.8%</td>
<td>5.8%</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>18.9%</td>
<td>18.3%</td>
<td>18.3%</td>
<td>18.3%</td>
</tr>
</tbody>
</table>
### Scenario 6B: Reallocation of part of the indirect subsidy budget in the form of direct transfers using the new formula

#### Removal of subsidies on the French loaf « baguette»

<table>
<thead>
<tr>
<th>Budget for abolished subsidies fully reallocated to other subsidies</th>
<th>Transfer of 40% of abolished subsidies to PNAFN and 60% reallocated to other subsidies</th>
<th>Transfer of 60% of abolished subsidies to PNAFN and 40% reallocated to other subsidies</th>
<th>Transfer of 100% of abolished surveys to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty Rate</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>7.98%</td>
<td>8%</td>
<td>8%</td>
</tr>
</tbody>
</table>

#### Abolition of subsidies on the French «loaf» + «canned tomatoes»

<table>
<thead>
<tr>
<th>Budget for abolished subsidies fully reallocated to other subsidies</th>
<th>Transfer of 40% of abolished subsidies to PNAFN and 60% reallocated to other subsidies</th>
<th>Transfer of 60% of abolished subsidies to PNAFN and 40% reallocated to other subsidies</th>
<th>Transfer of 100% of abolished surveys to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty Rate</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>7.98%</td>
<td>8%</td>
<td>8.02%</td>
</tr>
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</table>

#### Abolition of subsidies on the French «loaf» + «canned tomatoes» + «milk» + «flour»

<table>
<thead>
<tr>
<th>Budget for abolished subsidies fully reallocated to other subsidies</th>
<th>Transfer of 40% of abolished subsidies to PNAFN and 60% reallocated to other subsidies</th>
<th>Transfer of 60% of abolished subsidies to PNAFN and 40% reallocated to other subsidies</th>
<th>Transfer of 100% of abolished surveys to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty Rate</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>7.98%</td>
<td>8.03%</td>
<td>8.06%</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Budget for abolished subsidies fully reallocated to other subsidies</th>
<th>Transfer of 40% of abolished subsidies to PNAFN and 60% reallocated to other subsidies</th>
<th>Transfer of 60% of abolished subsidies to PNAFN and 40% reallocated to other subsidies</th>
<th>Transfer of 100% of abolished surveys to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty Rate</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>7.32%</td>
<td>7.5%</td>
<td>7.57%</td>
</tr>
</tbody>
</table>
### Abolition of subsidies on the French «loaf» + «canned tomatoes» + «milk» + «flour» + «couscous» + «pasta» + «sugar» + «large loaves»

<table>
<thead>
<tr>
<th></th>
<th>Budget for abolished subsidies fully reallocated to other subsidies</th>
<th>Transfer of 40% of abolished subsidies to PNAFN and 60% reallocated to other subsidies</th>
<th>Transfer of 60% of abolished subsidies to PNAFN and 40% reallocated to other subsidies</th>
<th>Transfer of 100% of abolished subsidies to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty Rate</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>7.98%</td>
<td>8.38%</td>
<td>8.56%</td>
<td>8.97%</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
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<th>Budget for abolished subsidies fully reallocated to other subsidies</th>
<th>Transfer of 40% of abolished subsidies to PNAFN and 60% reallocated to other subsidies</th>
<th>Transfer of 60% of abolished subsidies to PNAFN and 40% reallocated to other subsidies</th>
<th>Transfer of 100% of abolished subsidies to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty Rate</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>19.8%</td>
<td>9.8%</td>
<td>9.8%</td>
<td>3.5%</td>
</tr>
</tbody>
</table>
7. Conclusions

This study shows that it is possible to propose simple public policies that will reconcile a cut in the budget allocated by the central government to direct and indirect transfers with a reduction in the poverty rate to low levels.

This study presents a synthetic living standard score calculated on the basis of tangible, readily observable indicators by the field workers. This score permits an adequate classification and multidimensional assessment of household living standards. It takes into consideration living standards, the capacity of household members to generate a decent income and finally the burdens borne by active household members. A combination of the Proxy Means Test and Multiple Privations Approaches reduces targeting errors and consequently wastage of taxpayer resources that such errors might cause. The greatest impact of this targeting procedure is on the poorest segments of the population.

Furthermore, the indicator used by this procedure is tangible and easily verifiable by the public decision-maker in addition to being easy to implement by the field workers. Indeed, by adopting the proposed indicator, the Ministry of Social Affairs may communicate to its different social workers uniform living standard assessment criteria for the surveyed households. This new procedure thus prevents any possible subjectivity in social workers’ assessment procedures. It will also help to prevent targeting errors due to the fact that non-poor households, by being untruthful about their real living standards, manage to benefit from social assistance to the detriment of the neediest families.

The results confirm the effectiveness of the approach.

Without affecting indirect subsidies, the new targeting procedure achieves a 1.5% extreme poverty rate even after a 50% reduction in the PNAFN budget. With a constant PNAFN budget, the new targeting procedure would lead to the eradication of extreme poverty and bring down the poverty rate to 8%. If the PNAFN budget remains unchanged, households living in extreme poverty would receive TND 2525.6 per year for all transfers combined i.e. TND 2276.8 dinars more than under the present method. The poorest segments of the population would then receive 52% of the total budget allocated to direct and indirect transfers.

The use of the new procedure would also contribute to the eradication of extreme poverty while abolishing food subsidies. However, the number of poor households lingered at 15.5% to 16%.

However, if the food subsidy budget is reallocated to PNAFN the results are spectacular. The transfer of the entire subsidy budget using the new targeting method would reduce the extreme poverty level to 0% and the poverty rate to 4.1%.

The following policy scenarios, which explore different combinations of budget allocation and reduction, all stress that there are no grounds for maintaining indirect subsidies since no scenario results in a better performance than the abolition of subsidies and the reallocation of the related budget to direct transfers.
Annex I: Direct Targeting Statistics

Table 1.1: Distribution of Beneficiaries according to Social Programmes

<table>
<thead>
<tr>
<th>Social Programmes</th>
<th>Households</th>
<th></th>
<th>Population</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>(%)</td>
<td>Number</td>
<td>(%)</td>
</tr>
<tr>
<td>Beneficiary of direct transfers (AMG1)</td>
<td>183,012</td>
<td>7.2%</td>
<td>728,285</td>
<td>6.6%</td>
</tr>
<tr>
<td>Beneficiary of partial medical care coverage (AMG2)</td>
<td>505,440</td>
<td>19.8%</td>
<td>2,389,865</td>
<td>21.8%</td>
</tr>
<tr>
<td>Non Beneficiary</td>
<td>1,859,713</td>
<td>73.0%</td>
<td>7,867,432</td>
<td>71.6%</td>
</tr>
<tr>
<td>Total</td>
<td>2,548,165</td>
<td>100%</td>
<td>10,985,582</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: INS 2013, Technical Note ‘Distribution and Impact of Indirect Subsidies on Poor Households’.

Table 1.2: Distribution of Beneficiaries of Direct Transfers by Quintile

<table>
<thead>
<tr>
<th></th>
<th>Quintile 1</th>
<th>Quintile 2</th>
<th>Quintile 3</th>
<th>Quintile 4</th>
<th>Quintile 5</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beneficiaries of AMG1</td>
<td>37.2%</td>
<td>23.5%</td>
<td>19.2%</td>
<td>14%</td>
<td>6.1%</td>
<td>100%</td>
</tr>
<tr>
<td>Beneficiaries of AMG2</td>
<td>38%</td>
<td>24.9%</td>
<td>17.1%</td>
<td>12.4%</td>
<td>7.7%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: INS 2013, Technical Note ‘Distribution and Impact of Indirect Subsidies on Poor Households’.

Table 1.3: Distribution of beneficiaries of direct transfers between ‘poor’ and ‘non-poor’

<table>
<thead>
<tr>
<th></th>
<th>Poor</th>
<th>Non Poor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beneficiaries of AMG1</td>
<td>30.9%</td>
<td>69.1%</td>
<td>100%</td>
</tr>
<tr>
<td>Beneficiaries of AMG2</td>
<td>27.5%</td>
<td>72.5%</td>
<td>100%</td>
</tr>
<tr>
<td>Beneficiaries of at least one programme</td>
<td>28.3%</td>
<td>71.7%</td>
<td>100%</td>
</tr>
<tr>
<td>Total Population</td>
<td>15.7%</td>
<td>84.3%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: INS 2013, Technical Note ‘Distribution and Impact of Indirect Subsidies on Poor Households’.
The Indian experience comprised four phases, between 1992 and 2011, during which the Authorities made a series of adjustments to improve transparency and effectiveness in the selection of standard of living indicators, thereby reducing targeting errors. The adjustments led to a reduction in incompatibilities between the assessment procedures adopted by the planner and those adopted by the field worker.

In the first phase of the targeting programme introduced in 1992, India had applied an identification procedure for households benefiting from assistance on the basis of income levels declared by the households. However, the planner realized that it is particularly difficult to verify information on the incomes of a large number of households working in the informal or non-structured sectors given that 90% of Indian enterprises are concentrated in these sectors.

To address this problem of targeting, and in order to reduce standard of living assessment errors, in 1997, the Indian planners modified the indicators used to reduce targeting errors. In the second phase initiated, the targeting procedure comprised two stages. First, it was necessary to identify visibly non-poor (non-needy) households on the basis of visible characteristics (possession of durable assets, belonging to certain economic regions, etc…). Then, in a second phase, information is collected on the total expenditure of the remaining households. A subsidy is therefore granted to households with income levels below a given threshold (known as the poverty threshold).

The Indian planner realized that the 1997 reform had several shortcomings even though it had led to a partial reduction in targeting errors characterizing the first phase. Indeed, the exclusion indicator was too strict (for example, owning a moped or a fan should not be adopted as the sole criterion for excluding a household from a subsidy). Furthermore, the targeting procedure used in the second phase does not take into account differences in terms of economic environments and household needs since it used a single poverty threshold for all regions and environments. A single poverty threshold does not take into account the heterogeneity of needs and habits between regions, nor did this method include any provision for updating the lists of beneficiaries. Finally, the beneficiaries are identified on the basis of their incomes and not on their capacity to use the income. Indeed, if the household head is physically or mentally impaired or is handicapped by his/her geographical location or ethnicity, s/he will be unable to benefit from the same level of well-being and satisfaction as a household with no handicaps.

In its third phase, initiated in 2002, India used a synthetic indicator based on a multidimensional living standards approach for identifying household beneficiaries of subsidies. 13 indicators with scores of 0 to 4 (0 score to the worst situation reported by the indicator and 4 to the best situation for the indicator in question) were used. On the basis of the individual scores of 13 selected indicators, an overall summary score of 0 to 52 is generated. Households in each region are ranked in ascending order of the overall score, then on the basis of a poverty threshold disaggregated by region. It is considered that a household may benefit from the subsidy if its score is below a certain threshold. Households with overall scores below these thresholds will be considered as needy and will consequently benefit from the subsidy.

The approach adopted by the third phase was more rigorous than the two preceding ones. However, several shortcomings were observed concerning three components: (a) the identification method, (b) data reliability and quality and finally (c) the informational content (Table IV.1).
In order to address these shortcomings, a fourth phase was launched in 2008. The Commission responsible for this 4th phase of the reform made new proposals using ‘verifiable’ indicators. The method comprises three stages:

1. Automatic exclusion of those who are visibly non-poor;
2. Automatic inclusion of those who are visibly poor and ensure they are the first to benefit from the subsidies;
3. Classification of the other families by awarding scores reflecting their respective deprivation levels for each of the agreed criteria, then grant assistance to those with the lowest overall scores within the limitations of the available budget.

Other proposals for inclusion and scoring criteria have been made since the 2009 report, including those based on socio-demographic characteristics. Table IV.3 assesses scoring according to type of trade, social group, the degree of vulnerability due to age, health status and gender.

**Table 2.1: Identification of Weaknesses in the Method Used for Identification of the Beneficiaries of the Third Phase in India**

<table>
<thead>
<tr>
<th>a. Identification Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The summation of scores is open to criticism, for all the responses are qualitative whereas their values are used as if they were quantitative.</td>
</tr>
<tr>
<td>• Using the same weight for the 13 criteria is not valid.</td>
</tr>
<tr>
<td>• The choice of poverty line is the subject of a number of controversies.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>b. Data Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Many households will do anything to be included on the list.</td>
</tr>
<tr>
<td>• The objective of reaching all the households is forgotten.</td>
</tr>
<tr>
<td>• Lack of control, which should eliminate false declarations and highlight omissions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>c. Informational Content of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Manipulation: remove dependents and substitute other ineligible persons for them is possible.</td>
</tr>
<tr>
<td>• On the basis of resources and not of capacities, there is a risk of neglecting the willingness of individuals to convert resources into capacities.</td>
</tr>
<tr>
<td>• The quality of these resources is not identified.</td>
</tr>
<tr>
<td>• The Frequency: information collected 5 years ago may no longer be relevant.</td>
</tr>
</tbody>
</table>

**Table 2.2: Scoring Criteria for the 4th Phase in India**

<table>
<thead>
<tr>
<th>First phase (automatic exclusion)</th>
<th>Second Stage (Automatic Inclusion)</th>
<th>Third Stage (establishing scores)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Families owning twice the average land area.</td>
<td>Primitive tribes</td>
<td>Recognized minority casts: 3 points</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The most backward casts: 2 points</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Muslims: 1 point</td>
</tr>
<tr>
<td>Families owning 3 or 4 motorized vehicles</td>
<td>Families suffering discrimination, as identified by the government</td>
<td>Farm workers without land: 4 points</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Farmers with small plots: 3 points</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Casual workers: 2 points</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Self employed and craftspersons: 2 points</td>
</tr>
<tr>
<td>Families with at least farm equipment such as a tractor or combine harvester</td>
<td>Households with a woman head</td>
<td>No adult over 35 years of age has an education level beyond primary: 1 point</td>
</tr>
<tr>
<td>Families with at least one person with a salary of 10000 rupees</td>
<td>The breadwinner is disabled</td>
<td>A family member has a serious disease (tuberculosis, mental disorder, AIDS): 1 point</td>
</tr>
<tr>
<td>Family subject to taxation</td>
<td>Household whose head is a minor</td>
<td>Family whose head is over 60 years old: 1 point</td>
</tr>
</tbody>
</table>
### Table 2.3: Alternative Scoring Procedures by Category

<table>
<thead>
<tr>
<th>Trade</th>
<th>Social Group</th>
<th>Vulnerability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent on alms: 4 points</td>
<td>Minority casts: 3 points</td>
<td>Household with woman head: 4 points</td>
</tr>
<tr>
<td>Forest gatherer: 4 points</td>
<td>The most impoverished casts: 2.5 points</td>
<td>Disabled worker: 4 points</td>
</tr>
<tr>
<td>Worker without land: 3.5 points</td>
<td>Muslims: 1.5 points</td>
<td>Worker with disability aids: 4 points</td>
</tr>
<tr>
<td>Sharecropper: 3 points</td>
<td>Primitive tribe: 5 points</td>
<td>Household with an elderly head: 4 points</td>
</tr>
<tr>
<td>Marginal farmer: 3 points</td>
<td></td>
<td>Worker with a chronic disease: 4 points</td>
</tr>
<tr>
<td>Small-scale farmer: 2.5 points</td>
<td></td>
<td>Worker with constraints: 2 points</td>
</tr>
<tr>
<td>Self-employed and craftspersons: 3 points</td>
<td></td>
<td>Disabled dependents: 2 points</td>
</tr>
</tbody>
</table>
Annex III: Statistical Prerequisites for Direct Targeting

Two types of initial conditions must be fulfilled to conduct a living standards analysis: the selection of variables for the living standard indicators and the existence of adequate statistical information.

1. The variables

In order to implement an optimization procedure, the variables retained must meet certain conditions.

(1) Each variable must be correlated with the living standard approximated by the income or synthetic index on the basis of appropriate weighting to ensure the targeting error is minimal.

(2) Reducing the targeting error requires the effective observation (with no errors) of the variables used as living standard indicator. This variable must, therefore, be readily observable and consequently not easily concealed and non-falsifiable by the person or household interviewed and candidate for possible targeting. For example, if the variable used refers to the possession of a car so that any person owning a car will not benefit from the subsidy, the household may hide and subsequently deny the fact that it owns a car in order to benefit from the subsidy.

(3) The variable may not be easily changed by the household. A person who owns a durable good may sell it in order to benefit from the subsidy. The planner must, therefore take into account the temptation of the household interviewed to cheat in order to become eligible for social assistance. It is necessary to take asymmetrical information into account when selecting adequate living standards in order to ensure the lowest level of targeting errors.

2. The Database

To correctly estimate the standard of living, it is necessary to have:

(1) conditions for which a random sample is taken in compliance with the rules of sampling and representativeness of this sample53.

(2) assurances that the synthetic living standard indicator54 is correctly measured by the surveyor when collecting information from households in order to prevent measurement errors which would compound other types of targeting errors.

(3) sufficient variables to approximate the living standards of each household in the total population. The approximation of non-observed income or summary score for living standards on the basis of these variables will therefore be more robust and consistent. The selection of these variables is especially important since the living standard approximations derived from them would be used to compile a household classification in ascending order of eligibility for social assistance, and provide an estimation of the amounts that could be allocated to each needy family for almost perfect targeting.

53 A necessary condition for the absence of selectivity bias in the analysis of deprivations and in the ensuing draft targeting policy
54 Measured by permanent income or by a summary living standards score
### Table 4.1: Estimation of the Equation for Determinants of Total Expenditure

<table>
<thead>
<tr>
<th>Survey Data</th>
<th>2005</th>
<th>2010</th>
<th>pool</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variables</strong></td>
<td>Ldep</td>
<td>Ldep</td>
<td>Ldep</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Housing Conditions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wall</td>
<td>0.00540</td>
<td>-0.0107</td>
<td>-0.0188</td>
</tr>
<tr>
<td></td>
<td>(0.0695)</td>
<td>(0.0796)</td>
<td>(0.0622)</td>
</tr>
<tr>
<td>Roof</td>
<td>0.0344</td>
<td>-0.0370</td>
<td>0.0105</td>
</tr>
<tr>
<td></td>
<td>(0.0257)</td>
<td>(0.0305)</td>
<td>(0.0197)</td>
</tr>
<tr>
<td>Water</td>
<td>-0.0220</td>
<td>-0.0816***</td>
<td>-0.0597***</td>
</tr>
<tr>
<td></td>
<td>(0.0172)</td>
<td>(0.0173)</td>
<td>(0.0122)</td>
</tr>
<tr>
<td>Bath</td>
<td>-0.414***</td>
<td>-0.426***</td>
<td>-0.425***</td>
</tr>
<tr>
<td></td>
<td>(0.0128)</td>
<td>(0.0131)</td>
<td>(0.00921)</td>
</tr>
<tr>
<td>Electric</td>
<td>-0.0295</td>
<td>-0.100</td>
<td>-0.0567</td>
</tr>
<tr>
<td></td>
<td>(0.0444)</td>
<td>(0.0623)</td>
<td>(0.0359)</td>
</tr>
<tr>
<td>Sanit</td>
<td>-0.126***</td>
<td>-0.0882***</td>
<td>-0.0877***</td>
</tr>
<tr>
<td></td>
<td>(0.0148)</td>
<td>(0.0298)</td>
<td>(0.0116)</td>
</tr>
<tr>
<td>Typlog</td>
<td>0.0175</td>
<td>-0.0823</td>
<td>-0.00822</td>
</tr>
<tr>
<td></td>
<td>(0.0650)</td>
<td>(0.0923)</td>
<td>(0.0525)</td>
</tr>
<tr>
<td>Nnqual</td>
<td>-0.282***</td>
<td>-0.266***</td>
<td>-0.282***</td>
</tr>
<tr>
<td></td>
<td>(0.0153)</td>
<td>(0.0144)</td>
<td>(0.0106)</td>
</tr>
<tr>
<td>Disabled</td>
<td>-0.120***</td>
<td>-0.144***</td>
<td>-0.123***</td>
</tr>
<tr>
<td></td>
<td>(0.0197)</td>
<td>(0.0189)</td>
<td>(0.0137)</td>
</tr>
<tr>
<td>Noprim</td>
<td>-0.0351***</td>
<td>-0.125***</td>
<td>-0.0660***</td>
</tr>
<tr>
<td></td>
<td>(0.0126)</td>
<td>(0.0127)</td>
<td>(0.00987)</td>
</tr>
<tr>
<td><strong>Burden borne by Active Members</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>depend2</td>
<td>0.0214</td>
<td>-0.332***</td>
<td>-0.119***</td>
</tr>
<tr>
<td></td>
<td>(0.0159)</td>
<td>(0.0167)</td>
<td>(0.0114)</td>
</tr>
<tr>
<td>overcrowd3</td>
<td>-0.422***</td>
<td>-0.335***</td>
<td>-0.389***</td>
</tr>
<tr>
<td></td>
<td>(0.0192)</td>
<td>(0.0214)</td>
<td>(0.0144)</td>
</tr>
<tr>
<td>Widow</td>
<td>0.183***</td>
<td>0.194***</td>
<td>0.200***</td>
</tr>
<tr>
<td></td>
<td>(0.0175)</td>
<td>(0.0175)</td>
<td>(0.0125)</td>
</tr>
<tr>
<td>abs_amenities</td>
<td>-0.133***</td>
<td>-0.158**</td>
<td>-0.104***</td>
</tr>
<tr>
<td></td>
<td>(0.0117)</td>
<td>(0.0356)</td>
<td>(0.0105)</td>
</tr>
<tr>
<td>GPL</td>
<td>0.0711</td>
<td>-0.188**</td>
<td>-0.0305</td>
</tr>
<tr>
<td></td>
<td>(0.0648)</td>
<td>(0.0787)</td>
<td>(0.0499)</td>
</tr>
<tr>
<td><strong>Area</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>-0.141***</td>
<td>-0.164***</td>
<td>-0.188***</td>
</tr>
<tr>
<td></td>
<td>(0.0160)</td>
<td>(0.0137)</td>
<td>(0.0104)</td>
</tr>
<tr>
<td>Grittunis</td>
<td>0.0984***</td>
<td>0.119***</td>
<td>0.105***</td>
</tr>
<tr>
<td></td>
<td>(0.0148)</td>
<td>(0.0147)</td>
<td>(0.0105)</td>
</tr>
<tr>
<td>Interior</td>
<td>-0.0699***</td>
<td>-0.115***</td>
<td>-0.0920***</td>
</tr>
<tr>
<td></td>
<td>(0.0126)</td>
<td>(0.0122)</td>
<td>(0.00884)</td>
</tr>
<tr>
<td>Surv.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>14.61***</td>
<td>14.94***</td>
<td>-86.31***</td>
</tr>
<tr>
<td></td>
<td>(0.0110)</td>
<td>(0.00946)</td>
<td>(3.715)</td>
</tr>
<tr>
<td>Observations</td>
<td>12.317</td>
<td>11.281</td>
<td>23.598</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.353</td>
<td>0.389</td>
<td>0.402</td>
</tr>
</tbody>
</table>

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1
### Table 4.2: Estimation of the Equation for the Determinants of Total Expenditure in 2010

<table>
<thead>
<tr>
<th>Survey Data</th>
<th>All Households</th>
<th>First Quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions</strong></td>
<td><strong>Variables</strong></td>
<td><strong>Ldep</strong></td>
</tr>
<tr>
<td><strong>Housing Conditions</strong></td>
<td>Wall</td>
<td>-0.0107</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0796)</td>
</tr>
<tr>
<td></td>
<td>Roof</td>
<td>-0.0370</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0305)</td>
</tr>
<tr>
<td></td>
<td>Water</td>
<td>-0.0816***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0173)</td>
</tr>
<tr>
<td></td>
<td>Bath</td>
<td>-0.426***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0131)</td>
</tr>
<tr>
<td></td>
<td>Electric</td>
<td>-0.100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0623)</td>
</tr>
<tr>
<td></td>
<td>Sanit</td>
<td>-0.0882***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0298)</td>
</tr>
<tr>
<td></td>
<td>Typlog</td>
<td>-0.0823</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0923)</td>
</tr>
<tr>
<td><strong>Household head’s capacity to generate a decent income</strong></td>
<td>Nnqual</td>
<td>-0.266***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0144)</td>
</tr>
<tr>
<td></td>
<td>Disabled</td>
<td>-0.144***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0189)</td>
</tr>
<tr>
<td></td>
<td>Noprim</td>
<td>-0.125***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0127)</td>
</tr>
<tr>
<td></td>
<td>depend2</td>
<td>-0.332***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0167)</td>
</tr>
<tr>
<td></td>
<td>overcrowd3</td>
<td>-0.335***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0214)</td>
</tr>
<tr>
<td><strong>Burden supported by Active Members</strong></td>
<td>Widow</td>
<td>0.194***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0175)</td>
</tr>
<tr>
<td></td>
<td>abs_amenities</td>
<td>-0.158***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0356)</td>
</tr>
<tr>
<td></td>
<td>GPL</td>
<td>-0.188**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0787)</td>
</tr>
<tr>
<td><strong>Family Living Conditions</strong></td>
<td>Rural</td>
<td>-0.164***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0137)</td>
</tr>
<tr>
<td></td>
<td>Grittunis</td>
<td>0.119***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0147)</td>
</tr>
<tr>
<td></td>
<td>Interior</td>
<td>-0.115***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0122)</td>
</tr>
<tr>
<td><strong>Area</strong></td>
<td>Constant</td>
<td>14.94***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.00946)</td>
</tr>
</tbody>
</table>

Observations: 11,281
R-squared: 0.389

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1
1. Definition of poverty on the basis of deprivations

Alkire and Foster (2008) (referred to as A&F) consider specific scores for each type of deprivation, then on an aggregation of deprivation levels taking multiple deprivations into account.

The case of \( N \) households and \( D \) dimensions of deprivation (represented by \( D \) indicators) is considered. Each household \( i \) is associated with a set of \( D \) indicators \( s_{id} \) (representing its status in relation to each of the possible deprivations). \( z_d \) is defined as the threshold (or line) specifying the level of deprivation in dimension \( d \) (\( d=1,...,D \)).

A scalar of \( g_{id}^{0} \) is associated with each household \( i \) and each level of deprivation \( d \) so that:

\[
g_{id}^{0} = 1 \text{ if } s_{id} < z_d \text{ and } g_{id}^{0} = 0 \text{ otherwise.}
\]

Proceeding in the same manner, the deprivation mean \( g_{id}^{1} \) may also be constructed by:

\[
g_{id}^{1} = z_d - s_{id} \text{ if } s_{id} < z_d \text{ and } g_{id}^{1} = 0 \text{ otherwise.}
\]

This procedure may be applied for all \( \alpha > 1 \) so that:

\[
g_{id}^{\alpha} = (z_d - s_{id})^\alpha \text{ if } s_{id} < z_d \text{ and } g_{id}^{\alpha} = 0 \text{ otherwise.}
\]

However, a household may suffer more than one deprivation. Aggregation of deprivations heightens the drop in living standards and sinks the household deeper into poverty. In order to factor in the impact of deprivations and identify their effects on poverty levels the union or intersection approach will be used. The union approach stipulates that a household is poor if it is deprived in at least one dimension. The intersection approach affirms that a household is poor if deprived in all dimensions.

According to A&F, a household is considered as multidimensionally poor if it is deprived in at least \( k \) dimensions. Two extreme cases of this indicator would be: if \( k = 1 \) this identification criterion corresponds to that of the union approach and if \( k = D \), it corresponds to the intersection approach.

If the weights are equal, the A&F approach identifies a household as poor if it is deprived in at least \( k \) dimensions (\( k=1,...,D \)). A scalar of \( c_i \) is constructed corresponding to the number of deprivations suffered by the household \( i \) and a scalar of \( \rho_k \) is defined so that:

\[
\rho_k = 1 \text{ if } c_i \geq k \text{ and } \rho_k = 0 \text{ if } c_i < k.
\]

A&F define a function \( g(x) \) verifying the fundamental hypotheses imposed by the axiomatic approach to poverty for the unidimensional case. They define an index which verifies (a) the property of monotonicity whereby, if the number of deprivations increases, the level of poverty also rises and (b) the property of decomposability permitting an analysis by population group and by region.

Thus, for all \( \alpha > 0 \), A&F define an index:

\[
g_{id}^{\alpha} (k) = g_{id}^{\alpha} \text{ if } \rho_k = 1 \text{ and } g_{id}^{\alpha} (k) = 0 \text{ if } \rho_k = 0.
\]

For \( \alpha = 0 \), a scalar of \( g_{id}^{0} (k) \) may be defined which is equal to 1 if the coefficient \( \rho_k \) associated with household \( i \) also equals 1, and \( g_{id}^{0} (k) = 0 \) if \( \rho_k \) is zero.

2. A&F Multidimensional Poverty Index

Alkire and Foster (2008) adjust the multidimensional headcount rate \( H = Q/N \), where \( Q \) represents the number of individuals with \( k \) deprivations in order to impose the properties of transfer, monotonicity and decomposability required by the axiomatic approach to poverty analysis.

Index \( H \) is undoubtedly easier to understand and estimate but, unfortunately, does not take into account the intensity and distribution of poverty and does not satisfy the properties of transfer and monotonicity. Thus, if a household identified as poor becomes deprived in an additional dimension, index \( H \) will remain unchanged. In addition, this measurement is not sensitive to decomposition by dimension, (a very useful property for economic policy recommendations).

A&F propose the adjusted FGT family of measures defined by \( M_\alpha = \mu (g^\alpha) \) pour \( \alpha \geq 0 \). Pour \( \alpha = 0 \) the A&F class of measures gives...
the adjusted headcount rate defined by \( M_0 = \mu (g^0 (k)) \) corresponding to the sum of all deprivations \( c (k) = \sum_{i=1}^{N} c_i (k) \), out of the maximum number of deprivations equal to \( ND \). This may thus be written as:

\[
M_0 = c (k) / ND.
\]

\( M_0 \) may also be expressed as the product of the multidimensional headcount ratio \( H \), and the average proportion of deprivations among poor people \( A = c(k) / QD \times A \) gives the level of deprivation from which an average multidimensional poor person suffers. This may thus be written as \( M_0 = HA \). It is concluded that \( M_0 \) contains information on: the incidence of poverty and the average level of extension of the deprivation of poor households to the multidimensional level. Thus, \( M_0 \) meets the axiomatic multidimensional property while remaining easy to calculate and is also adapted to ordinal data.

The adjusted FGT family of measures also gives the adjusted poverty gaps, \( M_1 = \mu (g^1 (k)) \). Thus, \( M_1 \) corresponds to the sum of normalized gaps \( g^1 (k) = \sum_{i=1}^{N} g^1_i (k) \) divided by \( ND \) (the maximum number of gaps possible). Moreover, \( M_1 \) may also be expressed as the product of \( H \), \( A \) and \( G \) (average poverty gap), where \( G = g^1 (k) / g^0 (k) \), tel que

\[
M_1 = \mu (g^1 (k)) = HAG
\]

Thus, \( M_1 \) contains information on the incidence of poverty, the average level of deprivation and the average depth of poverty. \( M_1 \) therefore, satisfies the property of monotonicity. (Thus, the deprivation of an individual in a given dimension increases, \( M_1 \) will increase).

All the indices in the family \( M_\alpha \) are decomposable by population groups. Thus, if we have two groups of households of sizes \( N_1 \) and \( N_2 \) ( \( N = N_1 + N_2 \) ) with which the achievement matrices \( S_1 \) and \( S_2 \), are associated, we have:

\[
M_\alpha (S_1, S_2, z) = (N_1/N) M_\alpha (S_1, z) + (N_2/N) M_\alpha (S_2, z)
\]

Furthermore, all members of this family may be subdivided into sub-groups of indicators. This property of decomposition is interpreted as the contribution of the \( d^\text{th} \) dimension to all multidimensional poverty.

Finally it is noted that assigning the same weight to the different dimensions is valid in certain specific cases, but in most cases it is necessary to assign more weight to certain dimensions.

\( W_d \) denotes the weight assigned to dimension \( d \). The class of adjusted FGT measures is thus defined by:

\[
M_\alpha (X,z,W_d) = \mu (g_\alpha (k,W_d)) \text{ pour } \alpha \geq 0.
\]
### Annex VI: Assessment of the Impact of Existing Indirect Subsidies on the basis of Two Standard of Living Classifications

<table>
<thead>
<tr>
<th></th>
<th>Tot_dep. Classification</th>
<th>Weighted Score Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty Rate</td>
<td>4.3%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>14.2%</td>
<td>14.2%</td>
</tr>
<tr>
<td>Number of Beneficiaries (in millions)</td>
<td>10.6</td>
<td>10.6</td>
</tr>
<tr>
<td>% of beneficiaries</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Per-Unit Subsidy Q1 (in TND)</td>
<td>63.5</td>
<td>67.7</td>
</tr>
<tr>
<td>% Subsidy in rev.Q1</td>
<td>7.7%</td>
<td>6.5%</td>
</tr>
<tr>
<td>Total subsidy amount received by Q1 (in million TND)</td>
<td>138.8</td>
<td>135.2</td>
</tr>
<tr>
<td>Per-unit Subsidy Q5 (in TND)</td>
<td>89.4</td>
<td>89.4</td>
</tr>
<tr>
<td>% Subsidy in rev.Q5</td>
<td>1.5%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Total subsidy amount received by Q5 (in million TND)</td>
<td>183.9</td>
<td>236.9</td>
</tr>
</tbody>
</table>
Direct targeting requires a network that will directly reach the targeted households. It will also help to identify the reaction of the households concerned, the intrinsic characteristics of the household’s social environment and validate specific information for each household through cross-referencing with specific information on its local environment. These are known as social channels.

1. The PNAFN Assistance Transfer System

The Department of Social Advancement under the Ministry of Social Affairs has a network of social assistants and workers, supervised by local commissions which are coordinated by regional commissions directly attached to the Department and to the regional authorities. The organization and mode of management of this network are defined in a joint Circular to the Ministries of the Interior (Circular No. 12) and Social Affairs (Circular No. 3) dated 27 May 2011. This network comprises over 2000 workers with permanent residence in the different localities who visit and interview families applying for social assistance programmes in their respective localities. They thus identify household living standards by collecting information and preparing assessment reports on their eligibility for the assistance applied for.

The joint circular determines the criteria of eligibility for permanent assistance under the PNAFN programme and specifies the organization methods for the local and regional commission which coordinate actions relating to the establishment of lists of needy families.

Social Assistance Eligibility Criteria

The circular specifies that the PNAFN should target families deprived of family and material support, unable to exercise a professional activity/trade with an adjusted annual income not exceeding 585 dinars. Once the conditions of disability of the household head as well as the absence of support are verified, the social assistant or worker assesses the adjusted average annual household income denoted as REV, which will be used to classify families in order of priority for PNAFN assistance. The REV adjusts the annual family income declared by each household taking into account the number of disabled persons in the family and the burden it supports due to its size and housing type. This is measured in dinars and calculated according to the following official equation:

\[
REV = (\text{Annual family income} - 600 \times \text{number of disabled persons} - 500 \times (\text{if tenant}) \times \frac{\text{Number of family members}}{\text{Number of family members}}
\]

Organization of Commissions

The different commissions are required to monitor, update and revise the lists of PNAFN beneficiaries. They are required to guarantee full coverage of all the targeted families meeting the aforementioned criteria.

Local Commissions

Each commission is chaired by the head of the local social Advancement unit. It comprises different representatives of local social organizations (public organizations and NGOs). It is responsible for examining and issuing opinions on submissions prepared by the local units concerning (1) applications for permanent assistance benefits (PNAFN programme) and (2) proposals to remove non-eligible persons from the list of beneficiaries of permanent assistance\(^5\).

The local units submit to the Department of Social Advancement the minutes of the local commission meetings accompanied by the files examined relating to applications for benefits or reintegration into the PNAFN (refusals and approvals are classified by order of priority). It is, therefore, the responsibility of the regional commissions to take the final decisions of rejection or approval concerning the different applications following verification.

---

\(^5\) Of course, this assumes that the social workers of the local unit have carried out their investigations. Thus each file contains documents provided by the family and the investigation report prepared by the social worker.
Regional Commissions

Each commission is chaired by the Director-General of Social Affairs and comprises regional representatives of several institutions. It examines and issues opinions on files submitted to it by the local commissions. It has full prerogatives to request any further information on these files that it considers to be useful. On the basis of these files, it establishes the lists of families proposed for inclusion (or exclusion) in the list of beneficiaries. This commission establishes the list of beneficiaries in compliance with the quota retained for each region (governorate).

The regional commissions are required to inform the governors of the number of applications approved and rejected and the number of beneficiaries removed.

Finally, it should be noted that PNAFN transfers are paid to households in the form of postal money orders made payable to the household head. This financial assistance only covers part of the households benefiting from the AMG 1 programme which allocates free health care cards.

2. Shortcomings of the PNAFN Transfer System

The Department of Social Advancement is aware of certain weaknesses concerning the procedures for assessing needs and identifying needy families. In response to these weaknesses, the Department proposes to prepare a comprehensive survey of PNAFN and AMG1 beneficiaries to improve the assessment of these families’ living conditions. The Department also intends to establish a digital database that will allow social workers to immediately verify the information declared by households and use single scoring methods to assess the standard of living and thus harmonize the criteria for inclusion in or removal from PNAFN’s final list of needy families.

However, the Department raises several challenges:

a. Assessment of the family’s income (should children’s incomes be included, and, among the latter, should the incomes of married children with their own families to support be considered?).

The Department thus proposes to assign different weights (scoring) to all these data by assigning a weight equal to 1 to the family head and ever decreasing weights to children over 18 years old according to their marital status and the burdens they are expected to shoulder outside this family.

b. A look at the criteria for assessing ability to work and taking into account youth unemployment as well as informal work. There may be families in situations of extreme poverty but who do not benefit from PNAFN assistance because their family members include children of working age but who are unemployed. Another scenario is possible where members declare themselves unemployed because they are not engaged in any declared employment, while carrying out informal work!

c. The condition and status of housing (over 80% of Tunisians own their houses especially in rural areas). But it is rather the condition of the house which reflects the family’s poverty level.

In this case, the problem lies in the selection of an adequate score that will permit the classification of households by their levels of poverty especially where the aim is to compare the situations of households: (1) families with a very low level of income but living in a home in good condition, (2) families with a significant income but who neglect the condition of their houses, and (3) families who pay rent, especially in urban areas.

d. Consideration of the disabled. This raises several questions:

(1) Should we confine ourselves to the family’s income without special treatment of the problem of the presence of disabled persons? (2) Should we ignore the presence of a disabled person if the family income exceeds a certain threshold? (3) Should we allocate specific allowances to disabled persons depending on their number?

e. Scoring method selection. Once again several questions are raised (1) Is scoring the only criterion for allocating assistance? (2) Will the levels of income and subsequently monetary poverty be considered alongside scoring in determining the standard of living? (3) Will a threshold be considered (equivalent to the monetary poverty threshold) to assess the eligibility of a household for social assistance? (4) Will the specific budget for social assistance be adjusted on the basis of the needs identified by the scoring method or will the budget be fixed in advance and will the amount of assistance allocated in each governorate be limited by the amount initially allocated to each governorate? (4) How do we determine the threshold score on the basis of which a family will be considered as a needy family?
f. The selection of a poverty threshold of 585 dinars, irrespective of the area. Once again, this raises several questions: (1) Is it necessary to determine different thresholds by area (as in the case of the INS: large city, small towns, rural area)? (2) Should poverty or extreme poverty lines be taken into consideration? (3) Should monetary poverty be ignored and a multidimensional poverty analysis conducted?
**Annex VIII: Detailed Results of the Impact of the Abolition of Subsidies on Targeted Products and the Reallocation of All or Part of the Budget to PNAFN**

**Scenario 6A.1: Reallocation of Part of the Remaining Budget for Indirect Subsidies in the form of direct transfers using the former procedure (constant direct targeting budget) + (different levels of the indirect subsidy budget)**

<table>
<thead>
<tr>
<th>Reduction in Central Government Budget Allocated to Subsidies on the French Loaf</th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>66.3</td>
<td>1.4</td>
<td>95.7</td>
<td>284.3</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>38</td>
<td>-67.7</td>
<td>72</td>
<td>351.3</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>71.5</td>
<td>-17.1</td>
<td>54.1</td>
<td>196.6</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>11.2</td>
<td>-133.2</td>
<td>-26.6</td>
<td>186.7</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>-10.6</td>
<td>-222</td>
<td>-125.9</td>
<td>66.2</td>
</tr>
<tr>
<td>4th quintile</td>
<td>-39</td>
<td>-303.9</td>
<td>-220.6</td>
<td>-53.9</td>
</tr>
<tr>
<td>5th quintile</td>
<td>-89.9</td>
<td>-363.9</td>
<td>-273.7</td>
<td>-93.2</td>
</tr>
</tbody>
</table>

**Percentage of Beneficiary Households within a Category as a result of the Policy**

<table>
<thead>
<tr>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>99%</td>
<td>66%</td>
<td>100%</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>87%</td>
<td>19%</td>
<td>93%</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>100%</td>
<td>26%</td>
<td>81%</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd quintile</td>
<td>100%</td>
<td>0%</td>
<td>41%</td>
<td>82%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd quintile</td>
<td>0%</td>
<td>0%</td>
<td>11%</td>
<td>56%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th quintile</td>
<td>0%</td>
<td>0%</td>
<td>1%</td>
<td>16%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5th quintile</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Number of Dinars Received per Household**

<table>
<thead>
<tr>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>320.8</td>
<td>255.9</td>
<td>350.2</td>
<td>538.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>424.6</td>
<td>318.9</td>
<td>458.6</td>
<td>737.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>304.5</td>
<td>215.9</td>
<td>278.2</td>
<td>429.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd quintile</td>
<td>372</td>
<td>227.6</td>
<td>334.2</td>
<td>547.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd quintile</td>
<td>399.4</td>
<td>188</td>
<td>284.1</td>
<td>476.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th quintile</td>
<td>404.9</td>
<td>140.1</td>
<td>223.4</td>
<td>390</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5th quintile</td>
<td>393.9</td>
<td>119.9</td>
<td>210.1</td>
<td>390.6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Breakdown of Budget Allocated to Social Transfers between Categories**

<table>
<thead>
<tr>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>12%</td>
<td>17%</td>
<td>16%</td>
<td>15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>16%</td>
<td>22%</td>
<td>21%</td>
<td>21%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>12%</td>
<td>15%</td>
<td>13%</td>
<td>12%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd quintile</td>
<td>14%</td>
<td>16%</td>
<td>16%</td>
<td>16%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd quintile</td>
<td>15%</td>
<td>13%</td>
<td>13%</td>
<td>14%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th quintile</td>
<td>15%</td>
<td>10%</td>
<td>10%</td>
<td>11%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5th quintile</td>
<td>15%</td>
<td>8%</td>
<td>10%</td>
<td>11%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Scenario 6A.2: Reallocation of Part of the Remaining Budget for Indirect Subsidies in the form of direct transfers using the former procedure

(constant direct targeting budget) + (different levels of the indirect subsidy budget)

**Reduction in Central Government Budget Allocated to Subsidies on the French Loaf + Canned Tomatoes**

<table>
<thead>
<tr>
<th></th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Extreme Poverty</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>63.9</td>
<td>-0.4</td>
<td>93.1</td>
<td>280</td>
</tr>
<tr>
<td><strong>Remaining Poor</strong></td>
<td></td>
<td>-70.2</td>
<td>68.1</td>
<td>344.9</td>
</tr>
<tr>
<td><strong>Remainder of First Quintile</strong></td>
<td></td>
<td>-18.4</td>
<td>52.1</td>
<td>193.2</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; quintile</td>
<td></td>
<td>-135.2</td>
<td>-29.6</td>
<td>181.5</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; quintile</td>
<td></td>
<td>-223.9</td>
<td>-128.8</td>
<td>61.3</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; quintile</td>
<td></td>
<td>-305.6</td>
<td>-223.2</td>
<td>-58.3</td>
</tr>
<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt; quintile</td>
<td></td>
<td>-366.2</td>
<td>-277.1</td>
<td>-98.9</td>
</tr>
</tbody>
</table>

**Percentage of Beneficiary Households within a Category as a result of the Policy**

<table>
<thead>
<tr>
<th></th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; quintile</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; quintile</th>
<th>4&lt;sup&gt;th&lt;/sup&gt; quintile</th>
<th>5&lt;sup&gt;th&lt;/sup&gt; quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>99%</td>
<td>87%</td>
<td>100%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>
| **Total Number of Dinars Received per Household**
| Extreme Poverty          | 318.4           | 254.1          | 347.6                       | 534.5                    |
| Remaining Poor           | 421             | 316.4          | 354.7                       | 731.5                    |
| Remainder of First Quintile | 302.3          | 214.6          | 285.1                       | 426.2                    |
| 2<sup>nd</sup> quintile  | 388.5           | 225.6          | 331.2                       | 542.3                    |
| 3<sup>rd</sup> quintile  | 395.3           | 186.1          | 281.2                       | 471.4                    |
| 4<sup>th</sup> quintile  | 400.5           | 138.4          | 220.8                       | 385.7                    |
| 5<sup>th</sup> quintile  | 388.3           | 117.6          | 206.7                       | 384.9                    |

**Breakdown of Budget Allocated to Social Transfers between Categories**

<table>
<thead>
<tr>
<th></th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; quintile</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; quintile</th>
<th>4&lt;sup&gt;th&lt;/sup&gt; quintile</th>
<th>5&lt;sup&gt;th&lt;/sup&gt; quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12%</td>
<td>16%</td>
<td>15%</td>
<td>16%</td>
<td>16%</td>
<td>13%</td>
<td>16%</td>
</tr>
</tbody>
</table>
| **Total Number of Dinars Received per Household**
| Extreme Poverty          | 318.4           |               |                            |                          |                          |                          |                          |
| Remaining Poor           | 421             |               |                            |                          |                          |                          |                          |
| Remainder of First Quintile | 302.3          |               |                            |                          |                          |                          |                          |
| 2<sup>nd</sup> quintile  | 388.5           |               |                            |                          |                          |                          |                          |
| 3<sup>rd</sup> quintile  | 395.3           |               |                            |                          |                          |                          |                          |
| 4<sup>th</sup> quintile  | 400.5           |               |                            |                          |                          |                          |                          |
| 5<sup>th</sup> quintile  | 388.3           |               |                            |                          |                          |                          |                          |
### Scenario 6A.3: Reallocation of Part of the Remaining Budget for Indirect Subsidies in the form of direct transfers using the former procedure

(constant direct targeting budget) + (different levels of the indirect subsidy budget)

**Reduction in Central Government Budget Allocated to Subsidies on the French Loaf + Canned Tomatoes + Milk + Flour**

<table>
<thead>
<tr>
<th>Category</th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>58.3</td>
<td>-4.5</td>
<td>86.8</td>
<td>269.5</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>25.6</td>
<td>-76.5</td>
<td>58.7</td>
<td>329.1</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>62.9</td>
<td>-22.1</td>
<td>46.6</td>
<td>184</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>-2.4</td>
<td>-140.9</td>
<td>-38.1</td>
<td>167.4</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>-28.5</td>
<td>-230.1</td>
<td>-138.1</td>
<td>45.9</td>
</tr>
<tr>
<td>4th quintile</td>
<td>-60.7</td>
<td>-312.1</td>
<td>-232.9</td>
<td>-74.4</td>
</tr>
<tr>
<td>5th quintile</td>
<td>-118.3</td>
<td>-375.4</td>
<td>-291</td>
<td>-122</td>
</tr>
</tbody>
</table>

**Additional Dinars per Household**

<table>
<thead>
<tr>
<th>Category</th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of Beneficiary Households within a Category as a result of the Policy</td>
<td>95%</td>
<td>57%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Total Number of Dinars Received per Household</td>
<td>312.8</td>
<td>250</td>
<td>341.3</td>
<td>524</td>
<td>715.7</td>
<td>417</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Dinars Received per Household</td>
<td>358.4</td>
<td>219.9</td>
<td>322.7</td>
<td>528.2</td>
</tr>
<tr>
<td>Breakdown of Budget Allocated to Social Transfers between Categories</td>
<td>381.5</td>
<td>179.9</td>
<td>271.9</td>
<td>455.9</td>
</tr>
<tr>
<td></td>
<td>383.3</td>
<td>131.9</td>
<td>211.1</td>
<td>369.5</td>
</tr>
<tr>
<td></td>
<td>365.5</td>
<td>108.4</td>
<td>192.8</td>
<td>361.8</td>
</tr>
</tbody>
</table>

### Calculation Details

- **Reduction in Central Government Budget Allocated to Subsidies**
  - Extreme Poverty: 58.3
  - Remaining Poor: 25.6
  - Remainder of First Quintile: 62.9
  - 2nd quintile: -2.4
  - 3rd quintile: -28.5
  - 4th quintile: -60.7
  - 5th quintile: -118.3

- **Transfer of 40% of subsidy budget to PNAFN**
  - Extreme Poverty: -4.5
  - Remaining Poor: -76.5
  - Remainder of First Quintile: -22.1
  - 2nd quintile: -140.9
  - 3rd quintile: -230.1
  - 4th quintile: -312.1
  - 5th quintile: -375.4

- **Transfer of 60% of subsidy budget to PNAFN**
  - Extreme Poverty: 86.8
  - Remaining Poor: 58.7
  - Remainder of First Quintile: 46.6
  - 2nd quintile: -38.1
  - 3rd quintile: -138.1
  - 4th quintile: -232.9
  - 5th quintile: -291

- **Transfer of 100% of subsidy budget to PNAFN**
  - Extreme Poverty: 269.5
  - Remaining Poor: 329.1
  - Remainder of First Quintile: 184
  - 2nd quintile: 167.4
  - 3rd quintile: 45.9
  - 4th quintile: -74.4
  - 5th quintile: -122

- **Percentage of Beneficiary Households within a Category as a result of the Policy**
  - Extreme Poverty: 95%
  - Remaining Poor: 59%
  - Remainder of First Quintile: 100%
  - 2nd quintile: 17%
  - 3rd quintile: 0%
  - 4th quintile: 0%
  - 5th quintile: 0%

- **Total Number of Dinars Received per Household**
  - Extreme Poverty: 312.8
  - Remaining Poor: 412.2
  - Remainder of First Quintile: 295.9
  - 2nd quintile: 358.4
  - 3rd quintile: 381.5
  - 4th quintile: 383.3
  - 5th quintile: 365.5

- **Breakdown of Budget Allocated to Social Transfers between Categories**
  - Extreme Poverty: 12% 18% 17% 16%
  - Remaining Poor: 16% 22% 22% 21%
  - Remainder of First Quintile: 12% 15% 14% 12%
  - 2nd quintile: 14% 16% 16% 16%
  - 3rd quintile: 15% 13% 13% 14%
  - 4th quintile: 15% 9% 10% 11%
  - 5th quintile: 15% 8% 9% 11%
### Scenario 6A.4: Reallocation of Part of the Remaining Budget for Indirect Subsidies in the form of direct transfers using the former procedure

(constant direct targeting budget) + (different levels of the indirect subsidy budget)

Reduction in Central Government Budget Allocated to Subsidies on the French Loaf + Canned Tomatoes + Milk + Flour + Couscous + Pasta + Sugar

<table>
<thead>
<tr>
<th></th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Additional Dinars per Household</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extreme Poverty</td>
<td>0.5</td>
<td>-47.6</td>
<td>22.3</td>
<td>161.9</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>-61.8</td>
<td>-140.1</td>
<td>-36.6</td>
<td>170.2</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>11.2</td>
<td>-54.2</td>
<td>-1.5</td>
<td>103.9</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>-82.1</td>
<td>-188.6</td>
<td>-109.7</td>
<td>48</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>-117.9</td>
<td>-272.7</td>
<td>-202</td>
<td>-60.6</td>
</tr>
<tr>
<td>4th quintile</td>
<td>-159</td>
<td>-349.9</td>
<td>-289.7</td>
<td>-169.1</td>
</tr>
<tr>
<td>5th quintile</td>
<td>-233.2</td>
<td>-241.7</td>
<td>-360.4</td>
<td>-237.8</td>
</tr>
</tbody>
</table>

| **Percentage of Beneficiary Households within a Category as a result of the Policy** | | | | |
| Extreme Poverty      | 65%                                | 16%                                     | 90%                                      | 100%                                     |
| Remaining Poor       | 19%                                | 3%                                      | 47%                                      | 94%                                      |
| Remainder of First Quintile | 71%                            | 9%                                      | 56%                                      | 100%                                     |
| 2nd quintile         | 0%                                 | 0%                                      | 0%                                       | 41%                                      |
| 3rd quintile         | 0%                                 | 0%                                      | 0%                                       | 11%                                      |
| 4th quintile         | 0%                                 | 0%                                      | 0%                                       | 1%                                       |
| 5th quintile         | 0%                                 | 0%                                      | 0%                                       | 0%                                       |

| **Total Number of Dinars Received per Household** | | | | |
| Extreme Poverty      | 255                                | 206.9                                   | 276.8                                    | 416.4                                    |
| Remaining Poor       | 324.8                              | 246.5                                   | 350                                      | 556.8                                    |
| Remainder of First Quintile | 244.2                          | 178.8                                   | 231.5                                    | 336.9                                    |
| 2nd quintile         | 378.7                              | 172.2                                   | 251.1                                    | 408.8                                    |
| 3rd quintile         | 292.1                              | 137.3                                   | 208                                      | 349.4                                    |
| 4th quintile         | 284.9                              | 94                                      | 154.3                                    | 274.8                                    |
| 5th quintile         | 250.6                              | 62                                      | 123.4                                    | 246                                       |

| **Breakdown of Budget Allocated to Social Transfers between Categories** | | | | |
| Extreme Poverty      | 13%                                | 19%                                     | 17%                                      | 16%                                      |
| Remaining Poor       | 17%                                | 22%                                     | 22%                                      | 22%                                      |
| Remainder of First Quintile | 13%                            | 16%                                     | 15%                                      | 13%                                      |
| 2nd quintile         | 14%                                | 16%                                     | 16%                                      | 16%                                      |
| 3rd quintile         | 15%                                | 13%                                     | 13%                                      | 13%                                      |
| 4th quintile         | 15%                                | 9%                                      | 10%                                      | 11%                                      |
| 5th quintile         | 13%                                | 6%                                      | 8%                                       | 9%                                       |
### Scenario 6A.5: Reallocation of Part of the Remaining Budget for Indirect Subsidies in the Form of Direct Transfers Using the Former Procedure

(constant direct targeting budget) + (different levels of the indirect subsidy budget)

**Reduction in Central Government Budget Allocated to Subsidies on the French Loaf + Canned Tomatoes + Milk + Flour + Couscous + Pasta + Sugar + Large loaves**

<table>
<thead>
<tr>
<th></th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Additional Dinars per Household</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extreme Poverty</td>
<td>-76.9</td>
<td>-105.1</td>
<td>-64.1</td>
<td>18.1</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>-180.9</td>
<td>-226.1</td>
<td>-165.6</td>
<td>-44.7</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>-65.8</td>
<td>-100.4</td>
<td>-70.9</td>
<td>-11.8</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; quintile</td>
<td>-202.8</td>
<td>-258.7</td>
<td>-214.9</td>
<td>-127.2</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; quintile</td>
<td>-263.9</td>
<td>-340.9</td>
<td>-304.2</td>
<td>-231</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; quintile</td>
<td>-320.7</td>
<td>-411.8</td>
<td>-382.4</td>
<td>-323.8</td>
</tr>
<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt; quintile</td>
<td>-398.2</td>
<td>-486.5</td>
<td>-457.6</td>
<td>-399.7</td>
</tr>
</tbody>
</table>

| **Percentage of Beneficiary Households within a Category as a Result of the Policy** |                                |                                |                                |                                |
| Extreme Poverty          | 6%                                 | 3%                            | 10%                                    | 90%                                    |
| Remaining Poor           | 1%                                 | 1%                            | 2%                                    | 47%                                    |
| Remainder of First Quintile | 8%                                 | 5%                            | 6%                                    | 53%                                    |
| 2<sup>nd</sup> quintile  | 0%                                 | 0%                            | 0%                                    | 0%                                    |
| 3<sup>rd</sup> quintile  | 0%                                 | 0%                            | 0%                                    | 0%                                    |
| 4<sup>th</sup> quintile  | 0%                                 | 0%                            | 0%                                    | 0%                                    |
| 5<sup>th</sup> quintile  | 0%                                 | 0%                            | 0%                                    | 0%                                    |

| **Total Number of Dinars Received per Household** |                                |                                |                                |                                |
| Extreme Poverty          | 177.6                              | 149.9                        | 190.4                                    | 272.6                                    |
| Remaining Poor           | 205.7                              | 160.5                        | 221                                    | 341.9                                    |
| Remainder of First Quintile | 167.2                              | 132.6                        | 162.1                                   | 221.2                                   |
| 2<sup>nd</sup> quintile  | 158                                | 102.1                        | 145.9                                   | 233.6                                   |
| 3<sup>rd</sup> quintile  | 146.1                              | 69.2                         | 105.8                                   | 179.1                                   |
| 4<sup>th</sup> quintile  | 123.3                              | 32.2                         | 61.5                                    | 120.2                                   |
| 5<sup>th</sup> quintile  | 85.6                               | -2.7                         | 26.2                                    | 84.1                                    |

| **Breakdown of Budget Allocated to Social Transfers between Categories** |                                |                                |                                |                                |
| Extreme Poverty          | 17%                                | 23%                          | 21%                                    | 19%                                    |
| Remaining Poor           | 19%                                | 25%                          | 24%                                    | 24%                                    |
| Remainder of First Quintile | 16%                                | 21%                          | 18%                                    | 15%                                    |
| 2<sup>nd</sup> quintile  | 15%                                | 16%                          | 16%                                    | 16%                                    |
| 3<sup>rd</sup> quintile  | 14%                                | 11%                          | 12%                                    | 12%                                    |
| 4<sup>th</sup> quintile  | 12%                                | 5%                            | 7%                                    | 8%                                    |
| 5<sup>th</sup> quintile  | 8%                                 | 0%                            | 3%                                    | 6%                                    |
**Scenario 6B.1: Reallocation of Part of the Remaining Budget for Indirect Subsidies in the form of direct transfers using the new procedure**
(constant direct targeting budget) + (different levels of the indirect subsidy budget)

<table>
<thead>
<tr>
<th>Reduction in Central Government Budget Allocated to Subsidies on the French Loaf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget fully allocated to subsidies</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>Extreme Poverty</td>
</tr>
<tr>
<td>Remaining Poor</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
</tr>
<tr>
<td>2nd quintile</td>
</tr>
<tr>
<td>3rd quintile</td>
</tr>
<tr>
<td>4th quintile</td>
</tr>
<tr>
<td>5th quintile</td>
</tr>
</tbody>
</table>

**Percentage of Beneficiary Households within a Category as a result of the Policy**

<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
</tr>
<tr>
<td>Remaining Poor</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
</tr>
<tr>
<td>2nd quintile</td>
</tr>
<tr>
<td>3rd quintile</td>
</tr>
<tr>
<td>4th quintile</td>
</tr>
<tr>
<td>5th quintile</td>
</tr>
</tbody>
</table>

**Total Number of Dinars Received per Household**

<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
</tr>
<tr>
<td>Remaining Poor</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
</tr>
<tr>
<td>2nd quintile</td>
</tr>
<tr>
<td>3rd quintile</td>
</tr>
<tr>
<td>4th quintile</td>
</tr>
<tr>
<td>5th quintile</td>
</tr>
</tbody>
</table>

**Breakdown of Budget Allocated to Social Transfers between Categories**

<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
</tr>
<tr>
<td>Remaining Poor</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
</tr>
<tr>
<td>2nd quintile</td>
</tr>
<tr>
<td>3rd quintile</td>
</tr>
<tr>
<td>4th quintile</td>
</tr>
<tr>
<td>5th quintile</td>
</tr>
</tbody>
</table>
### Scenario 6B.2: Reallocation of Part of the Remaining Budget for Indirect Subsidies in the Form of Direct Transfers using the New Procedure

(constant direct targeting budget) + (different levels of the indirect subsidy budget)

#### Reduction in Central Government Budget Allocated to Subsidies on the French Loaf + Canned Tomatoes

<table>
<thead>
<tr>
<th></th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>2,276.8</td>
<td>2,376.5</td>
<td>2,424.9</td>
<td>2,513.3</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>310.3</td>
<td>358.8</td>
<td>382.9</td>
<td>427.8</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>-81.3</td>
<td>-75.3</td>
<td>-71</td>
<td>-59.7</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>-86.8</td>
<td>-90.3</td>
<td>-92.1</td>
<td>-95.6</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>-86.9</td>
<td>-92.3</td>
<td>-95</td>
<td>-100.5</td>
</tr>
<tr>
<td>4th quintile</td>
<td>-86.9</td>
<td>-95.5</td>
<td>-99.8</td>
<td>-108.5</td>
</tr>
<tr>
<td>5th quintile</td>
<td>-86.8</td>
<td>-101</td>
<td>-108.1</td>
<td>-122.3</td>
</tr>
</tbody>
</table>

#### Additional Dinars per Household

<table>
<thead>
<tr>
<th></th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>2,609.2</td>
<td>774.6</td>
<td>436.6</td>
<td>434.3</td>
<td>427.3</td>
<td>383.7</td>
<td>319.1</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>2,710.2</td>
<td>825.1</td>
<td>444.9</td>
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<td>383.7</td>
<td>319.1</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
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<td>427.3</td>
<td>383.7</td>
<td>319.1</td>
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</table>
| Total Number of Dinars Received per Household

<table>
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<tr>
<th></th>
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<th>Remainder of First Quintile</th>
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<th>3rd quintile</th>
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<tbody>
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<td>48%</td>
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<tr>
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<td>8%</td>
<td>8%</td>
<td>6%</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
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</tbody>
</table>

### Breakdown of Budget Allocated to Social Transfers between Categories

#### Percentage of Beneficiary Households within a Category as a Result of the Policy

<table>
<thead>
<tr>
<th></th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
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<tr>
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<td>100%</td>
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#### Total Number of Dinars Received per Household

<table>
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<td>Extreme Poverty</td>
<td>2,609.2</td>
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<td>427.3</td>
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<td>383.7</td>
<td>319.1</td>
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<td>434.3</td>
<td>427.3</td>
<td>383.7</td>
<td>319.1</td>
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#### Breakdown of Budget Allocated to Social Transfers between Categories

<table>
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<tr>
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<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
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<tbody>
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<td>8%</td>
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<tr>
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<td>8%</td>
<td>6%</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>16%</td>
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<td>8%</td>
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<tr>
<td>4th quintile</td>
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<td>8%</td>
<td>6%</td>
</tr>
<tr>
<td>5th quintile</td>
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<td>15%</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
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### Scenario 6B.3: Reallocation of Part of the Remaining Budget for Indirect Subsidies in the form of direct transfers using the new procedure

(constant direct targeting budget) + (different levels of the indirect subsidy budget)

Reduction in Central Government Budget Allocated to Subsidies on the French Loaf + Canned Tomatoes + Milk + Flour

<table>
<thead>
<tr>
<th>Additional Dinars per Household</th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
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</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>2,276.8</td>
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<td>2,537.9</td>
<td>2,707.9</td>
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<td>397.8</td>
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<td>-117.3</td>
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<tr>
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<td>-108.6</td>
<td>-119.5</td>
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Percentage of Beneficiary Households within a Category as a result of the Policy

<table>
<thead>
<tr>
<th>Total Number of Dinars Received per Household</th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
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<tbody>
<tr>
<td>Extreme Poverty</td>
<td>2,603.7</td>
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<td>998.8</td>
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<tr>
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<tr>
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Breakdown of Budget Allocated to Social Transfers between Categories

<table>
<thead>
<tr>
<th>Breakdown of Budget Allocated to Social Transfers between Categories</th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
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</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>49%</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
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<td></td>
<td></td>
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<tr>
<td>Remaining Poor</td>
<td>14%</td>
<td>15%</td>
<td>16%</td>
<td>17%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd quintile</td>
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<td>8%</td>
<td>7%</td>
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<td></td>
</tr>
<tr>
<td>3rd quintile</td>
<td>8%</td>
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<td>7%</td>
<td>7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th quintile</td>
<td>7%</td>
<td>7%</td>
<td>6%</td>
<td>6%</td>
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<td></td>
</tr>
<tr>
<td>5th quintile</td>
<td>6%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Scenario 6B.4: Reallocation of Part of the Remaining Budget for Indirect Subsidies in the form of direct transfers using the new procedure**

(constant direct targeting budget) + (different levels of the indirect subsidy budget)

Reduction in Central Government Budget Allocated to Subsidies on the French Loaf + Canned Tomatoes + Milk + Flour + Couscous + Pasta + Sugar

<table>
<thead>
<tr>
<th></th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>2 276.8</td>
<td>2 851.6</td>
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<td>1 039.7</td>
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<tr>
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**Percentage of Beneficiary Households within a Category as a result of the Policy**

<table>
<thead>
<tr>
<th></th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
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<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
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</tbody>
</table>

**Total Number of Dinars Received per Household**

<table>
<thead>
<tr>
<th></th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>5th quintile</th>
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<tr>
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<td>3 409.3</td>
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<td>3 908.6</td>
<td>3 908.6</td>
<td>3 908.6</td>
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<td>1 509.1</td>
<td>1 509.1</td>
<td>1 509.1</td>
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</table>

**Breakdown of Budget Allocated to Social Transfers between Categories**

<table>
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<tr>
<th></th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
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<td>19%</td>
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<tr>
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<td>5%</td>
<td>5%</td>
</tr>
<tr>
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<tr>
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<td>4%</td>
<td>4%</td>
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<tr>
<td>5th quintile</td>
<td>4%</td>
<td>4%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
</tr>
</tbody>
</table>
### Scenario 6B.5: Reallocation of Part of the Remaining Budget for Indirect Subsidies in the form of direct transfers using the new procedure

(constant direct targeting budget) + (different levels of the indirect subsidy budget)

**Reduction in Central Government Budget Allocated to Subsidies on the French Loaf + Canned Tomatoes + Milk + Flour + Couscous + Pasta + Sugar + Large loaves**

<table>
<thead>
<tr>
<th></th>
<th>Budget fully allocated to subsidies</th>
<th>Transfer of 40% of subsidy budget to PNAFN</th>
<th>Transfer of 60% of subsidy budget to PNAFN</th>
<th>Transfer of 100% of subsidy budget to PNAFN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>2 276.8</td>
<td>3 429.9</td>
<td>3 800.9</td>
<td>4 461.6</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>310.3</td>
<td>945.6</td>
<td>1 194.5</td>
<td>1 720.8</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>-81.3</td>
<td>208.6</td>
<td>411.7</td>
<td>918.3</td>
</tr>
<tr>
<td>2\textsuperscript{nd} quintile</td>
<td>-86.8</td>
<td>-198.2</td>
<td>-253.9</td>
<td>-358.7</td>
</tr>
<tr>
<td>3\textsuperscript{rd} quintile</td>
<td>-86.9</td>
<td>-203.2</td>
<td>-261.3</td>
<td>-377.6</td>
</tr>
<tr>
<td>4\textsuperscript{th} quintile</td>
<td>-86.9</td>
<td>-198.7</td>
<td>-254.6</td>
<td>-366.5</td>
</tr>
<tr>
<td>5\textsuperscript{th} quintile</td>
<td>-86.8</td>
<td>-188.9</td>
<td>-240</td>
<td>-342.1</td>
</tr>
</tbody>
</table>

**Percentage of Beneficiary Households within a Category as a result of the Policy**

<table>
<thead>
<tr>
<th></th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2\textsuperscript{nd} quintile</th>
<th>3\textsuperscript{rd} quintile</th>
<th>4\textsuperscript{th} quintile</th>
<th>5\textsuperscript{th} quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>51%</td>
<td>71%</td>
<td>77%</td>
<td>65%</td>
<td>89%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>3%</td>
<td>52%</td>
<td>65%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>2\textsuperscript{nd} quintile</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>3\textsuperscript{rd} quintile</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>4\textsuperscript{th} quintile</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>5\textsuperscript{th} quintile</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Total Number of Dinars Received per Household**

<table>
<thead>
<tr>
<th></th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2\textsuperscript{nd} quintile</th>
<th>3\textsuperscript{rd} quintile</th>
<th>4\textsuperscript{th} quintile</th>
<th>5\textsuperscript{th} quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>2 471.6</td>
<td>561.4</td>
<td>195</td>
<td>164.5</td>
<td>150.1</td>
<td>125.6</td>
<td>99.3</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>3 681</td>
<td>1 284</td>
<td>583.8</td>
<td>164.5</td>
<td>150.1</td>
<td>125.6</td>
<td>99.3</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>4 080.3</td>
<td>1 576.6</td>
<td>836.4</td>
<td>164.5</td>
<td>150.1</td>
<td>125.6</td>
<td>99.3</td>
</tr>
<tr>
<td>2\textsuperscript{nd} quintile</td>
<td>4 797.3</td>
<td>2 190.2</td>
<td>1 441.9</td>
<td>171.2</td>
<td>150.1</td>
<td>125.6</td>
<td>99.3</td>
</tr>
<tr>
<td>3\textsuperscript{rd} quintile</td>
<td>195</td>
<td>164.5</td>
<td>150.1</td>
<td>125.6</td>
<td>125.6</td>
<td>99.3</td>
<td>99.3</td>
</tr>
<tr>
<td>4\textsuperscript{th} quintile</td>
<td>164.5</td>
<td>150.1</td>
<td>125.6</td>
<td>99.3</td>
<td>99.3</td>
<td>99.3</td>
<td>99.3</td>
</tr>
<tr>
<td>5\textsuperscript{th} quintile</td>
<td>150.1</td>
<td>125.6</td>
<td>99.3</td>
<td>99.3</td>
<td>99.3</td>
<td>99.3</td>
<td>99.3</td>
</tr>
</tbody>
</table>

**Breakdown of Budget Allocated to Social Transfers between Categories**

<table>
<thead>
<tr>
<th></th>
<th>Extreme Poverty</th>
<th>Remaining Poor</th>
<th>Remainder of First Quintile</th>
<th>2\textsuperscript{nd} quintile</th>
<th>3\textsuperscript{rd} quintile</th>
<th>4\textsuperscript{th} quintile</th>
<th>5\textsuperscript{th} quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Poverty</td>
<td>66%</td>
<td>60%</td>
<td>58%</td>
<td>53%</td>
<td>22%</td>
<td>24%</td>
<td>16%</td>
</tr>
<tr>
<td>Remaining Poor</td>
<td>15%</td>
<td>21%</td>
<td>22%</td>
<td>24%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Remainder of First Quintile</td>
<td>5%</td>
<td>10%</td>
<td>12%</td>
<td>16%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>2\textsuperscript{nd} quintile</td>
<td>4%</td>
<td>3%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>3\textsuperscript{rd} quintile</td>
<td>4%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>4\textsuperscript{th} quintile</td>
<td>3%</td>
<td>2%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>5\textsuperscript{th} quintile</td>
<td>3%</td>
<td>2%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
</tr>
</tbody>
</table>