



**World Food
Programme**

**VULNERABILITY ANALYSIS AND REVIEW
OF THE
FOOD SUBSIDY PROGRAM IN EGYPT**

**World Food Programme (WFP), Egypt
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The Vulnerability Analysis and Review of Food Subsidy in Egypt 2008 Report updates and expands the 2005 Report, and represents a reliable resource for the GoE, donors, and other concerned stakeholders in their design of policies, strategies, and programs targeting improved food security and poverty alleviation in Egypt.

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GianPietro Bordignon
WFP Representative and Country Director, Egypt

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EXECUTIVE SUMMARY

Introduction

In recognition of the importance of updated and reliable information for effective food security policy development and program planning, the United Nations World Food Programme (WFP) implemented an exhaustive nationwide study on household-level vulnerability to food insecurity and the effectiveness of the Government's food subsidy program¹ in 2005. The study sampled 13,200 households spread over 11 of Egypt's 26 governorates, representing 65 percent of Egypt's population at the time. This comprehensive nationwide study provided valuable data on the food subsidy sector, as well as on other significant subsidies, including energy, transportation, education, housing, health and social expenditure.

The **Vulnerability Analysis and Review of Food Subsidy in Egypt 2008 Report** updates and expands the previous analyses, and represents a reliable resource for the GoE, donors, and other concerned stakeholders in their design of policies, strategies, and programs targeting improved food security and poverty alleviation in Egypt. This report builds on the data from the 2005 report, as well as providing data from a survey designed and conducted specifically for this report. A sample of 3,338 households surveyed in 2005 was revisited in 2008. The research methodology relied on a combination of quantitative and qualitative data in order to address and evaluate the availability, access and utilization of the food subsidy program in Egypt, in light of the cross-cutting dimension of vulnerability, and within a wider macro-economic context.

Defining Vulnerability, Food Insecurity and Mobility

The term 'vulnerability' refers to the risk that a household will fall into poverty. Many households, while not currently 'in poverty' are vulnerable to events that could easily push them into poverty, such as a poor harvest, a lost job, an unexpected expense, an illness, or an economic downturn. The WFP defines food security as "exist(ing) when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs, and food preferences for an active and healthy life." (Source: World Food Summit, 1996). The Food and Agriculture Organization (FAO) FIVIMS Initiative defines vulnerability as "the presence of factors that place people at risk of becoming food insecure or malnourished, including those factors that affect their ability to cope"²; and it defines food insecurity as:

A situation that exists when people lack secure access to sufficient amounts of safe and nutritious food for normal growth and development and an active and healthy life. It may be caused by the unavailability of food, insufficient purchasing power, inappropriate distribution, or inadequate use of food at the household level. Food insecurity, poor conditions of health and sanitation, and inappropriate care and feeding practices are the major causes of poor nutritional status. Food insecurity may be chronic, seasonal or transitory.³

For the purposes of this report, a food security vulnerability index was created using four variables from the household survey questionnaire. These variables were: 1) adult literacy; 2) per capita food consumption expressed in L.E. purchases or equivalents during the week within which the questionnaire was completed; 3) per capita income; and 4) per capita asset ownership.

The main determinants for household vulnerability are: demographic region, educational status of the household head, the stability of the household head's employment, the presence of social insurance, changes in household income, ownership of agricultural land, and production assets. For example, households in Upper Egyptian governorates demonstrated relatively high percentages of vulnerability; vulnerable households tend to be large, and households with illiterate heads and members are more likely to stay vulnerable and face difficulty in moving to a less vulnerable group, as are those with limited access

¹ **Vulnerability Analysis and Review of Food Subsidy in Egypt**, WFP Egypt, October 2005

² FIVIMS website, accessed December 2008;

http://www.fivims.org/index.php?option=com_glossary&func=display&letter=V&Itemid=31&catid=13&page=1

³ *Ibid*, http://www.fivims.org/index.php?option=com_glossary&func=display&letter=F&Itemid=31&catid=13&page=1

to employment or income-generating activities. Finally, the most vulnerable households are the most likely to be without any savings, or to be in debt as a result of loans. Therefore, policies that aim to reduce vulnerability should focus on the development of Upper Egypt, building human capital in terms of education and skills, and maintaining sustainable sources of income through employment and social insurance expansion. Policies that help people to build and reinforce physical, human and social assets are essential.

The food consumption of poor households is centered on cereals and pulses, with little meat or dairy products. Households that are not vulnerable, or who have moved out of vulnerability are more likely to include milk and fruits in their diet. Naturally, it is expected that the health status of household members who stayed in the vulnerable groups is at greater risk than those in non-vulnerable groups, as a result of the different food consumption patterns, and nutritionally inferior diet. As for the nutritional status of children, stunting and wasting do not have a linear relationship with the vulnerability categories, and strangely enough, the least vulnerable category has a higher percentage of wasting than lower vulnerability categories.

Mobility refers to the movement of household categories between vulnerability groups. The vulnerability categories specified in the 2005 survey were revisited in 2008 to trace the mobility of households across vulnerability groups during that three year period.

The survey analyzed mobility across different vulnerability groups and found that those households at the extremes remained in the same vulnerability category between 2005 and 2008, while a considerable percentage of households who were in the high and the low vulnerability categories continued to be the least and the most vulnerable groups respectively.

Households whose heads are government or public sector employees are more likely to stay non vulnerable, as are those whose heads are employed in permanent jobs. Households whose heads are 'casual workers' are over represented among "remained vulnerable" or "entered vulnerability" categories. Therefore, creating permanent jobs is a key element in reducing or even preventing vulnerability.

About 63 percent of households in the least vulnerable category reported significant or moderate increases in their income as opposed to only 32 percent for households in the most vulnerable category. In contrast, 22 percent of the most vulnerable households reported a decrease in income compared to 6 percent of the least vulnerable households. Decreases in income can be caused by a variety of factors, including illness, price increases, unemployment and the death of an income earner.

Recent price increases have had a significant impact on the food security of the poor, with households in the first decile increasing their consumption by 17 percent just to maintain their current living standards. Price increases, extra expenses related to Ramadan and other religious occasions, and medical and education expenses were identified as the most urgent expenses affecting household vulnerability levels over the last three years, regardless of mobility group. Finally, unemployment of the household head was identified as the most significant factor affecting households who stayed vulnerable.

Four Vulnerability Categories

- **Remained Vulnerable:** This refers to those households who were in "very high or high" vulnerability groups in 2005 and remained in these two categories in 2008;
- **Exited Vulnerability:** This refers to those households who were in "very high or high" vulnerability groups in 2005 and are no longer so in 2008;
- **Entered Vulnerability:** This refers to those households who were not in "very high or high" vulnerability groups in 2005 and have moved in to one of these two categories in 2008; and
- **Remained Non-Vulnerable:** This refers to those households who were not in "very high or high" vulnerability groups in 2005, and remained so in 2008.

The Status of GoE Cash Transfers, Social Assistance, and Ration Cards

The food subsidy system accounts for a major part of the Government of Egypt's safety net program, both in terms of costs and coverage. It comprises two systems: 1) ration cards, that offer eligible households a pre-determined monthly quota of basic foodstuffs (including rice, flour, tea, sugar and oil) depending on the number of persons registered on the card; and 2) subsidized bread, which is available to everyone. The food subsidy program is crucial for meeting the daily food needs of poor households. It provides vital commodities at cheaper prices when compared to regular market prices, and it frees a portion of the household budget to be spent on other important non-food items, such as education and health care.

As regards GoE cash transfers and social assistance, the very high vulnerability group receives almost 30 percent of total benefits, while the lowest vulnerability group receives 11 percent of total benefits. This implies that a large proportion of public resources is spent on transfers to ineligible households, resources that could otherwise be made available to assist the vulnerable. The progressive nature of social assistance is due to low benefit received rather than targeting criteria used. The poor get more benefits not because of effective targeting mechanisms, but rather, because the social assistance is of such low value that the better-off do not bother to apply to receive it.

Ration cards are issued by the government to allow vulnerable households to purchase basic food products at subsidized prices. Approximately 40 million ration cards were in use till May of 2008, when the government responded to the negative impact of the global hike in food prices by opening the ration card system to an additional 22 million people (and doubling the amount of rice that card holders are entitled to receive). While ration cards provide vulnerable households with significant percentages of basic foodstuffs (such as 60 percent of their consumption of sugar, 73 percent of oil, and 40 percent of rice), there are opportunities for abuse of the system by both ration card holders, and by shopkeepers in participating grocery stores ('Tamwen' shops). The survey demonstrated that a high percentage of ration card holders are within the least vulnerable categories, pointing to significant leakage of program resources.

The ration card system is soon to be upgraded by the use of new smart cards, containing embedded chips with data on household head's monthly quota of subsidized goods, as well as other household information. The new cards will also allow officials to track the distribution and consumption of subsidized goods, by recording transactions electronically. It is envisioned that the smart card will eventually also be used for other subsidies and services, including healthcare, education and pensions. To date, smart cards are being issued to applicants in Beni Suef, Port Said, Helwan's Maadi district, Luxor, Menoufeya, Sharqiya, Sohag and Suez, with the expectation that 11.5 million smart cards will be issued by the end of 2008, covering 40 million beneficiaries.⁴

The majority of household heads with ration cards are literate, permanent employees in government or the public sector, and most likely to have remained in non-vulnerable groups between 2005 and 2008. Highly vulnerable households, on the other hand, are less likely to register all their members on ration cards than those in the least vulnerable groups, while the opposite should be the case. Highly vulnerable households are often without the proper documentation required for registration. This indicates that improvements are called for in the registration system, particularly the simplification of registration requirements. Non-governmental organizations (NGOs) can play a valuable role in helping the vulnerable to obtain the required documents, such as the "national ID number".

Surveyed households preferred the existing ration card system, but called for improvements in the quality of the goods covered. Additionally, a more flexible commodity mix should be adopted (an opportunity for the use of smart cards). Moreover, regional taste and preference should be taken into account. In order to ensure that commodities which are nutritionally essential – particularly for children - a special

⁴ Business Monthly Magazine Online Edition, March 2008, American Chamber of Commerce Egypt, [http://www.amcham.org.eg/Publications/BusinessMonthly/March%2008/indepth\(govtrollsoutsmarterraticards\).asp](http://www.amcham.org.eg/Publications/BusinessMonthly/March%2008/indepth(govtrollsoutsmarterraticards).asp)

quota of powdered milk could be offered to households with children, while at the same time eliminating or reducing subsidies on nutritionally inessential items such as tea and sugar.

Subsidized *Balady* bread (a two-layer round sourdough bread) is purchased by most households. The majority of balady bread users buy it because it is cheap. Although subsidized bread should be targeted to the poor, benefit incidence shows that subsidized bread is equally distributed among different deciles and vulnerability categories. Surveyed households indicated that the main reason for not purchasing subsidized balady bread is its poor quality, this is also a main reason why households do not consume the full quantity they purchase.

Households surveyed in rural areas and in the most vulnerable groups indicated their willingness to add subsidized wheat flour to their ration card instead of buying balady bread. Aiming at improving the delivery system, the GoE has introduced a new system that separates the production of balady bread from its distribution, accordingly, more than half of respondents indicated that the problem of obtaining balady bread was reduced. Two thirds of households in rural areas and from the wealthier groups reported that the problem of obtaining balady bread was reduced after separating production from distribution, while this percentage decreased to slightly above half of households from urban areas and from the most vulnerable groups.

Other Social Safety Net Programs: Education, Healthcare, and Basic Infrastructure

Despite an increase in government spending on safety net programs, those in poverty remain underserved and out of reach of most non-food subsidy programs. With reference to the educational sector, there appears to be a direct relationship between vulnerability and access to secondary education. Households in the 'very high' vulnerability category tend to have more children than less vulnerable households; they also are less likely to be able to afford to send their children to school beyond basic primary education stage, if at all. Often, children are considered income-earners, and are allowed to work or apprentice for a wage which is a valuable contribution to the household income.

With reference to healthcare and medical subsidies, government owned and operated health institutions (including hospitals, health units and university hospitals) are the most important providers of health care for highly vulnerable households. The importance of government institutions decreases as we move from highly vulnerable households to the better off, who favor private clinics. Public health spending through all government health institutions is highly progressive, where highly vulnerable households receive more benefits compared to the better off. It seems that self-targeting mechanisms work well in health subsidies. The poor and vulnerable choose this kind of cheap or free health care as they have no other alternative. On the other hand, the least vulnerable prefer to pay for private treatment, because of the generally low quality of health services provided by government institutions. In fact, households have to consider a trade-off between the cost of medical services and the quality of services they obtain.

Access to potable water is one of the Millennium Development Goals. In Egypt, access to water is strongly associated with the vulnerability of a household. Nearly all of the least vulnerable households have access to water in their homes, through a piped-water network. The most vulnerable households, however, are less likely to be connected to a formal system, and are much more likely to gain access through water sellers or through common neighborhood sources (public taps, etc). Despite the fact that water networks may be present in areas where the highly vulnerable live, they cannot afford to pay for the connection of their house to the system. NGOs can play an important role in this respect; either by providing vulnerable households with water connections, or with soft loans to pay for such connections.

Regarding energy, the GoE directly controls prices by imposing price subsidies that keep domestic prices below international market prices. Paradoxically, households who stayed vulnerable in 2005 and 2008 or who became highly vulnerable receive the least energy benefits, and households who are never vulnerable receive the largest energy benefits.

Finally, with reference to transportation, the privately owned and operated 'mini-bus' (or minivan) is the most important means of transportation regardless of place of residence or living standards. Accordingly, if the government decreases the subsidy (raising the price) of diesel fuel, as is expected, this will have a negative impact on the living standards of all Egyptian commuters, particularly those in rural areas. There is no clear relationship between vulnerability and the use of the public transportation system (metro, buses) or private buses, taxis or mini-buses. The preferred means of transportation used appears to depend more on the place of residence rather than vulnerability category. While the public transport system is subsidized, private transport also receives a subsidy, albeit an indirect one, through the use of subsidized fuel. Therefore, commuters using private transportation still benefit from the subsidy system.

Respondents were aware that the rise in the price of energy products will have an effect on them, if not directly, then indirectly, as the prices of goods and services will increase to compensate for higher production and transportation costs.

Conclusions and Recommendations

The study confirms that changes in income, unstable working conditions, health problems and the lack of social insurance are among the key determinants of vulnerability. While risks that vulnerable people face as a result of their circumstances are the cause of their vulnerability, the deeper cause is their inability to reduce or mitigate risk or cope with shocks—a cause that both draws from and feeds into the causes of other dimensions of food insecurity and poverty. Low levels of physical, natural, and financial assets make poor people especially vulnerable to negative shocks. Lack of adequate assets can push households to undertake coping strategies in the short term that worsen deprivation in the long term, like pulling children out of school to earn extra income during an economic crisis; depleting natural resources beyond the sustainable level; making quick sales of land or livestock at desperately low prices; and lowering nutritional intake below the levels necessary to sustain health. It is not surprising therefore that vulnerability is associated with low enrollment rates, high malnutrition indicators, and low income.

Given current spending levels, the safety-net and subsidy systems do not go far enough in reducing vulnerability to food insecurity, or in improving the lives of the poor. Many vulnerable households are not reached by the existing programs, due to the geographic areas in which the poor tend to live (rural Upper Egypt), and to the eligibility criteria for ration cards or social assistance. Moreover, even those poor households that are reached by the programs receive benefits that are insufficient to raise them out of poverty. There is a clear need for reform of the current system, not only by improving targeting mechanisms, but also by increasing the benefits to the poor. This does not necessarily imply an increased burden on the government budget, as better targeting will reduce leakage to the ineligible, and free up these resources for those that need them (a detailed targeting mechanism is provided in Annex I).

The government must make an extra effort to explain the objectives of any reform undertaken, and to develop an alternative mechanism for the substitution of price subsidies. Several mechanisms exist to transfer support to vulnerable social groups. These mechanisms include direct monetary transfers, which can be donated to the entire population or a small segment, repeatedly or not. Money transfers can also be paid on condition that recipients meet certain obligations/criteria (such as registration of children at school). Mechanisms also include sophisticated and used measures to promote support for education and health.

Two types of measures should be considered: measures to overcome the negative effect of increasing food and energy prices on poor households; and those to protect non-poor but vulnerable households from falling into poverty. Various measures for the poor today are considerably different from those targeting people at risk of falling into poverty as a result of the "shock" of rising food and energy prices. The current poor may need the "social safety net" of government or the welfare system, while vulnerable populations need a "safety rope" or measures to prevent them from falling into poverty. Thus, social security and social protection programs are an essential part of any policy package designed to reduce vulnerability. These social protection measures should include subsidies for consumer goods and education expenses that are targeted to the neediest families. Social protection measures should also

include extension of health insurance to the poor and uninsured; the enhancement of health insurance within schools; the gradual expansion of social security coverage; and the securing of a minimum allowance for workers in the informal sector.

Enhanced security will reduce vulnerability to economic shocks, natural disasters, ill health, disability, and personal violence; and it is an intrinsic part of enhancing well-being and encouraging investment in both human capital and higher-risk, higher-return activities. This requires effective national action to manage the risk of economy wide shocks and effective mechanisms to reduce the risks faced by poor people, including health- and weather-related risks. It also requires building the assets of poor people, diversifying household activities, and providing a range of insurance mechanisms to cope with adverse shocks— from public work to stay-in-school programs and health insurance.

There is a need to improve or provide new targeting mechanisms, and to increase the level of transparency of actions undertaken. Introducing an effective targeting program from scratch obviously takes time, but so does reforming an existing program. In this situation, reform of subsidy programs should be complemented by providing a more effective social protection mechanism. This can be combined with some shorter-term measures that increase the resources available to any existing informal social assistance programs delivered through existing networks of community, religious, or other non-governmental organizations.

The food subsidy program should be reformed through better targeting to reduce leakage and inefficiencies inherent in the system. The process should be iterative so that targeting mechanisms using means testing can be pilot tested to see if they are practical before scaling up the program reform nationally. Pilot activities could include changes in registration to improve targeting; changes in the commodity mix to introduce more nutritious foods and to take regional tastes and preferences into account; and continued testing of the smart card to allow for flexible commodity mixes.

Conditional cash transfers seem inadequate to provide a good alternative to existing food subsidies. The costs of the implementation of this type of system are higher than those of unconditional transfers. They are more appropriate for situations where: (1) a developed welfare mechanism integrating non-conditional cash transfers already exists, and (2) substitutes for non-energy subsidies in fuel prices can be designed and provided to all consumers (eg., health services to the entire population of a remote village where most people have low incomes). Because only 20 percent of highly vulnerable households are currently receiving social assistance cash transfers, there is considerable room for improvement in targeting of these programs. Proxy means testing and geographical targeting in Upper Egypt should enable more needy households to receive social support. The Ministry of Social Solidarity is currently carrying out a targeting exercise that will facilitate reaching the vulnerable more effectively. NGOs and CBOs can assist in this targeting process.

Immediate Short Term Actions

a. Nutritional Interventions

Anemia has been identified as one of the micro nutrient deficiencies in the country, particularly among women of child bearing age. The fortification programme of wheat flour with iron and folic acid for use in the production of balady bread has been a means to address this issue. The World Food Programme has currently begun this initiative in three governorates, with further expansion to a total of eight governorates planned, while a Government fortification programme currently covers fifteen governorates. The fortification of wheat flour should immediately be expanded to include all flour used in the food subsidy rations, whether for production of balady bread or direct distribution of the wheat flour which occurs in some Upper Egypt governorates.

To support traditional consumption patterns while reaching women and small children with nutritious food, WFP has developed blended foods such as Indiamix, Likuna Phala, and Unimix - all products made

in the food-recipient country using local foods. Awareness campaigns should also be considered to eradicate nutrition illiteracy.

The nutritional contribution of vegetable oil that is included under the food subsidy ration system can be improved by its fortification with both A and D vitamins, while reducing the allowable ration per month for sugar to a basic quota of a maximum of 2 kilograms per household per month, with the additional and new additional quotas remaining unchanged. Furthermore, offering lentils through the ration system to make up for the reduced sugar quota will provide some dietary diversity and additional nutrients not available in sugar. It will also assist in the transition away from a diet that is geared to high quantities of carbohydrates, which can contribute to the development of chronic diseases. As with the transition to smaller sizes of balady bread loaves over time, this reduction of the sugar quota may need to be introduced gradually, and supported by targeted national awareness campaigns on the health dangers of high sugar consumption.

The food and nutritional needs of young school children should be addressed by expanding the ration provided in school feeding programs. School feeding programs provide between 20 to 25 percent of daily requirements of energy and micronutrients to those receiving them. At a minimum, the program should be expanded for full coverage of a full academic year for 30 percent of the schools found in the most vulnerable and food insecure areas. This will reduce drop-out rates for the more vulnerable households, and increase the chance that literacy levels will improve for the more vulnerable households. The inclusion of nutrition education messages within school curricula needs to be implemented and supported. Nutrition-related activities should be initiated for children both in schools and in their local communities. Such programs already exist within the context of joint UNICEF and Ministry of Health and Population activities undertaken in the Upper Egypt Governorates of Assiut, Sohag, Minia and Qena.

Consideration should also be given to increasing the quota of commodities for the poorest and more vulnerable households. Better targeting will be necessary through proxy means testing and geographical targeting using the poverty map currently adopted by the GoE. Efforts must also be made to simplify the registration process and facilitate the registration of poor illiterate households. NGOs and CBOs could help in this targeting and facilitation process.

b. Public Awareness Campaigns

The effort of the GoE to communicate the reform policies will have a critical impact on how the reforms are received politically. When the GoE launches its reforms, it has to explain the objectives of the reform in a transparent manner, and how the fiscal savings from the reform can be used to support tax relief as well as improvements in schools, better infrastructure for water and sanitation and improvements in health care. Reduced subsidy costs can lead to increases in spending on public services. National communication campaigns are also needed to create public awareness on issues related to nutrition.

Long Term Actions: A Comprehensive Social Protection Strategy for Upper Egypt

The GoE should develop a strategy for Upper Egypt that addresses the following major components:

1. A risk management approach in livelihood support activities that is three tiered- risk reduction, risk mitigation, and risk coping.
2. Productive safety nets for able-bodied chronically poor households,
3. Support for the most vulnerable and destitute members of the community.

Once this strategy is developed, it can be pilot-tested in selected governorates in order to determine its feasibility.

a. Comprehensive Risk Management Strategies

A comprehensive risk management orientation is key to protecting household and community assets against future shocks. A risk management lens should be used to screen any intervention that is being promoted in agriculture and income diversification. The program should also concentrate on building the

capacity of communities to manage more effectively the local risks that they are exposed to (e.g. drought and high food prices). Risk management components need to be integrated into savings and credit activities so that insurance mechanisms are in place in the event that a major shock overwhelms the community and people are unable to pay back their loans. Similarly, livestock and crop insurance should be evaluated on a pilot basis.

b. Productive Safety Nets

The second major component to a comprehensive social protection strategy is the creation and support of Productive Safety Nets for able-bodied extremely poor populations that can enable them to escape from poverty traps. Safety nets which are oriented towards community public works activities and environmental protection services are important for reducing vulnerability arising from food price increases and climatic shocks. Productive safety nets could also include access to farm inputs at subsidized prices to support crop and or livestock production. The GoE could target productive safety nets, such as CFW or FFW programs, to the chronically poor. Means testing would be used to identify eligible households. These safety nets build community assets and provide an income transfer that can improve livelihood security. Program-wide emphasis should be given to connecting productive safety nets with risk reduction activities. The infrastructure that is created should also benefit to the extent possible the poor households as well. NGOs and CBOs could help manage these targeted safety nets.

c. Community Support for the Most Vulnerable

The third component of a comprehensive social protection strategy is the creation of community mechanisms that provide support for the most vulnerable and destitute members of the community (including the elderly, the handicapped, orphans, and widows). Support could be provided through Mosque committee's social protection funds, savings groups, government transfers, NGOs and CBOs.

Because this comprehensive social protection strategy encompasses program elements that currently fall under the management responsibilities of several Ministries, it will be important to place the oversight of this program in the Prime Minister's Office. A Social Committee exists in the Prime Minister's Office that has representatives from several line Ministries that could serve this oversight function. The GoE's Information and Decision Support Center (IDSC) can be delegated to coordinate the collection and synthesis of all food security information generated by other line ministries. Because IDSC is an institution that provides information directly to the Egyptian Cabinet, it can provide a coordinating function to bring these various types of information together to inform policy decisions. Each of the Ministries would have representatives participating in the meetings where critical policy decisions would be made based on the various sources of information.

d. Pilot Project

A collaborative pilot project can be developed which would bring together a broad range of concerned stakeholders, including the Ministry of Education, the Ministry of Health and Population, the National Nutrition Institute, the Ministry of Agriculture to work in cooperation with donors including the World Food Programme, UNICEF, FAO, NGOs and CBOs. This would provide a forum to demonstrate a comprehensive approach to addressing food insecurity issues. It should be undertaken in an upper Egyptian governorate, such as Qena (which is one of the most vulnerable in the country) in a village selected from the Ministry of Health's listing of the 1,000 most vulnerable villages. Both the WFP and UNICEF are currently implementing nutrition intervention activities in Qena (including wheat flour fortification and community interventions, along with school health activities). Activities could include income generating activities; public awareness campaigns on the nutritional role played by subsidized foods in both diet and health; interventions targeting improvements for infants and young children; community or household gardening to promote dietary diversity, and nutrition education activities in schools, with the inclusion of topics in curricula.

Main Indicators by Vulnerability Categories

Variables	2005			2008			Significance Level
	Very High	Very Low	Total	Very High	Very Low	Total	
Household Characteristics							
Live in Urban Areas	15.9	24.4	45.1	20.2	23.4	45.8	*
Live in Rural Areas	22.6	12.7	54.9	23.6	14.9	54.2	*
Live in Metropolitan Areas	12.4	28.2	20.6	20.5	24.7	20.6	*
Live in Lower Egypt	12.9	21.7	42.9	13.7	23.3	42.9	*
Live in Upper Egypt	30.9	8.4	36.5	32.8	10.1	36.5	*
Average Household Size	7.3	4.8	6.2	6.9	4.3	5.4	*
Illiterate Household Head	69.5	3.4	39.1	70.7	7.5	39.6	
Having Savings	2.1	14.5	6.1	1.8	12.0	4.9	**
Having Loans	43.2	38.8	40.6	33.2	27.0	31.7	*
HHs with at least 1 member in permanent job	67.4	87.9	79.0	51.2	79.1	65.7	*
" Very High Vulnerable" Category in 2005				45.5	0.6	17.9	
" Very Low Vulnerable" Category in 2005				2.9	50.9	18.2	
Social Insurance							
HH Heads with Social Insurance	24.3	74.5	46.8	21.4	72.7	43.6	insignificant
Food Consumption and Child Nutrition							
Food Consumption Score				22.1	26.6	24.7	
Stunted Children				24.2	42.4	26.7	
Wasted Children				11.7	7.1	9.9	
Ration Cards							
Owning Ration Cards	78.2	73.5	77.4	76.9	76.2	79.2	*
(For not having RC) Having information but could not register	26.1	23.2	32.0	42.1	28.9	37.8	**
Reasons for not Purchasing Balady Bread							
Poor Quality	5.8	33.9	14.8	4.5	22.2	13.8	*
Crowded Bread Lines	8.0	29.7	20.8	22.7	34.1	26.6	*
Bake Bread at Home	76.6	27.1	51.4	42.0	30.2	40.2	*
Excessive Distance to Nearest Outlet	22.8	10.5	19.2	23.8	10.4	16.8	insignificant
School Enrollment							
Enrollment in Basic Education				79.6	85.6	84	
Enrollment in Secondary Education				36.4	58.5	47.5	
Enrolled in Public Education System	97.3	78.6	91.7	95.6	86.3	92.7	insignificant
Enrolled in Private Education System	2.7	21.4	8.3	4.4	13.7	7.3	insignificant
Education Expenses for Public School (L.E./Student)	354	1,151	563	471	1411	789	
Education Expenses for Private School (L.E./ Student)	1,031	2,847	1,861	891	3574	2096	
Medical Subsidies							
Individuals Accessing Government Hospital	36.1	12.5	24.6	57.1	18.7	40.2	*
Individuals Accessing Private Clinic	38.8	51.9	46.1	43.8	72.2	55.3	*
% of Beneficiaries of Govt. Institutions				53.6	16.7	35.6	
% of Share of Benefit of Govt. Institution				32.2	8.2	100	
Average Cost of Medical Treatment (L.E.)	473	1924	1034	882	1869	1290	
Average Medical Cost in Govt. Hospital	228	605	312	752	1754	919	
Average Medical Cost in Private Hospital	911	2702	1726	1311	5559	3491	
Good Rating for Public Institution	54.8	46.4	51.1	49.8	34.7	44.2	*
Subsidized Water							
Availability of Water Connection in House	79.2	97.5	88.0	87.5	94.9	90.7	*
Subsidized Energy							
Average Monthly Expenditure on Electricity	18.9	31.3	23.4	26.6	39.5	42.1	*
Nat. Gas Subsidy as Percentage of Total				10.9	39.2	100	
Electricity Subsidy as Percentage of Total				20.8	19.7	100	
Energy Increase and Mitigation							
Households Affected by Energy Price Increase				83.8	79.3	80.6	
Mitigation (Reduce Transportation Frequency)				26.9	18.5	26.6	

*: Significance less than 0.0005

** : Significance less than 10%

SECTION ONE: BACKGROUND AND INTRODUCTION

KEY MESSAGES

- This report updates and expands the previous vulnerability analysis conducted in 2005.
- Overall, GoE social spending increased from an average of 7.5 percent of GDP in the period from 1996 to 2000 to 9.8 percent in the period from 2001 to 2005.
- The GoE has undertaken a series of actions to deal with the food crisis; ranging from fiscal measures in raising the level of subsidies allocated for food items – administrative measures in separating between production & distribution of Baladi bread – and trade policy measures in banning rice export.

A. Background

In recognition of the importance of updated and reliable information for effective food security policy development and program planning, the United Nations World Food Programme (WFP) implemented an exhaustive nationwide study on household-level vulnerability to food insecurity and the effectiveness of the Government's food subsidy program⁵ in 2005. The study sampled 13,200 households spread over 11 of Egypt's 26 governorates, representing 65% of Egypt's population at the time. This comprehensive nationwide study not only provided valuable data on the food subsidy sector, but also highlighted information on other important subsidies, including energy, transportation, education, housing, health and social expenditure.

B. Purpose of this Report

While the Vulnerability Analysis and Review of Food Subsidy in Egypt 2005 report continue to represent a valuable resource for concerned stakeholders, there have been a number of important developments that have impacted the food subsidy sector over the past three years. Recent international and national political and economic conditions impacting the food security of a significant proportion of the Egyptian population include the repercussions of the Avian Flu outbreak in 2006, global food price increases in 2007, and the recent international economic crisis in 2008.

As the GoE explores ways of controlling intensifying budget burdens, the reform of the food subsidy program has become a governmental priority, particularly since improving the program's efficiency can reduce fiscal cost while maintaining, or even improving, the welfare status of the poor. Accordingly, this report is designed to provide information critical for the effective review of current food policies and subsidized food programs, and to assist the GoE in identifying the key challenges to developing and implementing its strategic plan for economic and social reform.

This report updates and expands the previous analyses conducted in 2005, representing a reliable analytical resource for the GoE, donors, and other concerned stakeholders to draw upon when crafting policies, strategies, and programs targeting improved food security and poverty alleviation in Egypt.

World Food Programme (WFP) Vulnerability Analysis and Mapping (VAM)

WFP's Vulnerability Analysis and Mapping (VAM) system is part of the international Food Insecurity and Vulnerability Information and Mapping Systems (FIVIMS). The analytical work undertaken by WFP's VAM units helps the Programme design food aid interventions that better address the needs of food-insecure households. In addition, VAM supports and complements national FIVIMS. For example, in Ecuador, VAM and the FIVIMS Secretariat in the United Nations Food and Agriculture Organization (FAO) joined together in a coordinated effort to support the design and implementation of a national FIVIMS.

By sharing information and resources through the Inter-Agency Working Group (IAWG), WFP is able to support the expansion of FIVIMS at national, regional and international levels. VAM has also signed a Memorandum of Understanding with the Famine Early Warning System (FEWS) of the United States Agency for International Development (USAID) to collaborate and share information worldwide.

⁵ Vulnerability Analysis and Review of Food Subsidy in Egypt, WFP Egypt, October 2005

The report provides data from a purpose-designed survey, where 3338 households surveyed in 2005 were revisited in 2008. Both quantitative and qualitative data were gathered to shed light on the availability, access and utilization of the food subsidy program, in light of the cross-cutting dimension of vulnerability. The data is also placed within the wider macro-economic context. This report is intended to update and expand the 2005 report, and to inform and facilitate a comprehensive approach to food security, one which enriches socio-economic statistics regarding income expenditure, education, consumption and nutrition, with qualitative information on people's own perceptions of food subsidy issues they feel impact them directly, such as the recent improvements in ration card registration, and the separation of subsidized bread production and distribution processes.

C. Linking Vulnerability and Poverty

Vulnerability refers to a state of insufficient economic, social and human assets. Economic and physical assets include land, livestock, housing, skills, good health, labor and other financial capital that provide the basis for generating income and production, either now or in the future. Human assets also include skills and talents. So people's ability to reduce their vulnerability to poverty can be strengthened through education and training that open up a wider range of opportunities. People without formal education have many skills including traditional knowledge and other physical and intellectual skills that can be tapped on in the fight against poverty. People's ability to draw on relationships with others on the basis of trust is a social asset. Manifestations of the use of social assets include people borrowing from one another to meet immediate needs for food or to cope with costs related to illness, or sharing cooking and childcare. These types of relationships can form the foundation for community organizations to take collective social and political action.

Vulnerability is the risk a household will fall into poverty in the future.

Social, economic, and human assets are by nature linked. Social assets can reinforce economic assets. The community solidarity that leads to collective political action to negotiate for better schools can improve economic assets by increasing the chances of employment. People, households and communities use their assets to develop strategies to reduce vulnerability. The more assets they have, the less their vulnerability and the greater their ability to cope with poverty. But any erosion of these assets increases their vulnerability and insecurity. Building on and reinforcing the assets of poor people helps them fight poverty and food insecurity themselves.

The concept of vulnerability emphasizes the uncertainty a household faces about its future well-being. While poverty and vulnerability are closely related, they represent two distinct dimensions of welfare. Poor households are often vulnerable to increased poverty. However, these groups are usually not identical (Baulch and Hoddinott, 1999).

Poverty and vulnerability represent two distinct dimensions of welfare.

As stated by Pritchett et al 1999: Vulnerability is an important aspect of households' experience of poverty. Many households, while not currently "in poverty" recognizes that they are vulnerable to events that could easily push them into poverty — a bad harvest, a lost job, an unexpected expense, an illness, an economic downturn. Most operational measures define poverty as some function of the shortfall of current income or consumption expenditures from a poverty line, and hence measure only poverty at a single point in time. Vulnerability is defined as the risk a household will fall into poverty in the future. Like the notion of poverty itself, the concept of "vulnerability" to poverty is complex and multifaceted and will never be adequately summarized in a single measure.

Second, this raises the issue of risk and security. Many "social protection" or "social insurance" schemes (e.g. unemployment insurance, disability benefits, and health insurance) attempt to reduce the variability of income by providing transfers not to the poor, but to those that have experienced shocks. In this sense these programs act more as a mountain climber's "safety rope" (a rope that fixed at a progressively higher levels and protects the climber from a fall of more than a fixed distance) than as a trapeze artists "safety net" that catches only at the bottom. That is, while both are referred to as "safety nets," there is an analytic

distinction between social insurance programs in which the benefits are contingent on the realization of some event — unemployment, flood, fire, health shock, old age, disability (safety ropes) — and poverty programs in which the benefits or participation are intended to be contingent on expenditure (or income) level (safety nets). It may well be that insurance programs will be as important as poverty programs in reducing vulnerability.

Third, this may provide insights into the political economy of targeting. While there is only a small proportion of the population who are chronically poor (and one would conjecture these would tend to be relatively politically powerless), there are many more who are vulnerable to poverty and would, for entirely self-interested reasons, be interested in programs that reduce the risks they face. In models in which the budget for poverty programs is endogenously determined by majority voting, programs that are well targeted to the poor can actually be worse for the poor than programs supported by the “middle” group interested in reducing their vulnerability (Gelbach and Pritchett, 1997 and 1999). In their model, the budget for well targeted programs is so low compared to programs with more broad based support that the poor are worse off with a larger share of a smaller pie.

Finally, vulnerability may alter the target groups for poverty or social insurance programs. In the Indonesian context, certain occupational groups (such as landless rural workers, urban informal sector workers, or fishermen) or certain socioeconomic groups (e.g. widows) may have quite highly variable incomes and hence merit attention even if their average level of expenditures is not much different from others. This is a possibility to be considered on a policy level, as it is not clear that this vulnerability can be properly identified or measured, or that once identified there will be programs that would be able to address it.

D. The Egyptian Context

In recent years, Egypt has achieved considerable progress in improving non-income dimensions of poverty, by improving services and access to services in the areas of health and education. On the health front, the GoE has worked to increase health facilities; provide better access to preventive health care; and improve children’s nutritional status. The GoE has placed stress on creating greater public awareness of disease prevention strategies, and environmental health. As a result, between the years 1990 and 1998, the overall health status of Egyptians has improved - as proxied by under-5 mortality rates - dropping from 85 out of 1,000 in 1990 to 41 per 1,000 in 2003. The infant mortality rate (per 1,000 live births) has also declined from 61.5 out of 1,000 in 1990 to 33 out of 1,000 in 2003. The proportion of children under five years of age who are underweight declined from 9.9 percent in 1992 to 6.2 percent in 2005, and the fertility rate has declined from 4.0 percent to 3.3 percent. Efforts to promote family planning may have impacted population growth, which has slowed slightly over the five year period from 1995 to 2000, decreasing from 2.5 percent two decades ago to slightly under 2 percent in 2000.

With regards to education, the GoE has worked to increase facilities; expand enrollment at primary and secondary levels; and reduce gender inequality in educational access. As a result, female literacy, especially among younger females, has increased significantly. The literacy rate among the 15 to 24 year old population increased from 73 percent in 1996 to 87 percent in 2005. National survey data now indicates minor differentials in literacy by sex.

Despite the progress achieved in these areas, outcome indicators like literacy, infant mortality and maternal mortality still lag behind those of other middle-income developing countries. Furthermore, the incidence of poverty remains high, with a poverty rate of 19.6 percent that remained fixed between 1995 and 2005.

1. What does the Egyptian Government Subsidize?

Social spending in Egypt covers education, health, food, energy, and social transfers. Table 1.1 below highlights budget allocations for different subsidized sectors.

Table 1.1: GoE Social Spending (in L.E. Millions)

	Draft Budget	Expected	Actual		
	2008/2009	2007/2008	2006/2007	2005/2006	2004/2005
1. Subsidies:					
• Supply Commodities	21476.80	15302.00	9405.90	9406.60	11203.00
• Petroleum Products	62703.00	60279.00	40129.60	41778.10	0
• Other Subsidies	11750.50	8095.30	4423.40	3059.90	2561.80
Subtotal	95930.30	83676.30	53958.90	54244.60	13764.80
2. Grants:	2992.40	3376.50	2599.40	2174.30	1846.30
3. Social Benefits (includes Public Treasury contribution to pension funds and social solidarity pensions)	31889.90	4238.00	1611.60	12335.50	14092.00
4. Other	2745.00	179.50	272.40	142.40	2.40
Total	133557.60	91470.30	58442.30	68896.80	29705.50

Source: Analytical Statement of the State General Budget Draft for FY. 2008 / 2009, Egyptian Ministry of Finance

The food subsidy system accounts for a major part of the Government of Egypt's safety net program, both in terms of costs and coverage. It comprises two systems: 1) ration cards, that offer eligible households a pre-determined monthly quota of basic foodstuffs (including rice, tea, sugar and oil) depending on the number of persons registered on the card; and 2) subsidized bread, which is available to everyone.

The food subsidy program is crucial for meeting the daily food needs of poor households. It is important to people because it provides vital commodities at cheaper prices when compared to regular market prices, and it frees a portion of the household budget to be spent on other important non-food items, such as education and health care.

Public education and health services are also subsidized in Egypt, and the provision of those social services at subsidized prices also represents an increase in the real income of the poor. However, although public expenditure on education has increased over time, its share in relation to general budget expenditure is expected to decline from 12.3 percent in 2006/07 to 10.9 percent in 2008/09. The corresponding figures for public health expenditure are 4.1 percent and 3.6 percent respectively.

The rapid demographic expansion on the one hand, and tighter budgets on the other, has made it increasingly difficult for the government to sustain the present level of expenditure. As a result, both the quality and infrastructure of the services provided has deteriorated, while the share of salaries in total expenditure is rising. In an attempt to rectify the situation, the GoE gradually introduced a "cost recovery" system in 1986, in the fields of primary education and health services, as an economic restructuring measure aimed at balancing government budget. Table 1.2 provides a breakdown of GoE social spending by sector.

Food subsidies account for a major part of the GoE's safety net program, both in terms of cost and coverage.

Table 1.2: GoE Social-Spending Budget Breakdown (in L.E. Millions)

	Draft Budget 2008/2009		Budget 2007/2008	
Education: Provision of educational requirements for basic education, pre-university and university, as well as the requirements of the second phase of teacher's cadre (L.E. 2,500 million) in the budget for the next financial year.		37289.30		32436.80
Health: Provision of health services to citizens; treatment requirements in hospitals and health units; subsidy of medicines (L.E. 405 million); basic health insurance (within the budget of the Health Insurance Authority - L.E.3772.7 million); and health insurance to students.		12119.00		11849.80
Subsidy: Subsidy of supply and additional commodities. Includes energy: petroleum products (natural gas, butane, diesel, fuel, petrol, kerosene) and electricity; housing subsidy for low-income groups; subsidy for promoting export; public transport subsidy; food commodities, and subsidy for Upper Egypt development.		95930.30		55702.90
• Supporting, strengthening, and restructuring pension systems and social security, of which:		59375.20		28932.10
▪ Estimated interest on pension funds used to finance public investments	15824.00		15818.00	
▪ Insurance benefits in pension system incurred by public Treasury	7271.00		6538.00	
▪ Treasury contributions to support pension funds	30277.20		2000.00	
▪ Social solidarity pension for poor families.	1120.00		1100.00	
▪ Children's pension.	20.00		20.00	
▪ Miscellaneous Social assistance.	4863.00		3456.10	
Services for Youth, Culture and Religious Affairs		10772.80		9873.20
Grand Total		215486.60		138794.80

Source: Analytical Statement of the State General Budget Draft for FY. 2008 / 2009, Egyptian Ministry of Finance

Overall, government social spending increased from an average of 7.5 percent of GDP in the period from 1996 to 2000 to 9.8 percent in the period from 2001 to 2005. In 2006/07, subsidies for goods and services reached LE 53.9 billion, representing 24 percent of public spending and 8 percent of GDP. The value of the energy subsidy represents 74 percent of total subsidies, while the bread subsidy reached 14.8 percent of total subsidies (LE 8 billion) and is expected to increase to 16.7 percent in 2007/08 and 2008/09. Food subsidies implemented through the use of ration cards amounted to LE 4.2 billion.

Egypt is classified as a net food importer, as it imports significant amounts of the most basic food items while its food commodity exports are modest. Egypt is the second largest importer of wheat worldwide, the fifth largest worldwide importer of maize, and the fourth largest worldwide importer of vegetable oils. Evidence shows that there is a shortage in the production of all these products, except for rice and some fruits and vegetables whose production surplus is exported. Inevitably, fluctuations in world food prices are quickly reflected in the costs of Egypt's food products.

The core of Egypt's food problem lies in the shortage in domestic production of major food commodities. The gap between domestic production and consumption has been estimated at an average of 44 percent for wheat, 35 percent for maize, 78 percent for vegetable oils, 96 percent for lentils, 45 percent for broad beans, 20 percent for sugar, 17 percent for red meat and 19 percent for milk. This gap has continued to widen over the years, and is reflected in an increasing dependence on

The core of Egypt's food problem lies in the shortage in domestic production of major food commodities.

food imports. The value of food imports amounted to about \$3.5 billion annually over the period 2003-2006. In 2007, however, there was a significant surge in the value of food imports, which went up by 78 per cent compared to the 2006 level (71.6 per cent of the increase was due to the increase in import prices, while seven per cent is attributable to the rise in volume of imports).

The Self Sufficiency Rate (SSR) of wheat in Egypt is of particular concern since it is the second largest importer of wheat world-wide and since it is particularly crucial for Egyptian food security given the scale of distribution and coverage of bread subsidies in the country. According to the Egyptian Ministry of Agriculture and Land Reclamation (MOALR), domestic wheat production is quite stable at approximately 8 million tons annually. The MOA attributes this stability to two factors: the relatively fixed area of agricultural land devoted to production (2.7 to 3 million feddans⁶) and marginal variation in the yield (per feddan). Accordingly, most of the variation in Egypt's SSR is due to the change in volume of imports, which were recorded as 4.5 million tons in 2006, 5.2 million tons in 2007, and 6.5 million tons in 2008. This implies that the SSR for wheat has declined by approximately 10 per cent over the past three years (from 64 per cent to 55 per cent). However, as many Egyptian analysts point out, there is reason to believe that the actual SSR is 5 to 6 per cent lower, due to the overestimation of domestic production. This is corroborated by the fact that in 2008, even after the implementation of major price reforms to the advantage of wheat farmers, only 2.5 million tons of wheat were delivered to the Government, (Khaled Abo Ismail et. al., 2008, forthcoming).

Table 1.3: Self-Sufficiency Rate; (1982-2004)

	1982-1992	1993-2004
Cereals	58.60	70.00
Dairy Products	65.90	76.30
Fats and Oils	23.90	58.00
Meats	85.50	86.10
Sugar	62.70	73.30
Vegetables	101.20	101.60
Pulses	84.90	67.00
Fish	70.60	75.70

(Source: Arab Organization for Agricultural Development)

2. The Impact of the Global Food Crisis

Food prices in Egypt increased rapidly in concert with global food prices contributing significantly to escalating general inflation, which reached 25 per cent in August 2008 compared to an average of 9.5 per cent during 2007. Food price inflation reached up to 35.5 per cent and has been a major driving force of overall inflation.

Globally, food prices have increased by 73 per cent since 2006, at an annual rate of 30 per cent. During the same period, the domestic price of edible oils has increased by 50 per cent; and cereals, including wheat and rice (a basic foodstuff in the Egyptian diet) have increased by 129 per cent. Lentils and milk have increased by nearly 400 per cent, while the price of cooking oil has tripled. Domestically, cereals and bread have increased in cost by 48 per cent, and foodstuffs as a whole have risen by 24 per cent. Indeed, the food crisis is just one component of a general inflationary environment that saw increases in the price of non-food items that consumed by low-income Egyptians (such as cigarettes, diesel and petrol) whose prices were considered inviolable two years ago.

The food crisis is one component of a general inflationary environment that saw increases in other essential non-food commodities.

Several international and domestic factors are behind the increase in national food prices. Due to deficiencies in the domestic market and prevailing monopolies in the food commodities market, domestic prices have increased at rates exceeding those of world prices. Analyzing the relationship between both world and domestic prices of major food commodities over the period from March 2006 to March 2008 reveals that an increase of one per cent in world prices is reflected in an increase of more than one per cent in domestic prices for all food commodities.

⁶ Traditional Egyptian unit of measure, 1 feddan is equivalent to 1.038 acres. It is the only non-metric unit of measurement that remains in use in Egypt.

International factors include significant increases in energy prices; the increasing use grains in the production of bio fuels; adverse climate changes affecting agricultural crop yields; rising transportation costs; rising global income levels; and changes to the global agricultural commodities market. Domestic factors include: continuous population increase at a rate of two per cent per annum; improved average income levels that raised demand for food commodities; the dampened domestic prices of such commodities resulting from subsidy policies; and deficiencies in the domestic market and prevailing monopolies in the food commodities market. On the other hand, the modest rate of growth in agricultural production is brought about by the high costs of production of various crops that rose at rates exceeding those of agricultural prices.

3. GoE Measures to Address the Food Crisis

The GoE has undertaken a number of measures to deal with the food crisis, including fiscal measures like raising the level of subsidies allocated for food items. The ration card and bread subsidies were increased to LE 21.4 billion from LE. 12 billion (representing L.E. 5.4 billion for ration cards, up from LE 4.2 billion; and LE 16 billion for bread, up from LE 7.8 billion); administrative measures for separating the bread production and distribution processes were instituted; and set of trade policy measures were introduced. Targeting mechanisms have been revised and households are allowed to apply for new ration cards. However, in the absence of well designed targeted programmes, a significant amount of increased resources are still leaked, and a significant number of the poor are missed.

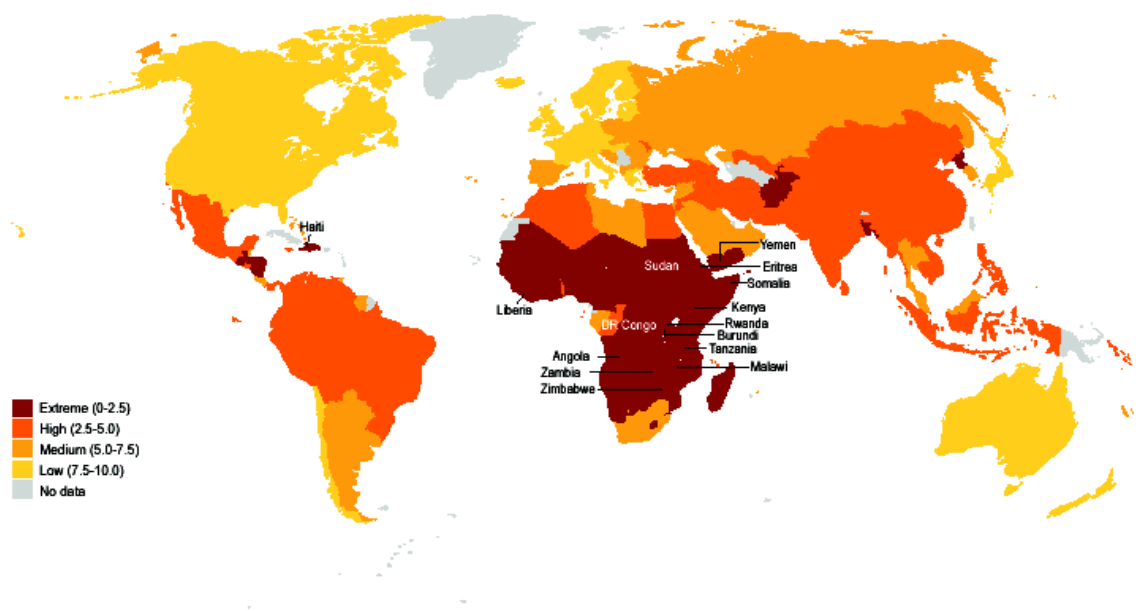
In the absence of well-designed targeted programs, a significant amount of resources are leaked, and a significant number of the poor are missed.

The trade policy measures adopted by the GoE include a ban on the export of all types of rice from 1st April 2008 to 1st October 2008 (rice is the fourth product to be added to the list of banned food exports, which includes wheat, maize and whole beans, (none of which receive export subsidies). The rice ban decision was preceded in 2006 and 2007 by ministerial decisions imposing export taxes that helped to reduce rice exports. Egypt was not the only country that adopted such measures. Vietnam, Thailand, India and China also restricted rice exports to avoid domestic shortages. Furthermore, in April 2008, the GoE reduced some tariffs and abolished others, on a number of food items, including soybean oil, cheese, rice, milk for babies, and milk substitutes (where tariffs were completely abolished), as well as reducing tariffs to five per cent on butter and dairy products. Unfortunately, however, these measures failed to have a significant impact on prices, Ghoneim, 2008.

Addressing the world food crisis requires instituting changes in agricultural objectives and programs with the aim of raising the efficiency of land utilization in order to increase agricultural production and to minimize the food gap and dependence on food imports. Priority has to be given to raising the self-sufficiency ratio for major food crops which, together with increasing the production of export crops, must be set forth as the main objective of any agricultural policy.

As water resources available for agricultural use are limited, the current irrigation system must be upgraded. The use of flood irrigation coupled with the traditional tendency to grow water-intensive plants is exhausting agricultural water resources. For example, one feddan of bananas needs about 12,000 cubic meters of water annually, while grapes need about 9,000 cubic meters per feddan. These quantities could irrigate two feddans of wheat and maize annually. Another valuable intervention would be launching intensive awareness campaigns to inform farmers of alternative systems and their benefits. Second, a ban on building on agricultural land should be enforced. An estimated loss of 39,000 feddans of fertile lands per year has been attributed to illegal building on agricultural lands. Egyptian agriculture lost about one million feddans of fertile land during the period between 1981 and 2007. Third, high yielding and disease resistant seeds should be universally used in the growing of all crops, especially cereals, pulses and vegetables used in oil production.

Figure 1: World Food Security Index



Food Security Index: This map is the visual representation of the Maplecroft Food Security Index (FSI). The FSI evaluates the risk of food insecurity in 162 countries across the globe. It provides a quantitative assessment of the availability, stability and access to food supplies, as well as the nutritional outcomes that result from food insecurity. Each country is assigned an index score based on its performance across 18 key indicators, classified into four sub-indices. Four categories of risk have been identified based on the FSI value for each country – extreme risk (0.0-2.5), high risk (2.5-5.0), medium risk (5.0-7.5) and low risk (7.5-10.0).
Source: FAO

SECTION TWO: HOUSEHOLD DEMOGRAPHICS, CHARACTERISTICS & VULNERABILITY CATEGORIES

KEY MESSAGES

- Household size is both a cause and a consequence of vulnerability, and larger households tend to be poorer.
- Low levels of literacy are usually highly correlated with poverty and food insecurity, as those with little education have little chance of finding jobs with favorable wages.
- The educational achievement level of the head of household may be one factor that can be used as a determinant of household vulnerability, and the educational level of household members may be considered both a cause and an effect of vulnerability.
- The highly vulnerable have limited access to employment; accordingly, policies that aim to reduce the risks of vulnerability must address the creation of more stable and sustainable jobs.
- Job permanency is important as it ensures the permanency of income and consequently it lessens the risk of facing any economic problem. Therefore, reducing vulnerability means increasing access to productive and decent employment.
- Between 2005 and 2008, the percentage of highly vulnerable has increased significantly.

A. Demographic and Socioeconomic Profile of the Survey Population

A demographic and socioeconomic profile of the Egyptian population based on rural and urban differences and regional differences is presented below. Information provided includes the average household size, and different characteristics related to the household head.

The report provides information categorized by governorate, the urban/rural setting, and by regional divisions designated as Metropolitan, Upper Egypt and Lower Egypt. Metropolitan areas include Cairo, Port Said and Alexandria; Upper Egypt includes rural Giza, Assiut, Sohag, Matrouh and Fayoum governorates while Lower Egypt includes Dakahliya, and Gharbeya. Matrouh is not included in these groupings.

Table 2.1 presents the distribution of households from the 2008 sample by marital status of the head of household, percentage of female-headed households, and average household size. These characteristics are important because they are often associated with socioeconomic differences between households. For example, female-headed households are frequently more vulnerable than households headed by males. In addition, the size of the household affects the income pattern and the food consumption among household members, which in turn influences the overall well-being of these individuals.

Female headed-households are frequently more vulnerable than those headed by males.

Table 2.1: General Demographic Characteristics, by Geographic Location, 2008.

	Average HH Size	Marital Status of Household Head (%)				Female Headed HHs (%)	Sex (%)	
		Single	Married	Divorced	Widowed		Male	Female
Total Sample	5.41	2.10	81.20	1.20	15.50	14.70	51.20	48.80
Governorate								
Cairo	4.24	4.30	72.20	3.30	20.10	20.10	48.60	51.40
Alexandria	4.45	6.00	70.70	1.70	21.70	20.70	50.10	49.90
Port Said	4.28	2.60	73.70	2.00	21.70	20.10	50.80	49.20
Dakahliya	4.90	2.60	85.60	0.30	11.40	10.80	52.30	47.70
Gharbeya	5.10	1.00	82.80	1.30	14.90	13.60	51.70	48.30
Giza	4.70	1.70	79.80	0.70	17.80	18.80	52.00	48.00
Fayoum	6.50	0.90	84.40	1.30	13.40	13.70	50.90	49.10
Minia	6.93	1.30	83.40	0.30	15.00	13.20	51.40	48.60
Assiut	7.09	2.90	84.00	0.70	12.40	12.10	51.20	48.80
Sohag	5.99	1.30	84.00	0.00	14.70	13.70	51.90	48.10
Matrouh	8.01	1.70	91.00	1.70	5.70	6.30	51.10	48.90
Region								
Metropolitan	4.31	4.80	71.70	2.80	20.60	20.20	49.20	50.80
Upper Egypt	6.32	1.60	82.90	0.40	15.10	14.50	51.40	48.60
Lower Egypt	5.07	1.30	84.10	1.00	13.70	12.50	52.00	48.00
Zone								
Urban	4.66	3.70	77.10	1.70	17.60	16.80	51.10	48.90
Rural	6.03	0.80	84.70	0.70	13.80	13.00	51.30	48.70

1. Household Size

Household size is both a cause and a consequence of vulnerability. Larger households, for example, tend to be poorer. As demonstrated in Table 2.1, average household size varies significantly among the eleven governorates sampled. In general, rural households are larger than urban households. Furthermore, Upper Egypt had the largest household size, while the metropolitan regions had the smallest. Overall, there are on average 5.4 persons per household. Household size varies from an average of 4.2 persons in Cairo and Port-Said to 6.5 persons or more in Fayoum, Matrouh and Assiut. Matrouh has the highest household size (8 persons).

2. Gender

For the overall survey population, 14.7 percent of households were headed by a female. However, the proportion of households headed by females varies across governorates, from 6 percent in Matrouh, to over 20 percent in metropolitan governorates such as Cairo, Alexandria and Port Said. The proportion of female-headed households does not vary greatly between urban and rural categories (16.8 percent vs. 13 percent). Metropolitan areas as a whole have over 20 percent of households headed by a female. In these areas there are significantly higher numbers of widowed households (21 percent), and single or divorced households. The percent of female-headed households is only slightly higher in Upper Egypt compared to Lower Egypt. Sex ratios vary only slightly among the eleven sampled governorates.

3. Education

In Egypt, as in most countries across the world, the risk of being vulnerable appears to be inversely correlated to the level of education of household members as well as the household head. *Education level of household members may be considered as a cause and effect of vulnerability.* The educational level of the household head is among the most important characteristics related to vulnerability because it is associated with many phenomena (including the health of children, income and consumption patterns, and accordingly the poverty status of the household) that affect the risk of vulnerability. Education is a powerful shield against vulnerability. It determines the command of individuals over income earning opportunities through access to various types of employment.

Vulnerability and poverty are usually identified as the main cause for school drop outs and hence low educational attainments. The correlation between education and welfare has important implications for policy, particularly for distributional impact. This sub-section discusses the relation between the educational characteristics of household heads and household members, and vulnerability. Table 2.2 provides a breakdown of educational level of Household Head by geographic category.

Table 2.2: Education Level of Head of Household, by Geographic Category, 2008.

	Level of Education (%)							
	Illiterate	Read and write	Primary	Preparatory	Secondary	Above Secondary	University	Above
Total Sample	39.60	17.00	6.50	4.40	18.10	4.70	9.30	0.50
Governorate								
Cairo	28.10	16.10	8.40	10.00	17.10	7.40	12.70	0.30
Alexandria	25.30	18.30	11.70	8.30	17.70	3.70	14.00	1.00
Port Said	15.50	18.80	9.50	5.30	22.40	7.20	20.40	1.00
Dakahlia	43.50	16.00	4.60	3.30	15.00	3.60	13.10	1.00
Gharbeya	31.50	20.50	8.40	3.20	21.10	5.50	9.70	0.00
Giza	37.20	16.80	4.00	4.00	24.80	3.70	8.70	0.70
Fayoum	54.50	15.00	4.80	1.60	15.90	3.80	4.10	0.30
Minia	50.70	10.60	3.30	2.30	20.20	3.60	8.90	0.30
Assiut	57.20	13.10	3.90	2.30	14.10	3.30	5.60	0.70
Sohag	47.50	14.40	3.70	3.30	16.40	5.00	7.40	2.30
Matrouh	26.90	26.90	11.60	7.30	16.90	2.70	7.00	0.70
Region								
Metropolitan	26.70	16.80	9.50	9.30	17.40	6.20	13.40	0.60
Upper Egypt	51.40	13.90	3.70	3.10	17.60	3.40	6.20	0.70
Lower Egypt	36.00	19.30	7.40	3.00	19.00	5.00	10.00	0.30
Zone								
Urban	30.10	16.00	7.50	6.40	20.20	5.60	13.40	0.90
Rural	47.50	17.80	5.60	2.70	16.40	3.90	5.80	0.30

The data demonstrates that educational attainment varies significantly by geographic location. Overall, two-fifths of household heads in Egypt are illiterate, while 32.6 percent have secondary school education or above. Illiteracy is still very much prevalent in Upper Egypt and in rural governorates. Over half of household heads in Upper Egypt are illiterate, compared to 36 percent in Lower Egypt. More than half of household heads in Assiut, Matrouh, and Fayoum are illiterate, while Port Said has the lowest level of illiteracy (15.5 percent). Low levels of literacy are usually highly correlated with poverty and food insecurity, as those with little education have little chance of finding jobs with favorable wages, find it difficult to complete bureaucratic processes that require filling out forms, and cannot benefit from information sources that require reading.

Regarding university level education, the data shows that there are great differentials between urban and rural areas, where 13 percent of household heads in urban areas have completed university education, compared to only 6 percent among rural household heads. Looking among the governorates in Upper Egypt, the data shows that almost 9 percent of household heads in Matrouh have completed university studies, compared to 4 percent in Fayoum. The metropolitan areas of Port Said, Alexandria and Cairo have the lowest levels of illiteracy and the highest levels of schooling from primary through university levels.

Table 2.3 provides data on educational level of household heads in 2005. If we look at the trends in educational levels, the data indicates that there are no significant differences between the educational levels across the two surveys. However, the percentage of illiterate household heads decreased in metropolitan governorates, namely; Cairo, Alexandria and Port Said, as well as in Matrouh. The percentage of illiterate heads remained unchanged or increased in all other governorates. Similar results were observed with reference to university education, where the percentage of household heads who have a university education

increased over time in metropolitan governorates. Looking at the vulnerability groups, the data shows that no marked differences were observed between the two surveys regarding the educational status.

Table 2.3: Education Level of Head of Household, by Geographic Category, 2005.

	Educational Level (%)							
	Illiterate	Read and write	Primary	Preparatory	Secondary	Above Secondary	University	Above
Total Sample	39.20	17.80	6.50	4.50	17.70	4.20	9.80	0.4
Governorate								
Cairo	32.40	12.40	10.50	8.00	18.50	6.50	10.90	0.70
Alexandria	27.70	20.40	10.80	7.30	15.80	4.20	13.50	0.40
Port Said	23.50	13.30	7.20	4.90	22.70	9.10	18.20	1.10
Dakahliya	34.80	24.60	5.80	3.30	16.30	2.90	11.60	0.70
Gharbeya	31.60	18.90	6.60	6.00	21.30	4.70	11.00	0
Giza	37.40	19.40	4.00	2.90	23.00	4.30	9.00	0
Fayoum	47.20	21.70	6.70	1.70	15.70	2.70	4.30	0
Minia	48.10	14.30	3.80	2.10	19.90	2.80	8.40	0.70
Assiut	57.70	14.70	6.30	1.70	11.30	2.30	6.00	0
Sohag	47.70	13.10	4.90	2.50	16.60	3.50	11.00	0.70
Matrouh	39.20	22.40	5.60	9.80	13.60	3.50	5.60	0
Region								
Metropolitan	30.60	14.70	10.50	7.70	17.80	6.10	11.90	0.70
Upper Egypt	49.90	17.00	4.60	2.50	16.10	2.60	7.10	0.20
Lower Egypt	33.60	20.40	6.50	5.30	19.50	4.00	10.50	0.20
Zone								
Urban	30.50	17.00	7.90	5.20	20.50	5.60	12.80	0.50
Rural	46.10	18.90	5.50	4.30	15.80	2.40	6.80	0.10
Vulnerability Group								
Very High	69.50	25.90	2.80	0.80	1.00	0	0	0
High	57.70	24.30	6.70	3.40	5.30	1.50	1.10	0
Medium	44.60	22.10	8.90	3.70	14.80	2.00	3.90	0
Low	21.50	15.30	7.70	6.20	31.70	5.50	11.80	0.40
Very Low	3.40	2.00	6.20	9.80	34.90	10.60	32.10	1.10

4. Socio-economic Trends

The data indicates that in the period between the 1st report and this one (2005 to 2008) living standards, access to education, and quality of life have all improved, and there were significant gains in literacy. Access to potable water (connections to water networks) and sewerage network connections improved between 2005 and 2008, yet large disparities remain between urban and rural areas and between the poor and better off. Data on the nutritional status of children from the Egypt Demographic Health Survey (EDHS) for 2000 and 2005 paint a more complex picture, with improvement of some indicators and deterioration of others. Such complex dynamics reflect complex distributional changes over the period.

B. Vulnerability Categories

In addition to looking at the differences between governorates, regions, and zones, the analysis also examined differences between vulnerability categories. To do so, a food security vulnerability index was created using four variables from the household questionnaire. These variables were:

- Adult literacy;
- Per capita food consumption expressed in L.E. purchases or equivalents during the past seven days;
- Per capita income; and
- Per capita asset ownership;

For food consumption, per capita income, and per capita asset ownership variables, data were divided into quintiles. Households falling in the lowest quintile of a given variable were assigned a value of 1, those falling into the second lowest quintile a value of 2, those falling into the third quintile a value of 3, those falling into the fourth quintile a value of 4, and those falling into the highest quintile a value of 5. For adult literacy, households were given a value of 1 if the household head was illiterate; 3 if s/he had a primary education; and 5 if s/he had above a primary education. Values of the four variables were then summed for each household. All variables were given equal weight. The resulting sums were then divided into quintiles. Households whose sums were in the lowest quintile represented the most vulnerable households according to the index. Those in the highest quintile were labeled as the least vulnerable. Table 2.4 provides the percentages of households in each category of vulnerability for the eleven governorates involved in the study sample.

Table 2.4: Governorates by Vulnerability Category, 2008

	Vulnerability Category				
	Very High	High	Medium	Low	Very Low
Cairo	17.40	12.40	18.10	25.40	26.80
Alexandria	29.00	19.30	17.30	15.30	19.00
Port Said	10.50	12.20	17.80	27.00	32.60
Dakahliya	15.00	19.30	20.60	24.80	20.30
Gharbeya	12.90	14.90	20.10	26.50	25.60
Giza	27.30	18.20	15.80	24.20	14.50
Fayoum	35.80	20.10	16.60	18.80	8.60
Minia	39.40	19.90	13.20	14.90	12.60
Assiut	31.70	19.90	13.70	22.50	12.10
Sohag	26.00	20.70	19.00	25.00	9.30
Matrouh	19.00	13.30	14.70	29.70	23.30
Total	24.00	17.30	17.00	23.10	18.60

The table demonstrates that Port Said is the least vulnerable to food insecurity, followed by Cairo. These two governorates have the highest percentage of households categorized as very low vulnerability. In Port Said, 32.6 percent of households are categorized as being of very low vulnerability and 27 percent are categorized as being of low vulnerability, and more than half of households (52 percent) in Cairo are characterized as being of low or very low vulnerability.

Conversely, households in the Upper Egyptian governorates (Minia, Fayoum, Assiut, and Sohag) demonstrated relatively high percentages of vulnerability. Regarding the very high vulnerability category, Minia is the highest vulnerable governorate followed by Fayoum and Assiut governorates. Over one third of households in Minia (39 percent) can be characterized as being very vulnerable to food insecurity (this figure reached 36 percent in Fayoum and 32 percent in Assiut). Gharbeya and Dakahliya demonstrate low vulnerability to food insecurity, where only 13 percent and 15 percent respectively of households are categorized as highly vulnerable.

Policymakers often ask how socioeconomic and demographic characteristics affect and are affected by vulnerability. The WFP surveys implemented in 2005 and 2008 give an insight into socio-economic characteristics according to different vulnerability groups. An examination of trends in the vulnerability status of different governorates over the three year period is provided by a comparison of data from Table 2.4 and Table 2.5. Overall, the percentage of very high and high vulnerability has increased significantly. The

vulnerability status and percentage of households in the most vulnerable group increased in all governorates, with the exception of Dakahliya, Sohag and Matrouh. Furthermore, the percentages of households in the less vulnerable groups decreased between 2005 and 2008 in all governorates, except for the three governorates mentioned above.

Table 2.5: Governorates by Vulnerability Category, 2005

	Vulnerability Category (%)				
	Very High	High	Medium	Low	Very low
Cairo	11.60	13.10	18.90	25.10	31.30
Alexandria	15.80	20.40	20.40	25.00	18.50
Port Said	4.20	8.00	14.40	29.20	44.30
Dakahliya	21.40	16.70	22.50	21.00	18.50
Gharbeya	9.30	14.60	24.80	27.50	23.80
Giza	18.30	19.40	23.40	25.20	13.70
Fayoum	35.70	18.70	19.00	19.00	7.70
Minia	34.10	15.70	20.90	17.40	11.80
Assiut	27.00	24.00	19.70	17.70	11.70
Sohag	31.00	23.20	17.60	19.00	9.20
Matrouh	24.10	21.70	24.50	20.30	9.40
Total	21.40	17.80	20.60	22.30	17.90
Region					
Metropolitan	12.40	15.10	19.10	25.20	28.20
Upper Egypt	30.90	20.90	20.80	19.00	8.40
Lower Egypt	12.90	15.80	24.70	25.00	21.70
Zone					
Urban	15.90	15.40	19.40	24.90	24.40
Rural	22.60	19.30	24.40	21.00	12.70

Regarding trends in the demographic characteristics of households between the two surveys, Table 2.6 shows average household size and other characteristics related to heads of households in 2005, while Table 2.7 presents this data for 2008.

Table 2.6: General Demographic Characteristics, by Vulnerability Category, 2005.

Vulnerability Categories	Average HH Size	Marital Status of Household Head (%)				Female Headed HHs (%)	Gender (%)	
		Single	Married	Divorced	Widowed		Male	Female
Very High	7.26	0.70	88.40	0.50	10.40	10.40	50.60	49.40
High	6.74	0.70	82.40	1.50	15.40	16.50	50.90	49.10
Medium	6.61	2.00	81.20	1.00	15.80	16.20	51.00	49.00
Low	5.48	2.10	84.30	0.70	12.90	13.40	49.50	50.50
Very Low	4.77	4.40	86.40	0.70	8.50	7.80	51.40	48.60
Total Sample	6.17	2.00	84.40	0.90	12.70	13.00	50.60	49.40

A comparison of the data shows that average household size decreased over time regardless of the vulnerability group. Average household size decreased from 7.3 persons to 6.9 persons among households in the most vulnerable group between 2005 and 2008, while it decreased from 4.8 persons to 4.3 persons for households in the least vulnerable group. In contrast, the percentages of female-headed households increased over time among all vulnerability groups, as the incidence of widowed female household heads increased between the two surveys.

Table 2.7: General Demographic Characteristics, by Vulnerability Category, 2008.

Vulnerability Categories	Average HH Size	Marital Status of the Head of the Household (%)				Female Headed HHs (%)	Gender (%)	
		Single	Married	Divorced	Widowed		Male	Female
Very High	6.92	1.10	84.10	0.40	14.40	13.50	51.40	48.60
High	5.77	2.00	80.60	1.50	15.80	15.40	50.90	49.10
Medium	5.16	0.70	81.40	2.00	16.00	18.30	51.50	48.50
Low	4.82	2.10	78.40	0.80	18.80	16.10	50.80	49.20
Very Low	4.26	5.00	82.50	1.30	11.30	10.20	51.70	48.30
Total Sample	5.41	2.10	81.40	1.10	15.40	14.70	51.20	48.80

C. Profile of Vulnerability Groups

1. Education

There is a high correlation between the educational attainment and vulnerability category (Figure 2.1 and Table 2.8).

The data shows that 71 percent of household heads in the most vulnerable group are illiterate; less than one percent have achieved secondary education or above; only 8 percent of household heads who are in the least vulnerable group are illiterate; and 78 percent have secondary education or above. As expected, the same result was observed regarding the educational status of household members, since there is a positive correlation between the educational status of household members and the household head.

Figure 2.1: Education of HH Heads by Vulnerability Group

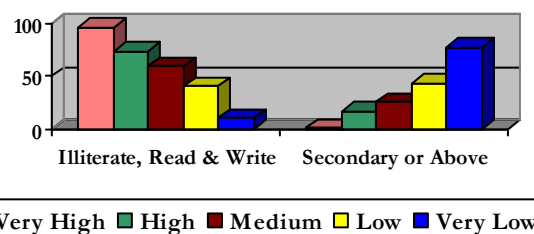


Table 2.8: Education Status of Head of Household by Vulnerability Group, 2008

	Level of Education (%)							
	Illiterate	Read and Write	Primary	Preparatory	Secondary	Above Secondary	University	Above
Vulnerability Group								
Very High	70.70	25.60	2.60	0.40	0.50	0.0	.10	.00
High	52.00	22.30	7.10	2.00	13.30	1.90	1.20	.20
Medium	41.10	18.80	9.10	5.40	17.30	2.80	5.40	.00
Low	25.40	15.10	9.40	6.30	23.30	8.90	10.70	.90
Very Low	7.50	2.60	4.30	7.80	37.60	9.30	29.50	1.40

Table 2.9 provides data on the educational status of individuals by vulnerability groups. The table shows that 65 percent of household members who are in the most vulnerable group are illiterate or can read and write

only, without any certificate. This figure decreased to 17 percent among household members who are in the least vulnerable group. Accordingly, **the educational achievement level of the head of household may be one factor that can be used as a determinant of household vulnerability.**

Table 2.9: Educational Status of Individuals by Vulnerability Groups of 2008

	Level of Education (%)							
	Illiterate	Read and Write	Primary	Preparatory	Secondary	Above Secondary	University	Above
Vulnerability Group								
Very High	43.80	17.70	12.80	7.10	14.60	1.70	2.20	0.10
High	35.40	16.40	13.60	8.80	21.60	2.20	1.90	0.10
Medium	28.90	15.00	13.80	9.90	23.40	2.50	6.40	0.00
Low	19.30	12.90	10.90	12.80	28.80	4.50	10.10	0.80
Very Low	8.20	8.40	9.90	11.00	34.70	5.20	21.70	0.70

2. Savings and Loans

Table 2.10 presents the percentage of households who report savings and loans and the purpose of obtaining the loans. Overall, few households report savings, (only 5 percent). The percentages of savings differ greatly between regions, where almost 8 percent of households in metropolitan areas report savings, while this figure decreased to 3 percent among households in Lower Egypt. Among governorates, the percentage of savings range from 1.6 percent in Gharbeya to 16 percent in Port Said.

Table 2.10: Household Savings and Loans, by Geographic Category, 2008.

	HHs with Savings (%)	HHs with Loans (%)	Purpose of Loans (%)						
			Consumption	Long Term Employment	Marriage, Divorce, or Funeral	Education	Housing	Health	Family Event
Total Sample	4.90	31.70	26.80	1.70	27.50	4.80	26.20	8.00	0.50
Governorate									
Cairo	8.40	21.10	9.50	6.30	31.70	12.70	20.60	6.30	-
Alexandria	4.30	19.30	29.30	1.70	22.40	10.30	17.20	13.80	-
Port Said	16.40	26.60	42.00	-	34.60	9.90	19.80	12.30	1.20
Dakahlia	3.90	33.70	17.70	0.30	36.20	2.90	24.50	10.80	1.00
Gharbeya	1.60	38.50	20.70	-	30.80	3.90	35.80	5.00	-
Giza	3.00	24.80	25.20	-	35.60	2.80	12.30	5.50	3.40
Fayoum	14.60	31.50	24.60	0.80	30.70	10.50	22.80	12.90	1.40
Minia	2.60	27.50	47.10	1.90	13.70	3.40	24.90	6.10	0.70
Assiut	17.00	33.00	30.00	2.30	18.70	3.40	11.10	15.00	1.10
Sohag	4.30	30.30	51.90	1.20	15.80	3.40	21.50	11.70	
Matrouh	6.00	39.70	41.40	0.30	11.10	4.40	26.70	15.80	2.10
Region									
Metropolitan	7.50	20.80	16.80	4.70	29.30	11.90	19.60	8.80	0.10
Upper Egypt	6.10	30.00	40.00	1.50	21.10	4.40	19.50	9.00	1.20
Lower Egypt	2.50	38.10	20.00	1.10	31.60	3.40	32.50	6.90	0.20
Zone									
Urban	5.20	24.20	22.60	1.90	32.60	7.60	23.60	9.20	0.80
Rural	4.50	38.00	29.00	1.60	24.70	3.30	27.60	7.30	0.40

In contrast to savings, loans are quite common in Egypt, with 32 percent of households currently repaying a loan. Loans are most common in Lower Egypt, where 38 percent of households have loans, compared to only 21 percent among metropolitan areas. Households in rural areas are more likely to have loans (38 percent) than those in urban areas (24 percent). Matrouh and Gharbeya have the highest percentage of

households with loans (around 40 percent), while Alexandria has the lowest percentage of households with loans (19 percent) followed by Cairo (21 percent).

Regarding the purpose of loans, the results of Table 2.10 show that the most common loans are for expenses related to a) marriage, divorce, or funeral, b) consumption loans and c) loans for housing purposes. All these loans are non-productive loans. For poor households they can signal fiscal vulnerability, as any non-productive loan must be paid back. Since the loan itself does not generate any income it must be paid back with future income that could otherwise go to other needs. This can create a debt spiral for some households, as more and more of their current income goes to servicing debt, which forces them to get additional loans to cover current consumption needs.

Marriage and divorce loans are most common in urban areas, in Lower Egypt and in metropolitan areas. In contrast, consumption loans are most common in rural areas, and in Upper Egypt, where 40 percent of loans in Upper Egypt are for consumption purposes, compared to only 20 percent in Lower Egypt and 17 percent in metropolitan areas. Large discrepancies were observed between governorates, where almost half of all loans in Sohag and Matrouh are for consumption, followed by Port Said and Matrouh (around 41 percent) and less than 10 percent in Cairo.

No large differences were observed between urban and rural areas regarding housing loans. However, housing loans are most common in Upper Egypt, where one third of loans are for housing, compared to 20 percent among other regions. In Gharbeya, 36 percent of loans are for housing, while housing loans did not exceed one quarter of loans in other governorates.

Almost 8 percent of loans are for health purposes. In metropolitan areas, a significant percentage of loans are for educational purposes, where 12 percent of loans in these areas are for education compared to around 4 percent in other areas. Education loans are most common in Cairo (13 percent) followed by Fayoum, Alexandria and Port Said. Other purposes of loans, such as those for supporting or growing a business, or loans for family events, are less common.

The data demonstrates that the presence of savings and loans differs greatly between different vulnerability categories. Figure 2.2 and Table 2.11 show that very few of the most vulnerable households have any savings (1.8 percent), compared to 12 percent of the least vulnerable households. The most vulnerable households are also the most likely to take out loans. Almost one third of the most vulnerable households have loans (33 percent), this decreases to 27 percent among the least vulnerable households. The primary purpose of loans for the most vulnerable households is for consumption (33 percent); marriage, divorce and funeral (27 percent); and housing loans (25 percent). In contrast, many of the least vulnerable households take out loans

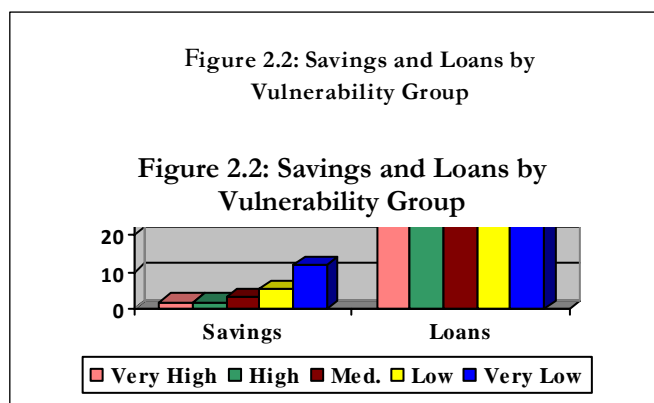
Loan Facilities

The results of a qualitative study implemented in Egypt in 2005 show that a variety of banking and loan facilities are available, but formal credit is hard for individuals to obtain due to high interest rates (between 20 to 40 percent), and it requires guarantees and collateral, and features complex loan application procedures. For this reason many households resort to money lenders to obtain loans.

Group loans from the Social Fund for Development (SFD) are available, though the procedures are complicated. Group loans from business committees are also easier to obtain than individual loans, and have lower interest rates (10% for business loans). Small loans (around LE 1,000) can also be obtained from public loan funds, local development associations, and development agencies, and village banks offer small loans to women and youth at low interest.

The variety of new credit sources that offer alternatives to large banks has improved loan access for people. The exception is Matrouh governorate, where few financial institutions exist outside of the main town, and the Bedouin inhabitants reject the idea of credit. Where informal credit is needed for consumption loans such as food and other necessities, people resort to relatives, friends, or to moneylenders who charge interest rates of between 100 to 120 percent.

Figure 2.2: Savings and Loans by Vulnerability Group



for housing (31 percent); marriage, divorce and funeral (22 percent); and consumption (15 percent). A non-negligible proportion of households went into debt to cover health expenses, with slight larger proportion within highly vulnerable household categories.

Table 2.11: Household Savings and Loans, by Vulnerability Category, 2008.

Vulnerability Category	HH with Savings (%)	HH with Loans (%)	Purpose of Loan (%)						
			Consumption	Long Term Employment	Marriage, Divorce or Funeral	Education	Housing	Health	Family Event
Very High	1.80	33.20	32.80	1.20	26.50	2.20	24.70	11.20	0.60
High	1.90	36.20	30.60	4.10	22.40	3.90	25.80	8.50	0.90
Medium	3.30	34.60	25.10	0.0	33.80	4.80	23.60	7.00	0.40
Low	5.50	28.40	27.50	1.90	32.00	7.00	26.80	5.40	0.60
Very Low	12.00	27.00	14.70	1.20	21.80	6.80	31.20	7.30	0.20

3. Employment

Unemployment is a serious threat to food and livelihood security; accordingly it affects the vulnerability status of households. *It has been increasingly acknowledged worldwide that reducing vulnerability means increasing access to productive and decent employment.* In 2000, the world reaffirmed its global commitment to the alleviation of poverty, and the United Nations Summit declared the Millennium Development Goals (MDGs) including the target to reduce poverty by one half by the year 2015. Unemployment rates have recently become one of the indicators for monitoring Goal 17. Khan (2003) identified four roots by which employment is linked with vulnerability: (a) percentage of wage formal employment; (b) percentage of permanent and secured jobs; (c) level of productivity in self-employment; and (d) the terms of exchange of the output of self-employment.⁸

Despite impressive economic growth over the past several years, the major kinds of employment created have been informal, seasonal and casual. Inequality increased as growth tended to benefit the better off. The low wages paid for casual or seasonal work has not been enough to pull people out of poverty. Low wages have not been able to keep up with the food price inflation. Based on the 2008 vulnerability assessment, one quarter of the households that remained highly vulnerable to food insecurity between 2005 and 2008 (25 percent of the sampled population is highly

Economic Problems

Qualitative results from the 11 governorates surveyed in 2005 reveal that the two most frequently mentioned economic problems are increased unemployment and rising prices. Other reasons include privatization, which led to job retrenchments and the loss of employment; devaluation of the Egyptian currency; and with inflation. In agricultural areas, the cost of renting land is increasing, reportedly as a result of the 1997 land law that reallocated land to its original owners. This has made it more difficult for farmers to rent productive land, and many communities voiced suspicion that the law is allowing the government to sell the land to wealthy individuals and foreign investors. Government restrictions on land use, and confiscation of agricultural land in some governorates have further decreased land availability. Some governorates are experiencing singular but acute economic problems. The effect of the war in Iraq is another common reason cited, with all governorates reporting a decline in job opportunities and remittances as people who worked in Iraq, or were seeking jobs there, were forced to return home.

Employment in rural areas is primarily agricultural, with some petty trading and construction, some government employment, and a narrow range of services and crafts. However, job opportunities in agriculture are reported to be declining in Assiut, Gharbeya, Sohag, Dakahliya, and Matrouh. Those employed in the agricultural sector are likely to work in other sectors at different times of the year. Government employment is common in the more urban areas of Matrouh and Port Said governorates, along with construction, and trade that encompasses large businessmen and small vendors. Matrouh in particular reports high unemployment to be a common problem across communities. Private business occupations include factory work, driving and operating equipment, olive oil processing. In urban areas, income is based primarily on government employment, and a wide range of self-employment, skilled trades, petty trading and service sector jobs.

⁷ To halve the proportion of people who suffer from hunger, by 2015.

⁸ The analytical framework in this part of the paper is more fully discussed in Khan (2001), the first discussion paper in the Issues in Employment and Poverty Series.

vulnerable) do not have stable skilled employment. Links between employment, unemployment, employment in informal sector, and vulnerability status are discussed below.

In Egypt, as in many developing countries, highly vulnerable households depend on the only asset they possess, labour. They seek to improve their living conditions by using this asset. Whether they are able to use this asset to decrease vulnerability ultimately depends on how successful they are in finding work, and how much they are able to earn. Therefore, even when a coping strategy improves the access of these households to other resources - e.g., land and capital, physical, financial, infrastructural and human - the process of reducing vulnerability does not depend on the creation of an entitlement to rent or annuity for those households but on the enhancement of opportunity for them to be employed more intensively, productively and remuneratively.

Table 2.12: Employment Conditions, 2008

	HHs with at Least One Member in a Skilled Job* (%)	HHs with at Least One Member in a Permanent Job (%)	HHs with at Least One Member Looking for a Job (%)
Total Sample	39.10	65.70	16.00
Governorate			
Cairo	47.50	55.20	15.40
Alexandria	45.30	55.30	15.00
Port Said	51.30	68.80	24.00
Dakahliya	40.20	75.50	12.10
Gharbeya	39.50	74.10	20.70
Giza	32.60	67.80	15.10
Fayoum	35.40	58.90	10.50
Minia	34.40	50.00	16.20
Assiut	24.80	59.80	9.50
Sohag	49.00	70.70	15.00
Matrouh	53.30	75.70	20.00
Region			
Metropolitan	47.00	55.80	15.70
Upper Egypt	34.80	61.0	13.70
Lower Egypt	38.70	74.10	18.00
Zone			
Urban	45.50	65.60	16.20
Rural	33.60	65.80	15.80

*Skilled job categories: Director/Senior, Specialized, Technical, Office Sales

Regarding employment conditions, Table 2.12 provides the distribution of households according to employment characteristics. Overall, over one third of households (39 percent) have a member in a skilled job. However, large discrepancies were observed between governorates, where this figure ranges from a low of 25 percent of households in Assiut to a high of 51 percent of households in Port Said (53 percent of households in Matrouh have a member in a skilled job). In metropolitan areas, almost 47 percent of households have at least one member with a skilled job. This percentage is significantly lower in Upper and Lower Egypt where 35 and 39 percent of households have at least one member with a skilled job. Additionally, urban and rural differences were observed regarding the availability of a skilled job, where 46 percent of households in urban areas have at least one member in a skilled job, which decreased to 34 percent in rural areas.

Job permanency is important as it ensures the permanency of income and consequently it lessens the risk of facing any economic problem. Survey data shows that two thirds of households (66 percent) have at least one

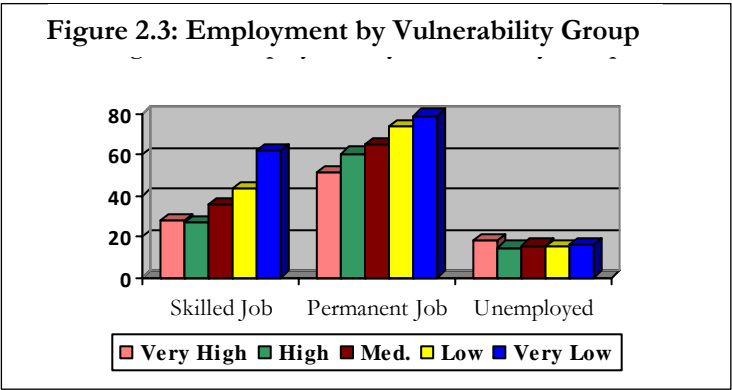
member with permanent employment, with no significant differences between urban and rural areas. Lower Egypt has the highest percentage of households with at least one member with permanent employment and metropolitan areas have the lowest. Permanent employment ranges from a low of 50 percent of households in Minia to around 75 percent of households in Matrouh and the Lower Egyptian governorates of Gharbeya and Dakahliya.

Table 2.12 shows that 16 percent of households interviewed had at least one household member seeking employment, with no differences between urban and rural areas. This was highest in Port Said (where, interestingly, the highest percentage of households were found with at least one member with a permanent job) followed by Gharbeya governorate, and lowest in Assiut and Fayoum. There is broad agreement, however, that unemployment in Egypt is rising due to adverse economic conditions.

The highly vulnerable have limited access to jobs. The lack of ability to participate in income-generating activities by households members is a driver of vulnerability. The link between employment and vulnerability is confirmed by data in Table 2.12. Overall participation in the labor force amounted to 34 percent of individuals of age 15 years and above. The labor force participation rate among the very high vulnerable category was slightly lower (32 percent) than that of the better off (37 percent for the very low category). Moreover, the labor force participation rate is the highest among households who stayed non vulnerable and the highest among households who moved in poverty, as employed persons in these households have to support larger members.

The highly vulnerable have limited access to jobs.

Figure 2.3 shows that more than half of households in the least vulnerable group (representing 62 percent) have at least one member in a skilled job, compared to only 28 percent among the most vulnerable group. A higher percentage of permanent employment is experienced by low vulnerability individuals. The difference between the very low and very high vulnerability groups is 28 percent. Conversely, individuals in the very high and high vulnerability groups are more likely to be engaged in casual work, so as workers in “stayed or moved in vulnerability” categories.



Data confirms that unemployment is not linked to vulnerability. This confirms previous poverty results which indicate that the poor cannot stay unemployed and are often constrained by circumstances to accept any available jobs. Thus policies aiming at reducing vulnerability risks should be concerned about creating more stable and sustainable jobs.

SECTION THREE: MOBILITY ACROSS VULNERABILITY GROUPS

Key Messages

- Mobility across different vulnerability groups shows that most households who were at the extreme groups remained within the same vulnerable groups between the two surveys.
- Work stability is highly correlated with mobility across the vulnerability groups.
- Households who stayed highly vulnerable in both 2005 and 2008 have less accessibility to social insurance benefits, compared to the non-vulnerable
- Illness, price increases and unemployment were the main reasons for decreasing income for vulnerable households while unemployment and death of income earner have been reported as major reasons for income decline.
- Households in the first decile have to increase their consumption by 17 percent in order to maintain their living standards, compared to 15.5 percent for the richest decile.
- The limited effectiveness of social-assistance cash transfers is due largely to the low level of benefits and coverage. Cash transfer payments from the MOSS provide low benefits amounting to LE 80 per recipient family per month. It also has a limited coverage where only 20 percent of highly vulnerable households receive social-assistance cash transfers.
- Policies aiming to reduce vulnerability should focus on the development of Upper Egypt, building human capital in terms of education and skills, and maintaining sustainable sources of income through employment and social insurance expansion.
- Increasing household size by one member increases the likelihood of a household moving into the vulnerable category.
- The main determinants for households to stay in the vulnerable group are: the region they live in, the education status of household head, the stability of household head's work, household having social insurance, change of household income, ownership of agriculture land and production assets.
- Changes in household income over the last two years have had a great impact on household vulnerability status. Households that reported a decrease in their income over the two year period were more likely to move into vulnerability than those who reported an increase in their income over the same period (assuming all other variables remain constant).
- The ownership of agricultural land and/or production assets has a strong influence on household vulnerability status. Those households that owned agricultural land were much less likely to move into the vulnerability category than households that did not own any. The same result was observed for households that own production assets. Accordingly, policies that help people to build and reinforce assets (physical, human and social) are essential.

A. Panel Data

Panel data can provide richer information than cross section data, as it collects information from the same households two or more successive times. The main advantage of panel data is that it can follow up trends and changes in different variables. It also has the ability to construct 'cause and effect' relationships between variables, and to analyze behavior at the individual respondent level.

Mobility refers to the movement of household categories between vulnerability groups.

This study is based on panel data, since it relies on information gathered from 3,338 households who were previously interviewed in 2005. The vulnerability categories specified in both the 2005 and 2008 surveys were used to analyze changes in living standards of households and to trace the mobility of households across vulnerability groups over this three year period. Mobility refers to the movement of household categories

Four Vulnerability Categories

- **Remained Vulnerable:** This refers to those households who were in "very high or high" vulnerability groups in 2005 and remained in these two categories in 2008;
- **Exited Vulnerability:** This refers to those households who were in "very high or high" vulnerability groups in 2005 and are no longer so in 2008;
- **Entered Vulnerability:** This refers to those households who were not in "very high or high" vulnerability groups in 2005 and have moved in to one of these two categories in 2008; and
- **Remained Non-Vulnerable:** This refers to those households who were not in "very high or high" vulnerability groups in 2005, and remained so in 2008.

between vulnerability groups.

Regarding the mobility of households across different vulnerability groups, overall, the data shows that slightly less than half of the sample (49 percent) always non vulnerable households, while one quarter of households stayed vulnerable between the two surveys, 14 percent moved in (dropped to the vulnerability categories in 2008) and finally, 11 percent of households moved out from the vulnerability categories in 2008.

B. Mobility across Vulnerability Groups

One advantage of panel data is that it can be used to construct transition matrices. The transition matrix used to capture the dynamics of households between different vulnerability groups between the two periods 2005 and 2008 is shown in Table 3.1 and Table 3.2, while Figure 3.1 provides a graphical representation of the mobility of households across vulnerability groups.

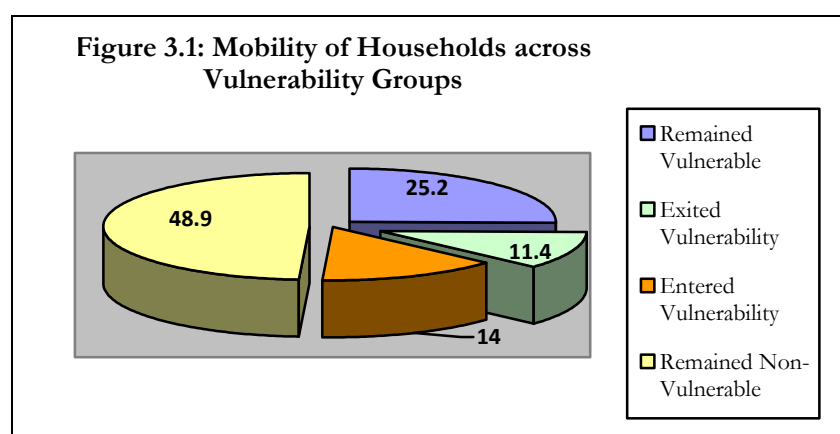


Table 3.1 shows that the largest decline in living standards was among the high vulnerability category, where 31.4 percent moved to higher vulnerability; and among the less vulnerable, 32.4 percent moved back to the low vulnerability category. Eight percent of the very high vulnerability category moved to the least two vulnerability groups.

Table 3.1: Mobility across Vulnerability Groups (Column %)

		Vulnerability Groups in 2005					
		Very High	High	Medium	Low	Very low	All in 2008
Vulnerability Groups in 2008	Very High	54.20	31.40	18.20	6.60	2.70	22.10
	High	25.60	26.30	21.10	11.50	4.10	17.60
	Medium	12.40	19.10	26.00	23.50	8.30	18.40
	Low	6.90	18.70	26.10	31.10	32.40	23.30
	Very Low	1.00	4.50	8.60	27.30	52.50	18.50
	All in 2005	100.00	100.00	100.00	100.00	100.00	100.00

Almost one-fifth of households in the high vulnerability category in 2005 moved to the least vulnerable groups in 2008. With reference to the category of very low vulnerability, the data shows that 85 percent of households who were in the least vulnerable category in 2005 remain within the lowest vulnerability categories in 2008, while 18 percent of households in the low vulnerable category in 2005 dropped to the most vulnerable groups in 2008. With regards to the households at the medium group in 2005, the data shows that about 39 percent of households were dropped to the most vulnerable groups, while another 35 percent moved to the least vulnerable groups.

Table 3.2: Mobility across Vulnerability Groups (Row %)

		Vulnerability Groups in 2005					
		Very High	High	Medium	Low	Very low	All in 2008
Vulnerability Groups in 2008	Very High	47.80	24.90	18.30	6.80	2.20	100.00
	High	28.30	26.20	26.50	14.80	4.20	100.00
	Medium	13.20	18.20	31.40	29.10	8.10	100.00
	Low	5.70	14.10	24.90	30.30	25.00	100.00
	Very Low	1.00	4.30	10.30	33.50	50.90	100.00
	All in 2005	19.50	17.60	22.20	22.70	18.00	100.00

Accordingly, mobility across different vulnerability groups shows that most households who were at the extreme groups remained within the same vulnerable groups between the two surveys, while a considerable percentage of households who were at the high and the low vulnerable groups moved to the least and the most vulnerable groups, respectively.

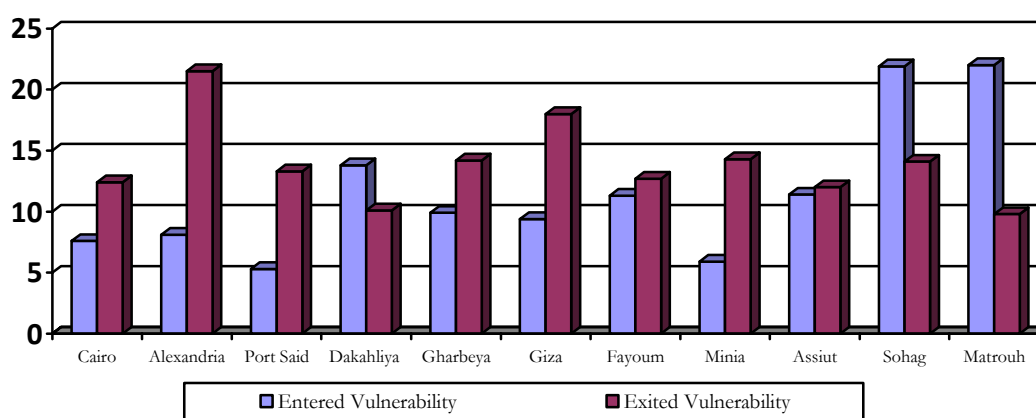
C. Mobility by Governorate and Region

Looking at urban-rural differences, Table 3.3 and Figure 3.2 demonstrate that the situation is slightly better in urban areas than in rural ones, where 29.1 percent of rural residents stayed vulnerable and 14.5 percent moved into a vulnerable status. The corresponding figures for urban areas are lower, with 21.5 percent remaining vulnerable, and 13.4 percent moving into vulnerability.

Table 3.3: Mobility by Governorates and Regions

	Row%				
	Remained Vulnerable	Exited Vulnerability	Entered Vulnerability	Remained Non-Vulnerable	All
Total Sample	807	357	440	1533	3137
	25.70	11.40	14.0	48.90	100
Governorates					
Cairo	17.10	7.60	12.40	62.90	100
Alexandria	28.10	8.10	21.50	42.30	100
Port Said	6.80	5.30	13.30	74.60	100
Dakahliya	24.30	13.80	10.10	51.80	100
Gharbeya	13.90	9.90	14.20	62.00	100
Giza	28.40	9.40	18.00	44.20	100
Fayoum	43.00	11.30	12.70	33.00	100
Minia	43.90	5.90	14.30	35.90	100
Assiut	39.80	11.40	12.00	36.80	100
Sohag	32.50	21.90	14.10	31.40	100
Matrouh	23.80	22.00	9.80	44.40	100
Region					
Metropolitan	19.80	7.70	15.10	57.40	100
Upper Egypt	38.60	13.20	14.90	33.30	100
Lower Egypt	17.50	11.20	13.00	58.30	100
Zone					
Urban	21.50	9.70	13.40	55.40	100
Rural	29.10	12.70	14.50	43.60	100

Figure 3.2: Percentage of Households Entering & Exiting Vulnerability, by Governorate



With regards to different governorates, the data shows that almost one-fifth of households in Alexandria and Giza that were previously not vulnerable moved into vulnerability in 2008. Matrouh and Dakahliya exhibited the lowest percentage in this respect. On the other hand, more than one-fifth of households in Sohag and Matrouh successfully moved out of vulnerability, Minia and Alexandria have the worst performance. Port Said has the highest percentage of households who always non vulnerable (75 percent), followed by Cairo

and Gharbeya. Upper Egypt governorates (including Fayoum, Minia, Assiut and Sohag) have the highest percentage of households who stayed vulnerable between 2005 and 2008, and have the lowest percentage of households that remained non-vulnerable.

D. Profile of Mobility Groups

Designing an effective coping strategy to prevent households from entering into vulnerability necessitates an informed understanding of which socio-economic groups are the most vulnerable, and how large they are. Several factors will be considered with reference to mobility between vulnerability groups, these include housing, education, employment, and savings.

1. Mobility and Housing Characteristics

A wealth of data has been collected by the 2005 and 2008 surveys on a range of housing characteristics. Table 3.4 presents some housing characteristics by region and by mobility across vulnerability groups. Differentials were observed among different groups regarding all housing characteristics. Most households who stayed in non vulnerable groups live in an apartment, while households who stayed in vulnerable groups live in rural houses. Almost 80 percent of households in rural areas owned their houses, while this figure decreased to 49 percent among households in urban areas, where the houses are mostly rented. However, no differences were observed between mobility groups regarding the ownership of the houses. More than 90 percent of all households regardless of their mobility group live in houses that are connected to an electricity network and that have a private bathroom.

Table 3.4: Housing Characteristics, (% of Households)

	Zone		Mobility Status				Total Sample
	Urban	Rural	Remained Vulnerable	Exited Vulnerability	Entered Vulnerability	Remained Non-Vulnerable	
Type of House							
Apartment	74.30	24.70	29.50	34.50	43.60	60.20	47.10
One or More Rooms in a Housing Unit	3.30	2.80	5.10	2.50	5.90	0.90	02.90
Independent Room	3.70	2.00	4.20	2.20	5.20	1.00	2.60
Villa/ Independent House	14.80	29.10	17.20	32.50	18.20	24.80	22.80
Rural House	3.90	41.30	43.80	28.30	27.00	13.00	24.60
Tent or Hut	0.10	0	-	-	-	-	-
Other	0	0.10	0.10	0	0	0.10	0.10
Type of Ownership							
Owned	48.40	79.70	68.60	74.90	56.40	64.40	65.60
Shared Ownership	9.60	13.20	8.60	15.90	11.40	12.90	11.90
Rented	40.40	4.50	20.60	7.30	28.60	21.00	20.40
Offered by Employer	0.30	0.20	0.60	0	0	0.30	0.30
Other	1.30	2.30	1.60	1.70	3.60	1.40	1.80
Average Area m ²	84.26	115.83	99.30	120.50	97.10	106.90	105.56
With Private Bathroom	94.00	95.90	91.70	96.60	90.50	98.40	95.40
Connected to Electricity Network	99.10	98.40	98.40	99.20	99.10	98.80	98.80

2. Mobility and Education

With regards to the relationship between educational characteristics of household heads and household members and the mobility of households across different vulnerability groups between the 2005 and 2008 surveys, the data shows that most households with illiterate heads stayed vulnerable between 2005 and 2008 (45 percent), and 17 percent of households with illiterate heads entered vulnerable groups in 2008 (Table 3.5 and Table 3.6). In contrast, more than three quarters of households (79 percent) whose heads have secondary education remained non-vulnerable between the two surveys. This figure increased to more than 90 percent among households whose heads have a diploma or university education.

Table 3.5: Mobility by Educational Status of Head of Household

Row%					
	Remained Vulnerable	Exited Vulnerability	Entered Vulnerability	Remained Non-Vulnerable	All
Illiterate	45.10	13.80	17.10	24.00	100
Read and Write	32.80	9.30	23.30	34.60	100
Primary	15.40	21.20	13.00	50.50	100
Preparatory	6.00	19.50	3.00	71.40	100
Secondary	3.40	7.50	10.00	79.10	100
Above Secondary	3.40	7.50	3.40	85.70	100
Diploma	0.70	4.30	2.50	92.50	100
University and Above	0	0	6.30	93.80	100

Table 3.6: Mobility by Educational Status of Head of Household

Column %					
	Remained Vulnerable	Exited Vulnerability	Entered Vulnerability	Remained Non-Vulnerable	All
Total Sample	100	100	100	100	100
Illiterate	69.50	47.90	48.30	19.40	39.60
Read and Write	22.30	14.30	29.00	12.40	17.50
Primary	4.00	12.30	6.10	6.80	6.60
Preparatory	1.00	7.30	0.90	6.20	4.20
Secondary	2.40	11.80	12.70	29.00	17.90
Above Secondary	0.60	3.10	1.10	8.20	4.70
Diploma	0.20	3.40	1.60	17.00	9.00
University and Above	0	0	0.20	1.00	0.50

Looking at households who remained vulnerable between 2005 and 2008, the data shows that 92 percent of them have heads of household that are either illiterate, or who can read and write but have no educational certificates. Additionally, 77 percent of households who moved into vulnerability have household heads that have no educational certificates, and 62 percent of households who exited vulnerability have household heads that are illiterate or without an educational certificate. Moreover, households whose heads hold secondary or higher education are over represented among the group that remained non-vulnerable, confirming that education is a powerful shield against vulnerability.

The same pattern was observed regarding the educational level of household members, where most illiterate members remained vulnerable between 2005 and 2008 (47 percent) and 16 percent entered vulnerable groups in 2008 (Table 3.7 and Table 3.8). On the other hand, the likelihood of an individual with higher education remaining in the non-vulnerable category is more than 75 percent. Accordingly, it is clear that **vulnerability is negatively correlated with the educational attainment of the household head and household members as well. Households with illiterate heads and members are more likely to stay vulnerable and face difficulty in moving out of vulnerability groups.**

Table 3.7: Mobility by Educational Status of Individuals

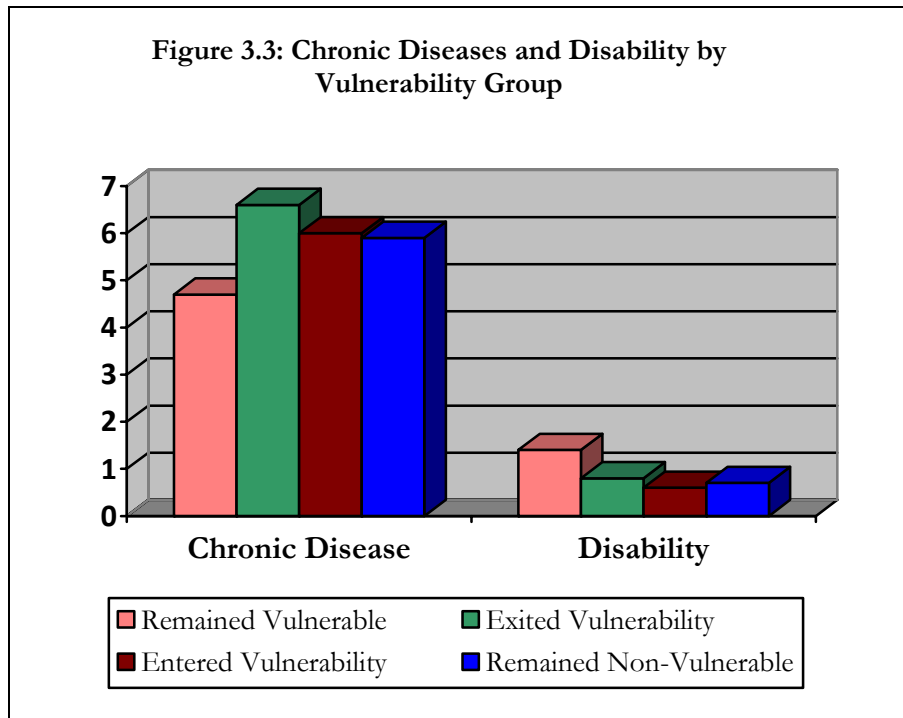
Row %					
	Remained Vulnerable	Exited Vulnerability	Entered Vulnerability	Remained Non-Vulnerable	All
Total Sample	31.00	12.30	14.00	42.70	100
Illiterate	47.10	13.70	16.00	23.10	100
Read and Write	36.20	12.30	17.00	34.50	100
Primary	33.10	12.60	14.80	39.50	100
Preparatory	25.10	14.00	10.70	50.20	100
Secondary	19.60	11.00	13.80	55.60	100
Above Secondary	18.70	9.60	8.70	63.00	100
Diploma	5.60	9.90	6.50	78.00	100
University and Above	-	0.20	11.40	88.40	100

Table 3.8: Mobility by Educational Status of Individuals

Column %					
	Remained Vulnerable	Exited Vulnerability	Entered Vulnerability	Remained Non-Vulnerable	All
Total Sample	100	100	100	100	100
Illiterate	43.70	32.00	32.90	15.60	28.80
Read and Write	17.00	14.50	17.60	11.80	14.50
Primary	13.20	12.70	13.00	11.40	12.40
Preparatory	8.00	11.20	7.50	11.60	9.90
Secondary	14.90	21.10	23.30	30.80	23.60
Above Secondary	1.80	2.40	1.90	4.50	3.10
Diploma	1.30	6.00	3.50	13.60	7.40
University and Above	-	0	0.20	0.60	0.30

3. Mobility and Health

The survey collected information on household member health, including the presence of any kind of disability, chronic disease, or both (Table 3.9). Overall, the percentage of individuals who suffered from chronic disease increased between the two surveys. The percentage of individuals who suffered from chronic disease is highest in metropolitan areas, as they are more likely to take care of their health and discover any health problems or chronic diseases, followed by individuals in Lower Egypt.



Regarding the vulnerability status of individuals, individuals in the least vulnerable group have a higher incidence of chronic diseases than those in the most vulnerable group (Figure 3.3). This observation is similar to that found in many countries as the better off are more educated and can afford to go for regular health checkups and consequently can discover any health problems early on. Suffering from a chronic disease depends on urbanization, financial status and the availability of health facilities. Individuals in urban areas, metropolitan areas, and the least vulnerable or those who have exited vulnerability are more likely to suffer from chronic disease. With regards to disability, the percentage of individuals who suffered from any kind of disability decreased between 2005 and 2008.

Table 3.9 demonstrates the high variation in health status of individuals, by governorate, region, zone and vulnerability category. The table shows that the prevalence of individuals with chronic diseases is highest among individuals in Port Said (16 percent), and is lowest in Minia (2 percent). A similar result was observed regarding mobility across vulnerability groups, where individuals who remained in or entered the high vulnerability group between the two surveys are least likely to suffer from any chronic disease compared to those who remained in the non-vulnerable group or moved out from the vulnerability groups.

Table 3.9: Health Status of Individuals, Percent of Individuals

	2005				2008			
	Good Health	Chronic Illness	Disabled	Both	Good Health	Chronic Illness	Disabled	Both
Governorate								
Cairo	94.40	3.40	1.40	0.80	87.20	10.10	1.60	15.80
Alexandria	96.20	2.60	0.80	0	88.50	10.00	1.10	6.60
Port Said	98.30	1.00	0.40	0.30	81.90	16.10	1.00	15.80
Dakahlia	97.10	1.70	1.10	0.10	90.40	7.90	1.40	5.30
Gharbeya	98.00	1.60	0.40	-	93.40	5.80	0.50	6.90
Giza	97.20	1.90	0.70	0.10	94.90	4.20	0.80	2.00
Fayoum	97.40	1.30	0.90	0.30	94.40	4.80	0.50	8.60
Minia	97.70	0.80	1.30	0.20	94.70	3.80	1.10	8.40
Assiut	98.00	1.00	0.80	0.30	96.30	2.70	0.70	10.80
Sohag	98.20	0.70	1.00	0.20	96.00	2.70	1.10	6.40
Matrouh	97.80	0.60	1.40	0.30	96.80	1.80	0.90	13.50
Region								
Metropolitan	95.10	3.10	1.20	0.70	87.40	10.30	1.40	0.80
Upper Egypt	97.70	1.00	1.00	0.20	95.40	3.40	0.90	0.30
Lower Egypt	97.80	1.50	0.70	0.00	92.50	6.40	0.70	0.30
Zone								
Urban	96.70	2.10	0.80	0.30	91.00	7.40	1.10	0.50
Rural	97.80	1.10	1.00	0.10	94.30	4.50	0.80	0.30
Vulnerability Category								
Very High	96.70	1.60	1.30	0.40	92.90	5.30	1.40	0.40
High	96.80	1.70	1.20	0.30	93.90	5.00	0.80	0.40
Moderate	97.90	1.20	0.70	0.10	91.40	7.10	0.90	0.60
Low	97.70	1.40	0.80	0.10	93.80	5.20	0.70	0.30
Very Low	97.80	1.80	0.40	0.00	93.00	6.00	0.70	0.40

Table 3.10: Health Status of Individuals, (No. & %) by Mobility Categories

	Good Health	Chronic Illness	Disabled	Both
Remained Vulnerable	93.40	4.70	1.40	0.40
Exited Vulnerability	92.30	6.60	0.80	0.30
Entered Vulnerability	93.10	6.00	0.60	0.20
Remained Non-Vulnerable	92.90	5.90	0.70	0.50

4. Mobility and Employment

Employment characteristics are frequently mentioned as a major cause of changes in vulnerability status. For instance, households with heads who become unemployed or retire may slip into the high vulnerability category. The data shows that around 85 percent of household heads were employed, regardless of their vulnerability status (Table 3.11). Concerning the sectors of employment, most household heads who work in government and economic authorities are in the remained non-vulnerable category (72 percent). Additionally,

all household heads who work in non-governmental organizations (NGOs) are either in the non-vulnerable, remained non-vulnerable or exited vulnerability categories. However, most household heads who remained in the vulnerable groups work in the private sector (84 percent).

Table 3.11: Mobility by Employment Status of Head of Household

Column %					
	Remained Vulnerable	Exited Vulnerability	Entered Vulnerability	Remained Non-Vulnerable	All
Working Status					
Employed	85.50	87.20	81.70	85.80	85.30
Unemployed	1.20	2.10	0.60	0.70	1.00
Out of Labor Force	13.30	10.70	17.70	13.50	13.70
Total Sample of 6+ Years	100	100	100	100	100
Sector of Employment					
Government and Economic Authorities	14.50	22.60	16.70	42.10	29.70
Public Sector	1.40	2.50	2.80	4.40	3.20
Local Government	0.40	0.80	0.70	0.30	0.40
NGO	0	0.40	0	0.50	0.30
Private Sector	83.70	73.70	79.70	52.70	66.30
Total Employed	100	100	100	100	100
Work Stability					
Permanent	63.00	79.30	67.00	87.9	78.00
Temporary	5.80	3.30	4.70	4.0	4.40
Seasonal	7.40	4.10	6.20	2.0	4.10
Occasional	23.80	13.40	22.10	6.2	13.40

Work stability is highly correlated with mobility across the vulnerability groups, with 88 percent of household heads from households in the ‘remained non-vulnerable’ category in permanent employment. This figure decreased to 63 percent among those who remained in vulnerable groups, which is less than the average by 15 percentage points.

One quarter of household heads from households that remained vulnerable work in occasional/casual jobs. This figure is much higher than the average, and it decreases to 6 percent among household heads in non-vulnerable groups in 2005 and 2008. The same results were observed regarding the employment status of household members. Generally, households who stayed vulnerable are more likely to have a head who works in the private sector and/or occasionally. Conversely, heads of household who are government employees and/or permanent workers are mostly found among households who either remained non-vulnerable, or moved out of vulnerability. These households are more likely to remain non-vulnerable. Households with heads employed as casual workers are over represented among those that remained vulnerable, or moved into vulnerability. Therefore, creating permanent job opportunities is a key element for reducing vulnerability or preventing it.

Creating permanent job opportunities is key to reducing or preventing vulnerability.

Table 3.12: Mobility by Employment Status of Head of Household

Row %					
	Remained Vulnerable	Exited Vulnerability	Entered Vulnerability	Remained Non-Vulnerable	All
Participation Rate					100
Working Status					
Employed	24.40	11.70	13.40	50.60	100
Unemployed	29.20	25.00	8.30	37.50	100
Out of Labor Force	23.70	8.90	18.00	49.40	100
Total Sample (6+ Years)	24.40	11.40	14.00	50.30	100
Sector of Employment					
Government and Economic Authorities	11.90	8.80	7.50	71.80	100
Public Sector	10.30	8.80	11.80	69.10	100
Local Government	22.20	22.20	22.20	33.30	100
NGO	0	16.70	0	83.30	100
Private Sector	30.70	12.90	16.10	40.30	100
Total Employed	24.30	11.60	13.40	50.70	100
Work Stability					
Permanent	19.70	11.90	11.30	57.10	100
Temporary	32.30	8.60	14.00	45.20	100
Seasonal	44.20	11.60	19.80	24.40	100
Occasional	43.30	11.70	21.60	23.40	100

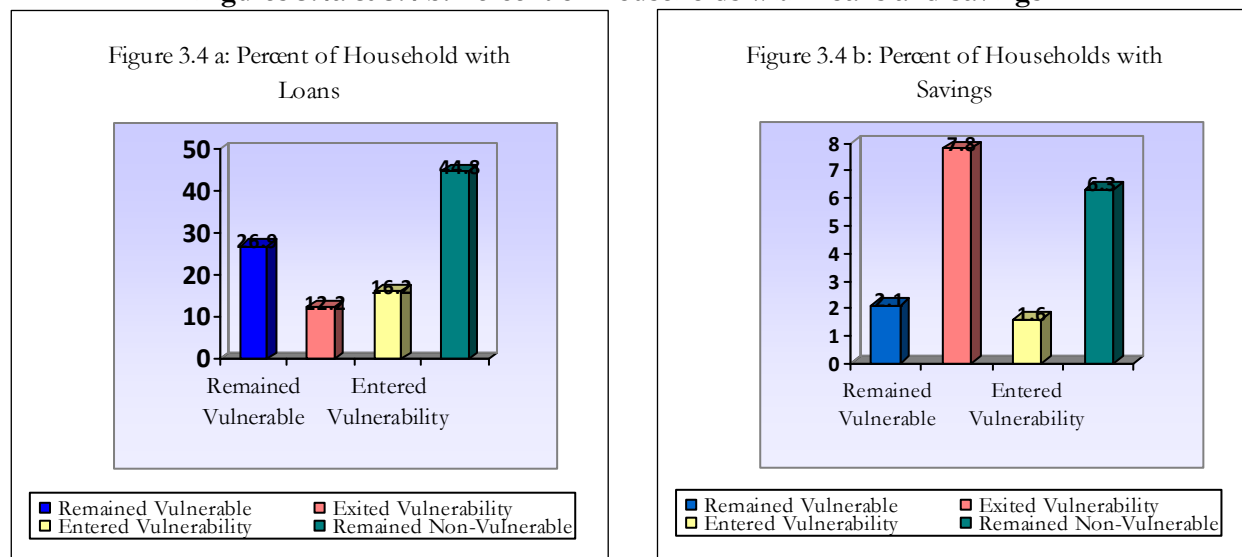
Table 3.13: Mobility by Employment Status of Individuals

Row %					
	Remained Vulnerable	Exited Vulnerability	Entered Vulnerability	Remained Non-Vulnerable	All
Participation Rate					100
Working Status					
Employed	29.70	13.10	12.90	44.70	100
Unemployed	26.50	13.90	15.50	44.00	100
Out of Labor Force	33.00	11.50	14.40	41.20	100
Total Sample (6+ Years)	31.60	12.10	14.00	42.30	100
Sector of Employment					
Government and Economic Authorities	10.90	10.00	7.50	71.60	100
Public Sector	14.20	9.80	10.10	65.90	100
Local Government	11.00	11.60	8.30	69.10	100
NGO	2.90	6.50	3.70	86.90	100
Private Sector	37.60	14.10	15.20	33.10	100
Total Employed	29.70	12.90	12.50	44.50	100
Work Stability					
Permanent	21.20	14.00	11.10	53.70	100
Temporary	41.90	10.40	11.70	36.00	100
Seasonal	52.70	9.60	20.30	17.30	100
Occasional	50.90	12.00	17.70	19.40	100

5. Mobility and Savings and Loans

As previously argued, savings and loans are highly correlated with the vulnerability status of households, and consequently they are correlated with the mobility of households across the vulnerable groups between 2005 and 2008.

Figures 3.4a & 3.4 b: Percent of Households with Loans and Savings



Households who exited vulnerability or who remained non-vulnerable in both 2005 and 2008 have the highest percentage of savings (7.8 percent and 6.3 percent respectively). In contrast, the percent of households who moved to the vulnerable groups, or who stayed vulnerable in both years that have savings reached 1.6 percent and 2.1 percent respectively. It is obvious that households who have managed to save were successfully able to reduce their vulnerability.

Regarding the correlation between loans and mobility across different vulnerability groups, the data shows that around one-third of households of all mobility groups except those who remained non-vulnerable (28 percent) have loans. Most loans taken by households who remained non-vulnerable are for housing, where the percentages of these loans are higher than their share in the sample. More than one-quarter of households who have loans are from those who remained in vulnerable groups between the two surveys, and the majority of loans are for consumption and health purposes, indicating that vulnerable groups were unable to satisfy their basic needs and had to borrow to cover them.

Table 3.14: Mobility by Access to Loans and Purpose of Loan

	Column %				
	Remained Vulnerable	Exited Vulnerability	Entered Vulnerability	Remained Non-Vulnerable	All
Purpose of Loans (% HH with Loans Reporting)					
Consumption	26.80	16.80	23.20	20.10	22.10
Business	9.10	7.10	12.50	8.50	9.10
Agriculture	0.30	-	-	-	0.10
Education	2.70	3.60	2.00	5.90	4.10
Housing	19.60	19.70	20.00	24.50	21.70
Health	8.00	3.70	8.30	6.40	6.80
Family Event	0.20	0.10	1.40	0.50	0.50
Other	33.30	49.00	32.60	34.10	35.80
All Loan Recipients	100	100	100	100	100

6. Mobility and Social Insurance

The 2005 and 2008 surveys asked households if any member of the household received social insurance. Survey data demonstrates that the percentage of households with social insurance decreased in urban areas, while no significant difference was observed in rural areas between the two surveys. Generally, almost two-fifths of households (44 percent) in urban areas in 2008 received at least one type of social insurance; the corresponding figure for rural areas is much lower, accounting for 29 percent. The percent of households reporting at least one member having social insurance varies according to governorate, with Port Said having the highest percentage at 62.40 and Assiut having the lowest percentage at 16 percent. The percentages of households who received social insurance declined between 2005 and 2008, except in Gharbeya, Minia, Sohag and Matrouh.

The percentage of households with social insurance differs greatly across different vulnerability groups. Only 15 percent of households who remained in vulnerable groups between the two surveys benefited from social insurance; this number increases to 41 percent among those who remained in non-vulnerable groups. Households who stayed highly vulnerable in both 2005 and 2008 have less accessibility to social insurance benefits, compared to the non-vulnerable.

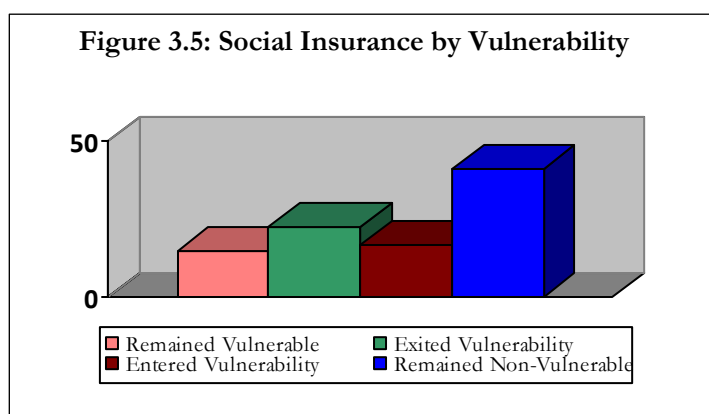


Table 3.15: Number and Percentage of Individuals (age 6+) with Social Insurance

	2005		2008	
	Number of Individuals	%	Number of Individuals	%
Governorate				
Cairo	176	49.40	159	45.30
Alexandria	152	45.20	128	38.20
Port Said	258	69.90	246	62.40
Dakahlia	160	33.60	140	30.50
Gharbeya	229	44.40	198	48.70
Giza	160	38.80	120	33.60
Fayoum	145	26.10	127	22.50
Minia	147	26.40	120	26.70
Assiut	125	21.20	81	16.10
Sohag	171	33.60	135	34.10
Matrouh	169	35.60	184	36.70
Region				
Metropolitan	389	49.10	347	44.10
Upper Egypt	926	39.80	800	40.80
Lower Egypt	560	26.50	433	25.10
Zone				
Urban	991	48.00	842	44.30
Rural	908	27.90	762	28.80
Vulnerability Category				
Very High	146	14.30	149	14.00
High	244	24.40	163	19.70
Moderate	393	30.30	265	33.60
Low	502	46.60	436	43.30
Very Low	613	67.90	591	69.60

7. Mobility and Income Patterns

Vulnerability is always associated with security in income, or the ability of a household to maintain its income level against shocks. Households were asked to report the changes in household income during the period 2005 to 2008. Only 5 percent of households believe their income has significantly increased (Table 3.16).

This was true regardless of geographic location. However, 40 percent feel their income has increased somewhat, and this ranges from a high of 56 percent in Cairo to a low of around 24 percent in Dakahliya, Giza and Assiut. Metropolitan households were more likely to say their income had increased than households in Upper or Lower Egypt. Also urban households are more likely to report their income has increased than rural households.

Slightly more than two-fifths of households (41 percent) mentioned that their income had remained about the same, where rural households were more likely to perceive no income change than urban households. Additionally, Lower and Upper Egyptian households reported no income change more than metropolitan households. Households whose real income in fact does not change will begin to feel the impact of their decreased purchasing power due to inflation. One in ten households felt a decline in income, and 5 percent reported their income decreasing significantly. Of the households who reported slight income decreases there was an even urban/rural split, with a higher percentage of Upper Egyptian households perceiving a slight decline. Significant declines were most common in Cairo, Port Said, Minia and Assiut, and averaged 8 percent for metropolitan areas compared to 4 and 2 percent for Upper and Lower Egypt, respectively.

Table 3.16: Income Change Over Past 2 Years, by Geographic Category, 2008.

	Categories of Change of Household Income (HH reporting)				
	Increased Significantly	Increased Somewhat	No Change	Decreased Somewhat	Decreased Significantly
Total Sample	4.50	40.00	40.60	10.00	4.90
Governorate					
Cairo	2.00	55.90	25.10	8.00	9.00
Alexandria	1.00	51.00	34.30	7.00	6.70
Port Said	6.30	47.70	28.90	9.50	7.60
Dakahliya	5.20	25.20	57.50	8.50	3.60
Gharbeya	2.30	46.30	47.20	3.90	0.30
Giza	-	23.60	60.30	13.00	3.00
Fayoum	2.20	50.30	42.40	3.80	1.30
Minia	8.60	32.80	38.40	12.90	7.30
Assiut	6.80	24.40	45.00	16.00	7.80
Sohag	3.00	49.20	28.20	16.90	2.70
Matrouh	11.70	33.70	39.00	10.30	5.30
Region					
Metropolitan	1.90	54.00	28.00	7.80	8.30
Upper Egypt	3.80	34.10	43.20	14.60	4.30
Lower Egypt	3.30	38.80	51.00	5.40	1.50
Zone					
Urban	2.80	46.30	37.50	8.20	5.30
Rural	3.80	34.90	48.40	10.10	2.80

a. Income by Vulnerability Category

Regarding the vulnerability categories, Figure 3.6 and Table 3.17 show the reported change in household incomes between 2005 and 2008, according to vulnerability category. About 63 percent of households in the "very low" vulnerability category reported a significant or moderate increase in their income as opposed to only 32 percent for households in the "very high" vulnerability category. In contrast, 22 percent of the most vulnerable households reported a decrease in income compared to 6 percent of the least vulnerable households.

Figure 3.6 : Changes in HH Income by Vulnerability

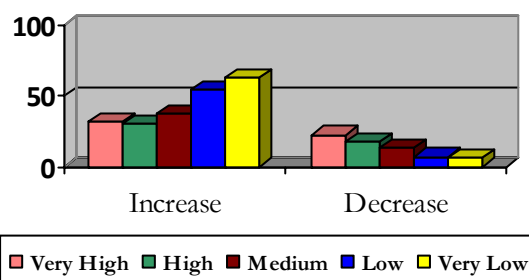


Table 3.17: Change in Real Household Income over Past 2 Years, by Vulnerability Category, 2008.

Vulnerability Categories	Categories of Change of Household Income (% HH Reporting)				
	Increased Significantly	Increased Somewhat	No Change	Decreased Somewhat	Decreased Significantly
Very High	1.00	30.70	46.10	13.60	8.60
High	1.70	28.20	52.90	13.90	3.20
Medium	2.60	34.50	49.20	9.50	4.10
Low	5.00	49.20	38.90	4.90	2.10
Very Low	6.20	56.60	30.90	4.80	1.40

Households who mentioned that their income decreased over the previous two years were asked to identify the reasons for this decrease and additionally the factors in the economy that affect their households. Reasons differed significantly across vulnerability groups. Overall, the data shows that *more than half of households attribute the decline in income to the loss of a job. Another 20 percent attribute it to a prolonged illness that kept a family member from working* (Table 3.18). In 8 percent of the households there was a death of an income earner.

Table 3.18: Reasons for Changes in Income, by Vulnerability Category, 2008.

Vulnerability Categories	Reasons for Decrease in HH Income (% HH with Decrease in Income Reporting)				Economic Reasons (% HH with Decrease in Income Reporting)			
	Loss of Job	Prolonged Illness	Death of Income Earner	Decrease of Remittances	High Unemployment	Change in Wages	Price Increase	Others
Very High	62.4	29.5	6.6	.2	77.4	63.7	99.6	1.2
High	52.1	18.1	7.2	-	72.2	65.0	99.5	1.2
Medium	48.1	15.1	7.2	4.1	70.2	74.3	99.0	2.6
Low	53.2	14.3	5.1	.6	62.5	69.0	99.4	1.8
Very Low	41.5	2.1	21.6	1.9	57.0	69.7	98.9	1.4
Total sample	54.4	19.9	8.0	1.1	67.9	68.2	99.3	1.6

Regarding differences across vulnerable groups, prolonged illness has a more significant impact on the most vulnerable and contributed to decreasing income for 30 percent of the households, compared to only 2 percent among the least vulnerable group. Death of income earner impacted only 7 percent of households in the most vulnerable group, while it represented a significantly larger 22 percent for those in the least vulnerable group. The most important economic reason cited for decline in real income was price increases, mentioned by almost all households regardless of their vulnerability status. More vulnerable households were more likely to also mention high unemployment, while less vulnerable households were more likely to mention changes in real wages. Illness, price increases and unemployment were the main reasons for decreasing income for vulnerable households while unemployment and death of income earner have been reported as major reasons for income decline.

Illness, price increases, death of an income earner and unemployment were the main reasons for decreased incomes.

b. Change of Household Income by Mobility Group

The data shows that reported changes in household income differ between mobility groups. As demonstrated in Table 3.20, more than half (55 percent) of households who stayed in non-vulnerable groups in both surveys mentioned that their income had increased significantly or somewhat, while this figure decreased to 30 percent among households who stayed in vulnerable groups in both surveys. In contrast, only 8 percent of households who remained in non-vulnerable groups mentioned that their income decreased during the past two years, while this figure increased to 22 percent among households who remained in vulnerable groups.

Table 3.19: Mobility by Categories of Change of Household Income

Column %					
	Remained Vulnerable	Exited Vulnerability	Entered Vulnerability	Remained Non-Vulnerable	All
Total Sample	100	100	100	100	100
Increased Significantly	1.40	3.10	0.90	5.30	3.40
Increased Somewhat	28.70	41.70	30.00	49.20	40.40
No Change	48.20	43.70	52.50	37.60	43.10
Decreased Somewhat	14.90	9.50	11.80	5.60	9.30
Decreased Significantly	6.80	2.00	4.80	2.30	3.80

With regard to the reasons for decreased income, the data shows that more than half of households who mentioned prolonged illness and more than two fifth of households who mentioned loss of job or death of income earner are from those who stayed in vulnerable groups. Around one quarter of households who mentioned loss of job and 16 percent who mentioned prolonged illness were from those who remained in non-vulnerable groups.

Table 3.20: Mobility by Reason for Decreased Income, (% HH with Decrease in Income Reporting)

		Remained Vulnerable	Exited Vulnerability	Entered Vulnerability	Remained Non-Vulnerable	All
Household-Level Reasons for Change	Loss of Job	44.50	11.30	20.10	24.00	100
	Prolonged Illness	52.90	8.80	22.20	16.10	100
	Death of Income Earner	42.40	6.00	10.10	41.50	100
	Decrease of Remittances	-	-	7.30	92.70	100
Economy-Level Reasons for Change	High Unemployment	28.50	11.20	15.40	44.90	100
	Change in Wages	23.40	12.20	13.80	50.50	100
	Price Increase	25.80	11.30	14.10	48.90	100
	Others	23.50	11.80	7.80	56.90	100

Households were asked whether any emergency events had affected the household budget level during the last three years. The data shows that price increases were the major event cited for increases in household expenditure, with no differences between mobility groups. Ramadan and other religious occasions were the second important event that affecting households. Events that affect households in some mobility groups more than the others include business projects, which affected approximately 9 percent of households who stayed in vulnerable groups, increasing to 20 percent among those who moved out from vulnerable groups. Additionally, long term unemployment was mentioned by around 60 percent of households who remained in vulnerable groups, while it was mentioned by only 37 percent of households who remained in non-vulnerable groups.

Table 3.21: Emergency Events Experienced Over Last 3 Years by Mobility Category (% HH Reporting)

Reason for Increase in Household Expenditure	Remained Vulnerable	Exited Vulnerability	Entered Vulnerability	Remained Non-Vulnerable	Total Sample
Price Increases	96.40	96.40	96.40	94.50	95.50
Business	9.40	20.40	12.70	13.30	13.00
Medical Expenditure	65.80	68.60	71.80	71.30	69.60
Ramadan and Other Religious Occasions	80.40	84.30	83.90	83.50	82.90
Accidents(Fire or Theft)	4.10	5.30	5.00	5.40	5.00
Long Term Unemployment	60.40	48.20	54.00	37.40	46.90
Rent	13.10	19.00	13.60	20.30	17.40
Education Expenses	58.70	50.60	52.50	56.30	55.70
Marriage Expenditure	23.90	27.90	17.00	22.40	22.70
Divorce Expenses	1.40	3.90	1.60	1.60	1.80
Debts	30.60	31.40	32.40	28.50	29.90
Death and Funeral Expenses	6.30	7.30	5.20	8.90	7.60

c. The Impact of Price Increases on Living Standards

Given recent data on consumption patterns, produced through the most recent household income, expenditure and consumption Survey (HIECS) for 2005, it is possible to estimate the current level of poverty by plugging in the current level of prices into the consumption basket obtained by the surveys. Direct Compensating Variation (DCV) associated with price changes since 2005 are shown in Table 3.19 above.

There are two important findings, 1) the DCV is high, implying that the poverty impact will be large; and 2) the DCV and CPI are higher for lower deciles. This means that the poor have suffered much more as a result of price changes. Households in the first decile have to increase their consumption by 17 percent in order to maintain their living standards, compared to 15.5 percent for the richest decile. As noted earlier, due to the high share of food consumption by the poor, the bulk of the poverty impact can be attributed to changes in food prices rather than to price changes in other goods (including fuel). As a result of the increase in food prices alone, our estimates show that the proportion of the population below the poverty line rose from 19.60 to 29.00⁹. These findings indicate that many poor households have not been protected by the existing safety nets.

Table 3.22: Consumer Price Index and Direct Compensating Variation for Egypt

Deciles ¹⁰	CPI (2004-05=100)			DCV
	2005-06	2006-07	July –Dec 2007	
1	105.00	116.70	125.00	17.00
2	104.60	116.10	124.90	16.80
3	104.40	116.00	123.90	16.70
4	104.20	115.60	123.80	16.70
5	104.10	115.50	123.70	16.60
6	104.00	115.30	123.50	16.50
7	103.80	115.00	123.30	16.40
8	103.40	114.60	122.90	16.20
9	103.00	114.00	122.60	16.00
10	101.40	111.80	121.50	15.50
All Egypt	103.80	115.10	122.80	16.20

Source: Authors calculations based on Household Income, Expenditure and Consumption Survey conducted by CAPMAS, 2004/05.

⁹ The poverty line is estimated to be LE 1,400 in 2005 and LE 1,968; World Bank (2007 and 2008)

¹⁰ Decile is based on per capita consumption derived from HIECS 2005.

F. Government Cash Transfers and Social Assistance

The Ministry of Social Solidarity (MOSS) provides cash transfers through three program funds: (i) a so-called social-pension fund for special categories of vulnerable people such as orphans, widows, divorcees and their children, and families of prison convicts; (ii) a temporary assistance fund for pregnant women, those with partial disabilities, emergencies such as medical expenses and school fees, and natural disasters and accidents; and (iii) a fund for families of former low-income GoE employees, covering emergency payments for sickness, education and marriage. In addition, the Nasser Social Bank issues transfers and interest-free loans to poor families for school or medical expenses or cases of personal crisis.¹¹

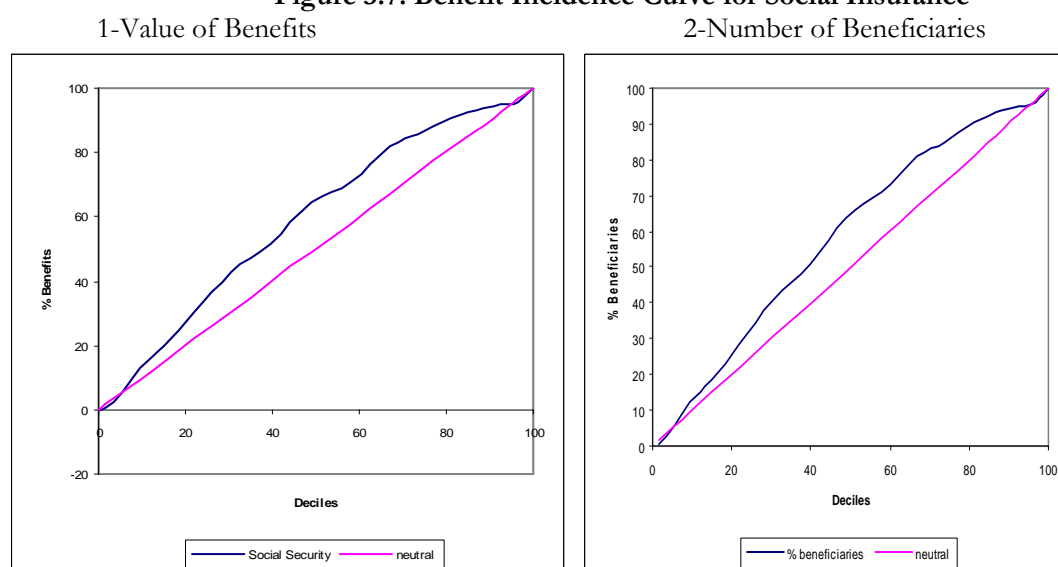
1. Do Cash Transfers Reach the Vulnerable?

How much of the resources of the social assistance system actually reach vulnerable households? As Table 3.23 shows, the least vulnerable individuals (the top two quintiles) receive 29 percent of the value of social assistance. Benefit incidence curves are demonstrated in Figure 3.7. It shows that social security benefits are progressive where highly vulnerable households receive more benefits; in terms of shares. For instance the very high vulnerability group receives 30 percent of total benefits, while the lowest vulnerability households receive only 9.12 percent of total benefits. This implies that some public resources are being spent on transfers to wealthier Egyptians – resources that could otherwise be available to reduce poverty and assist the vulnerable. The progressive nature of social assistance is due to low benefit received rather than targeting criteria used.

Table 3.23: Percentage of Beneficiaries from Social Assistance

	% Share Of Total Benefits	% of Beneficiaries
Very High	30.57	20.96
High	21.05	18.94
Moderate	19.43	19.62
Low	19.82	11.31
Very Low	9.12	10.05
All	100.00	15.89

Figure 3.7: Benefit Incidence Curve for Social Insurance



The limited effectiveness of social-assistance cash transfers is due largely to the low level of benefits and coverage. Cash transfer payments from the MOSS provide low benefits amounting to LE 80 per recipient family per month. It also has a limited coverage where only 20 percent of highly vulnerable households receive social-assistance cash transfers. Despite the fragmented approach to the safety net, there are concrete steps being taken to improve performance in some areas. Policymakers are aware of program deficiencies, particularly with respect to subsidies. For example, a pilot study of the use of smart cards for the ration-card system is underway and could be rolled out nationally within several years, potentially saving the GoE up to 10 percent in administrative costs.

¹¹ The Nasser Bank operates nominally under the management of MOISA, but functions independently as a full-range bank in addition to its social aspects. Nearly LE 50 million was disbursed to poor families as transfers or interest-free loans in FY04.

G. Determinants of Vulnerability

Vulnerability and mobility profiles are a useful way of summarizing information on the levels of poverty and the characteristics of the poor and vulnerable in a society. They also provide us with important clues to the underlying determinants of poverty and vulnerability (Ravallion, 1996). Empirical poverty assessments in recent years have seen a number of attempts to go beyond poverty profile tabulations to engage in a multivariate analysis of living standards and poverty. One of the benefits of such analyses is the ability to assess the impact of a change that a particular factor would have on the probability of an individual being vulnerable or entering vulnerability, were all other factors constant. Policy makers try to design interventions that protect populations from future poverty. Such interventions are based on a 'snap shot' assessment of vulnerability. Multivariate analysis is used here to evaluate vulnerability effects of proposed policy interventions.

This section assesses the main determinants that caused households to either remain vulnerable or become vulnerable in 2008 using the logistic regression model. The model's estimates were used to predict changes in household vulnerability status as an impact of changes of a certain factor, keeping all other factors constant (all other factors are controlled). Two regressions were estimated. The first regression is to identify the determinants of households who remained in the vulnerable group, while the second is for households who entered into the vulnerable group.

1. Households that Remained Vulnerable

Table 3.24 provides the results of the logistic regression analysis to assess the factors that influence whether households remain vulnerable. The dependent variable is a binary variable; takes the value "1" if the household stayed vulnerable in both years, while takes the value "0" otherwise. The odds ratios of the model are interpreted as the likelihood of a household to stay in the vulnerable group for a unit change in the explanatory variable after controlling all other variables.

Table 3.24: Logistic Regression Model Results for Main Determinants of Remaining Vulnerable

	Coefficients	Significance	Exp(B) (Odds Ratios)
Region: Metropolitan ®		.000	
Lower Egypt	-.084	.620	.919
Upper Egypt	.942	.000	2.564
Urban /Rural Zone (Urban ®)	-.051	.679	.950
Change of Health Status of Head 2005-08		.461	
Became Well	.173	.521	1.189
Became Ill	-.165	.239	.848
Stayed Ill	.164	.533	1.178
Education of Head (less than sec ®)		.000	
Secondary Education	-3.251	.000	.039
University	-4.174	.000	.015
Difference of Employment Status of Head 2005-2008	-.187	.162	.829
Sector of Employment of Head (Out of Labor force ®)		.236	
Government	.251	.804	1.285
Private Sector	-.040	.968	.961
Stability of HH Head Job (Out of labor force ®)		.001	
Permanent	.178	.866	1.194
Temporary	.725	.490	2.066
Difference in HH Size between 2005-08	.030	.389	1.030
Having Social Insurance (Not having SI ®)	-.301	.023	.740
Income Change (Increased ®)		.000	
Not Changed	.196	.083	1.217
Decreased	.722	.000	2.059
Availability of Loans (Not available ®)	-.166	.118	.847
Ownership of Agricultural Land	-1.848	.000	.158
Ownership of Lands	-1.097	.190	.334
Ownership of Production Assets	-1.118	.000	.327
Constant	.163	.798	1.177

®: Reference Category

Since the study examines the mobility of households across vulnerable groups, some of the independent variables were measured as the change in the characteristics of households between the two surveys; namely 2005 and 2008. Accordingly, the independent variables used in the regression are: zone, region, characteristics of head of household (education status, change in employment status across 2005-08, change in health status, sector of employment, and stability of employment). Other characteristics include: change of household size across 2005-08, household having social insurance, income change of household in the last two years, household having loans, ownership of agriculture land, construction lands and production assets.

a. Regression Results

As the accompanying classification table (Table 3.25) shows, the model performed quite well. It provides an indication of how well this model fits or “explains” the variation in the dependent variable. Overall, the model correctly identifies 72 percent of the sampled households as staying or not staying in the vulnerable group. The model is better at identifying households who stayed in the vulnerable groups than other households. The cutoff point used to classify the data into the two groups was identified by 0.25 as the percentage of households in the sample who stayed in the vulnerable group. Model interpretation is summarized below.

Table 3.25: Results of Logistic Regression for Households that Remained Vulnerable

Observed		Predicted		Percent Correct
		Remained Vulnerable		
		Otherwise	Remained	
Remained Vulnerable	Otherwise	1621	717	69.3
	Remained	135	617	82.0
Overall				72.4

The cut off value is 0.25

b. Household Head Characteristics:

The variable of educational status is one of the strongest significant determinants of whether or not a household remains vulnerable. Household heads with higher education are less likely to stay in the vulnerable group. The results of the regression show that when household heads have secondary education the likelihood of staying in a vulnerable group decreases by almost 60 percent compared to household heads having basic education or less, and by 85 percent for those having university education holding all other explanatory variables constant. Additionally, household heads who work in temporary jobs are more likely to stay in a vulnerable group than those in permanent employment. However, regression data shows that changes in the health status of the household head between 2005 and 2008, employment status, and sector of employment, have an insignificant impact on households remaining in the vulnerable group.

c. Household Characteristics:

Logistic regression data shows that households with similar characteristics have different risks of remaining in a vulnerable group, depending on the region they live in. Households in Upper Egypt are 2.5 times more likely to stay in a vulnerable group than those in metropolitan regions, provided that all other variables remained unchanged.

Additionally, changes in household income over the last two years have had a significant impact on keeping households vulnerable. The likelihood of remaining vulnerable between 2005 and 2008 is double for households who mentioned that their income decreased during the last two years compared to those whose income increased during the same period (assuming that all other explanatory variables are constant). Social insurance also has an impact on whether or not households remain vulnerable. The data indicates that the likelihood of remaining in the vulnerable group decreases by almost 25 percent among households who have social insurance compared to those who do not.

Ownership of agricultural land or production assets is a strong determinant of whether or not households remain vulnerable. As expected, ownership of production assets decreases the likelihood of remaining within the vulnerable category by almost 67 percent, compared to households who do not own any production

assets (with all other characteristics kept constant). A similar result was observed for those who own agricultural land.

Accordingly, the main factors determining whether or not households remain in a vulnerable group are:

- their regional location;
- the educational status of the household head;
- the stability of the household head's employment;
- the presence of social insurance;
- changes in household income; and
- Ownership of agriculture land and/or production assets.

Based on the above findings, policies that aim to reduce vulnerability should focus on the development of Upper Egypt, building human capital in terms of education and skills, and maintaining sustainable sources of income through employment and social insurance expansion.

2. Households that Entered Vulnerability

Regarding the mobility of households to the vulnerable group at 2008, a logistic regression model was estimated using the same explanatory variables as the previous model. The dependent variable is a binary variable takes the value "1" if the household move to the vulnerable group and the value "0" otherwise.

a. Regression Results

The classification table below (Table 3.26) shows that the model correctly identifies 62 percent of the sampled households as having entered into vulnerability groups. The model is better at identifying households who moved into the vulnerable group than other households. The cutoff point used to classify the data into the two groups was identified by 0.15, which is equal to the percentage of households in the sample who moved into to the vulnerable group.

Table 3.26: Logistic Regression Results for Households that Entered Vulnerability

Observed		Predicted		Percent Correct
		Entered into Vulnerability		
		Otherwise	Entered	
Entered into Vulnerability	Otherwise	1,587	1,031	60.60
	Entered	151	321	68.00
Overall				61.80

The cutoff value is 0.15

b. Household Head Characteristics:

As previously stated, the educational status of the head of the household is an influencing factor on whether or not a household moves into vulnerability. Households with educated heads are less likely to move into the vulnerable group. Another factor that determines whether or not households enter vulnerability is the health status of the household head. Finally, the employment status of the head of the household has the greatest impact on the mobility of households towards the vulnerable group. Household whose heads work in the private sector are 20 times more likely to enter into the vulnerable group than those whose heads are unemployed. The stability of the job (temporary, occasional, permanent, etc) had no impact in this respect.

c. Household Characteristics:

Changes in household size between 2005 and 2008 had a significant impact on whether or not households entered into vulnerability. **Increasing household size by one member increases the likelihood of a household moving into the vulnerable category.** Additionally, households who have social insurance decrease their chances of moving into the vulnerable category by 28 percent.

Changes in household income over the last two years have had a great impact on household vulnerability status. **Households that reported a decrease in their income over the two year period were more likely to move into vulnerability than those who reported an increase in their income over the same period** (assuming all other variables remain constant).

The ownership of agricultural land and/or production assets has a strong influence on household vulnerability status. Those households that owned agricultural land were much less likely to move into the vulnerability category than households that did not own any. The same result was observed for households that own production assets. Accordingly, policies that help people to build and reinforce assets (physical, human and social) are essential.

Table 3.27: Logistic Regression Model Results for Main Determinants of HHs Entering Vulnerability

	Coefficients	Significance	Exp(B) (Odds Ratios)
Region: Metropolitan ®		.009	
Lower Egypt	-.291	.101	.748
Upper Egypt	.074	.661	1.077
Urban /Rural Zone (Urban ®)	.075	.566	1.078
Change of Health Status of HH Head 2005-08		.088	
Became Well	-.369	.314	.692
Became Ill	.331	.025	1.392
Stayed Ill	.040	.895	1.041
Education of HH Head (less than sec ®)		.000	
Secondary Education	-.444	.002	.641
University	-1.384	.000	.251
Difference of Employment HH Head Employment Status 2005-2008	-.381	.061	.683
Sector of Employment of HH Head (Out of Labor Force ®)		.027	
Government	2.780	.045	16.126
Private Sector	3.030	.027	20.693
Stability of HH Head Employment (Out of Labor Force ®)		.008	
Permanent	-3.376	.011	.034
Temporary	-3.642	.006	.026
Difference in HH Size between 2005-08	.236	.000	1.266
Having Social Insurance (Not having SI ®)	-.328	.021	.721
Income Change (Increased ®)		.016	
Not Changed	.349	.004	1.417
Decreased	.262	.114	1.300
Availability of Loans (Not Available ®)	.007	.952	1.007
Ownership of Agricultural Land	-1.085	.000	.338
Ownership of Land	-1.007	.222	.365
Ownership of Production Assets	-.592	.042	.553
Constant	-.114	.865	.892

®: Reference category

SECTION FOUR: FOOD CONSUMPTION AND CHILDREN'S NUTRITION

Key Messages

- Highly vulnerable households tend not to diversify their food consumption and consume cheaper and less nourishing foods; accordingly, it is expected that the health status of household members who remained in vulnerable groups is at greater risk than those who remained non-vulnerable, as a result of their food consumption patterns.
- Households in the most vulnerable group are more likely to use less expensive food items like bread and cereals, in their diets, while households in the least vulnerable group are more likely to include expensive and more nourishing foods like milk, fruit, and meat or poultry in their nutritional diet.
- Stunting and wasting do not have a linear relationship with the vulnerability categories and the least vulnerable category has a higher percentage of stunting than some of the less vulnerable categories.
- Households in 2008 are less likely to include meat, poultry and fish in their consumption pattern than those in 2005 (25 percent versus 30 percent respectively). Similar results were observed for milk and vegetables, which might have a serious impact on nutritional status. This result could be interpreted by the increment of food prices of these items, namely; meat, poultry, milk and vegetables.

A. Food Consumption

Food consumption, the most direct measure of food security, is a complex variable that cannot be derived from a single question on a survey, and in any case must take into consideration the sources of food. Household food consumption is sourced from purchases, own production, and food received as aid or gifts. The latter source is particularly important as it determines food insecure people on the basis of their ability to purchase the food they need, i.e., food access, and more specifically, economic access to food. Moreover, patterns of food consumption are a primary determinant for the health of household members, particularly children. Accordingly, the pattern of food consumption is considered one of the main reasons affecting the stunting and wasting levels of children in Egypt.

Access to Food

According to the qualitative survey implemented in 2005, respondents mentioned that while food is readily available, the largest obstacle to access is lack of income. Gaps in people's ability to obtain food occur at the beginning of the school year and during Ramadan and other festivals due to the pressure of other expenses; and during winter, when the provisions of farming households are depleted coupled with a fall in tourism that reduces seasonal employment. Another frequently cited reason for running out of food is that government and other salaries are only adequate to meet food and other household expenses for 10 to 15 days of the month due to a shortage of cash. This is the time when households take out loans or defer payments for food expenditures.

Table 4.1 provides a number of statistics on food consumption and diet diversity by geographic area. The first indicator is the Food Consumption Score (FCS). The FCS is a proxy for the diversity of the household diet. The FCS is calculated based on the household's reported diet over the three days prior to the survey. Each food type is allocated a score based on its nutrient density. Animal proteins, milk and eggs in the diet receive the highest score of four. Cereals and bread receive a score of two; legumes, vegetables and fruits a score of three, and sugar/oils/fat/butter receive a score of 0.5. Sweets and beverages are excluded. The maximum possible FCS is 28.5. The higher the FCS, the more diverse and nutritional is the diet.

Table 4.1: Food Consumption and Food Expenditure by Geographic Categories, 2008

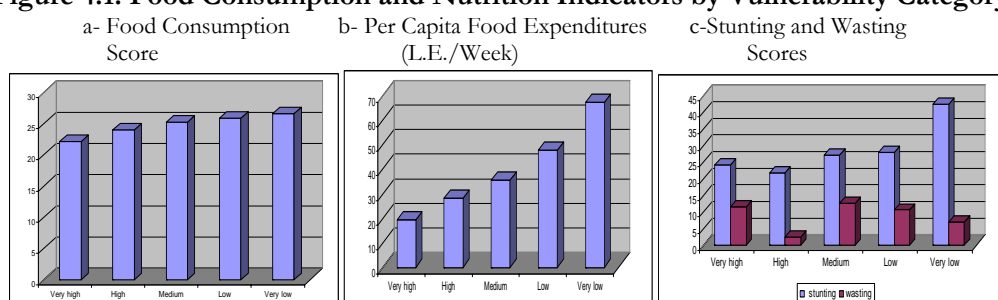
	FCS	Food Expenditures (L.E./week)	Per Capita Food Expenditures (L.E./week) (in 2008)
Total Sample	24.72	196.06	36.26
Governorate			
Cairo	25.09	193.34	45.55
Alexandria	24.57	142.44	32.03
Port Said	26.92	272.09	63.58
Dakahlia	24.51	190.10	38.82
Gharbeya	25.77	219.94	43.12
Giza	24.51	178.64	38.01
Fayoum	24.65	175.72	27.05
Minia	24.41	185.42	26.74
Assiut	23.79	255.58	36.05
Sohag	23.15	147.95	24.70
Matrouh	25.86	295.03	36.83
Region			
Metropolitan	25.01	181.35	42.11
Lower Egypt	25.32	211.00	41.61
Upper Egypt	23.82	183.15	28.99
Zone			
Urban	24.94	184.89	39.64
Rural	24.53	205.51	34.06

Overall, the average FCS for the sample population was 24.7. This suggests that there is acceptable diversity in household diets. Data presented in the table shows that there are no significant differences among the eleven governorates in the mean FCS, nor are there any distinctions by region or rural/urban areas. This suggests that the diet of Egyptian households is highly similar throughout all regions. However differences do exist between vulnerability groups confirming that vulnerability scores reflect food deprivation as well. The very high vulnerable households tend not to diversify their food consumption and, as will be shown later, they consume cheaper and less nourishing foods. FCS of the very high vulnerable households is below the average by 2 points and FCS of the least vulnerable households is 20 percent higher than the very high vulnerable households (Table 4.2 and Figure 4.1).

Table 4.2: Food Consumption Pattern, Food Expenditure, and the Nutritional Status of Children, by Vulnerability Category. 2008

Vulnerability categories	FCS	Food Expenditures (L.E./week)	Per Capita Food Expenditures (L.E./week)	Children (6-59 Months) Stunted	Children (6-59 Months) Wasted
Very High	22.13	131.61	19.37	24.2	11.7
High	24.01	166.16	28.24	21.9	2.5
Medium	25.26	188.49	35.49	27.2	12.8
Low	25.92	224.43	47.71	28.1	10.7
Very Low	26.61	281.10	67.17	42.4	7.1

Figure 4.1: Food Consumption and Nutrition Indicators by Vulnerability Category



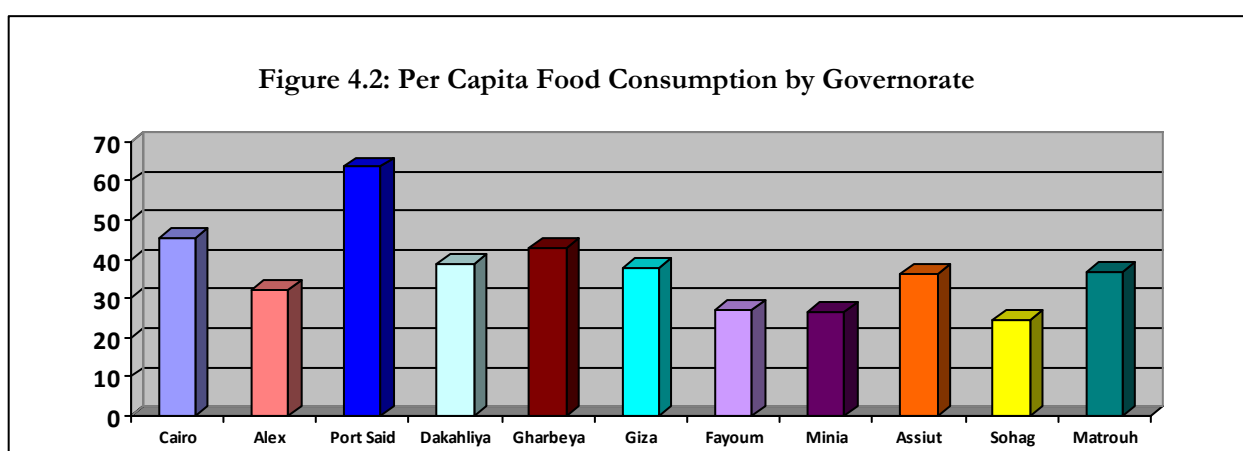
Regarding the vulnerability categories, the data shows that there are significant differences in per capita food expenditures among different categories. The per capita food expenditure reached L.E. 19 per week for the most vulnerable group, and increased to L.E. 67 for the least vulnerable group, which means that families in the very low vulnerability category spend nearly 3.5 times as much as families in the very high vulnerability category.

Table 4.3: Food Expenditures by Geographic Categories, 2005.

	Food Expenditures (L.E./week)	Per Capita Food Expenditures (L.E./week)	Per Capita Food Expenditures (L.E./week) at 2008 prices
Total Sample	135.53	22.07	32.10
Governorate			
Cairo	124.89	28.46	40.34
Alexandria	92.63	19.55	27.81
Port Said	162.75	36.66	52.60
Dakahliya	147.25	24.95	36.29
Gharbeya	152.90	26.00	37.81
Giza	136.25	24.26	35.00
Fayoum	127.68	18.82	27.15
Minia	120.04	16.52	23.83
Assiut	151.25	18.94	27.32
Sohag	116.90	15.75	22.72
Matrouh	118.89	15.70	22.65
Region			
Metropolitan	105.49	26.03	37.55
Lower Egypt	144.14	25.38	36.61
Upper Egypt	120.94	17.55	25.32
Zone			
Urban	128.19	24.73	35.68
Rural	141.56	20.26	29.23

Overall per capita food expenditures during the week prior to the survey amounted to LE 36.3¹² per week. The data shows that there are significant differences in per capita food expenditures among regions and between governorates (Table 4.3, Figure 4.2). In general, metropolitan and urban areas have higher per capita food expenditures than Upper Egypt. This is true even with household sizes being smaller in urban areas compared to rural areas. Port Said, Cairo, and Gharbeya have significantly higher per capita food expenditures. Upper Egyptian households report significantly lower per capita food expenditures, and Sohag and Fayoum have the lowest per capita food expenditures among all governorates.

Figure 4.2: Per Capita Food Consumption by Governorate



¹² This is 10% higher than food consumption reported in the HIECS of 2008-09 for April to June round.

Food consumption patterns vary between urban and rural residents, households in different vulnerability groups and households in different mobility groups. The 2008 data shows that there is a significant difference between urban and rural areas regarding the pattern of food consumption for some items only; namely, cereals, bread and milk. For urban households, 8 percent of their total food consumption comprised cereals. This increased to 12 percent among rural households. Bread represented only 6 percent of total food consumption for urban households, while households in rural areas consumed almost double this amount (11 percent). Households in rural areas are less likely to include milk in their nutritional diets than households in urban areas.

Food consumption patterns vary between urban and rural residents, households in different vulnerability groups, and households in different mobility groups.

With reference to vulnerability categories, the data shows that there are marked differences between the categories regarding all food items. Households in the most vulnerable group are more likely to use less expensive food items like bread and cereals, in their diets, where these two items represent almost one quarter of their total food consumption. However, these two items represent only 16.5 percent of total food consumption for the least vulnerable group. Households in the least vulnerable group are more likely to include expensive and more nourishing foods like milk, fruit, and meat or poultry in their nutritional diet than the most vulnerable group. However, differences in consumption patterns between vulnerability categories are more apparent than between households in various mobility categories, in fact food consumption patterns may take a longer time to change.

The consumption patterns of households in the 'remained poor' category resemble those of the poor where they consumed more cereals and pulses and less meat. Households who moved in vulnerability exhibited consumption patterns in the mid-way between households that stayed vulnerable and households that moved out of vulnerability. Households who stayed in vulnerable groups or moved into the vulnerable group are more likely to include cereal, bread and pulses in their food patterns than those who stayed in non vulnerable groups or moved out from vulnerable group. In contrast, households who stayed in non-vulnerable groups or moved out from these groups are more likely to include milk and fruits in their diet than other mobility groups. Accordingly, it is expected that the health status of household members who remained in vulnerable groups is at greater risk than those who remained non-vulnerable, as a result of their food consumption patterns.

Per capita real food expenditure increased significantly between the two surveys. Excluding expenditure on bread (as it was not recorded in the 2005 Survey), the comparison between per capita food consumption in 2005 and 2008 shows that the per capita real food expenditure increased significantly between the two surveys, where it increased in general, from L.E. 32.00 in 2005 to L.E. 33.10 in 2008 (t-statistics=6.246).¹³ The 2005 figure was adjusted using regional food CPI.

Per capita real food expenditure increased significantly between the two surveys.

After taking changes in prices into account, average per capita real food expenditure increased by 4 percent per annum. The per capita food expenditure increased in all governorates except in Fayoum. Annual increase ranged from 9 percent in Assiut to almost zero change in Fayoum. The metropolitan region experienced the lowest rate, while Upper Egypt has the highest growth rate. It is worth mentioning that, contrary to the trends observed in previous decades, food CPI in rural areas is higher than urban areas. This may be caused by a) villages becoming net consumers rather than net producers of food; and b) expansion in urban areas that blurs the distinction between urban and rural areas.

¹³ 2008 prices

B. Children's Nutritional Status

Malnutrition is the main underlying cause contributing to the high level of child mortality, and it is a primary result of food insecurity. Additionally, it affects the child's health and educational outcomes as it has a serious impact on the immediate and future cognitive development of the child. In order to measure malnutrition among children, three standard anthropometric indicators are used; stunting (height-for-age), wasting (weight-for-height) and under weight (weight-for-age). Stunting shows malnutrition resulting from cumulative inadequacies in the child's nutritional status. It is a good indicator for the general well-being of a population, as it reflects the structural context surrounding malnutrition.

The first Millennium Development Goal (MDG 1) - to "halve, between 1990 and 2015, the proportion of people who suffer from hunger", establishes "the proportion of children under five years of age who are underweight as the indicator to monitor progress towards this goal". Substantial evidence collected across continents shows that stunting (low height-for-age) in children below the age of five is a stronger indicator of hunger and of one of its determinants, poverty, than other anthropometric indicators or estimates of per capita income. This is because stunting indicates the *chronic* restriction of a child's potential growth, reflecting the cumulative effects of inadequate food intake and poor health conditions that result from endemic poverty. It is also important to note that children who become stunted during their first two years of life and who put on weight rapidly later in childhood are at high risk of chronic diseases related to nutrition.

Children who are stunted during their first 2 years of life, and then gain weight rapidly later in childhood are at higher risk of chronic diseases related to nutrition.

A wasting index provides a measure of wasting or acute malnutrition, as it reflects the effects on a child's nutritional status of recent food shortages or a recent episode of diarrheal or other illness that contribute to malnutrition.

Table 4.4 provides information on stunting and wasting in children under five. The 2008 survey collected age, sex, weight and height data on children aged six months to 59 months. These children were part of households interviewed for the survey. All children between 6 and 59 months in selected households were weighed and measured. Salter scales were used and children were weighed to the nearest 100 grams. Height was measured to the nearest 0.1 cm utilizing *Shorr* measuring boards. Recumbent length was measured for children under 24 months and children 24 months and older were measured standing.

The three anthropometric indicators calculated from the data include weight-for-height¹⁴, height-for-age, and weight-for-age expressed in Z-scores.¹⁵ Weight-for-height measures acute malnutrition in children, often referred to as thinness or wasting. This indicator is generally associated with a failure to gain weight or a significant loss of weight and is the most reliable indicator for acute malnutrition in children. It is the weight of a child compared with the height of reference children of the same height and sex. Height-for-age measures chronic malnutrition, often referred to as shortness or stunting. It is frequently associated with poor overall economic conditions, poor health/environment, and/or poor diet. This is the height of a child compared with reference children of the same age and sex.

The two indicators are expressed using Z-scores, with the following cutoff points used for differentiating among normal, moderate and severe levels of under nutrition.

Normal	=	≥ -2 z-scores
Moderate malnutrition	=	< -2 z-scores and ≥ -3 z-scores
Severe malnutrition	=	< -3 z-scores and/or Edema

¹⁴ Weight for height is independent of age and thus can be used when exact ages are difficult to determine.

¹⁵ Z-scores, or standard deviation units from the median, are derived utilizing an international reference population recommended by the World Health Organization in EgiInfo.

Table 4.4: Food Consumption, Food Expenditures, and the Nutritional Status of Children by Geographic Categories, 2008

	FCS	Food Expenditures (L.E./week)	Per Capita Food Expenditures (L.E./week) (in 2008)	Children (6-59 Months) Stunted	Children (6-59 Months) Wasted
Total Sample	24.72	196.06	36.26	26.70	9.90
Governorate					
Cairo	25.09	193.34	45.55	31.70	4.90
Alexandria	24.57	142.44	32.03	27.90	11.90
Port Said	26.92	272.09	63.58	34.60	13.50
Dakahliya	24.51	190.10	38.82	15.20	3.00
Gharbeya	25.77	219.94	43.12	21.70	3.60
Giza	24.51	178.64	38.01	26.70	19.80
Fayoum	24.65	175.72	27.05	37.70	7.90
Minia	24.41	185.42	26.74	25.30	4.30
Assiut	23.79	255.58	36.05	14.00	3.70
Sohag	23.15	147.95	24.70	21.50	7.00
Matrouh	25.86	295.03	36.83	22.20	11.50
Region					
Metropolitan	25.01	181.35	42.11		
Lower Egypt	25.32	211.00	41.61		
Upper Egypt	23.82	183.15	28.99		
Zone					
Urban	24.94	184.89	39.64	26.00	10.30
Rural	24.53	205.51	34.06	27.30	9.50

Table 4.4 shows the percentage of children aged between 6 to 59 months who suffered from stunting or wasting. Overall, the table shows that 26.7 percent of children suffered from stunting and almost 10 percent suffered from wasting. Rural areas had higher rates of stunting compared to urban areas (27.3 percent versus 26 percent). Fayoum had the highest stunting rate at 37.7 percent. Only 14 percent of children under five were found to be stunted in Assiut and 15 percent in Dakahliya.

Regarding wasted children, the data shows that Giza has the highest percentage of wasted children (20 percent), followed by Alexandria and Matrouh. Children in Dakahliya and Gharbeya are the least likely to suffer from wasting. Children in urban areas are more likely to suffer from wasting than children in rural areas (10.3 percent vs. 9.5 percent). Stunting and wasting do not have a linear relationship with the vulnerability categories and the least vulnerable category has a higher percentage of stunting than some of the less vulnerable categories. Moreover, results from the 2008 DHS survey show that the nutritional status of young children has worsened over the past three years. Nationwide stunting has increased by 7 percentage points (from 18 to 25 percent), levels not experienced since the early-mid 1990's. Similarly, levels of wasting have reached a long term high of 7 percent. These results may be considered –among others- as impacts of the global food crisis.

Children in urban areas are more likely to suffer from wasting than children in rural areas.

C. Changes in Food Consumption Patterns

Household consumption patterns differed between 2005 and 2008, for both urban and rural households. Adequate nutrition is critical to children's growth, health and development and to the health status of all society members. Inadequate or unbalanced diets and chronic illness are associated with poor nutritional status, particularly among children. It was believed that the rapid increase in food prices as well as the avian flu outbreak, might affect the consumption patterns of households between 2005 and 2008. Table 4.5 shows the percentage of consumed food items out of total food consumption for both 2005 and 2008. Looking at the sample as a whole, and because oil prices and to some extent pulses, have increased faster than other food items, households spend more of their budget on oil and pulses and less on meat.

Table 4.5: Food Consumption Patterns (2005 – 2008) by Region and Vulnerability Group.

2008 Survey											
	Cereals & Bread	Pulses	Eggs	Milk	Oils	Vegetables	Other Vegetables	Fruit	Meat	Sweets	Beverages
Total Sample	19.00	5.10	5.40	8.70	9.50	2.90	9.00	8.00	25.20	2.20	5.00
Zone											
Urban	14.00	4.70	5.90	10.50	9.20	2.80	9.60	9.10	25.70	3.00	5.60
Rural	22.90	5.30	5.00	7.40	9.80	2.90	8.50	7.20	24.90	1.70	4.50
Vulnerability Categories											
Very High	23.60	5.70	4.30	6.80	12.00	3.40	9.50	5.10	23.10	1.30	5.00
High	21.50	6.20	5.20	8.50	9.80	3.10	9.30	6.90	23.30	1.50	4.60
Medium	19.60	5.20	4.80	8.80	9.50	3.00	8.90	7.80	26.00	1.50	4.90
Low	18.60	4.70	5.80	8.70	9.70	2.70	8.60	8.40	24.80	2.40	5.60
Very Low	15.00	4.20	6.10	10.00	7.70	2.50	8.90	10.10	27.60	3.50	4.50
Mobility Group											
Remained Vulnerable	22.80	6.40	4.50	6.80	11.10	3.20	9.40	5.60	23.70	1.30	5.20
Exited Vulnerability	19.90	4.60	5.60	7.90	9.40	2.80	8.90	7.00	25.60	2.40	5.80
Entered Vulnerability	22.10	5.30	5.10	9.00	10.20	3.40	9.70	6.80	22.40	1.60	4.30
Remained Non-vulnerable	17.10	4.70	5.70	9.50	8.80	2.70	8.80	9.20	26.10	2.70	4.80
2005 Survey											
	Cereals	Pulses	Eggs	Milk	Oils	Vegetables	Other Vegetables	Fruit	Meat	Sweets	Beverages
Total Sample	11.90	4.50	5.00	10.10	9.80	3.10	9.50	6.70	29.60	2.70	7.00
Zone											
Urban	8.40	4.10	5.20	11.30	9.60	3.50	9.30	7.80	31.00	3.20	6.40
Rural	14.50	4.80	4.90	9.20	9.90	2.90	9.60	5.90	28.60	2.30	7.50
Vulnerability Categories											
Very High	13.50	5.40	5.00	9.30	11.60	3.40	9.70	4.60	26.10	1.80	9.60
High	14.50	4.50	4.70	9.20	9.60	3.00	10.70	5.60	28.30	2.10	7.80
Medium	12.70	4.90	6.00	10.80	10.40	3.10	9.40	5.80	27.80	1.90	7.30
Low	10.40	5.40	5.10	10.00	8.90	3.30	9.70	7.60	30.10	3.20	6.30
Very Low	10.20	2.70	4.30	10.60	9.30	3.00	8.50	8.50	33.30	3.70	5.80

The data shows that households in 2008 are less likely to include meat, poultry and fish in their consumption pattern than those in 2005 (25 percent versus 30 percent respectively). Similar results were observed for milk and vegetables, which might have a serious impact on nutritional status. This result could be interpreted by the increment of food prices of these items, namely; meat, poultry, milk and vegetables.

Between 2005 and 2008, the data shows that the gap between urban and rural areas is much wider in 2005 than that in 2008 for some items. Also, the gap between the vulnerability groups is wider in 2005 than in 2008. For example, almost 31 percent of total food consumption for households in urban areas in 2005 was directed to meat and 28.6 percent in rural areas, while both urban and rural residents in 2008 allocate 25 percent of their food budget to meat. Additionally, households in urban areas in 2005 were more likely to include vegetables and meat in their diets than in 2008.

Urban to rural differences in milk and dairy product consumption is puzzling, as one would expect that rural residents consume (as a share) more dairy products than their rural counterparts. One explanation is that in times of hardship rural households tend to sell the dairy products they produce rather than consume them. This confirms the observation mentioned earlier about rural households who became net consumers rather than net producers of their food, producing food but selling it for cash.

SECTION FIVE: THE FOOD SUBSIDY PROGRAM

KEY MESSAGES

- The high percentage of ration card holders among the least vulnerable category points to high leakage of program resources and calls for better targeting mechanisms that increase the coverage of the program to highly vulnerable households and reduce leakage to the better off.
- The high rate of ration card ownership by educated household heads suggests that targeting needs to be refined in the ration card program.
- Highly vulnerable households are less likely to register all members than those in the least vulnerable groups, while the opposite should be the case. This calls for further improvements to the registry system.
- Quantities provided through ration cards cover 19 days worth of household monthly consumption of sugar, 23 days for oil and 11 days for rice.
- Ration cards provide very vulnerable households with 60 percent of their consumption of sugar, 73 percent of oil consumption and 40 percent of rice consumption.
- On average, a person in a household holding a ration cards receives LE 7 per month, a person in a highly vulnerable household receives the equivalent of LE 5 per month through food subsidies, and LE 8 for the richest households. Balady bread expenditure is highly inelastic with respect to vulnerability status.
- On average, each person consumes about 2.4 loaves per day. Daily consumption of balady bread varies significantly between urban and rural areas, where the average per capita daily consumption in urban areas reached 3.11 loaves, as opposed to 1.9 loaves in rural areas, pointing to bias of subsidy resources to urban areas.
- Households in rural areas and in the most vulnerable groups agree to add subsidized wheat flour to their ration card instead of buying balady bread.
- Over half of respondents indicated that the problem of obtaining balady bread was reduced. After separating production from distribution.
- The less vulnerable obtain more benefits from public institutes for both secondary and higher education, while education costs for the most vulnerable group represents only a third of the least vulnerable group, this points to the need for more effective targeting mechanisms. Moreover, private tutoring (which has a negative impact on public perceptions of the value and usefulness of public schools) represents a major element in educational expenditure, especially for public schools.
- The majority of Egyptians use private clinics for medical treatments, with Government hospitals ranked second in this respect and public medical insurance hospitals ranked third. Public health spending is progressive, where the poor and vulnerable receive more benefits than the rich. This may be a result of the low quality of services provided by public institutions.
- As the price of piped water is highly subsidized, better off households receive more benefits than the highly vulnerable. NGOs can play an important role; by providing vulnerable households with water connections or soft loans to pay for such connections.
- Given that rising energy prices harms the poor, particularly in the short term, it is necessary to try to mitigate the impact through well-targeted social safety nets using some of the resources generated through subsidy reform.
- Total direct household energy subsidies represent LE 18 per capita per month. The LPG subsidy exhibited the largest share and all energy subsidies are regressive, i.e., the groups with the highest consumption accrue the highest benefits.

A. Egypt's Safety Net Program

The safety net to protect the poor and the near poor has not been effective. Social spending (including education, health, food subsidies, and social transfers) increased from an average of 7.5 percent of GDP in the period 1996-2000 to 9.8 percent in the period 2001-2005. In 2006-2007, subsidies for goods and services reached LE 53.9 billion, representing 24 percent of public spending and 8 percent of GDP. The energy subsidy represents 74 percent of total subsidy, while the bread subsidy reached 14.8 percent of total subsidies (LE 8 billion). The food subsidy through ration cards amounted to LE 1.4 billion (2.6 percent of total subsidy).

Egypt's main safety net is the food subsidy system, accounting for a major part of the Government of Egypt's safety net program, both in terms of costs and coverage. It comprises two systems: 1) ration cards, that offer eligible households a pre-determined monthly quota of basic foodstuffs (including rice, flour, tea, sugar and oil) depending on the number of persons registered on the card; and 2) subsidized bread, which is available to everyone. The food subsidy program is crucial for meeting the daily food needs of poor households. It is important to people because it provides vital commodities at cheaper prices when compared to regular market prices, and it frees a portion of the household budget to be spent on other important non-food items, such as education and health care.

Food subsidies account for a major part of the GoE's safety net program, both in terms of cost and coverage.

B. Ration Cards

Ration cards in particular were intended simply to ensure all Egyptians received a reasonable quantity of essential food items. However, the program has persisted since World War II, although with varying scope and size, and has become a strong symbol of the broader social contract between the GoE and the population. Ration cards are issued by the government to allow vulnerable households to purchase basic food products at subsidized prices.

The ration card system has undergone several reforms over the years. In 1981 the items covered by the ration card were reduced to oil and sugar; children born after 1989 were no longer eligible to register; and attempts were made to move less-poor households onto a new, lower-subsidy card.¹⁶ Reform of subsidized bread began in 1984, when the price of balady bread was raised from 1 piaster to 2 piasters, and then to 5 piasters in 1989. (In September 2003, the GoE introduced two types of higher-quality subsidized bread – 10-piaster bread and fino bread – at lower subsidy rates.) The reforms of the 1980s avoided sharp price increases that could have been politically volatile. Rather, reform measures were undertaken gradually and quietly. This slow transformation of the subsidy system ensured a successful reduction in the fiscal burden of the subsidy bill, while avoiding political difficulties.

After the Egyptian pound was floated in January 2003, it depreciated by more than 30 percent. Consequently, the prices of consumer goods, especially food, increased. This coincided with a drop in local wheat production, accompanied by an increase in

Evaluation of the Food Subsidy System

The food-subsidy system is inefficient and poorly targeted as a safety net. The cost to deliver \$1's worth of benefit is very high by international comparisons and has risen in recent years. The data shows that the cost of delivering \$1 of food benefit to the poor is considerably higher than the cost in food-based safety nets in other countries. Even comparing the cost in Egypt today with the same program in 1997 shows a decline in the efficiency with which the food-subsidy program operates.

There are two aspects to the inefficiency: the large amount of resources going to households that are not poor or vulnerable, and the large amount spent on distribution costs. As information is not available on the second of these, analysis here focuses only on the first. **WB 2005**

¹⁶ The high-subsidy card is often referred to as a "green ration card," while the low-subsidy card is often referred to as a "red ration card," corresponding to their original colors. Both cards offer the same items, but at different prices (i.e., different subsidy rates).

international food prices and freight costs. Responding to public pressure, the GOE expanded food subsidies in April 2004 by raising the number of rationed products from two to seven, and introducing subsidized fino bread.

Approximately 40 million ration cards were in use until May of 2008, when the GoE responded to the negative impact of the global hike in food prices by opening the ration card system to an extra 22 million people (and doubling the amount of rice that card holders are entitled to receive).

The GoE is introducing several policies and interventions schemes to realign the current subsidy program in order to redirect its benefits towards those who need them most. These include separating between the production and distribution processes for balady bread, expanding the coverage of the subsidy program to 63 million beneficiaries, revising ration card eligibility criteria to allow people born since 1989 to apply for a new ration card, removing low-demand food items and increasing food quotas at a higher (yet still subsidized) rate, increasing social assistance beneficiaries, and piloting the smart card system.

These new smart cards contain embedded chips with data on the household head's monthly quota of subsidized goods, as well as other household information. The new cards will also allow officials to track the distribution and consumption of subsidized goods, by recording transactions electronically. It is envisioned that the smart card will eventually also be used for other subsidies and services, including healthcare, education and pensions. To date, smart cards are being issued to applicants in Beni Suef, Port Said, Helwan's Maadi district, Luxor, Menoufeya, Sharqiya, Sohag, and Suez, with the expectation that 11.5 million smart cards will be issued by the end of 2008, covering 40 million beneficiaries.

Smart Cards will allow officials to electronically track the distribution and consumption of subsidized goods.

Subsidy rates vary widely by product. At one end of the spectrum, consumers pay only 5 percent of the cost of cooking oil; while at the other end, the rice subsidy rate reaches 30 percent. Table 5.1 shows the subsidy rates for different subsidized items, along with the quantity households can purchase at the subsidized price.

Table 5.1: Subsidy Rates for Individual Food Items

		Sugar	Oil	Rice	Tea
Main Quota Before 2006	Main Quantity per Person per Month	1 Kg	0.5 Kg	Maximum 2 Kg per Family	.050
	Price LE per Kg	0.60	0.50	1.00	11.20
	Subsidy Rate	20.00	5.00	30.77	50.91
Additional Quota from July 2006 to May 2008	Quantity per Person per Month	0.5 Kg (Maximum 2 Kg per Family)	0.5 Kg (Maximum 2 Kg per Family)	1 Kg (Maximum 4 Kg per Family), added in 2004	
	Price per KG	0.75	1.75	1.00	
	Subsidy Rate	25 %	17.5%	30.77%	
New Additional Quota After May 2008	Quantity per Person per Month	0.5 Kg (Maximum 2Kg per Family)	0.5 Kg (Maximum 2Kg per Family)	1 Kg (Maximum 4 Kg per Family)	
	Price per Kg	1.00	2.50	2.00	
	Subsidy Rate	33.33%	25%	61.54%	

Source: Ministry of Social Solidarity

The ration card program needs further improvements, not only in terms of registration, but also in terms of the quality and quantity of the commodities delivered. The GoE has responded to the publicly acknowledged need to improve ration card registration and availability, and registration for the food subsidy program was updated in June 2008 to allow those born after 1989 to receive ration cards. Some items such as beans, pasta and lentils were removed from the subsidy system, and quotas for existing items were increased at higher – yet still subsidized - rates.

On average, quantities provided through ration cards cover 19 days worth of household consumption of sugar, representing 63 percent of total consumption of sugar. The corresponding figure for oil is 23 days representing 76 percent of total consumption; 11 days for rice, representing 37 percent of total consumption of rice; and 14 days for tea; representing 47 percent of monthly consumption of tea. Percentages of ration cards quota out of total household consumption are similar across different vulnerability categories, except for the very high vulnerable group who seem to consume larger quantities of sugar and tea (Table 5.2.)

Table 5.2: Percent of Ration Card Quota out of Total Household Consumption, by Vulnerability Group, 2008.

	Sugar		Oil		Rice		Tea	
	No. of Days	Percent of Total Consumption	No. of Days	Percent of Total Consumption	No. of Days	Percent of Total Consumption	No. of Days	Percent of Total Consumption
Very High	17.80	59.34	22.04	73.46	11.82	39.38	13.17	43.89
High	18.97	63.24	23.01	76.68	10.82	36.07	13.51	45.05
Medium	19.10	63.68	23.20	77.35	11.21	37.36	15.26	50.85
Low	19.32	64.41	22.85	76.15	10.77	35.90	13.78	45.93
Very Low	19.38	64.60	23.35	77.82	10.89	36.29	15.35	51.17
All	18.90	63.00	22.86	76.21	11.11	37.05	14.10	47.01

1. Ration Card Ownership

According to the last food subsidy Ration Card Program, every household in Egypt was eligible to obtain either a full or partial ration card. Possession of a ration card is the first indication of a household's participation in the food subsidy program.

Data presented in Table 5.3 shows that ration card ownership is widespread, with nearly 80 percent of households in Egypt possessing a ration card. For most governorates surveyed there is no marked difference in the percent of households that access the food subsidy program through ration card ownership. Ownership of ration cards in Matrouh is just above half of all households (55 percent), while in many of the other governorates sampled it reached 70 percent and above, and with its highest value in Gharbeya and Fayoum (almost 88 percent).

Ownership in metropolitan areas such as Cairo, Alexandria and Port Said is significantly lower than in Upper and Lower Egypt. Metropolitan ownership averages 71 percent compared to 77 percent in Upper Egypt and 87 percent in Lower Egypt. If broken down by urban and rural sampling units, the data shows that households in rural areas are more likely to own a ration card than those in urban areas, where 86 percent of rural households owned a ration card compared to 73 percent of urban households.

Table 5.3: Ration Card Ownership

	2005	2008
Total Sample	77.50	79.20
Governorate		
Cairo	70.90	70.90
Alexandria	68.80	71.20
Port Said	73.50	73.50
Dakahliya	81.20	84.10
Gharbeya	81.20	87.70
Giza	60.10	63.30
Fayoum	79.90	87.30
Minia	83.60	84.70
Assiut	79.30	77.70
Sohag	77.80	75.40
Matrouh	50.30	54.50
Region		
Metropolitan	70.40	71.00
Upper Egypt	77.00	77.30
Lower Egypt	81.90	87.40
Zone		
Urban	71.40	73.40
Rural	82.40	85.70
Mobility Category		
Remained Vulnerable		81.00
Exited Vulnerability		83.50
Entered Vulnerability		78.50
Remained Non-Vulnerable		79.50

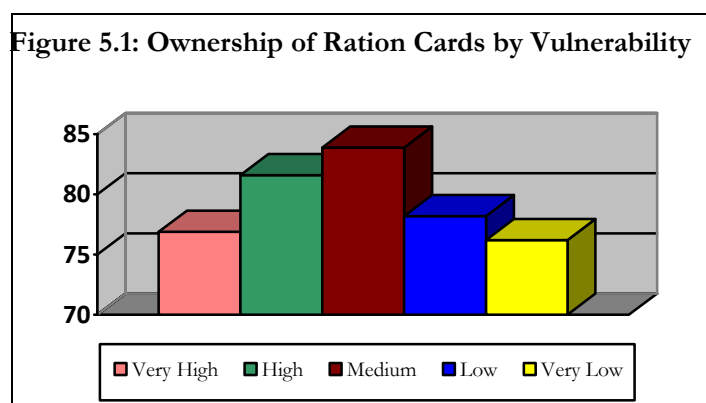
A comparison of ration card ownership between 2005 and 2008 indicates that possession of a ration card increased by 1.7 percentage points. While this trend can be observed among all governorates, Lower Egypt has the highest increment in the percentage of ration card ownership between the two surveys.

Each household that owned a ration card was asked whether or not it was a full ration card or a partial ration card¹⁷. Overall, 94 percent of the ration cards are full ration cards with a slight difference between urban and rural areas. Additionally, the survey data shows that 90 percent or above of the ration cards owned in all governorates are full ration cards. Although it may be logical to link full and partial subsidies to household size, there is a slight difference in average household size based on full or partial ration card ownership (5.7 members for full cards, and 4.5 members for partial cards).

Concerning the vulnerability categories of households, the data shows that there are slight differences between different groups of vulnerability. Very high and very low vulnerable households have the lowest percentage of ration card holders (76 percent) while the middle class has the highest percentage (84 percent), indicating that a quarter of highly vulnerable households are excluded from participating in the ration card system. This may be due to the fact that highly vulnerable households who work in the informal sector and are illiterate do not have the necessary documents to apply for ration cards. In any event, the high percentage of ration card holders among the least vulnerable category points to high leakage of program

¹⁷ All Partial ration card holders were transferred to Full ration card as of May 2008

resources and calls for better targeting mechanisms that increase the coverage of the program to highly vulnerable households and reduce leakage to the better off.



One of the important issues addressed in the 2008 survey is the smart card. Households who have ration cards were asked whether they also had smart cards. Less than one percent of households reported that they own the smart card, with 2 percent among households in urban areas and 0.1 percent among households in rural areas.

Ration cards provide the very vulnerable households with 60 percent of consumption of sugar, 73 percent of oil consumption and 40 percent of rice consumption. The high percentage of ration card holders among the least vulnerable category points to high leakage of program resources and calls for better targeting mechanisms that increase the coverage of the program to highly vulnerable households and reduce leakage to the better off.

2. Characteristics of Ration Card Owners

One of the central themes of the survey was to assess which households own and use food ration cards, and how the services provided by the program are perceived. Respondents were asked about their card ownership, monthly use patterns, commodity preferences, and suggestions for improving the system.

With regards to mobility across vulnerability categories, the data shows that 48 percent of households who owned a ration card are from those who stayed in non vulnerable groups between the two surveys, while 26 percent are from those who stayed in vulnerable groups. However, looking at each mobility group, the data shows that around 80 percent of households in each mobility group owned ration cards with almost 93 percent of them full ration cards.

Table 5.4: Percentage of Households Owning Ration Cards

2008			
	HHs Owning Ration Cards (%)	Type of Card (% of HHs with Ration Cards)	
		Full	Partial
Remained Vulnerable	81.00	94.00	6.00
Exited Vulnerability	83.50	95.00	5.00
Entered Vulnerability	78.50	92.20	7.80
Remained Non-Vulnerable	79.50	93.80	6.20
All	80.20	93.80	6.20

In terms of ration card ownership, the data shows that 59 percent of household heads that own a ration card are either illiterate or functionally literate (can read and write) without any educational certificates. However, almost 30 percent of household head ration card owners have completed secondary education or higher. These results were almost identical to the results presented by the 2005 survey. The high rate of ration card

ownership by educated household heads suggests that targeting needs to be refined in the ration card program. Ration card ownership was also looked at by status of employment of household head, where it was found that 75 percent of those who classified their employment as permanent held ration cards, 62 percent of those with temporary employment held ration cards, and 73 percent of the casually employed held ration cards. However, most ration card owners are permanently employed (78 percent). *Regarding the sector of employment of the household head, the data shows that household heads employed in government or the public sector are more likely to have a ration card than those in the private sector.*

In sum, most household head owners of ration cards are either illiterate or functionally literate (can read and write), are permanent employees in government or the public sector, and are in the category of those who remained in non vulnerable groups between 2005 and 2008.

Table 5.5: Percentage of HHs with Ration Cards, According to HH Head Characteristics

	% HH Owning Ration Cards in 2005	% HH Owning Ration Cards in 2008
Working Status of Head of Household		
Employed	83.20	83.00
Unemployed	0.90	0.60
Out of Labor Force	15.90	16.50
Total Sample	100.00	100.00
Sector of Employment of Head of Household		
Government and Economic Authorities		81.40
Public Sector		81.90
Local Government		81.80
NGO		100.00
Private Sector		70.70
Total Employed		74.30
Work Stability of Head of Household		
Permanent	78.40	78.30
Temporary	3.90	4.30
Seasonal	4.60	4.70
Occasional	13.10	12.60

3. Ration Card Registration by Mobility Category

Based on the introduction of the new ration card registration programme in 2008, households were asked whether any new household members had been registered. Survey data shows that 71 percent of households who owned ration cards had added household members on the card since 2008, with some differences between the mobility groups. As expected, households who stayed in the most vulnerable groups are more likely to add members on their ration cards than those that stayed in non-vulnerable groups, pointing to the great need experienced by vulnerable households to obtain food items at lower prices. More than three quarters of households who remained vulnerable (78 percent) added members to the card, compared to 68 percent among the non-vulnerable groups.

The average number of household members registered on the ration card is approximately 4.8 members, with slight differences among mobility groups. However, one-third of ration cards holders indicated that some household members are not registered on the ration card. Marked differences between mobility groups exist in this respect. Almost half of the households who moved into the vulnerability groups in 2008 mentioned household members that were not registered on the card, even though they had added some members; while this percentage decreased to 28 percent among those who stayed in non-vulnerable groups, or moved out from the vulnerable groups. Highly vulnerable households are less likely to register all members than those

in the least vulnerable groups, while the opposite should be the case. This is a clear indication that further improvements are needed in the registry system.

Table 5.6: Ration Card Registration by Mobility Category

	Average Registered Household Members	% HHs with Members Not Registered	Average Unregistered Members	% HHs Who Added Members in 2008	Average No. of Persons Added to Ration Card in 2008
Remained Vulnerable	5.6000	44.8000	1.0776	77.6000	2.6600
Exited Vulnerability	5.4600	29.9000	0.6841	70.8000	2.0800
Entered Vulnerability	4.6100	45.2000	0.8456	69.1000	2.1200
Remained Non-Vulnerable	4.3000	27.9000	0.4399	68.1000	1.8400
All	4.8100	34.9000	0.6902	71.1000	2.1200

4. Reasons for Not Having Ration Cards

Households that did not have a ration card were asked about the reasons for non-registration. These reasons are presented in Table 5.7, broken down by place of residence.

Table 5.7: Reasons for Not Having a Ration Card, by Place of Residence, (% of HH)

	Not Enough Knowledge/Information About the System	Have Information but Could Not Register	Late for Re-Registration	High Income	Do Not Need	Other Reasons
Total Sample	22.30	37.80	17.40	0.40	2.30	19.70
Governorate						
Cairo	35.50	28.80	17.50	0	0	16.40
Alexandria	26.30	28.90	10.50	0	6.60	27.60
Port Said	14.30	28.60	31.40	4.30	5.70	15.80
Dakahlia	22.70	25.00	18.20	0	6.80	27.20
Gharbeya	10.50	44.70	28.90	0	0	15.70
Giza	11.50	71.20	4.80	1.90	1.90	8.60
Fayoum	28.90	39.50	23.70	0	0	7.90
Minia	22.20	40.00	20.00	0	2.20	15.50
Assiut	30.80	30.80	12.30	0	1.50	24.60
Sohag	21.40	25.70	22.90	1.40	2.90	25.70
Matrouh	11.50	32.30	18.50	0	2.30	35.40
Region						
Metropolitan	33.50	29.00	15.90	0	2.30	15.80
Upper Egypt	21.20	46.50	14.20	0.80	1.20	16.30
Lower Egypt	13.50	38.20	25.30	0	1.80	21.20
Zone						
Urban	23.60	38.50	17.00	0.50	2.70	17.90
Rural	20.30	39.00	19.10	0	0	21.40

The data shows that 38 percent of households mentioned that they have information about ration cards but could not register, while 22 percent of households mentioned that they did not have sufficient information about the system, and 17 percent of households mentioned that they were late for re-registration.

At the regional level, the data shows that there are great differentials between different regions, where one-third of metropolitan households who did not own ration cards mentioned that they did not have enough information about the system. This percentage decreased to only 14 percent among Lower Egyptian households. Additionally, 47 percent of Upper Egyptian households who did not have ration cards

mentioned that they have information but could not register. This figure decreased to 29 percent among metropolitan households.

Large differentials were also observed between different governorates. For example, while 71 percent of households in Giza who did not have ration card mentioned that they had information but could not register; only 25 percent of households in Dakahliya mentioned this reason. Also, only 11 percent of households who did not have ration cards in Gharbeya mentioned that they did not have enough information about the system, while this percentage increased to 36 percent among households in Cairo. Regarding the reasons for not having ration cards by household characteristics, Table 5.8 shows that there are some differences between the vulnerability categories, where the most vulnerable groups are more likely to mention that they have information about the system but could not register than the least vulnerable groups.

Table 5.8: Reasons for Not Having Ration Card, by HH Characteristics (% of HH)

	Not Enough Knowledge/Information About the System	Have Information but Could Not Register	Late for Re-Registration	High Income	Do Not Need	Other Reasons
Total Sample	22.40	37.80	17.40	0.40	2.40	19.60
Vulnerability Category						
Very High	21.60	42.10	14.60	0	0.60	21.10
High	35.80	33.90	13.80	0	0.90	15.60
Moderate	22.40	35.70	15.30	0	3.10	23.30
Low	19.50	45.00	16.60	0	3.00	16.00
Very Low	16.80	28.90	25.50	2.00	4.70	22.20
Mobility Category						
Remained Vulnerable	32.50	38.30	12.30	0	0.60	15.90
Exited Vulnerability	27.10	33.90	20.30	0	1.70	17.0
Entered Vulnerability	20.20	45.70	17.00	0	1.10	15.90
Remained Non-Vulnerable	17.10	37.80	20.30	0.60	2.50	21.60
Working Status of Head of Household						
Employed	20.30	39.30	18.10	0.70	1.70	19.80
Unemployed	30.00	50.00	0	0	0	20.00
Out of Labor Force	33.30	26.20	19.00	0	4.80	16.70
Total Sample	21.40	38.60	17.90	0.60	1.90	19.60
Sector of Employment of Head of Household						
Government and Economic Authorities	11.50	44.30	19.70	0	0.80	25.60
Public Sector	15.40	38.50	15.40	7.70	0	23.00
Local Government	100.00	0	0	0	0	0
NGO	-	-	-	-	-	-
Private Sector	22.50	38.30	17.90	0.50	2.10	18.70
Total Employed	20.10	39.50	18.20	0.50	1.70	20.00
Work Stability of Head of Household						
Permanent	18.30	39.70	19.50	0.90	1.40	20.20
Temporary	32.50	35.00	15.00	0	5.00	12.50
Seasonal	33.30	33.30	16.70	0	11.10	5.60
Occasional	22.00	40.20	12.20	0	1.20	24.40

5. Food Item Preferences and Usage of Ration Cards

In general, ration cards are frequently used by all households, demonstrating their importance across all vulnerability categories. For poorer households they represent a safety net that improves food security, and may contribute to overall livelihood security by allowing households to spend money they save by using ration cards on other basic needs such as health and education.

Four goods were offered at a subsidized rate before 2006. Almost every household uses the ration card to purchase sugar and oil, and over 90 percent purchase their entire allotment each month except tea where only 54 percent use it. In July 2006, households were allowed to buy additional quantities of sugar, oil and rice at lower subsidized rates. It seems that ration cardholders were in need of these additional quotas, especially for sugar and oil more than 92 percent of them get their additional quotas. Additional rice was less important and purchased by only 71 percent of cardholders (Table 5.9).

Table 5.9: Purchase Frequency of Rationed Food Commodities by Governorate (% of HH)

		Very High	High	Medium	Low	Very Low	All
Before July 2006	Sugar	97.70	97.90	96.80	98.20	99.60	98.00
	Oil	97.70	97.90	97.80	97.80	99.60	98.10
	Rice	93.80	91.40	90.70	91.70	94.70	92.40
	Tea	64.10	55.30	51.90	51.60	48.60	54.50
From July 2006 to May 2008	Sugar	97.90	98.50	97.60	99.30	99.60	98.60
	Sugar 1	92.20	91.20	91.50	95.50	94.70	93.10
	Oil	97.70	99.00	97.60	99.30	100.00	98.70
	Oil 1	89.90	92.00	91.70	95.00	94.90	92.70
	Rice	94.10	93.30	91.70	92.80	94.50	93.30
	Rice 1	71.70	70.00	68.30	71.20	73.70	71.00
	Tea	64.30	56.00	51.90	52.10	48.50	54.70
From June 2008	Sugar	99.80	99.80	99.20	99.80	100.00	99.70
	Sugar1	95.20	92.20	92.30	96.50	95.40	94.40
	Sugar2	75.10	73.00	77.70	81.20	77.40	77.00
	Oil	100.00	99.80	99.60	99.80	100.00	99.80
	Oil 1	93.10	92.90	93.30	95.30	93.90	93.70
	Oil 2	70.80	72.50	75.10	78.50	74.70	74.40
	Rice	96.10	92.90	90.70	93.20	93.70	93.40
	Rice 1	72.10	68.80	66.70	68.90	72.80	69.80
	Rice 2	43.00	48.00	45.40	41.50	44.80	44.40
	Tea	64.90	55.80	52.30	52.80	48.60	55.10

Although ration cards are used by all vulnerability categories for obtaining the main quotas, the less vulnerable households purchase additional quotas more frequently, thus subsidies for additional quotas go to the less vulnerable households. In June 2008, new additional quotas were added, but quotas for sugar and oil are used by almost three quarters of households, and additional rice quotas are used by only 44 percent of households. Moreover, a larger percentage of households in the less vulnerable categories purchase these newly additional quotas.

There is room for improving the ration card subsidy program to reduce leakage of subsidized goods especially the additional and new additional items, also the rice quota should be revised as 44 percent of households purchase this additional quota. The survey data shows that 45 percent of respondents consider sugar as the most important food item offered through ration cards. Sugar is the most important item for all vulnerability categories except for the least vulnerable, where oil is more important.

Food Item Preferences

The results of a qualitative survey implemented in 2005 show that sugar, oil and rice are the three most preferred commodities. It also shows that preference for some items, such as ghee, lentils and beans, is comparably low. Additionally, the results show that there are some concerns about the quality of these items, and that the quality is not consistent, so that at times one receives good-quality beans, for example, and at other times they receive poorer quality beans. Despite this variation, the majority of households continue to use their full commodity ration cards, and the inclusion of beans and lentils is an important nutritional contribution to the household diet.

These results suggest that future policy options regarding the food subsidy program should consider quality as a factor in determining inclusion/exclusion of specific commodities. Highly nutritious items such as beans and lentils are important to the diet and if issues of quality can be resolved then the use of these items in the household diet will likely increase.

Different consumption preferences between regions are reflected in Table 5.10 where sugar is mostly preferred by households living in Upper Egypt and Lower Egypt, Metropolitan residence consider oil as the most important subsidized item in ration cards. This is also reflected through urban to rural differences, where rural residents indicated that sugar is the most important, while urban residents consider sugar and oil of equal important.

Table 5.10: Relative Importance of Subsidized Food Items

	Sugar	Oil	Rice	Tea	
Mobility Category					
Remained Vulnerable	52.70	28.20	18.64	0.46	100
Exited Vulnerability	51.35	33.45	15.20	0.00	100
Entered Vulnerability	40.17	31.79	27.46	0.58	100
Remained Non-Vulnerable	41.52	35.40	22.58	0.50	100
All Egypt	45.40	32.80	21.36	0.44	100
Vulnerability Category					
Very High	47.33	32.03	19.93	0.71	100
High	48.85	27.46	23.48	0.21	100
Medium	43.70	35.83	20.08	0.39	100
Low	48.75	31.39	19.53	0.33	100
Very Low	36.42	39.16	24.00	0.42	100
Region					
Metropolitan	28.23	54.05	16.85	0.88	100
Lower Egypt	41.49	31.42	26.92	0.16	100
Upper Egypt	59.02	24.13	16.30	0.54	100
Zone					
Urban	39.58	39.85	19.84	0.73	100
Rural	49.22	28.24	22.29	0.26	100

6. Utilization of Ration Cards

Some households, despite having one or more ration cards, do not use any. In terms of ration card usage, 78.7 percent of respondents have ration cards and utilize them, 20.8 percent do not have ration cards and the percentage of households who do not use the ration card did not exceed 0.5 percent nationwide. Households were asked about their reasons for not using the ration card. However, because of the small representation of these households, we will not analyze reasons of not using ration cards.

Table 5.11: Utilization of Ration Cards

	% of HHs Using Ration Cards	Reasons for Not Using Ration Cards (% of HHs with Ration Cards but Not Using Them)							% of HHs Without Ration Cards	% of HHs Not Using Ration Cards
		Bad Quality	Almost Similar Market Prices	Shortage in Goods Provided	Distance to Tamween Grocery	Not Worth the Effort	Give to Others	Other Reasons		
Total Sample	78.70	25.80	-	-	8.00	15.60	17.10	22.40	20.80	0.50
Vulnerability Category										
Very High	76.60	17.90	-	-	-	17.00	-	65.20	23.10	0.40
High	81.00	-	-	-	-	-	9.70	90.30	18.40	0.80
Moderate	83.60	100.00	-	-	-	-	-	-	16.10	0.40
Low	77.40	-	-	-	-	10.60	33.90	55.50	21.80	1.00
Very Low	75.80	73.80	-	-	50.70	53.80	23.10	23.10	23.80	0.60
Mobility Category										
Remained Vulnerable	80.50	12.00	-	-	-	11.40	6.10	70.60	19.00	0.60
Exited Vulnerability	83.00	-	-	-	-	-	-	100.00	16.50	0.70
Entered Vulnerability	78.20	-	-	-	-	-	-	100.00	21.50	0.00
Remained Non-Vulnerable	78.80	42.50	-	-	15.30	23.20	29.30	27.20	20.50	0.80

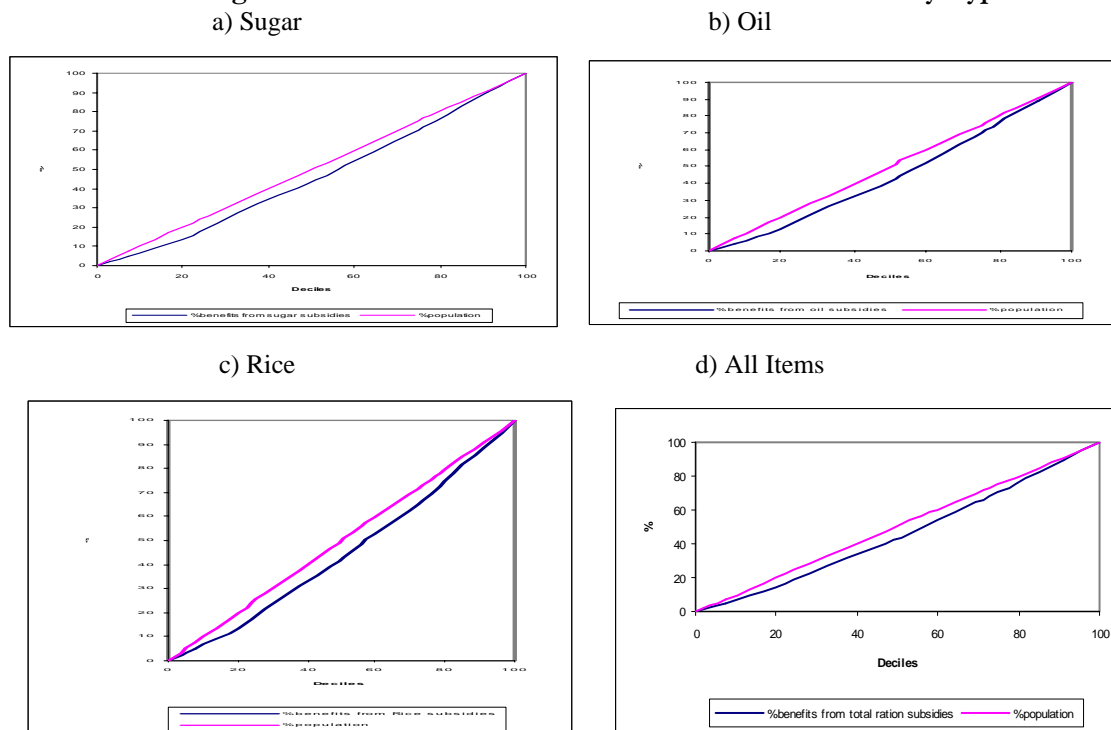
7. Benefit Incidence

Benefits received by ration card holders are estimated by the difference between market price and prices of subsidized goods purchased through ration cards. On average, a person in a household holding a ration cards receives LE 7 per month, a person in a highly vulnerable household receives the equivalent of LE 5 per month through food subsidies, while the corresponding figure for the richest households is LE 8.

The question becomes, how much of the food subsidy system is going to households that are not poor or vulnerable? All food subsidies through ration cards are highly regressive where more benefits leak to the less vulnerable households. This implies that an enormous amount of public resources is being spent on transfers to wealthier Egyptians – resources that could otherwise be available to reduce poverty and assist the vulnerable.

Benefit incidence curves in Figure 5.2 below show that the poorest quintile receive only 13.5 percent of all subsidized food benefits, while the richest quintile receive 25 percent of total subsidies of food items. Once again, this points to the need for revising ration card eligibility criteria to improve targeting. In this instance, Proxy means testing is both applicable and recommended.

Figure 5.2: Benefit Incidence for Subsidized Food Items by Type

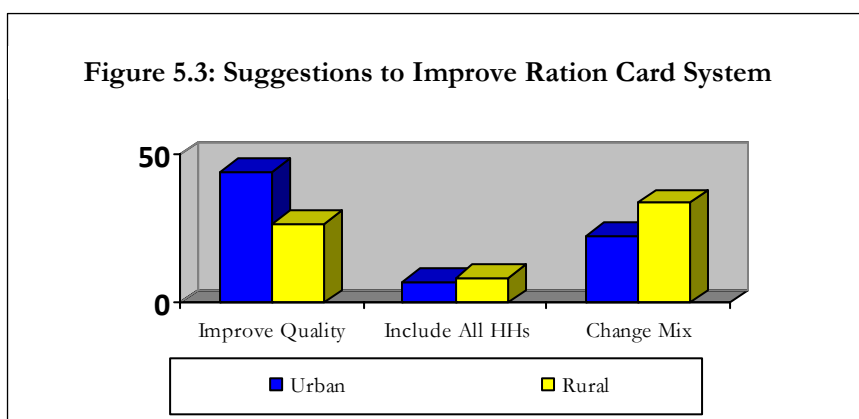


8. Suggestions to Improve the Ration Card System

One of the most important issues addressed by the 2008 survey is suggestions for the improvement of the ration card system in Egypt. Households with ration cards were asked for their suggestions for improving the system.

The most common suggestion made by respondents was to “improve the quality of ration card commodities”, reported by 34 percent of households,

followed by the "change of the commodity mix" (29 percent) and 8 percent mentioned "include all household members". However, changes were observed between urban and rural households. Households in urban areas are more likely to mention "improve the quality of the ration card commodities" than rural households (44 percent vs. 27 percent respectively). Households in rural areas are more likely to mention "change the commodity mix" than households in urban areas.



To improve the subsidized system to increase its utilization and usefulness to households, the data presented in Table 8.11 shows that the most frequent suggestion is to audit *Tamween* grocery, where 36 percent of households mentioned this suggestion, with 40 percent and 33 percent of urban and rural households respectively mentioned this issue. Change the commodity mix (25 percent) and then the improvement of the

registration system (11 percent) are also frequent suggestions mentioned by households, with slight differences between urban and rural households.

Table 5.12: Suggestions to Improve Ration Card System, (% HH reporting)

		Urban	Rural	Total Sample
To Obtain the Most Benefit	Improve Quality	44.10	26.60	33.90
	Include all Household Members	7.20	8.40	7.90
	Change Commodity Mix	22.90	33.80	29.30
	No Suggestions	9.00	9.00	9.00
To Improve the Subsidized System to be More Utilized By Households	Increase Number of Tamween Groceries	2.20	1.80	2.00
	Increase Tamween Grocery Working Hours	2.90	0.40	1.50
	Open Tamween Groceries During Weekends and Official Holidays	1.20	0.90	1.00
	Provide Incentives to Tamween Grocery Owners	3.00	1.60	2.20
	Change Commodity Mix	21.70	27.70	25.20
	Improve Registration System	10.00	12.40	11.40
	Audit Tamween Groceries	39.70	33.00	35.80
	Generalization of Smart Cards	1.60	1.90	1.80

Respondents preferred the existing ration card system, but they called for improving the quality of the goods covered. Respondent perceptions were sought in order to be able to identify the advantages and disadvantages of the current system, and ways to improve it, using a participatory approach. Almost all respondents (96 percent) indicated that they would rather keep the current system than have cash transfers, with no differences between urban and rural respondents. There were, however, differences between vulnerability categories. Very high vulnerable households expressed a preference for in-kind assistance. Neither place of residence nor vulnerability status affected their reasons for preferring the current system. Approximately one-third of respondents prefer the current system because they can obtain essential foods at fixed prices; approximately one-quarter prefer it as it secures the basic needs for their households; and one household out of seven prefers ration cards because they provide essential food for their households. Those who preferred cash transfers did so because it increases flexibility in selecting the mix of commodities, however, the small percentage of respondents who preferred this option cautions against giving too much weight to this opinion.

Table 5.13: Suggestions for Food Subsidy Improvements, 2008

		Urban	Rural	Vulnerability Category				
				Very High	High	Moderate	Low	Very Low
Prefer Means to Get Rationed Goods (% HH Reporting)	Current Ration System	96.30	96.50	99.50	97.50	94.60	96.50	93.60
	In – Cash Subsidy	3.50	3.40	0.50	2.50	5.40	3.40	6.10
	Other	0.20	0.10	0.00	0.00	0.00	0.10	0.30
Reasons for Preferring Ration Cards (% HH Reporting)	It secures the basic needs for me and my family	27.00	28.00	28.20	26.90	27.80	26.70	28.20
	The prices in the subsidy system are fixed	32.40	31.00	32.20	30.10	30.50	32.30	32.50
	Being sure of getting the goods	15.90	17.50	16.00	16.60	18.60	18.50	14.00
	The continuous increase of the prices of goods in the free market	24.50	23.20	23.60	26.30	23.00	22.20	24.50
	Others	0.30	0.30	-	-	0.10	0.40	0.70

Recommendations for Improving the Ration Card System

1. Adopt better targeting mechanisms to identify the most vulnerable groups, and to reduce errors of inclusion (of least vulnerable groups) and errors of exclusion (of vulnerable households). Proxy means testing combined with poverty mapping can be used in this respect.
2. Facilitate ration card registration for eligible populations, including all household members of eligible households, combined with the establishment of clear enter and exit strategies.
3. Improve the quality of subsidized goods and reconsider additional quotas of rice.
4. Adopt a system of flexible commodity mix (smart cards can be used here). Regional taste and preference should be taken into account.
5. Introduce commodities which are essential for nutritional status especially for children (a special quota of powdered milk can be offered to households with children) and eliminate or reduce subsidies on tea and sugar.

C. Balady Bread Consumption

Subsidized *balady* bread (a two-layer round sourdough bread) is purchased by most households (83 percent of surveyed households). Urban households purchase balady bread at a higher frequency (87 percent) than do rural households (81 percent), but it is an important food commodity for both urban and rural households. Rural households may have more difficulty in accessing balady bread purchasing points, and this may partly explain the difference in rural/urban preferences. This is supported by the fact that more rural households choose to purchase bread every other day instead of daily.

There are marked differences in purchasing patterns according to governorate and region. Purchasing behavior in surveyed households in Port Said, Minia and Alexandria is significantly higher than elsewhere, and in Assiut and Matrouh it is significantly lower. The percentage of households purchasing balady bread in Port Said, Minia and Alexandria is over 92 percent of all households, while this figure decreased to less than 62 percent for Assiut and Matrouh.

For the vulnerability categories, the data shows that there is no statistically significant difference in balady bread consumption, with more than 80 percent of households in all vulnerable groups purchasing balady bread. This means that balady bread purchasing is highly inelastic with respect to vulnerability status.

Data shows that the average household consumption rate in the survey was 13 loaves per day. On average, each person consumes about 2.4 loaves per day. The average per capita daily consumption of balady bread varies significantly between urban and rural areas, where the average per capita daily consumption in urban areas reached 3.11 loaves, as opposed to 1.9 loaves in rural areas, pointing to bias of subsidy resources to urban areas.

Table 5.14: Balady Bread Purchasing Patterns

	Buying Balady Bread
Total Sample	83.30
Governorate	
Cairo	86.50
Alexandria	92.10
Port Said	96.60
Dakahliya	88.60
Gharbeya	84.70
Giza	71.80
Fayoum	87.00
Minia	94.40
Assiut	61.90
Sohag	75.30
Matrouh	45.20
Region	
Metropolitan	88.60
Lower Egypt	86.00
Upper Egypt	78.40
Zone	
Urban	86.50
Rural	80.50

The majority of balady bread users buy it because it is cheap. Over 89 percent of urban dwellers purchased balady bread because it was inexpensive and 87 percent of rural dwellers did likewise. Although subsidized bread should be targeted to the poor and hence the poor get more benefits, benefit incidence shows that subsidized bread is equally distributed among different deciles and vulnerability categories, where the share of subsidized bread for every decile of vulnerability group is almost similar to its population share.

For those households that do not purchase balady bread, the main reason cited is poor quality. Nevertheless, other reasons vary considerably by region (Table 5.15). In Metropolitan regions, such as Cairo, Alexandria and Port Said, a large percentage of non-users (47 percent) complain of the quality of the bread, while almost as many as 33 percent cite long lines as a major reason for not purchasing balady bread. Almost 8 percent feel that balady bread outlets are too far away, and a smaller percentage cited that they prefer other types of bread.

In rural Upper Egypt, almost 64 percent of non-users do not purchase balady bread because they bake bread at home, this percentage reached 31 percent among urban Upper Egypt. Additionally, 44 percent of households in urban Upper Egypt mentioned the long lines, and 15 percent mentioned the bad quality of the bread.

In rural Lower Egypt the reasons for not purchasing balady bread are more diverse. Baking bread at home was cited by about 32 percent of non-users as a factor in their decision not to purchase bread. About one-quarter of non-users mentioned the lines and 10 percent felt balady bread outlets are too far away. For urban Lower Egypt, crowded lines was cited as the main reason for not purchasing balady bread, followed by poor quality and home baking. Price is not a significant factor in determining whether a household chooses not to buy balady bread.

The data shows that there are some differences between vulnerability groups regarding reasons for not buying balady bread. Home-baking is the common reason cited among the most vulnerable group, where it was mentioned by 42 percent, while overcrowded bread lines was mentioned by one-quarter of those households, 9 percent mentioned that the distance to the balady bread shops is too far, and 5 percent mentioned the poor quality of the bread. Households

Table 5.15: Reasons for Not Purchasing Balady Bread, 2008.

	Frequency	Percent
Metropolitan		
Poor Quality	36	46.80
Distance Too Far	6	7.80
Prefer Other Kind	5	6.50
No Price Incentive	-	-
Over Crowded Lines	25	32.50
Bake Bread at Home	2	2.60
Other	3	3.90
Urban Lower Egypt		
Poor Quality	12	20.70
Distance Too Far	2	3.40
Prefer Other Kind	11	19.00
No Price Incentive	-	-
Over Crowded Lines	22	37.90
Bake Bread at Home	9	15.50
Other	2	3.40
Rural Lower Egypt		
Poor Quality	6	4.30
Distance Too Far	14	10.10
Prefer Other Kind	10	7.20
No Price Incentive	-	-
Over Crowded Lines	37	26.80
Bake Bread at Home	44	31.90
Other	27	19.50
Urban Upper Egypt		
Poor Quality	9	15.30
Distance Too Far	-	-
Prefer Other Kind	2	3.40
No Price Incentive	0	0.00
Over Crowded Lines	26	44.10
Bake Bread at Home	18	30.50
Other	4	6.90
Rural Upper Egypt		
Poor Quality	12	6.00
Distance Too Far	13	6.50
Prefer Other Kind	-	-
No Price Incentive	0	0
Over Crowded Lines	37	18.60
Bake Bread at Home	128	64.30
Other	9	4.50

in the least vulnerable group cited different reasons, including the poor quality of the bread (22 percent); home baking (30 percent) and over-crowded bread lines (34 percent).

Households were asked questions about the access to balady bread. They were also asked about the reasons that make them chose to buy balady bread. The cheaper price of the balady bread is the most common reason mentioned by all households, where more than 86 percent of households in urban and rural areas mentioned this reason. Additionally, more than 90 percent of the most vulnerable households that purchase balady bread do so because it is cheaper, and this figure reached more than 85 percent among all other vulnerable groups.

More than half of urban households purchase balady bread from bakeries, while this figure decreased to only 30 percent among rural households. Households in rural areas are more likely to purchase balady bread from street vendors than urban households. Slight differences were observed among different vulnerable groups regarding the place where they purchase balady bread. About 24 percent of most vulnerable households cited the long distance they need to travel to access balady bread as a reason limiting their purchase of it. The average time needed to reach the bakery and the average waiting time to get balady bread is higher in urban areas and for households in the most vulnerable group than those in other groups.

Despite the cheaper price of balady bread, households were constrained in the amount of bread they could purchase. The data shows that over 85 percent of all households mentioned that there is a limit on the quantity they can purchase per visit per person. However, up to 15 percent of households did not consume all the bread they purchased; with the main reason cited being that it was not well baked. Therefore, due to the poor quality of the bread, households do

Table 5.16: Reasons for Not Purchasing Balady Bread by Vulnerability Group, 2008.

	Frequency	Percent
Very High Vulnerability		
Poor Quality	4	4.50
Distance Too Far	8	9.10
Prefer Other Kind of Bread	8	9.10
No Price Incentive	-	-
Crowded Lines	20	22.70
Bake at Home	37	42.00
Other	11	12.40
High Vulnerability		
Poor Quality	9	8.00
Distance Too Far	17	15.20
Prefer Other Kind of Bread	0	0.0
No Price Incentive	-	-
Crowded Lines	19	17.00
Bake at Home	54	48.20
Other	13	11.60
Moderate Vulnerability		
Poor Quality	15	15.00
Distance Too Far	2	2.00
Prefer Other Kind of Bread	8	8.00
No Price Incentive	-	-
Crowded Lines	39	39.00
Bake at Home	34	34.00
Other	2	2.00
Low Vulnerability		
Poor Quality	21	15.90
Distance Too Far	4	3.00
Prefer Other Kind of Bread	3	2.30
No Price Incentive	-	-
Crowded Lines	28	21.20
Bake at Home	61	46.20
Other	15	11.40
Very Low Vulnerability		
Poor Quality	28	22.20
Distance Too Far	4	3.20
Prefer Other Kind of Bread	10	7.90
No Price Incentive	-	-
Crowded Lines	43	34.10
Bake at Home	38	30.20
Other	3	2.40

not consume all the quantity they purchase. The majority of households in rural areas mentioned that the unconsumed bread is used to feed animals, while some households in urban areas throw the unconsumed bread in the garbage.

Table 5.17: Access to Balady Bread, 2008

		Zone		Vulnerability Category				
		Urban	Rural	Very High	High	Moderate	Low	Very Low
Reasons for Buying Balady Bread (HHs Reporting)	Cheap Price	89.40	86.90	90.90	91.20	85.40	86.00	86.80
	Good Quality	3.50	2.80	1.50	2.90	3.00	4.70	3.40
	Preference	2.60	3.00	2.30	1.70	4.50	2.00	3.80
	Availability	3.50	4.60	3.30	1.90	4.50	5.10	5.40
Outlet Location (HHs Reporting)	Bakery	52.80	30.20	42.60	43.90	40.00	40.30	37.70
	Outlet	39.20	35.00	36.20	35.40	37.80	40.10	34.90
	Street Vendor	0.70	6.60	2.50	4.60	3.10	3.10	6.00
	Other	7.00	27.70	18.80	16.10	19.00	16.50	21.40
HHs reporting that distance to the nearest bread outlet is a problem.		16.10	17.40	23.80	15.70	14.00	17.70	10.40
Average time required to reach bakery.		9.04	7.76	10.59	8.78	7.53	8.10	6.32
Average waiting time		43.45	27.46	44.46	41.75	32.32	32.23	23.00
HHs reporting that there is a limit on the quantity you can purchase per visit per person		85.60	90.70	87.90	87.40	88.60	90.70	86.40
Average maximum number of loaves one can buy at one time		20.79	14.66	18.44	18.64	16.73	17.65	18.52
HHs consuming all purchased commodity		85.20	92.90	91.20	88.50	89.80	87.10	89.80
Reasons for not consuming the full quantity purchased (HHs Reporting)	Bad Quality	19.60	5.70	8.80	12.70	12.00	19.30	18.00
	Poorly Baked	44.80	62.90	50.90	49.10	58.00	51.80	48.00
	Rotten	8.20	7.60	15.80	0.00	2.00	7.20	16.00
	Too Dry	18.00	18.10	17.50	25.50	22.00	15.70	10.00
Uses of unconsumed portion	Fed to Animals	40.80	85.70	55.40	53.60	51.90	63.10	60.00
	Thrown in Garbage	20.40	6.70	12.50	8.90	23.10	16.70	16.00
	Given to Poor Families	7.10	1.00	3.60	3.60	7.70	3.60	8.00
	Resold	18.40	2.90	26.80	16.10	7.70	6.00	12.00
HHs agreeing to add an appropriate portion of subsidized wheat flour to ration card instead of balady bread		50.20	81.80	71.90	73.00	69.00	64.50	58.60
HHs reporting that the problem of obtaining balady bread was reduced after separating production from distribution		52.90	66.50	51.70	57.50	58.30	64.90	68.70

Households were asked whether they would agree to having an appropriate portion of subsidized wheat flour added to their ration card as a substitute to balady bread. Survey results show that agreement varies considerably by region and by vulnerability group. Households in rural areas and in the most vulnerable groups agree to add subsidized wheat flour to their ration card instead of buying baladi bread, (82 percent of households in rural areas compared to only 50 percent among households in urban areas). Approximately 72 percent of households in the most vulnerable groups agree to add subsidized wheat flour to their ration card, while this figure decreased to 59 percent among the wealthier group.

Aiming at improving the delivery system, the GoE has introduced a new system that separates the production of balady bread from its distribution. Over half of respondents indicated that the problem of obtaining balady bread was reduced. Two-thirds of households in rural areas and from the wealthier groups reported that the problem of obtaining balady bread was reduced after separating production from distribution, while this percentage decreased to slightly above half of households from the urban areas and from the most vulnerable groups.

C. Other Subsidy Programmes

For several decades, the Egyptian government has relied extensively on a pervasive subsidy system to support consumers. The system covered a broad range of basic goods and services that have been subsidized either directly (e.g. food staples, spinning and weaving products and vegetarian agriculture output) or indirectly (including a host of productive and social services, including transport, communication, education, healthcare and energy).

Despite the fact that government spending on safety net programs has increased, the poor have not benefited very much from this increased spending. Social spending broadly defined (including education, health, food subsidies, and social transfers) increased from an average of 7.5 percent of GDP in the 1996- 2000 period to 9.8 percent in the 2001-2005 period. However, in 2005 very little was spent on cash transfers (0.1 percent of GDP) compared to subsidies on food (1.7 percent of GDP) and on energy products (5.4 percent of GDP). All transfers, public and private, represented only 11 percent of incomes for the poor as opposed to over 20 percent for the better off. The share was stable for the poor between 2000 and 2005, but it increased for the non-poor. Most of the transfers (about two thirds) are accounted for by pensions, and 85 percent of pension spending is accruing to the non-poor. Only 4 percent of all transfers is accounted for by social assistance payments, but even then as much as 70 percent goes to the non-poor. Therefore public safety nets in the form of cash transfers do not play a large role for the poor. Both the remittances and the in-kind support in the form of subsidies occupy a larger share in the budgets of poor households (World Bank, 2007).

Despite the fact that government spending on safety programs has increased, the poor have not benefited as hoped.

1. Education Sector

Access to education is the most powerful tool that helps households to exit vulnerability. Accordingly, examining children's school enrollment can provide an insight to their future well-being. Evidence shows that poverty perpetuated the lack of education, and vice versa. Such relationships help explain how poverty is transferred from one generation to the next. A typical scenario can be described as follows: Starting with a household whose head is illiterate and has no productive assets, the path can be traced through to his children. The children are very likely to be malnourished – more a consequence of the parents' ignorance than the unavailability of adequate food, as well as the result from their poor sanitary conditions. These children are more prone to disease, which further diminishes their physical capabilities. They also have no place in formal schools. Even if they enter the public school system, due to the constrained economic conditions of their households, they will soon drop out to join the labour market. Under these circumstances, many of them will likely be illiterate and, in the absence of adequate vocational training facilities, these children will possess limited or very poor skills. The cycle is completed when children marry spouses with the same characteristics. Thus, the poverty level is perpetuated across

Access to education is the most powerful tool that helps households to exit vulnerability.

different generations. Given this scenario, it is clear that education is a very powerful, though not the only, instrument which can enable individuals to break the cycle of poverty.

Egypt's education system is the largest in the Middle East and North Africa (MENA) region and grew rapidly through the 1990s. At the pre-university level alone, the system enrolls over 16 million students and employs over 1.2 million teachers and administrators, of whom around 800,000 are categorized as teachers. Total public spending on education is high by international standards (5.9 percent of GDP and 19 percent of total public spending in 2002/03). The total private cost of education, most of which is for students in the public system (for private tutoring, textbooks, school fees, uniforms, supplies, etc.), amounts to an additional 3.7 percent of GDP investment in education.

As a result of such high public investment, during the past decade the government achieved increases in enrollment rates that would have been remarkable even without the increase in student population. Enrollment in basic education for both girls and boys is now nearly universal. Moreover, the speed with which the gender gap in basic education was closed is impressive. However such progress masks differences among populations.

Overall, 65.1 percent of all households surveyed had at least one member of the household in school. The other 35 percent of households did not have a child in school. Table 5.18 shows that households in the highest category of vulnerability also had the highest percentage of household members in the education system (71.5 percent). In contrast, only 62 percent of households in the lowest category of vulnerability reported having household members in the education system. Having members enrolled in schools indicates that those members are inactive and hence do not provide households with any income, thus those households have lower per capita income and hence are more likely to be represented within high vulnerability categories..

Table 5.18: Percent of Households With at Least One Family Member in School.

	Total Number of HHs	HHs with Family Members in Education System	HHs with Family Members in Education System (%)
Total Sample	3,333	2171	65.10
Governorate			
Cairo	299	165	55.20
Alexandria	300	164	54.70
Port Said	304	169	55.60
Dakahlia	306	195	63.70
Gharbeya	309	226	73.10
Giza	298	175	58.70
Fayoum	314	199	63.40
Minia	302	200	66.20
Assiut	306	210	68.60
Sohag	300	199	66.30
Matrouh	300	199	66.30
Zone			
Urban	1,527	915	59.90
Rural	1,806	1,256	69.50
Vulnerability Category			
Very High	734	525	71.50
High	588	381	64.80
Medium	609	394	64.70
Low	776	482	62.10
Very Low	627	390	62.20

a. School Enrollment

School enrolment can be thought of as an interaction of two factors: supply and demand. In other words, low school attendance is in part due to family decisions based on the opportunity cost of schooling (demand for schooling) and in part on the availability and quality of school facilities (supply of schooling). Neither side should be neglected when analysing school attendance patterns.

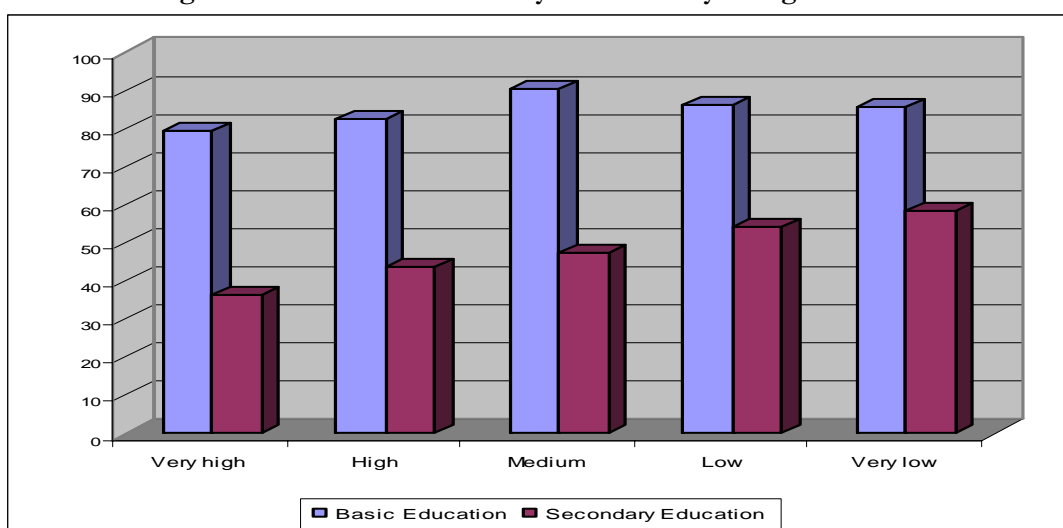
Overall, 82 percent of children from 6 to 15 years of age were enrolled in basic education. The net enrollment rate in secondary school dropped to only 60.50 percent. Governorate and urban and rural difference in this respect is apparent: Cairo has the highest rate in basic education, (90 percent), while secondary education drops to almost half of the basic education rate. This may be explained by the increasing opportunity cost for work in Cairo. Most governorates in Upper Egypt exhibited lower enrolment rates in both basic and secondary education stages. Children in urban areas are more likely to be enrolled in schools, with enrollment rates in urban areas more than 6 percentage points higher than in rural areas.

Vulnerability affects enrollment rates inversely, as 79.6 percent of children from 6 to 15 years of age in the "very high vulnerability" group were enrolled in basic education, as opposed to 85.6 percent in the least vulnerable group. This shows how vulnerability is perpetuated from one generation to another. The impact of vulnerability on enrollment in secondary education is much stronger; less than half of the children in the "very high vulnerability" group are enrolled in secondary education. Enrollment rates in secondary education increase when we move to less vulnerable households.

Children who live in households that moved from moderate or low vulnerability categories to very high or high vulnerability categories are the least likely to be enrolled in basic education (80 percent). It seems that households who suffer from deteriorated living standards can not afford to send their children to school and most probably allow them to work. The main causes contributing to child labour are either educational or economic in nature. Child labour may be a consequence of low quality and the high cost of education. Furthermore, low levels of physical, natural, and financial assets make poor people especially vulnerable to negative shocks.

As mentioned earlier, households in the "very high vulnerability" category have more children and hence 30 percent of children who are enrolled in basic education belong to this category. Lower percentage shares in secondary and university stages may be due to age structure of those households and to low enrollment rates in those stages.

Figure 5.4: Enrollment Rates by Vulnerability Categories



b. Type of Education

Table 5.19 below shows the type of education for all members of households attending school. Of the 4,865 persons attending school, 4,509 (92.6 percent) are attending public school. By Governorate, Cairo has a significantly higher percent of students enrolled in private schools (21.8 percent). Other metropolitan areas such as Port Said, Alexandria and Giza have approximately 12 percent of students enrolled in private schools. The other governorates, predominantly rural, have significantly lower percentages enrolled in private schools, with Matrouh having the lowest (2 percent). Private schools are available in governorates with high living standards and thus with high demand for better quality education.

Table 5.19: Type of Education System (Public/Private) by Governorate, Region and Vulnerability Category, 2008.

Total Sample Size = Individuals				
	Public		Private	
	N	%	N	%
Total Sample	4,509	92.70	356	7.30
Governorate				
Cairo	256	83.40	51	16.60
Alexandria	275	84.60	50	15.40
Port Said	279	85.80	46	14.20
Dakahliya	387	92.40	32	7.60
Gharbeya	461	92.40	38	7.60
Giza	321	87.50	46	12.50
Fayoum	455	97.00	14	3.00
Minia	499	95.20	25	4.80
Assiut	488	96.10	20	3.90
Sohag	502	97.70	12	2.30
Matrouh	559	97.70	13	2.30
Zone				
Urban	1,711	88.10	232	11.90
Rural	2,798	95.80	124	4.20
Vulnerability Category				
Very High	1,233	95.60	56	4.40
High	791	95.40	38	4.60
Medium	859	93.90	56	6.10
Low	925	90.80	94	9.20
Very Low	701	86.30	111	13.70
Mobility Group				
Remained Vulnerable	1,341	96.10	55	3.90
Exited Vulnerability	460	96.30	18	3.70
Entered Vulnerability	581	94.30	35	5.70
Remained Non-Vulnerable	1,902	89.30	229	10.70

The most vulnerable households have less than 4.5 percent of their children enrolled in private schools. Households who stayed vulnerable in both 2005 and 2008 have an even lower percentage of enrolled students (3.9 percent), while the least vulnerable households have over 13 percent.

c. Benefit Incidence for Public Spending on Education

Evidence shows that "while significant progress has been made in providing more educational opportunities to Egyptian citizens, the quality of that educational experience is low and unequally distributed"¹⁸.

A benefit incidence analysis was performed to investigate the level of access of high vulnerability groups to educational subsidies. The distribution of children by decile of vulnerability index (score), were compared with the distribution of direct beneficiary students from public schools and thus the proportion of total public funding of education going to each decile of the Egyptian population, was estimated. Table 5.20 shows the results of this analysis, and Figure 5.5 illustrates them graphically in the form of a cumulative distribution curve, the benefit incidence curve.

While significant progress has been made in providing more educational opportunities, the quality of educational experience is low, and unequally distributed.

Table 5.20: Enrollment Rates in Public Schools by Stage and Vulnerability Deciles (%)

Deciles	Basic Schools	Secondary Schools	Higher Education
1	78.46	35.80	15.84
2	78.68	36.04	15.26
3	78.40	60.72	10.35
4	77.21	79.68	6.62
5	83.88	48.57	10.38
6	85.10	61.29	27.31
7	79.62	58.29	31.49
8	83.64	60.43	28.42
9	79.59	62.38	50.73
10	69.31	75.43	49.09
100	57.69	57.69	25.83

In the benefit incidence curve, the horizontal axis represents the cumulative percentage of the population from the poorest to the left to the richest to the right. The vertical axis is the cumulative distribution of those who actually benefited from public education spending. The 45-degree line from bottom left to top right is a benchmark for equal access to public spending on education across the entire vulnerability score distribution. Thus the benefit incidence curve plots the percentile of the entire children below that level against the percentile of the public spending beneficiaries below it. When the benefit incidence curve lies above the 45° line, it shows that (for example, when the 20th percentile of public spending beneficiaries falls within the 10th percentile of all children), public spending on education were being allocated progressively, targeting the relatively poor. Whereas, when the benefit incidence curve lies below the 45° line, it indicates that public spending on education is being allocated regressively, targeting the relatively less vulnerable.

¹⁸ World Bank Report: "Improving Quality, Equality, and Efficiency in the Education Sector: Fostering a Competent Generation of Youth", 2007.

Figure 5.5: Enrollment Rates in Public Schools by Stage and Vulnerability Deciles (%)

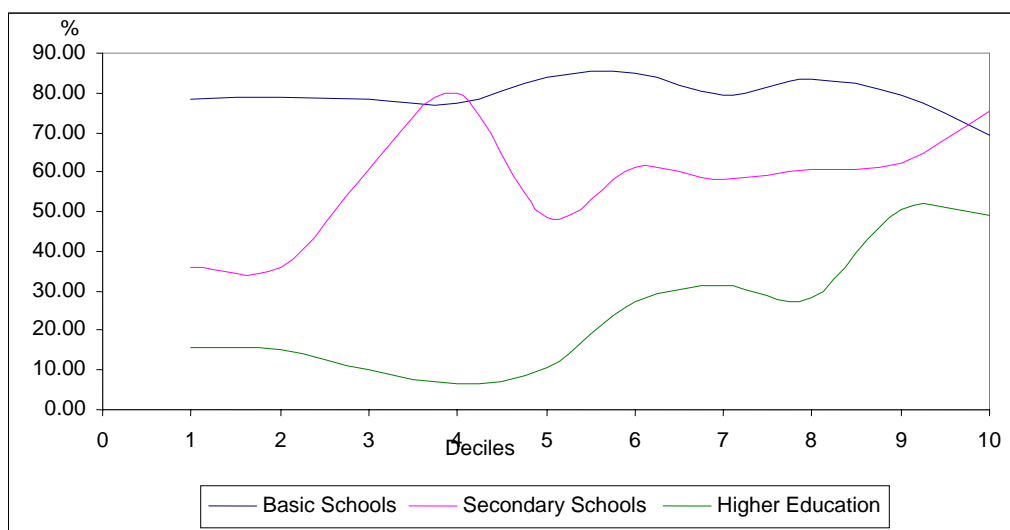
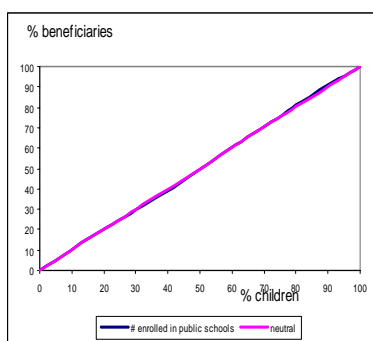


Table 5.20 and Figure 5.5 show that public spending on basic education is almost neutral where all deciles get almost equal shares. One should argue that benefits should be well targeted to the vulnerable so children in the lower deciles should get more benefits. This is quite apparent from Figure 5.6, where benefit incidence curve is identical with neutral curve (45° line).

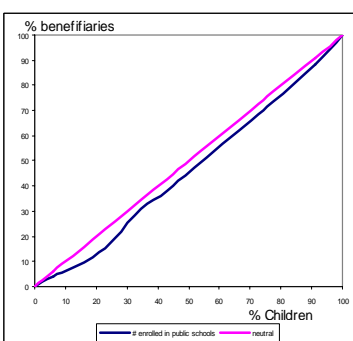
Incidence curves for both secondary and higher education are below neutral curve (45° line), especially for higher education, indicating that public spending for these stages is progressive where the less vulnerable obtain more benefits than the most vulnerable. This calls for better targeting mechanisms to channel more benefits to the most needy, for example the vulnerable can be offered education grants to continue their secondary and higher education.

Figure 5.6: Benefit Incidence Curves in Public Schools

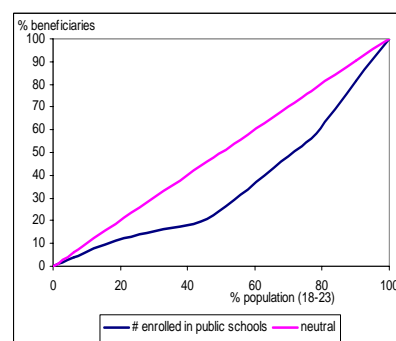
a) Basic Education



b) Secondary Education



c) Higher Education



d. Education Costs

Both the Egyptian government and the Egyptian people spend substantial public and private resources on education (more compared to other similar countries), leading to the conclusion that it is not the level of investment, but the *nature* of investment that must change.

In order to investigate out of pocket expenditure on education and whether public spending on education provides free education services, each respondent was asked to provide estimated costs per year for each household member in school. The categories of costs included: fees and books; donated fees/books, external (non-supplied) books; official school uniforms; school tools (supplies and equipment such as

drawing pads, pencils/pens, notebooks, etc.); transportation to/from school; educational support courses (in-school); and private lessons. Results of these costs are provided in Table 5.21.

Table 5.21: Educational Expenses Per Student by Governorate, Region, and Vulnerability Category for Public Schools, 2008.

Total Sample Size = Students		L.E./Student/Year								
		Fees/Books	Donations	Ext. Books	Uniforms	School Tools	Transport	Ed. Support	Private Lessons	TOTAL
	N									
All Sample		96.80	1.00	86.50	118.30	66.40	91.30	42.50	286.40	789.20
(% of Total)		12.27	0.13	10.96	14.99	8.41	11.57	5.39	36.29	100.00
Governorate										
Cairo	256	150.60	1.10	116.60	93.30	63.00	89.60	147.90	527.30	1,189.40
Alexandria	273	169.30	0.00	120.60	117.90	79.80	195.20	54.50	442.20	1,179.50
Port Said	278	164.40	7.10	140.00	192.60	89.50	180.40	55.30	757.60	1,586.90
Dakahlia	384	87.10	3.30	155.10	150.30	103.20	78.40	16.80	524.40	1,118.60
Gharbeya	461	94.20	0.20	104.40	127.00	61.40	129.60	31.40	343.50	891.70
Giza	320	168.30	0.11	90.60	124.60	97.20	154.30	144.00	312.00	1,091.11
Fayoum	455	71.00	0.55	46.10	114.30	68.60	47.10	20.20	137.90	505.75
Minia	499	78.40	0.35	36.90	100.30	55.40	57.50	16.50	144.80	490.15
Assiut	480	78.20	0.94	41.90	80.40	55.00	66.10	8.10	117.80	448.44
Sohag	502	68.30	1.00	59.90	113.80	52.30	35.20	16.80	118.30	465.60
Matrouh	559	99.40	0.47	41.70	111.00	76.90	57.60	20.40	105.90	513.37
Zone										
Urban	1,706	127.60	0.49	114.90	118.40	78.60	111.40	72.10	441.60	1,065.09
Rural	2,793	78.00	1.30	69.20	118.30	59.00	79.00	24.40	193.50	622.70
Vulnerability Category										
Very High	1,151	69.48	0.61	38.85	91.61	49.73	43.49	50.21	127.62	471.37
High	777	59.80	2.10	64.35	119.67	61.24	65.49	43.58	230.15	645.51
Medium	1,111	85.54	0.39	80.21	113.09	62.83	62.55	42.57	275.19	723.76
Low	625	103.88	0.87	112.62	127.95	72.75	98.38	38.74	377.17	935.14
Very Low	4,500	191.86	1.56	169.59	158.05	98.31	230.99	32.34	532.49	1,411.54
Mobility Group										
Remained Vulnerable	1,225	61.47	1.27	38.38	97.81	54.85	41.04	37.79	136.73	469.31
Exited Vulnerability	450	75.59	0.43	90.57	123.95	58.61	53.85	30.55	231.13	667.26
Entered Vulnerability	703	78.88	1.02	76.40	115.21	55.06	82.73	61.25	247.87	717.06
Remained Non-Vulnerable	1,903	130.55	1.05	123.12	133.97	80.59	133.90	41.06	427.42	1,072.90

Table 5.21 provides education expenditure for all students attending public schools and private schools, respectively, by governorate, location, and vulnerability and mobility categories. The average costs per student per year enrolled in public schools were L.E. 798. There was a large difference of total costs by governorate, ranging from an average of L.E. 448 per year for Assiut to L.E. 1,487 for Port Said. Urban costs averaged almost 71 percent higher than rural costs at L.E.1,065 per year. Part of this difference, however, is explained by the fact that more urban students are in higher education which tends to be more expensive, even at public schools.

Education costs for students from less vulnerable households averaged L.E.1,412 per year compared with L.E. 471 for students from the most vulnerable households. As household level of vulnerability decreases, the average cost of sending a child to a public school increases. This is again explained in part by the fact that wealthier and less vulnerable households keep their children in school longer. The above figures show how better-off households are willing to pay for the education of their children and can afford to do so, while the cost for education is the main reason for the most vulnerable households to keep their children out of school. Even if they

keep their children in school they pay only 60 percent of the average cost of students in public schools and one-third of what the better off spend. Households that experienced deterioration in their living standards pay two-thirds of the cost paid by households who stayed better off, indicating the hardship they suffered, This points to the need for better targeting of public spending on education so that vulnerable households receive more benefits, and the less vulnerable pay for their education.

The average cost per student enrolled in private school is about two and half times that of student in public school. This trend applies at the governorate and region levels, and in urban and rural areas. It is worth mentioning that households who stayed vulnerable had to spend the least on private schools. This indicates that when a household faces some shocks, it reduces spending on education, which affects its human capital in the long run.

Table 5.22: Educational Expenses Per Student by Governorate, Zone, and Vulnerability Category for Private Schools, 2008.

Total Sample Size = Students										
		Fees/Books	Donations	Ext. Books	Uniforms	School Tools	Transport	Ed. Support	Private Lessons	TOTAL
	N	L.E./Student/Year								
Total Sample		1,012.50	2.10	143.80	147.90	89.90	236.10	33.00	431.40	2,096.70
(% of total)		48.29	0.10	6.86	7.05	4.29	11.26	1.57	20.58	100.00
Governorate										
Cairo	51	1,500.30	7.30	222.70	193.40	115.40	286.10	98.50	890.50	3,314.20
Alexandria	48	1,464.00	0.00	104.30	128.70	77.50	394.70	14.60	329.40	2,513.20
Port Said	46	1,191.90	14.20	172.20	165.90	68.40	330.70	70.20	731.30	2,744.80
Dakahliya	32	621.70	0.00	164.30	257.80	218.90	186.90	18.30	572.10	2,040.00
Gharbeya	38	629.90	0.00	65.90	94.30	48.90	144.70	0.35	192.00	1,176.05
Giza	45	1,609.20	0.00	283.20	116.80	85.10	332.80	70.50	571.00	3,068.60
Fayoum	14	589.20	5.50	82.70	142.70	83.70	101.10	8.80	266.60	1,280.30
Minia	25	1,168.30	1.20	116.40	140.80	126.30	339.50	9.90	265.20	2,167.60
Assiut	20	473.70	4.20	59.60	27.60	44.80	175.70	0.00	27.50	813.10
Sohag	12	946.90	10.60	195.50	170.30	83.00	202.80	1.80	400.80	2,011.70
Matrouh	13	297.60	0.00	46.00	61.80	117.90	214.70	0.00	94.90	832.90
Zone										
Urban	229	1,289.90	3.30	172.20	149.60	109.30	282.70	48.90	573.80	2,629.70
Rural	124	497.50	0.00	90.70	144.60	53.60	149.00	3.20	164.50	1,103.10
Vulnerability Category										
Very High	51	447.55	0.00	60.74	63.41	45.01	76.74	49.15	140.27	891.45
High	38	713.05	0.00	54.42	61.23	55.61	242.68	2.10	141.59	1,268.89
Medium	76	640.03	0.00	137.10	71.08	67.22	104.85	14.56	202.02	1,236.89
Low	92	887.18	7.31	126.26	186.57	73.89	266.11	7.01	324.21	1,863.80
Very Low	97	1,674.03	0.70	230.28	223.92	147.19	356.02	67.00	875.17	3,574.06
Mobility Group										
Remained Vulnerable	40	421.55	0.00	52.64	69.08	52.60	68.18	52.27	97.38	821.37
Exited Vulnerability	25	1,389.11	0.00	219.91	413.27	73.28	257.14	1.38	157.83	2,511.94
Entered Vulnerability	48	696.32	0.00	49.18	54.10	48.28	201.64	1.03	131.10	1,181.69
Remained Non-Vulnerable	223	1,007.29	3.26	141.67	158.74	105.55	244.52	36.79	535.10	2,226.58

Table 5.23 demonstrates educational expenses as a percentage of total education costs per student by governorate, zone, vulnerability category, and private/public education. It shows that in general school fees represent only 18.6 percent of total expenditure, with a large difference between public and private

education; fees account for 12.3 percent of total expenditure of public school attendants, compared to 48.3 percent for private schools attendants.

Table 5.23: Educational Expenses as Percentage of Total Education Costs Per Student, 2008.

Total Sample Size = Students								
	Fees/Books	Donations	Ext. Books	Uniforms	School Tools	Transport	Ed. Support	Lessons
% of Total Costs								
Total Sample	18.60	0.2	8.60	23.60	12.90	7.20	6.10	22.60
Governorate								
Cairo	22.70	0.28	9.90	13.02	8.00	6.80	16.70	22.40
Alexandria	22.00	0.00	9.50	16.20	10.10	12.30	5.30	23.00
Port Said	17.40	0.90	8.70	16.40	7.00	10.20	4.50	30.80
Dakahliya	12.30	0.30	12.00	20.40	11.90	3.30	2.80	36.30
Gharbeya	17.30	0.05	9.30	18.70	10.00	9.80	5.40	29.30
Giza	18.50	0.00	7.10	17.60	10.60	10.50	16.10	19.10
Fayoum	17.60	0.29	5.40	31.20	18.10	5.40	3.30	18.60
Minia	21.60	0.13	4.90	31.90	15.30	6.90	3.80	15.20
Assiut	25.30	0.20	7.70	25.90	17.30	7.70	1.30	14.20
Sohag	19.50	0.43	8.80	35.50	17.50	3.90	3.10	11.10
Matrouh	18.80	0.12	5.50	34.90	22.40	6.00	2.20	10.00
Zone								
Urban	19.20	0.11	9.40	18.20	11.10	7.50	8.50	25.40
Rural	18.50	0.27	8.00	27.00	13.80	7.10	4.80	20.40
Vulnerability Category								
Very High	20.60	0.20	6.30	28.10	16.20	5.00	8.90	14.70
High	16.49	0.30	7.30	27.60	14.10	7.00	6.70	20.20
Medium	18.70	0.10	8.70	21.70	11.90	5.40	6.60	26.50
Low	18.70	0.20	10.50	21.07	10.60	8.30	4.40	25.90
Very Low	18.50	0.00	10.90	17.04	9.30	12.20	3.50	28.20
Public/Private School								
Public	12.27	0.13	10.96	14.99	8.41	11.57	5.39	36.29
Private	48.29	0.10	6.86	7.05	4.29	11.26	1.57	20.58
Mobility Group								
Remained Vulnerable	19.11	0.30	6.20	28.80	16.90	5.20	6.50	16.90
Exited Vulnerability	16.50	0.20	10.50	26.00	12.90	5.90	5.60	22.10
Entered Vulnerability	18.40	0.30	8.11	25.80	12.60	7.60	9.90	17.00
Remained Non-Vulnerable	18.80	0.13	9.90	18.90	10.30	8.80	4.80	28.20

Private tutoring represents a major element in educational expenditure, especially for public schools. It is apparent from table 5.23 that school fees and uniforms exhaust half of the education budget and the vulnerable cannot pay for private tutoring as their better off counterparts can. This picture is less pronounced among households who moved in vulnerability categories. Table 5.24 shows average costs in

L.E./student/year for public education at the different education stages. Public education costs range from a low for primary school of L.E. 418 per student per year to a high of L.E 1,730 for a university student. Component costs vary by education stage. Education fees are the lowest (representing only 11 percent of total spending) at the primary stage and the highest at the university stage (24.5 percent). The same trend can be observed for external books and transportation. By contrast, tutoring expenditure accounts for 41 percent at the primary stage and 56 percent at the secondary stage (because of Thanaweya Amma bottle neck), as opposed to only 17 percent at the university stage. It is worth noting that transportation for university accounts for 27 percent of total cost (higher than university fees). Raising university fees and using the extra resources to provide grants to poor students will enhance equity in educational access. It should be noted that private tutoring is a consequence of the inadequate educational services provided by public schools, and have a negative impact on public perceptions of the value and usefulness of public school.

Table 5.24: Educational Expenses Per Student by Educational Stage for Public Schools, 2008.

Total Sample Size = Students										
		Fees/Books	Donations	Ext. Books	Uniforms	School Tools	Transport	Ed. Support	Private Lessons	TOTAL
N		L.E./Student/Year								
		Education Stage								
Kindergarten	76	166.30	1.30	1.40	73.10	23.60	22.60	0.00	13.00	301.30
Primary School	2,081	47.20	0.60	30.40	100.30	49.80	15.20	45.10	129.20	417.80
General Preparatory	1,060	49.30	0.90	74.30	131.30	67.30	35.60	55.40	317.60	731.70
Secondary School	762	73.90	0.40	131.80	163.10	78.90	137.10	32.90	708.10	1,326.20
Post-Intermediate	53	344.90	0.30	162.60	121.10	67.20	254.40	28.10	315.50	1,294.10
University	467	424.00	4.20	296.20	103.50	124.70	473.00	25.20	278.90	1,729.70

Table 5.25 shows the same type of data for private schools, while Figure 5.7 provides a comparison of average annual educational expenses for public and private schools. In general, educational expenses rise as one progresses through the educational stages. The exception in this survey is in private post-intermediate school, which is less expensive than private secondary school. Half of total spending for private school students is devoted to fees, regardless of the education stage, with the exception of the secondary stage, where private tutoring has the largest share.

Table 5.25: Educational Expenses per Student by Educational Stage for Private Schools, 2008.

Total sample size = students										
		Fees/books	Donations	Ext. Books	Uniforms	School Tools	Transport	Ed. Support	Private Lessons	TOTAL
N		L.E./Student/Year								
		Education Stage								
Kindergarten	102	233.70	3.80	4.80	52.90	41.40	38.30	0.00	17.00	391.90
Primary School	110	987.10	0.69	94.60	163.30	97.80	167.10	44.60	346.80	1,901.99
General Preparatory	24	1,203.80	1.30	122.50	176.10	85.00	214.70	164.10	801.10	2,768.60
Secondary School	38	932.40	6.80	296.00	194.70	167.70	265.40	48.60	2,142.40	4,054.00
Post-Intermediate	25	1,344.10	0.00	244.60	230.90	87.60	377.90	0.70	42.30	2,328.10
University	55	2,333.50	0.00	362.50	211.40	113.50	668.90	17.00	209.90	3,916.70

2. Medical Subsidies

The survey questionnaire covered several aspects of medical care, including the kind of health institution normally used by households; the type of medical treatment system used within each kind of health institution; and the yearly treatment costs per household (for doctors' fees, x-rays and other lab tests, medicine, and surgery/hospital care). In addition, information was sought on the annual costs of private medical insurance and respondents' perceptions of the quality of public health institutions. Table 5.26 identifies the type of medical institutions individuals go to when they are ill.

Figure 5.7: Average Annual Educational Expenses for Public vs. Private Education

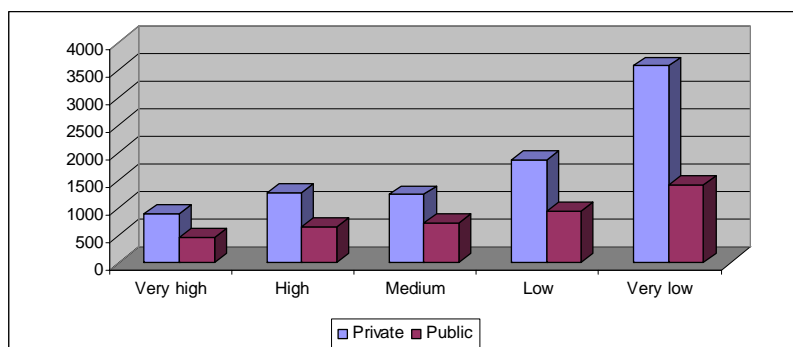


Table 5.26: Individuals Accessing Health Institutions when Ill (%).

	N	Gov Hospital	Gov Health Unit	University Hospital	Public Medical Institution	Mostawsaf Clinic	Private Hospital	Private Clinic	Other
All Sample	3,338	40.24	3.56	0.47	14.17	4.99	7.85	55.26	0.77
Governorate									
Cairo	299	40.50	2.70	-	22.40	22.10	5.00	45.20	1.30
Alexandria	300	32.30	2.70	-	33.00	13.00	22.00	33.30	0.70
Port Said	304	37.80	2.00	0.70	29.30	1.30	14.10	44.70	0.30
Dakahlia	306	28.80	2.60	1.60	7.50	1.60	5.90	69.60	1.30
Gharbeya	309	31.20	6.60	0.40	5.20	-	1.10	62.60	0.20
Giza	298	45.70	2.80	-	17.20	7.00	4.70	53.70	0.70
Fayoum	314	49.50	3.70	0.40	15.10	2.50	4.00	69.20	0.20
Minia	302	24.80	3.40	0.70	8.60	2.50	3.40	72.40	2.70
Assiut	306	41.00	4.20	-	5.40	1.70	10.00	65.50	0.40
Sohag	300	47.40	5.20	0.70	5.50	1.00	2.30	56.50	0.60
Matrouh	300	63.90	3.20	0.70	7.10	2.70	14.10	33.80	0.10
Zone									
Urban	1,527	37.00	2.10	0.50	18.20	9.60	7.10	52.90	1.10
Rural	1,806	36.70	7.00	0.50	4.30	1.20	2.90	62.80	0.50
Vulnerability Category									
Very High	711	57.10	5.90	0.80	7.90	4.40	4.50	43.80	0.30
High	551	43.10	4.10	0.30	8.60	5.00	3.30	53.50	0.50
Medium	596	36.90	6.90	0.40	10.20	5.00	5.60	55.20	0.50
Low	877	27.60	4.00	0.40	12.20	5.00	5.20	66.70	0.70
Very Low	599	18.70	2.80	0.60	14.50	5.90	5.60	72.20	0.40
Mobility Category									
Remained Vulnerable		51.20	5.70	0.80	8.00	3.80	4.40	48.70	0.10
Exited Vulnerability		47.50	6.10	0.80	7.30	3.90	4.30	56.00	1.10
Entered Vulnerability		49.40	3.80	0.20	8.10	6.50	3.00	46.90	1.00
Remained Non-Vulnerable		23.50	4.20	0.30	13.40	5.50	5.40	67.50	0.50

Overall, private clinics are the most frequented medical institution, with just over 55 percent of the sample population normally attending them when ill. Government hospitals are next, representing 40 percent of all attendance. The third most frequented institution is the public medical insurance hospital, with almost 14 percent attendance. All others account for 7 percent or less each. About two thirds of rural respondents frequent private clinics (63 percent) and 37 percent frequent government hospitals. For urban dwellers, the most frequented institutions are private clinics and government hospitals, but public medical insurance clinics play an important role as well, with over 18 percent using their services when ill. However, only 4.3 of the rural population use medical insurance clinics for medication. This may be due to the fact that most rural residents work in agriculture and the informal sector, where no health insurance is provided.

Government owned health institutions (government hospitals, government health units and university hospitals) are the most important providers of health care for the highly vulnerable, with 64 percent of households in this vulnerability category obtaining health care through those institutions. The importance of government institutions decreases as we move from very high vulnerability to those that are better off, with 72 percent of households in the 'very low' vulnerability category using private clinics.

Within each type of medical institution a number of service options can be available, including free medical care, subsidized care (the patient does not pay the full cost), fee-based care (the patient pays the full cost), and cases where part or all of the fees are paid by a government or private insurance program. These options are broken down in Table 5.27.

Table 5.27: Medical Care Fee Options, 2008.

Type of Payment	Frequency	Percent
Free Treatment	608	15.00
Subsidized Treatment	843	20.60
Fee-based Treatment	2355	58.20
Government Insurance	222	5.50
Private Insurance	24	0.60
Other	5	0.10

Table 5.28 shows that 36 percent of households reported that they receive free treatment in government hospitals, while 51 percent received some subsidized care. In government health units, about one-quarter of those attending reported receiving free care, with the remainder receiving some reduction of fees (27%). Patients attending insurance hospitals, as expected, used predominantly government insurance, while those frequenting Mostawsaf clinics received a mix of subsidized and fee-based services. In private institutions almost all treatment is fee-based.

Table 5.28: Use of Different Fee Options at Different Medical Clinics, 2008.

Type of Medical Institution	Free Treatment	Subsidized Treatment	Fee-based Treatment	Gov. Insurance	Private Insurance
Government Hospital	36.20	50.80	12.00	0.70	0.20
Government Medical Unit	27.20	57.00	10.80	5.10	0.00
University Hospital	52.90	17.60	29.40	0.00	0.00
Public Medical Insurance	27.30	10.10	2.00	56.10	4.50
Clinic(Mostawsaf)	7.10	39.30	53.60	0.00	0.00
Private Hospital	1.20	0.60	96.30	0.60	0.60
Private Clinic	0.00	0.70	98.70	0.30	0.20

a Benefit Incidence Analysis

A benefit incidence analysis was performed to assess the extent of coverage of health subsidies for high vulnerability groups. Through this type of analysis, the distribution of population by decile of vulnerability

index (score) was compared with the distribution of direct beneficiaries who utilize government-provided health services. Assuming that every beneficiary obtains the same amount of subsidy, the proportion of total public funding of health services going to each decile of the Egyptian population was estimated. Table 5.29 shows the results of this analysis, and Figure 5.8 provides a graphical illustration in the form of a cumulative distribution curve, which is called the benefit incidence curve.

Table 5.29: Percentage of Beneficiaries of Government Health Institutions, by Vulnerability Category¹⁹

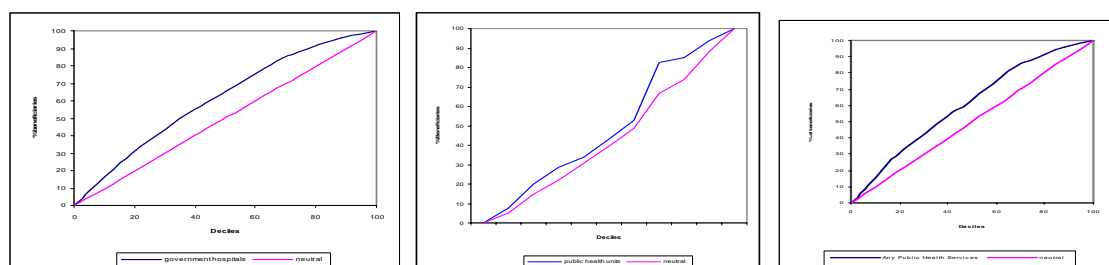
	Any Government Institutions		Government Hospitals	Government Health Units	University Hospitals
	Beneficiaries (%)	Share of Benefits (%)	Beneficiaries (%)	Beneficiaries (%)	Beneficiaries (%)
Very High	53.64	32.16	48.78	5.53	0.80
High	37.76	17.56	35.33	2.31	0.12
Medium	43.21	21.71	37.83	5.88	0.00
Low	27.18	20.13	23.71	3.47	0.46
Very Low	16.72	8.44	13.91	2.65	0.17
Total	35.55	100	31.74	4.00	0.34

As indicated by Table 5.29, public health spending through all government health institutions is highly progressive, where highly vulnerable households receive more benefits compared to the better off. For instance; 53.6 percent of households in the very high vulnerability category benefited from free or subsidized services through government health institutions, as opposed to only 16.70 percent of households in the very low vulnerability category. Highly vulnerable households receive a larger share of benefits provided by public health facilities, where one-third of benefits go to the very high vulnerable households (representing the bottom quintile), middle class households receive 20 percent, and the least vulnerable households receive only 8 percent.

Figure 5.8 illustrate the progressive nature of public health services more obviously. Benefit incidence curves of all types of government institutions are above the neutral line, indicating that the most vulnerable receive more benefits than the better off. It seems that self-targeting mechanisms work well in health subsidy, the poor and vulnerable choose this kind of cheap or free health care as they have no other alternative. On the other hand, the better off were kicked out as a result of low quality of health services provided by government institutions. In fact households have to consider trade off between cost of medical services and the quality of services they obtain.

Figure 5.8: Benefit Incidence Curve for Public Health Expenditure

- a) Government Hospitals b) Government Health Units c) Any Government Institution



b. The Cost of Medical Treatment

Costs for medical treatment are provided in the next series of tables. Costs are divided into doctors' fees, x-ray and laboratory fees, medicines/prescriptions, and surgery/hospital fees. The survey

¹⁹ Beneficiaries are defined as those who utilized government health institutions and received free or subsidized services.

asked for an estimation of annual costs for the entire household. All costs are reported on a per capita basis.

Table 5.30 provides average medical treatment costs for the four cost categories, plus the overall annual total cost, and Figure 5.9 provides a graphical representation of annual medical expenditures by household. Overall, annual costs per household, for medical care based on four categories of expenses are estimated at L.E.1,290. Almost half of health expenditure (43 percent) is paid for medicine, one-quarter for surgery, and the remaining share is equally divided between doctors' fees and lab fees. Average health expenditure in urban and rural areas is almost the same, while health expenditure of households with very high vulnerability is less than half the health expenditure of very low vulnerability categories.

Table 5.30: Average Medical Treatment Costs in L.E. per Household, by Governorate, Zone, and Vulnerability Category, 2008.

		Doctor Fees	Lab Fees	Medicine	Surgery/Hosp.	TOTAL
	N	L.E./Household /Year				
All Sample		191.50	201.60	560.00	337.00	1,290.10
Governorate						
Cairo	299	127.50	187.80	571.00	163.70	1,050.00
Alexandria	300	147.80	243.30	631.00	215.50	1,237.60
Port Said	304	221.60	255.80	971.00	746.30	2,194.70
Dakahliya	306	175.60	211.20	588.00	345.80	1,320.60
Gharbeya	309	254.00	287.80	611.70	321.30	1,474.80
Giza	298	168.50	174.80	495.30	580.10	1,418.70
Fayoum	314	224.00	202.90	663.80	250.40	1,341.10
Minia	302	241.70	117.90	609.00	394.40	1,363.00
Assiut	306	245.80	130.30	676.10	392.70	1,444.90
Sohag	300	111.10	87.80	339.70	421.50	960.10
Matrouh	300	141.10	196.40	422.00	500.40	1,259.90
Zone						
Urban	1,527	169.20	223.90	582.20	329.50	1,304.80
Rural	1806	210.20	182.80	541.30	343.40	1,277.70
Vulnerability Category						
Very High	711	127.66	133.46	422.66	198.64	882.45
High	551	166.64	163.50	425.46	332.88	1,088.50
Medium	596	192.58	180.62	625.81	318.12	1,317.14
Low	877	209.46	183.73	524.63	422.88	1,340.72
Very Low	599	266.33	360.01	827.32	415.23	1,868.91
Mobility Category						
Remained Vulnerable	944	128.68	121.79	363.64	263.76	887.88
Exited Vulnerability	414	209.12	143.37	614.64	286.31	1,253.46
Entered Vulnerability	560	178.77	201.14	552.07	278.69	1,210.69
Remained Non-Vulnerable	1,881	226.62	261.92	660.00	384.80	1,533.35

Figure 5.9: Annual Medical costs by Vulnerability Category, L.E. per Household

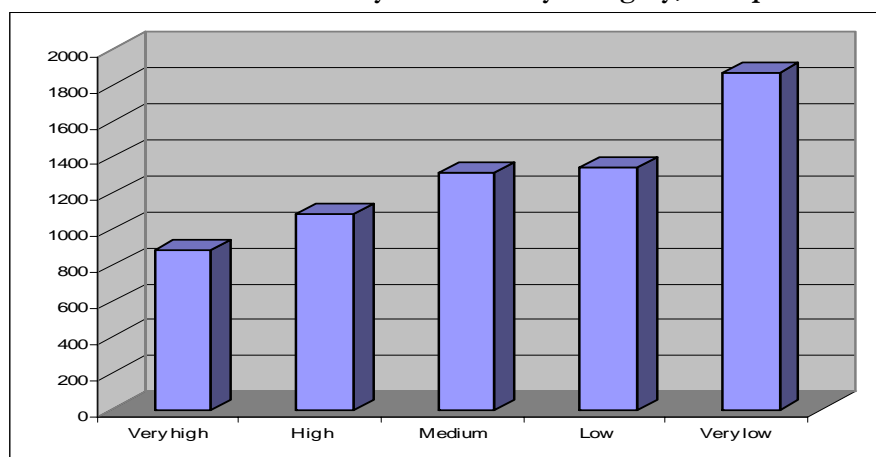


Table 5.31 shows total average household annual fees by type of medical institution, and the significant cost differentials between public and private medical institutions. **Average household expenditures, for example, for those households primarily accessing government hospitals are L.E. 919**, while those accessing private hospitals are paying three times as much. The vulnerability category breakdown suggests that highly vulnerable households are not seeking as much medical care as wealthier households, because even at the primarily fee-based institutions such as private hospitals, the most vulnerable category is spending about one third as much as the less vulnerable category.

Table 5.31: Average Medical Expenses per Household, in L.E., by Type of Medical Institution, 2008.

	Govt. Hospital	Govt. Medical Clinic	University Hospital	Public Medical Institution	Mostawraf Clinic	Private Hospital	Private Clinic
All Sample	918.50	736.90	1,512.50	1,466.00	1,038.60	3,491.00	1,546.80
Governorate							
Cairo	922.70	1,054.30	0.00	893.10	1,185.40	1,429.20	1,251.30
Alexandria	796.60	565.00	0.00	1,098.80	838.80	1,590.50	2,052.50
Port Said	1,266.60	1,116.30	3,975.00	2,255.00	720.00	5,034.40	2,488.60
Dakahliya	965.40	1,105.30	953.30	594.90	942.50	5,642.40	1,385.90
Gharbeya	1,056.10	566.70	350.00	3,595.10	0.00	10,988.10	1,653.10
Giza	1,121.50	1,461.00	0.00	1,442.90	849.90	7,821.90	1,595.00
Fayoum	1,565.80	444.70	1,440.00	1,294.40	656.00	1,837.50	1,732.10
Minia	629.50	1,043.20	275.80	793.00	234.60	1,983.80	1,607.40
Assiut	1,020.50	751.50	0.00	488.70	1,109.20	850.10	2,018.10
Sohag	392.70	775.00	8,398.60	2,818.30	1,298.20	7,176.00	1,248.80
Matrouh	1043.80	551.20	81.00	1,298.60	830.40	4,011.20	1,231.10
Zone							
Urban	881.70	1,270.90	1892.10	1,431.20	1,067.00	3,676.00	1,541.70
Rural	949.40	603.90	1146.40	1,588.90	853.20	3,097.10	1,550.40
Vulnerability Category							
Very High	751.52	859.01	799.50	824.38	706.32	1,310.72	1,235.65
High	898.73	347.28	736.40	1,094.18	1,008.71	1,870.14	1,427.92
Medium	815.96	505.09	2,221.73	1,190.98	984.57	3,276.75	1,643.79
Low	909.37	886.59	68.56	1,273.18	905.51	4,439.04	1,475.96
Very Low	1,753.95	1,252.21	3,661.93	2,468.29	1,531.37	5,558.68	1,858.64
Mobility Category							
Remained Vulnerable	668.87	828.51	864.61	1,015.44	1,066.00	1,690.87	1,230.47
Exited Vulnerability	1,042.72	471.87	68.60	937.26	1,335.60	2,433.18	1,656.31
Entered Vulnerability	1,118.66	332.01	268.00	971.03	610.91	1,149.72	1,605.28
Remained Non-Vulnerable	1,067.71	926.09	1,433.50	1,875.64	1,146.35	4,248.06	1,675.46

c. Level of Satisfaction

Each household was asked their opinion on the quality of services received at public medical institutions. They were provided response choices of “good”, “medium”, and “not good.” Results are provided below in Table 5.32.

Overall, over half of respondents felt that services were good, 30 percent felt they were medium, and 18 percent felt they were poor. Opinions varied significantly by location, with the highest ratings for “good” in Port Said and Fayoum. Ratings for “good” were significantly lower for Alexandria, Giza and Gharbeya. Other governorates fell between these extreme. Rural/urban differences with regards to the “good” rating were not statistically significant, with rural households having a higher opinion of the quality of services than urban households. There was difference in rural and urban scores for “not good” ratings. Finally, less vulnerable households hold a slightly lower opinion of public medical institutions than do more vulnerable households. Almost 50 percent of the most vulnerable households rated services as good, compared to 35 percent of the less vulnerable households. Usually urban residents, as well as the better off, have higher desired welfare levels and aspirations and hence they are not easily satisfied.

Table 5.32: Perceptions of the Quality of Services Offered by Public Medical Institutions, 2008.

		Good	Medium	Not Good
	N	% Respondents		
All Sample	1,629	44.20	46.20	17.80
Governorate				
Cairo	175	49.10	48.00	14.90
Alexandria	179	37.40	48.00	28.50
Port Said	197	69.00	23.90	18.80
Dakahliya	113	67.30	23.00	20.30
Gharbeya	133	36.80	50.70	13.50
Giza	168	35.70	54.80	25.80
Fayoum	188	45.90	41.00	28.50
Minia	104	54.00	34.30	18.50
Assiut	149	42.20	43.30	17.70
Sohag	165	39.50	50.60	16.50
Matrouh	221	31.00	62.70	12.70
Rural/Urban				
Urban	798	43.90	46.30	20.60
Rural	831	44.40	46.10	15.10
Vulnerability Category				
Very High	466	49.80	40.70	19.40
High	269	43.80	45.80	18.80
Medium	325	45.80	49.20	13.10
Low	373	41.10	47.40	18.50
Very Low	195	34.70	52.80	18.30
Mobility Category				
Remained Vulnerable	-	48.90	42.20	19.50
Exited Vulnerability	-	42.10	50.90	14.50
Entered Vulnerability	0	45.80	41.40	19.40
Remained Non-Vulnerable	-	38.60	51.10	17.60

3. Subsidized Water

Table 5.33 provides results for water availability and the monthly average expenditure for a number of water sources. Average water expenditures by type of water supplied to the household are shown in Table 5.34 and Figure 5.10.

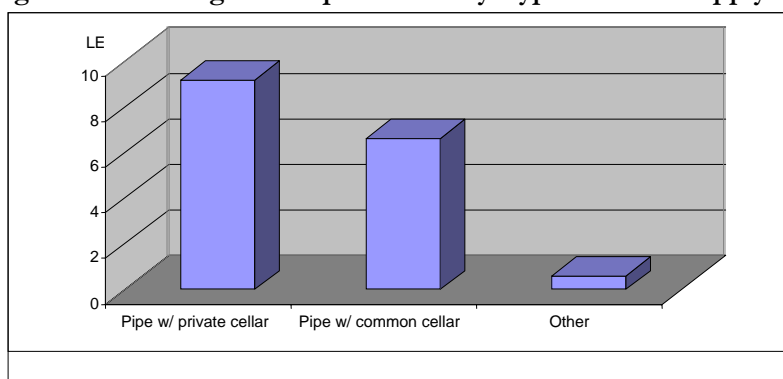
Table 5.33: Water Availability and Monthly Average Expenditure by Water Source

	HHs having Water Source to Their House	Type of Water Source (%)					Average Monthly Expenditure on Water (L.E.)		
	(%)	Pipe w/ Private Cellar		Pipe w/ Common Cellar	Hydrant	Other ²⁰	Public Water Network with Separate Meter	Public Water Network with Shared Meter	Other Sources
		Private Meter	Shared Meter						
Total Sample	96.00	52.90	38.48	3.27	0.30	5.05			
Governorate									
Cairo	99.70	17.30	80.40	1.30	0.30	0.60	4.00	15.20	0.20
Alexandria	99.70	64.70	35.00	-	0.30	-	9.20	3.40	0.00
Port Said	98.70	43.40	50.70	5.60	-	0.30	3.60	4.10	0.10
Dakahliya	95.80	58.20	36.60	-	0.30	4.90	12.00	7.20	0.00
Gharbeya	97.70	64.90	31.30	-	-	3.80	12.30	6.00	0.10
Giza	96.60	16.20	50.90	27.90	0.50	4.60	2.70	11.30	1.70
Fayoum	90.80	67.90	24.00	-	4.10	4.00	9.80	3.40	0.00
Minia	90.10	48.70	40.80	0.50	-	9.90	6.70	5.20	0.00
Assiut	92.20	42.50	49.60	-	0.70	7.20	4.30	5.40	0.00
Sohag	98.00	80.40	17.40	-	-	2.20	11.90	1.50	0.00
Matrouh	69.30	44.90	3.20	2.20	-	0.49	15.20	0.80	25.00
Zone									
Urban	98.80	42.20	53.10	2.90	0.20	1.60	7.70	9.40	0.60
Rural	93.10	61.80	25.90	3.60	0.50	8.10	10.40	4.20	0.60
Vulnerability Category									
Very High	93.50	52.80	34.80	4.90	0.80	6.80	7.90	5.40	0.50
High	94.60	52.40	38.00	2.70	0.40	6.50	8.80	5.70	0.70
Medium	95.60	53.20	38.60	3.60	0.10	4.40	9.40	6.50	0.60
Low	96.40	50.10	40.80	3.10	0.40	5.40	8.20	8.00	0.70
Very Low	98.40	56.30	39.70	1.60	-	2.30	12.10	7.40	0.40
Mobility Category									
Remained Vulnerable	91.60	54.70	31.00	4.70	2.60	6.90	8.90	4.30	0.70
Exited Vulnerability	94.10	61.20	27.70	3.70	0.80	6.70	10.90	4.70	0.90
Entered Vulnerability	98.20	50.60	43.10	3.20	0.40	2.70	7.60	7.30	0.60
Remained Non-Vulnerable	97.30	51.30	42.30	2.50	0.20	3.70	9.70	7.90	0.50

²⁰ "Other" water sources mentioned include: water from mosques, water from canals, water purchased, and water without cellar.

It is noteworthy that the average water costs per month for pipes with private versus common cellars are nearly identical, as both are regulated by the government, while the costs of water from hydrants is significantly lower and the costs from “other” sources are significantly higher. Overall 91.4 percent of households have private piped water source, either with separate or shared meter. Rural areas are more deprived in this respect, where only 87.7 percent of households have private piped water source as opposed to 95.3 percent.

Figure 5.10: Average Costs per Month by Type of Water Supply.



Access to water is strongly associated with the vulnerability of a household. Nearly all of the least vulnerable households have access to piped water network in their homes (98.4 percent) but only 93.5 percent of the highest vulnerable households have access to it. The highest vulnerable households are also less likely to have a pipe with private cellar and are much more likely to gain access through water sellers or through common neighborhood sources (4.9 percent). Households who were highly vulnerable in 2005 and stayed vulnerable in 2008 are less likely to have private water cellar than households who stayed non vulnerable. As price of piped water is highly subsidized, better off households receive more benefits than the highly vulnerable. Water networks may be available in areas where the highly vulnerable households live, but the vulnerable cannot afford to pay for connection to their house. NGOs can play an important role in this respect; by providing vulnerable households with water connection or give them soft loans to pay for such connections.

Table 5.34: Average Costs per Month by Type of Water Supply.

	Type of Water Supply System			
	Pipe w/ Private Cellar	Pipe w/ Common Cellar	Hydrant	Other
N	3334	3334	3334	3334
Average Cost per Month, in L.E.	9.1784	6.6122	.0000	.5877
Standard Error	.25473	.23174	.0000	.10805
Median	5.0000	.0000	.0000	.0000

4. Subsidized Energy

The GoE controls prices directly by imposing price subsidies that keep domestic prices below border prices. Because international fuel prices increase sharply, the development of an energy pricing strategy is part of the GoE’s economic reform agenda which entails revisiting the current levels of subsidy which have been found to exceed those provided in comparable countries.

Deisel is used to fuel most private micro-buses; the main means of transportation of the poor. In response to both internal and external circumstances, the GoE increased the price of both diesel and gasoline, in May 2008. The price of deisel was increased by 46 percent, and the price of gasoline by 28 percent. Given that rising oil prices harm the poor, particularly in the short term, it is necessary to try to mitigate the impact through well-targeted social safety nets using some of the resources generated through subsidy reform. This section tries to shed light on who benefits from energy subsidies, and how recent increases in fuel prices have affected household energy consumption patterns.

Table 5.35 provides data on the number of households connected to the electricity network, and the average monthly expenditure for three electricity sources. Nearly every household that has electricity has general electricity (99 percent). Only 0.1 percent of surveyed households use a generator. The majority of households without

electricity are in Matrouh, where there is also the most use of generators. Household monthly expenditure for all electricity use averages L.E. 41 per month, accounting for LE 7.7 per person per month, LPG amounts to LE 2, and total per capita expenditure on all energy products reached LE 10 per person per month. As shown in table 5.36, almost all households in Egypt in both rural and urban areas use LPG (87 percent) and electricity (98 percent). LPG is mainly used for cooking and water heating, while electricity is used mainly for lighting purposes. LPG usage is more prevalent among rural households in all consumption quintiles, with higher usage rates for richer quintiles. Rural households generally use LPG combined with other energy sources (electricity, kerosene, etc.). The percentage of households in urban areas using both LPG and kerosene is smaller compared to rural areas, with combined usage more prevalent among lower quintiles.

Table 5.35: Percentage of Households Connected to Electricity Network and Average Electricity Expenditure.

	HHs Connected to Electricity Source	Type of Electricity Source (%)		Average Monthly Expenditure on Electricity (L.E.)	
	(%)	General Electricity	Generator	General Electricity	Generator
Total Sample					
Governorate					
Cairo	100.00	100.00	-	31.90	0.00
Alexandria	100.00	99.70	0.30	25.70	0.11
Port Said	99.70	99.00	1.00	47.20	0.56
Dakahliya	99.30	99.70	0.30	39.30	0.06
Gharbeya	99.70	99.40	0.60	28.80	0.08
Giza	100.00	99.90	0.10	30.10	0.04
Fayoum	98.40	99.80	0.20	31.70	0.06
Minia	99.30	98.70	1.30	28.10	0.26
Assiut	99.00	96.80	3.20	32.00	1.30
Sohag	99.70	99.70	0.30	33.90	0.17
Matrouh	95.70	97.30	2.70	31.60	0.68
Zone					
Urban	99.90	99.90	0.40	32.40	0.16
Rural	98.90	99.20	0.80	30.00	0.14
Vulnerability Category					
Very High	99.00	99.20	0.80	26.60	0.29
High	99.20	99.10	0.90	27.40	0.16
Medium	99.80	99.10	0.90	29.30	0.13
Low	99.70	99.80	0.20	32.90	0.09
Very Low	99.40	99.70	0.30	39.50	0.07

a. Energy Subsidy Beneficiaries

Total direct household energy subsidies represent LE 18 per capita per month. The LPG subsidy exhibited the largest share (representing 68 percent of direct household energy subsidies); it is followed by the electricity subsidy (20 percent) and gasoline and diesel (9 percent). Table 5.36 shows that all energy subsidies are regressive, i.e., the groups with the highest consumption accrue the highest benefits.

Table 5.36: Percentage Share of Energy Subsidies and Per Capita benefits by Energy Type and Vulnerability

	LPG	Natural Gas	Electricity	All Energy Subsidies	Population
Percentage Share of Energy Subsidy					
Very High	20.71	10.94	20.75	18.59	28.19
High	17.75	8.68	17.27	15.83	18.83
Medium	18.72	13.13	18.36	25.79	17.40
Low	24.31	28.07	23.90	22.18	20.75
Very Low	18.51	39.17	19.71	17.61	14.83
All	100	100	100	100	100
Average Per Capita Monthly Subsidy					
Very High	10.48	4.87	2.74	11.87	
High	12.50	4.21	3.39	15.12	
Medium	14.46	5.87	3.85	26.67	
Low	15.83	7.46	4.20	19.24	
Very Low	17.54	9.39	4.87	21.37	
All	13.73	6.90	3.68	17.99	
Average Expenditure on Energy, Per Capita Per Month					
Very High	1.65	1.42	5.91	7.22	
High	1.89	1.24	11.19	12.79	
Moderate	2.14	1.70	5.72	10.84	
Low	2.39	2.15	7.79	10.11	
Very Low	2.67	2.69	9.36	11.96	
All	2.09	1.99	7.78	10.20	

For all products lower quintiles receive smaller per capita subsidy benefits compared to other quintiles. For example, highly vulnerable households receive LE 10.5 per month per person from the LPG subsidy, and LE 11.90 from the electricity subsidy, and almost double these figures are received by the very low vulnerability category. This is also true for mobility categories, where households who stayed vulnerable in 2005 and 2008 or who became highly vulnerable receive the least benefits, and households who are never vulnerable receive the largest energy benefits (LE23.9).

Moreover, although the least vulnerable households constitute 14.8 percent of total surveyed households, they receive 17.6 percent of total energy benefits. Conversely, households at the highest vulnerability ranking received only 18.6 percent of total energy benefits, yet they represent 28.2 percent of total households. Biased energy subsidies to less vulnerable households is also confirmed by noting that benefits are unevenly distributed among different mobility groups, where households who stayed non-vulnerable received 54 percent of total energy subsidies while they represent 41 percent of total households in the sample.

Figure 5.11: Percentage Share of Energy Subsidy by Vulnerability Category

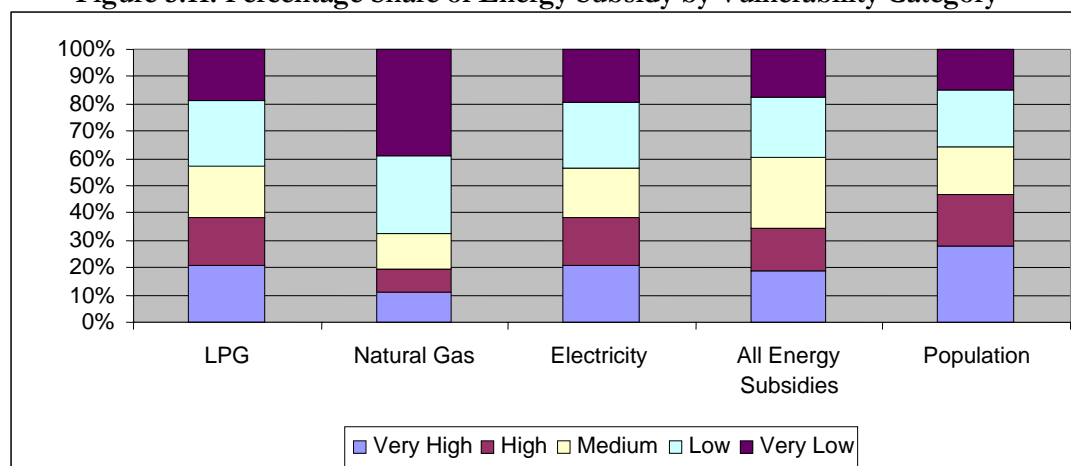


Table 5.37: Percentage Share of Energy Subsidies and Per Capita Benefits by Energy Type and Mobility

	LPG	Natural Gas	Electricity	All Energy Subsidies
Percentage Share of Energy Subsidy				
Remained Vulnerable	25.13	9.97	24.28	22.22
Exited Vulnerability	13.12	8.89	11.43	11.57
Entered Vulnerability	13.16	10.03	13.75	11.96
Remained Non-Vulnerable	48.59	71.10	50.54	54.24
All	100	100	100	100
Average Per Capita Monthly Subsidy				
Remained Vulnerable	10.77	4.80	2.75	12.40
Exited Vulnerability	15.03	8.57	3.55	17.85
Entered Vulnerability	12.43	4.43	3.46	14.83
Remained Non-Vulnerable	16.17	7.95	4.45	23.88
All	13.76	6.98	3.65	18.12
Average Expenditure on Energy, Per Capita Per Month				
Remained Vulnerable	1.65	1.39	9.47	10.77
Exited Vulnerability	2.20	2.44	6.16	8.26
Entered Vulnerability	1.94	1.30	5.31	7.03
Remained Non-Vulnerable	2.44	2.28	7.70	11.45

Figure 5.12: Average Per Capita Monthly Subsidy

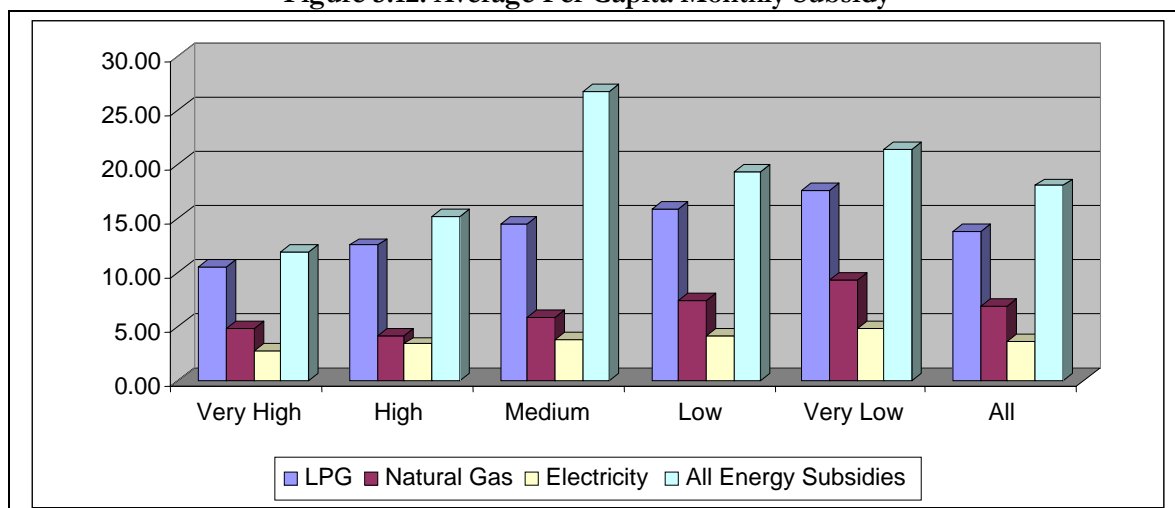


Table 5.38: Type of Energy for Cooking and Average Energy Expenditure.

	Type of Energy (% of HH)				Average Expenditure on Energy for Cooking	Number of LPG Cylinder	Average Cost per LPG Cylinder
	Natural Gas	LPG	Kerosene	Others			
Total Sample	268	2,913	103	58	267	2,915	2,915
Region							
Metropolitan	89.9	14.7	6.8	57.9	8.19	1.65	7.48
Lower Egypt	5.6	46.7	16.5	33.3	10.60	2.36	4.59
Upper Egypt	4.5	37.2	74.8	8.8	7.02	2.13	5.74
Zone							
Urban	100.0	42.0	26.2	25.9	8.27	1.89	6.22
Rural	0.0	58.0	73.8	74.1	0.0	2.37	4.90
Vulnerability Category							
Very High	12.9	21.2	59.3	38.0	7.11	2.12	5.62
High	12.0	18.4	15.4	15.4	6.11	2.10	5.38
Medium	14.1	18.7	7.8	36.3	7.72	2.18	5.37
Low	27.8	23.5	12.3	9.1	8.32	2.25	5.41
Very Low	33.2	18.3	5.2	1.1	9.70	2.20	5.48
Mobility Category							
Remained Vulnerable	12.0	25.5	59.2	39.5	7.07	2.16	5.46
Exited Vulnerability	7.7	11.5	8.2	31.0	9.63	2.50	5.24
Entered Vulnerability	13.3	14.0	17.1	16.1	6.44	2.05	5.57
Remained Non-Vulnerable	66.9	49.0	15.5	13.4	8.92	2.17	5.44

b. Public and Private Transportation

The privately operated mini-bus is the most important means of transportation, regardless of place of residence or living standards. However, the relative importance of this means of transportation varies. Three-quarters of respondents from Lower Egypt, half of respondents from Upper Egypt, and one-thirds of respondents in Metropolitan areas use private mini-buses as a means of transportation.

Within this context, raising the price of diesel fuel (which is used to fuel most mini-buses) may have negative impact on the living standards of all Egyptians, and particularly those in rural areas. Moreover, 43 percent of respondents use public buses, the underground and metro, compared to 2.5 percent in Lower Egypt. The least vulnerable households are more likely to use other means of transportation (such as motorcycles, bicycles, donkeys and tractors) and they are less likely to use private cars. There no clear relation between vulnerability and using public or private buses or mini buses. It seems that patterns of transportation depend to a large extent on place of residence rather than o vulnerability category.

The bias of the subsidized public transportation services towards urban residents is apparent. Almost half of Metropolitan residents use public means of transportation, a quarter of urban respondents, and only 2.4 percent of rural households. But it should be noted that private transportation also receives an indirect subsidy, through the use of subsidized fuel. Hence, customers of private transportation are also recipients of energy subsidies.

Figure 5.13: Percentage Share of Means of Transportation

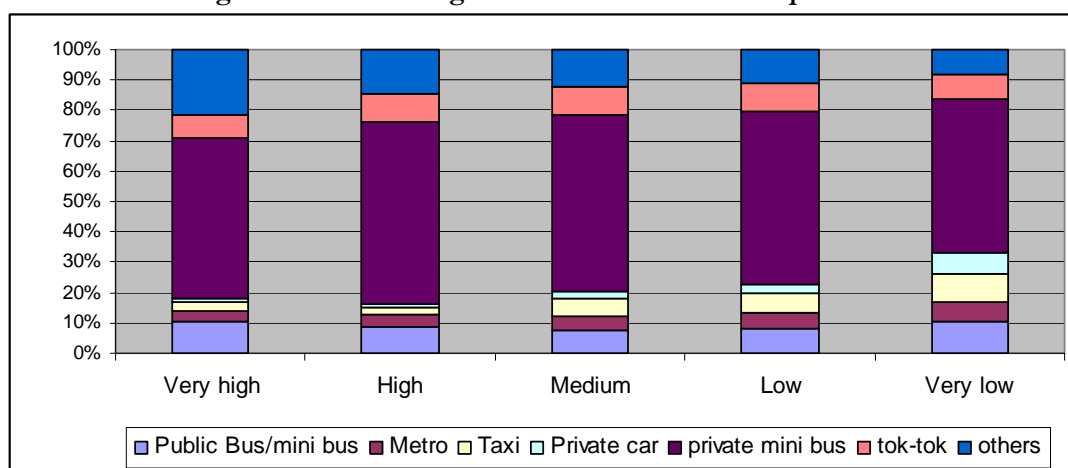


Table 5.39: Percentage Share of Means of Transportation

	Public Bus/Mini Bus	Underground	Metro	Taxi	Private Car	Private Mini Bus	Tok-Tok	Others	All
Region									
Metropolitan	28.29	8.64	6.19	14.05	4.13	34.87	1.08	2.75	100
Lower Egypt	1.22	1.09	0.13	1.28	2.82	73.14	8.59	11.73	100
Upper Egypt	4.72	1.68	0.13	3.88	2.33	51.10	14.34	21.83	100
Zone									
Urban	17.06	5.46	3.27	9.75	3.85	47.66	8.14	4.82	100
Rural	1.46	0.94	0.00	1.27	2.26	63.11	9.46	21.51	100
Vulnerability Category									
Very High	10.90	1.40	1.99	2.40	1.40	52.00	8.60	21.30	100
High	7.70	3.60	1.50	3.60	0.40	58.40	8.20	16.70	100
Medium	7.60	2.20	1.30	4.70	2.20	59.80	10.40	11.70	100
Low	8.70	4.40	1.30	6.30	3.20	56.30	9.30	10.50	100
Very Low	10.60	4.00	2.10	10.10	7.50	51.40	7.40	6.90	100
All	9.20	3.20	1.60	5.50	3.00	55.40	8.80	13.40	100
Mobility Category									
Remained Vulnerable	1.0	2.0	1.9	2.8	1.2	53.8	10.0	16.1	100
Exited Vulnerability	7.5	1.0	1.1	4.4	.6	58.0	14.4	12.0	100
Entered Vulnerability	12.3	2.8	1.3	2.9	.7	59.7	5.5	13.9	100
Remained Non-Vulnerable	8.9	3.9	1.7	7.4	4.9	56.0	8.2	8.1	100
	8.8	2.9	1.6	5.3	2.9	56.2	9.0	11.3	100

c. Energy Price Increases and Mitigation Measures

Respondents were asked whether their household consumption of energy has been affected by the recent increases in fuel prices (on May 2008) and if they could economize on their consumption. **Respondents were aware that the rise in the price of energy products affects them if not directly, then indirectly with prices of goods and services increasing to compensate for the higher costs of production and transportation.** Only 1.6 percent of respondents expressed a readiness to switch to an alternative source of fuel as long as it was cheaper and not harmful to their health. However, **one-quarter of respondents said that they reduced their average usage of transportation as a response to the increased costs, with 3.9 percent reporting that they use public transportation to mitigate fuel price increases.** Responses differ by regions and vulnerability categories. As public transportation is of better quality in Metropolitan regions, 14.1 percent indicated that they switched to public transportation. Slight differences in household response to mitigate fuel price increases between vulnerability categories exist, where 26.9 percent of the highly vulnerable households reported that they have reduced their usage of transportation as opposed to only 18.5 percent of the least vulnerable.

Table 5.40: Response to Recent Energy Increases (% of HHs Reporting)

	% of HHs Indicating Impact of Energy Price Increases	Means to Mitigate Impact of Energy Price Increases (% of HHs Reporting)			
		Use Cheaper Energy Source	Use Public Transportation	Reduce Average Transportation Frequency	Other
Total Sample	80.6	1.6	3.9	26.6	67.9
Region					
Metropolitan	77.5	3.8	14.1	34.5	47.6
Lower Egypt	84.3	0.8	1.2	20.5	77.6
Upper Egypt	77.9	1.4	1.7	29.7	67.1
Zone					
Urban	77.5	2.5	7.4	27.8	62.3
Rural	83.2	1.0	1.1	25.5	72.3
Vulnerability Category					
Very High	83.8	1.0	4.9	26.9	67.2
High	78.2	1.9	3.5	31.1	63.4
Medium	80.0	2.0	2.9	31.7	63.3
Low	81.1	0.8	3.1	24.4	71.8
Very Low	79.3	3.2	4.9	18.5	73.4
Mobility Category					
Remained Vulnerable	79.8	2.0	4.5	27.5	66.0
Exited Vulnerability	75.9	3.3	3.2	28.5	64.9
Entered Vulnerability	84.1	.5	4.3	30.9	64.3
Remained Non-Vulnerable	81.8	1.6	3.5	23.8	71.1

SECTION SIX: CONSTRUCTING A BROADER VULNERABILITY INDEX

Vulnerability is a multidimensional concept. The current index, though it captures the main elements of vulnerability, leaves several important dimensions behind. It is thus useful to introduce more dimensions and indicators into the analysis to account for more vulnerability dimensions. Additionally, as the current index uses ranks in each dimension, variation between households is very small, in fact, the index ranged from 4 to 20. Accordingly, a broader vulnerability index (BVI) has been constructed, using disaggregated data at the household level.

Constructing such an index requires: (1) identifying the underlying dimensions of human development and investigating the interrelationships between different aspects of each dimension, (2) choosing the most relevant indicators or variables that reflect those dimensions of human development; and (3) combining those variables in a smaller number of composite indices, preferably one.

Some subjectivity is always found in this type of analysis. Subjectivity is involved in the selection of the dimensions of vulnerability, in the variables that measure each dimension and in the way these variables are combined. In the BVI, weighting is used to linearly combine the selected variables into a smaller number of indices. Weights may be arbitrarily chosen as equal (as in the current index) or, they may be determined through multivariate statistical techniques such as the Principal Component Analysis (PCA). Principal Component Analysis is commonly used to obtain the appropriate weights for the various variables of the proposed index. The first extracted principal component is the factor that explains the largest percentage of total variance.

Variables in the new vulnerability index include: 1) total household size; 2) expenditure on food; 3) monthly per capita income; 4) educational status of the head of household; 5) the presence of social insurance; and 6) the food consumption score. All these variables were included in the index by their raw values (i.e. household size, food expenditure, monthly income, and FCS were included as continuous variables).

The first principal factor extracted from the PCA was used as the vulnerability index, and it explained 30 percent of the total variation of the included variables. Households were then classified- according to their new vulnerability index- into 5 quintiles, where each quintile represents 20 percent of the households in the sample. The first quintile represents the highest vulnerability category, while the last category represents the least vulnerable category.

To investigate the relationship between the two definitions of vulnerability, Table 6.1 presents the distribution of households according to the two definitions. The table shows that almost 40 percent of households in the highest vulnerable group according to the old definition, are also classified as high vulnerability by the new definition. The same result was observed regarding the "very low" vulnerable group. However, all other categories show less agreement between the two definitions. Additionally, the coefficient of correlation between the categories of the two vulnerable indices presents a significant moderate correlation (Gamma=0.4 with p-value less than 0.0005).

Table 6.1: Distribution of Households According to the New and the Old Vulnerability Indices

Old Index	New Vulnerability Index					Total
	Very High	High	Medium	Low	Very Low	
Very High	38.6	25.5	15.5	11.3	9.1	100.0
High	28.7	20.7	19.2	17.0	14.3	100.0
Medium	18.0	24.9	19.5	23.3	14.3	100.0
Low	10.8	18.0	27.2	22.2	21.8	100.0
Very Low	3.7	9.9	17.9	27.2	41.4	100.0
Total	20.1	19.9	20.1	20.0	20.0	100.0

Table 6.2 provides the percentages of households in each category of the new vulnerability index for the eleven surveyed governorates. The data clearly shows that Matrouh and Port Said governorates have the highest percentage of households categorized as very low vulnerability. In Port Said, 37.9 percent of households are categorized as being of very low vulnerability and 31 percent are categorized as being of low vulnerability, and 72 percent of households in Matrouh are characterized as being of low or very low vulnerability. Conversely, regarding the very high vulnerability category, Sohag is the highest vulnerable governorate followed by Minia governorate. Almost one third of households in Sohag can be characterized as being very vulnerable to poverty, while this figure reached 26 percent in Matrouh.

Table 6.2: Governorates by New Vulnerability Category, 2008

	New Vulnerability Category				
	Very High	High	Medium	Low	Very Low
Cairo	17.30	18.40	22.00	21.80	20.40
Alexandria	24.00	31.40	23.00	11.80	9.80
Port Said	6.90	10.30	13.80	31.00	37.90
Dakahliya	20.80	21.00	21.00	24.10	13.10
Gharbeya	13.80	15.50	21.20	23.60	25.80
Giza	23.80	24.80	17.50	19.20	14.70
Fayoum	19.40	26.90	17.60	18.50	17.60
Minia	26.10	21.60	15.70	15.70	20.90
Assiut	20.50	15.80	12.30	16.40	34.90
Sohag	31.60	22.00	22.00	12.90	11.50
Matrouh	4.70	9.30	14.00	23.30	48.80
Total	20.10	19.90	20.00	20.00	19.90

The educational status of the head of household is correlated by the new vulnerability categories as presented in Table 6.3. The data shows that 53 percent of household heads in the most vulnerable group are illiterate, while less than 3.5 percent are of university education or above. On the other hand, 35 percent of household heads who are in the least vulnerable group are illiterate, while 16 percent have university education or above.

Table 6.3: Educational Status of Head of Household by Vulnerability Group, 2008

	Level of Education (row percent)							
	Illiterate	Read and Write	Primary	Preparatory	Secondary	Above Secondary	University	Above
New Vulnerability Groups								
Very High	52.5	16.4	4.2	4.0	15.6	4.0	2.7	.6
High	40.7	17.5	7.7	5.1	16.3	5.0	7.4	.3
Medium	35.6	16.0	7.3	6.0	19.4	3.9	11.5	.3
Low	34.3	16.7	8.3	3.5	19.5	7.2	9.8	.8
Very Low	34.7	18.5	4.8	3.5	19.5	3.5	15.0	.6

SECTION SEVEN: CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

Given current spending levels, the safety-net and subsidy systems do not go far enough in reducing vulnerability or in improving the lives of the poor. Many vulnerable households are not reached by the existing programs, due to the geographic areas in which the poor tend to live (rural Upper Egypt), and to the eligibility criteria for ration cards or social assistance. Moreover, even those poor households that are reached by the programs receive benefits that are insufficient to raise them out of poverty. Thus there is a great need for reform, not only in the targeting mechanisms used, but also in the level of benefits available to the poor. This does not necessarily imply increased budgetary burdens for the state, as improvements to the system will make available resources that are currently leaked to those who are not vulnerable, and redistribute these resources to vulnerable populations. A detailed proposed targeting mechanism is provided in Annex I.

The reform of subsidies is a means of reducing inefficiencies inherent in subsidized prices. The reforms are intended to reduce the budgetary cost of subsidies, and provide a better welfare result. However, when launching reforms, the GoE must make an extra effort to explain the objectives of the reform and to develop an alternative mechanism for the substitution of price subsidies.

Several mechanisms exist to transfer support to vulnerable social groups. These mechanisms include direct monetary transfers, which have the flexibility to be donated to the entire population or to a small segment, repeatedly or not. Monetary transfers can also be paid on condition that recipients meet certain obligations (such as registration of children at school). Mechanisms also include sophisticated and tested measures to promote support for education and health.

B. Recommendations

1. Targeting Mechanisms

There is a need to either improve existing targeting mechanisms, or develop new ones, and to increase the level of transparency of actions undertaken. Introducing an effective targeting program from scratch obviously takes time, but so does reforming an existing program. In this situation, a more systematic social protection strategy is needed that protects those households that are vulnerable to food insecurity as well as provides assistance to those that are chronically poor and vulnerable that are currently not being reached. This strategy distinguishes between a broad-based food subsidy program that serves as an income transfer for the majority of the population, and targeted safety nets for the poorest and most vulnerable.

The food subsidy program should be reformed through better targeting to reduce leakage and inefficiencies inherent in the system. The process should be iterative so that targeting mechanisms using means testing can be pilot tested in a few governorates to see if they are practical before scaling up the program reform nationally. Pilot activities could include changes in registration to improve targeting; changes in the commodity mix to introduce more nutritious foods and to take regional tastes and preferences into account; and continued testing of the smart card to allow for flexible commodity mixes.

2. Conditional Cash Transfers

Conditional cash transfers have recently been the object of attention, but they seem inadequate to provide a good alternative to existing food subsidies. The costs of the implementation of a system of conditional cash transfers are higher than those of unconditional transfers. They are more appropriate for situations where: (1) a developed welfare mechanism integrating non-conditional cash transfers already exists, and (2) substitutes for non-energy subsidies in fuel prices can be designed and provided to all consumers (e.g. health services to the entire population of a remote village where most people have low incomes).

Because only 20 percent of highly vulnerable households are currently receiving social assistance cash transfers, there is considerable room for improvement in targeting of these programs. Proxy means testing and geographical targeting in Upper Egypt should enable more needy households to receive social support. The Ministry of Social Solidarity is currently carrying out a targeting exercise that will facilitate reaching the vulnerable more effectively. NGOs and CBOs can assist in this targeting process.

3. Social Protection Measures

The study concludes that changes in income, instable working conditions, health problems and absence of social insurance are among the key determinants of vulnerability. While the risks that vulnerable people face as a result of their circumstances are the cause of their vulnerability, the deeper cause is their inability to reduce or mitigate risk, or to cope with shocks—a cause that both draws from and feeds into the causes of other dimensions of poverty.

Low levels of physical, natural, and financial assets make poor people especially vulnerable to negative shocks. Lack of adequate assets can push households to undertake coping strategies in the short term that worsen deprivation in the long term. Examples are pulling children out of school to earn extra income during an economic crisis; depleting natural resources beyond the sustainable level; making quick sales of land or livestock at desperately low prices; and lowering nutritional intake below the levels necessary to sustain health. It is not surprising therefore that vulnerability is associated with low school enrollment rates, high malnutrition indicators, and low income.

Two types of measures should be considered; these measures to overcome the negative effects of increasing food and energy prices on poor households, and to protect non-poor but vulnerable households from falling into poverty. Measures for those who are already poor are considerably different from those in favor of those that may fall into poverty as a result of economic shocks such as rising food and energy prices. The current poor may need the "social safety net" of government or the welfare system, while vulnerable populations need a "safety rope" type of social security, or measures to prevent them from falling into poverty. Therefore, social security and social protection programs are essential components of any policy package designed to reduce vulnerability. These social protection measures should include subsidies for consumer goods and educational expenses that are targeted to the neediest families. Social protection measures should also include the extension of health insurance to the poor and uninsured as well as the enhancement of health insurance within schools. Other positive measures include expanding social security coverage gradually and securing a minimum allowance for workers in the informal sector.

Enhanced security will reduce vulnerability to economic shocks, natural disasters, ill health, disability, and personal violence. Enhanced security is an intrinsic part of enhancing well-being and encourages investment in human capital and in higher-risk, higher-return activities. This requires effective national action to manage the risk of economy wide shocks and effective mechanisms to reduce the risks faced by poor people, including health- and weather-related risks. It also requires building the assets of poor people, diversifying household activities, and providing a range of insurance mechanisms to cope with adverse shocks— from public work to stay-in-school programs and health insurance.

Egypt's Human Development Report for 2008 identified several obstacles for universal social security, including high poverty levels; low mean income levels; fragmented labor markets; a large informal economic sector; limited social insurance coverage for wage workers in the formal economic sector; fragmentation of existing social protection systems; and the weakness of the tax base. The GOE must address all of these issues in order to improve the coverage and efficiency of the social insurance base.

4. Immediate Short Term Actions

a. Nutritional Interventions

Anemia has been identified as one of the micro nutrient deficiencies in the country, particularly among women of child bearing age. The fortification programme of wheat flour with iron and folic acid for use in the production of balady bread has been a means to address this issue. The World Food Programme has currently begun this initiative in three governorates, with further expansion to a total of eight governorates planned, while a Government fortification programme currently covers fifteen governorates. The fortification of wheat flour should immediately be expanded to include all flour used in the food subsidy rations, whether for production of balady bread or direct distribution of the wheat flour which occurs in some Upper Egypt governorates.

To support traditional consumption patterns while reaching women and small children with nutritious food, WFP has developed blended foods such as Indiamix, Likuna Phala, and Unimix - all products made in the

food-recipient country using local foods. Awareness campaigns should also be considered to eradicate nutrition illiteracy.

The Flour Fortification Project in Egypt

The Global Alliance for Improved Nutrition (GAIN) has committed US\$3 million to the United Nations World Food Programme (WFP) to work with the Egyptian Government on launching a nationwide project to fortify wheat flour with folic acid and iron. The fortified wheat flour is widely used in Egypt to make balady bread, the staple food for Egyptians. Addition of the two nutrients will provide an effective preventive measure to protect 50 million Egyptians from the threat of anemia, including some of the poorest segments of the Egyptian society.

Why is flour fortification needed in Egypt?

Anemia in children under the age of five increased from 26 percent in 2000 to 48 percent in 2005, and among child-bearing women from 30 percent to 48 percent during the same time period. Anemia affects the productivity of a healthy being by 15 percent, so the resulting losses in GDP were estimated at \$2 billion annually. As a response, the Government of Egypt adopted a national strategy to combat micronutrient deficiencies, which calls for fortification, supplementation, de-worming and education.

What is WFP's role?

WFP/Egypt was selected by the Government of Egypt to implement the three-year GAIN funded project. In this context, WFP undertakes the following activities in cooperation with the Government of Egypt:

- Purchase necessary equipment and materials for the fortification process, such as feeders and premix.
- Put in place and build capacity for a quality control system.
- Conduct a social marketing campaign to improve awareness of anemia and the role of fortification, and change behavior.
- Put in place a system within partner government entities to monitor and evaluate project progress and performance.

Who are the Project Partners?

The main government partner is the Ministry of Social Solidarity. The Ministry of Health is represented by the National Nutrition Institute, which oversees implementation of the social marketing campaign; coordinates the monitoring and evaluation function; and parts of the quality control function. The Holding Company for Food Industries owns the participating public sector mills. This is in addition to other private participating mills, non-governmental organizations, and sister international organizations.

What is the Project Timeframe?

The project is a five-year project, but WFP's role under the GAIN-funded project is over the first three years. The first six months of the project will launch fortification in governorates of Sharqiya, Fayoum, Kafr El Sheikh and Aswan, while the following six months extends coverage to six more governorates. By the end of the three year period, the project will cover the entire nation.

The nutritional contribution of vegetable oil that is included under the food subsidy ration system can be improved by its fortification with both A and D vitamins. Vitamin A deficiency is a public health issue and affects 10 percent of preschool children, 25 percent of adolescents and 20 percent of adults. (West, Klemm, and Johnson: Vitamin A Deficiency Prevention in Egypt: Focus on Vitamin A Fortification; March 2008). At the same time, the allowable ration per month for sugar should be reduced to a basic quota of a maximum of 2 kilograms per household per month, with the additional and new quotas remaining unchanged. Furthermore, offering lentils through the ration system to make up for the reduced sugar quota will provide some dietary diversity and additional nutrients not available in sugar. It will also assist in the transition away from a diet that is geared to high quantities of carbohydrates, which can contribute to the development of chronic diseases. As with the transition to smaller sizes of balady bread loaves over time, this reduction of the sugar quota may need to be introduced gradually, and supported by targeted national awareness campaigns on the health dangers of high sugar consumption.

The food and nutritional needs of young school children should be addressed by expanding the ration provided in school feeding programs. The pre-school and primary school feeding programs currently implemented through the Ministry of Education provide a snack of biscuits or pies and milk to school children, but this snack is not covering children for a full school year. The school feeding programs provide an important addition of between 20 to 25 percent of daily requirements of energy and micronutrients to

those receiving the biscuits and milk. In view of the heavy burden of food costs to the families of the poorest, expansion of coverage provides significant dietary support to these families and their children during critical growth years. At a minimum, the program should be expanded for full coverage of a full academic year for 30 percent of the schools found in the most vulnerable and food insecure areas. This will reduce drop-out rates for the more vulnerable households, and increase the chance that literacy levels will improve for the more vulnerable households.

In addition to the dietary supplementation which the school feeding program provides, the inclusion of nutrition education messages within school curricula needs to be implemented and supported. The FAO has already developed a manual for nutritional education in school curricula. Additionally, nutrition related activities should be initiated for children both in the schools and in their local communities. Such programs already exist within the context of joint UNICEF and Ministry of Health and Population activities undertaken in the Upper Egypt Governorates of Assiut, Sohag, Minia and Qena.

Consideration should also be given to increasing the quota of commodities for the poorest and more vulnerable households. Accordingly, better targeting will be necessary through proxy means testing and geographical targeting using the poverty map currently adopted by the GoE. In addition, to enable the more vulnerable households to participate, efforts must be made to simplify the registration process and facilitate the registration of poor illiterate households. NGOs and CBOs could help in this targeting and facilitation process.

b. Public Awareness Campaigns

The effort of the GoE to communicate the reform policies will have a critical impact on how the reforms are received politically. When the GoE launches its reforms, it has to explain the objectives of the reform in a transparent manner, and how the fiscal savings from the reform can be used to support tax relief as well as improvements in schools, better infrastructure for water and sanitation and improvements in health care. Reduced subsidy costs can lead to increases in spending on public services. National communication campaigns are also needed to create public awareness on issues related to nutrition. These campaigns can make use of a variety of media, including radio and television public service announcements, posters, billboards, and the use of celebrity spokespersons.

5. Long Term Action: A Comprehensive Social Protection Strategy for Upper Egypt

The GoE should develop a strategy for Upper Egypt that addresses the following major components:

1. A risk management approach in livelihood support activities that is three tiered- risk reduction, risk mitigation, and risk coping.
2. Productive safety nets for able-bodied chronically poor households,
3. Support for the most vulnerable and destitute members of the community.

Once this strategy is developed, it can be pilot-tested in selected governorates in order to determine its feasibility and practicality.

a. Comprehensive Risk Management Strategies

Given the food price changes and weather induced shocks that have recently impacted vulnerable communities, a comprehensive risk management orientation is key to protecting household and community assets against future shocks. The following three strategies comprise comprehensive risk management:

1. Risk Reduction (ex-ante) takes place prior to a shock. It includes risk reduction activities at both household and community levels, such as improving irrigation canals, and livelihood diversification to increase stable income to counter the effects of rising food prices.
2. Risk mitigation (ex-post) takes place during a shock at both household and community levels and includes responses such as food banks, savings groups, or revolving funds to serve as insurance mechanisms against food price shocks. It also could include crop and livestock insurance.

3. Risk Coping Strategies (ex-ante) take place after a shock at the household, community, or higher levels. It includes household coping strategies such as liquid asset sales, and informal and formal safety nets operated at the community level (e.g. social support from Mosques). It also entails different kinds of social protection mechanisms that need to be in place at the district and governorate level in case the lower levels are not able to deal effectively with a shock.

A risk management lens should be used to screen any intervention that is being promoted in agriculture and income diversification. The program should also concentrate on building the capacity of communities to manage more effectively the local risks that they are exposed to (e.g. drought and high food prices). Risk management components need to be integrated into the savings and credit activities so that insurance mechanisms are in place in the event that a major shock overwhelms the community and people are unable to pay back their loans. Similarly, livestock and crop insurance should be evaluated on a pilot basis.

b. Productive Safety Nets

The second major component to a comprehensive social protection strategy is the creation and support of Productive Safety Nets for able-bodied extremely poor populations that can enable them to escape from poverty traps. Safety nets which are oriented towards community public works activities and environmental protection services are important for reducing vulnerability arising from food price increases and climatic shocks. Productive safety nets could also include access to farm inputs at subsidized prices to support crop and or livestock production. The GoE could target productive safety nets, such as CFW or FFW programs, to the chronically poor. Means testing would be used to identify eligible households.

These safety nets build community assets and provide an income transfer that can improve livelihood security. Program-wide emphasis should be given to connecting productive safety nets with risk reduction activities. The infrastructure that is created should also benefit to the extent possible the poor households as well. NGOs and CBOs could help manage these targeted safety nets.

c. Community Support for the Most Vulnerable

The third component of a comprehensive social protection strategy is the creation of community mechanisms that provide support for the most vulnerable and destitute members of the community. This group includes the elderly, the handicapped, orphans, and widows. Support could be provided through Mosque committee's social protection funds, savings groups, and government transfers. NGOs and CBOs could assist in strengthening these informal social assistance programs.

Because this comprehensive social protection strategy encompasses program elements that currently fall under the management responsibilities of several Ministries, it will be important to place the oversight of this program in the Prime Minister's Office. Currently a Social Committee exists in the Prime Minister's Office that has representatives from several line Ministries that could serve this oversight function.

The GoE's Information and Decision Support Center (IDSC) can be delegated to coordinate the collection and synthesis of all food security information generated by other line ministries. Timely food security information will be critical for the GOE to determine if social safety nets need to be expanded or modified to accommodate the effects of rising food prices. Currently several ministries have established their own information systems to support their programs. Because IDSC is an institution that directly provides information to the Egyptian Cabinet, it could provide a coordinating function to bring these various types of information together to inform policy decisions. Each of the Ministries (MALR, MOSS, etc) would have representatives participating in the meetings where critical policy decisions would be made based on the various sources of information.

d. Pilot Project

A collaborative pilot project can be developed which would bring together a broad range of concerned stakeholders, including the Ministry of Education, the Ministry of Health and Population, the National Nutrition Institute, the Ministry of Agriculture to work in cooperation with donors including the World Food Programme, UNICEF, FAO, NGOs and CBOs. This pilot project would provide a forum to demonstrate a comprehensive approach to addressing food insecurity issues. It should be undertaken in an

upper Egyptian governorate, such as Qena (which is one of the most vulnerable in the country) in a village selected from the Ministry of Health's listing of the 1,000 most vulnerable villages. Both the WFP and UNICEF are currently implementing nutrition intervention activities in Qena (including wheat flour fortification and community interventions, along with school health activities).

Pilot project activities could include income generating activities; public awareness campaigns on the nutritional role played by subsidized foods in both diet and health; interventions targeting improvements for infants and young children; community or household gardening to promote dietary diversity, and nutrition education activities in schools with the inclusion of topics in curricula.

ANNEX I: TARGETING MECHANISMS: GEOGRAPHIC AND PROXY MEANS

Successful and financially feasible interventions to reduce poverty must be based on a mechanism for targeting assistance to the poor. Although the explicit goal of all types of strategies is to reduce poverty, they are likely to benefit some non-poor as well. Given that funding for such programs is limited, steps must be taken to better direct benefits toward the poor. Targeting also reduces the total cost of social protection. To achieve this, the Government must put in place well-designed targeting systems that reduce leakage (the granting of aid to ineligible beneficiaries) and specify the level of aid as a share of the costs that beneficiaries bear²¹. Several targeting options are available for a variety of program types, and few absolute rules exist. This section identifies options for the choice of targeting method and for its thoughtful implementation.

A.1. GEOGRAPHICAL TARGETING

Narrow geographical targeting at the level of the village or the urban community can reduce the leakage of benefits to the non-poor in countries or regions where, as an effect of agro-climatic or socioeconomic conditions, the standard of living in the majority of the households in most villages and urban communities is similar. The households in these villages often have similar sources of income, and they are all affected by the same agro-climatic and geographic conditions, including road conditions, the distance to the nearest town, and the availability of public facilities for health, education, water supply, and so forth. Consequently, the overall income inequality in these countries or regions is primarily due to income differences between villages, and only to a lesser degree to income differences between individuals within villages. As will be demonstrated in Part 4 below, this is exactly the Egyptian case.

In urban areas, targeting methods that focus on individual households are likely to be more effective (proxy means tests, self-targeting, etc.). In areas with high poverty rates, the provision of general public services and programs through geographic targeting would be more affective. Table A.1 presents summary descriptions and characteristics of proxy mean testing (PMT) versus geographic targeting (GT).

Table A.1: Characteristics of PMT versus GT

	Proxy Means Testing	Geographical Targeting
Brief Description	A “score” for each household is calculated based on a small number of easily observable characteristics. Each characteristic is weighted to calculate household score. Ideally characteristic weights are obtained from factor or regression analysis of household data. Eligibility is determined by comparing the score against a predetermined cutoff.	Eligibility for benefits is determined, at least partly, by location of residence. This method uses existing information such as surveys of basic needs or poverty maps. GT depends on single indicator or multiple indicators to rank deprived areas.
Advantages	Is verifiable, may allay concerns over politicization or randomness of benefit assignment; uses readily observable household characteristics	Administratively simple; no labor disincentive; unlikely to create stigma effects; and easy to combine with other methods
Limitations	May seem mysterious or arbitrary; requires large body of literate and probably computer-trained staff combined with moderate-to-high levels of information and technology; inherent inaccuracies at household level, although good on average; insensitive to quick changes in welfare, as in a crisis or in some transition countries.	Depends critically on the accuracy of information; performs poorly where poverty is not spatially concentrated; and can be politically controversial.
Appropriate Circumstances	Reasonably high administrative capacity; programs meant to address chronic poverty in stable situations; best applied to a large program or to several programs so as to maximize return for fixed overhead.	Where considerable variations exist in living standards across regions; where administrative capacity is sufficiently limited so as to preclude use of individual / household assessment; where delivery of intervention will use a fixed site such as a school, clinic, or ration shop.

Source: Coady et al, 2000

²¹ In recent years, the World Bank has devoted substantial efforts in research on social protection. The website of the World Bank (pages on safety nets and targets) reflects this effort.

A.1.1 Geographical Targeting Using Poverty Mapping

For Egypt, geographic targeting offers significant advantages over other methods of targeting. It provides a clear criterion for identifying the target population and avoids the informational constraints that impede most other targeted programs. It is relatively easy to monitor and administer and its implementation can be greatly assisted by local administrative institutions and nongovernmental organizations (NGOs). Geographic targeting has relatively little influence on household behavior since it is difficult and costly to change the place of residence. It is possible to combine the location criterion with other criteria based on individual or household characteristics for determining eligibility and thereby improve targeting. Examples of these combinations include programs for school-age children in rural areas, food rations for pregnant and lactating women in certain regions, public works programs that are restricted to the poorer districts, and so forth.

Finally, the instruments of geographically targeted programs can include not only direct income transfers to the target population, but also a variety of other measures aimed at increasing the income of the population. Development measures include precipitating growth through investments in infrastructure, provision of public services, and provision of financial services. Measures to develop the target areas can be particularly important at the local level of the village or urban neighborhood, where the physical infrastructure is often a critical constraint. Geographic targeting can thus provide guidelines for both the allocation of benefits under a country's welfare program, and the allocation of resources under the country's development program. Geographic targeting can also be used at different levels, ranging from the region, to the district, to the village and the urban neighborhood. Once targeting is complete, a wide variety of instruments can be used to transfer benefits to residents of target areas.

A.1.2. Poverty Mapping in Egypt

Mapping poverty in Egypt is a research project of the World Bank in cooperation with the Egyptian Ministry of Economic Development. The cutting edge methodology being used involves the examination of the spatial aspects of poverty, inequality and vulnerability throughout Egypt's regions, governorates, cities and villages. A level of disaggregation not previously possible is achieved here by using micro-level estimates of poverty and inequality from combined census and household survey data. The final product of this activity is two panel maps, for years 1996 and 2006, containing poverty measurements for regions, governorates and villages.

Large inequality in the standards of living between geographic areas and "pockets of poverty" are common in all countries, rich and poor. Upper Egypt is an example of a geographic area with a much higher incidence of poverty than in other parts of the country. There are many possible reasons for such marked inequality including the unequal distribution of natural resources (including water), differences in agro-climatic conditions, and differences in geographic conditions such as the distance to centers of commerce, main transport routes, and seaports. Another factor that leads to income disparities between regions, districts, and communities is geographic bias in infrastructure policy decisions. This is reflected in the poor quality of local infrastructure such as access roads, utilities, and other public services. Geographic areas with a low standard of living often have a much lower quality of public services, particularly education and health, which impedes their residents' accumulation of human capital, and therefore their earning capacity.

By identifying the spatial and environmental factors that affect the standard of living in a community, it is possible to formulate the policies that are necessary in order to raise living standards. In recent years, however, geographic indicators have received much greater attention and their importance for the design of public policies has been widely recognized. This process took a large leap forward with the development of new and sophisticated methods for incorporating spatial data by organizing them as a geographic information system (GIS), suitable for computer analysis, and by a surge of technological innovations, particularly satellite imagery, which advanced the ability to collect spatial and climatic data.

In a GIS, the database contains information not only on the value of social, economic, climatic, or environmental observations, but also on their location and spatial arrangement. This allows the presentation of data in the form of maps and overlaying interfaces for cross-comparisons, and the performance of spatial analysis assessing the relationships between these data according to their geographic location. In many countries, and at all levels of development, these systems have become the single most important analytical

tool for the analysis of a wide range of geographic and socioeconomic data and for the design of local development policy measures.

Poverty mapping methodology involves detailed analysis of two main sources of data: a household survey; and the population census. Individual and household welfare can be measured in many ways. Conventionally, economists argue that individual's material welfare is best measured by their consumption. The main source of information on consumption in Egypt is the Household Income, Expenditure and Consumption Survey (HIECS). However, the HIECS only provides statistically reliable spatial estimates of welfare at the regional level, separately for urban and rural areas. The census, which can provide more disaggregated data, does not contain any information on consumption.

The poverty map for Egypt is based on a statistical procedure developed by Elbers et al. (2002) that combines household survey data with population census data. The Elbers procedure allows for heteroskedasticity in the household component. This technique uses the strength of both the detailed information about living standards available in the household budget survey and the more extensive coverage of a census to derive spatially disaggregated poverty estimates based on a consumption indicator of welfare. Survey data are first used to estimate a prediction model for consumption and then the parameters are applied to census data to derive an imputed value for consumption, employing a set of explanatory variables which are common to the survey and the census. This allows defining a set of welfare indicators based on consumption, such as headcount poverty. Finally, the welfare indicators are constructed for geographically defined subgroups of the population using these predictions. Although the approach is conceptually simple, properly accounting for spatial autocorrelation in the first stage model and estimating standard errors for the welfare estimates requires additional elaboration.

Once the poverty map exercise has been completed for all regions in the country, the resulting databases which provide estimates of poverty and inequality (and their standard errors) at a variety of levels of geographic disaggregation can be projected onto geographic maps using GIS mapping techniques. This involves the application of GIS software (such as ArcView) which merges information on the geographic coordinates of localities such as the district or sub-district with the poverty and inequality estimates produced by the poverty mapping methodology.

The Government has taken these results seriously. An operational plan to alleviate poverty in the poorest 100 villages was set as a first stage. Comprehensive and integrated development programs for the poorest 1000 villages are expected to be included in the government plan of 2008/2009. Providing basic infrastructure, facilitating micro credit, food programs, family planning services, and illiteracy eradication programs are examples of what these villages need. Government alone will not be able to fulfill all these needs and participation of civil society is extremely important. However in the poorest 1000 villages, almost 5 million people live under poverty line, representing about 37% of the total number of absolute poor in Egypt (13.6 million). This indicates that almost 63% of the Egyptian poor live outside these villages, which highlights the importance of complementing poverty mapping methodology with other developmental policies and targeting techniques.

A.1.3. The Efficacy of Basing Cash Transfers on Geographic Targeting

Some argue that cash transfer programs should rely entirely on geographic targeting instead of fine-tuned household assessments on the grounds that it would be more administratively simple. We argue the opposite, since the benefits of cash transfer programs are not site-specific (unlike a school or a sanitation system), and since these benefits are largely "private goods," then even with pure geographic targeting there is still a need to register individual households to confirm residence and household composition (generally with a home visit). With cash transfers, this minimum information is critical for adequate data management and payment purposes (to eliminate duplications, apply cross-checks, and verify residence). Once a program undertakes to collect this minimum information on residence and household composition, the marginal costs of collecting additional variables needed to predict household welfare using Proxy Means Testing (PMT, discussed in the next section) are quite small. However, experience from other countries shows that it is possible to combine the location criterion with other criteria based on individual or household characteristics for determining eligibility and thereby improve targeting (refer to Box A.1). The primary benefit derived from targeting at the household level, which classifies households into those eligible and ineligible for receiving benefits and giving

benefits to those who are eligible, is a more effective way of using the limited funds towards the achievement of the social objective.

Combining Geographic Targeting with Household Assessments

The international study by Coady, Grosh, and Hoddinott (2004) shows that the combined use of multiple targeting mechanisms is associated with more accurate targeting outcomes. One common combination is between geographic targeting and household assessment mechanisms. Indeed, the household registry systems in the five LAC case studies, all combine household assessment with some degree of geographic targeting. Coady (2001, 2003) shows the power of combining targeting methods for Mexico's Oportunidades Program. His simulations show that: (a) geographic targeting alone results in a CGH outcome of 1.7 (with the bottom quintile receiving 33% of benefits); (b) geographic targeting combined with PMT yields a CGH outcome of 2.0 (with the bottom quintile receiving 40% of benefits); and (c) a combination of geographic targeting, PMT, and demographic targeting (taking into account the number of children in the household) generates the impressive CGH outcome of 2.9 (with the bottom quintile receiving 58% of the benefits) – as is currently the case with the Oportunidades Program in Mexico. Given that the marginal cost of combining these methods is relatively low (see previous paragraph), we recommend this combined approach (but with the availability of on demand applications in non-prioritized areas to avoid excluding the poor in those areas).

Source: Castaneda and Lindert et. al. 2005

A.2 PROXY MEANS TESTS (PMT)

A.2.1. Rationale and Methodology

Targeting benefits to the poor requires a precise definition of the target group. Once the target group is established, a methodology must be found for identifying individuals or households that are in that group and for excluding those who are not. For instance, if the poor are identified as a target group for a program, one must be able to make a precise judgment about the level of welfare or the means of the recipient.

In principle, conducting a means test that correctly measures the earnings of a household is the best way to determine eligibility when the poor are the target group. However, income is always considered an imperfect measure of welfare in developing countries, since it is unlikely to measure accurately imputed value of own-produced goods, gifts and transfers, or owner-occupied housing. Incomes of the poor in developing countries are also often subject to high volatility due to factors ranging from seasonality of agriculture to the unstable nature of employment in the informal sector.

Given the administrative difficulties associated with sophisticated means tests and the inaccuracy of simple means tests, the idea of using Proxy Means Tests that avoid the problems involved in relying on reported income is appealing. Proxy Means Tests use information on household or individual characteristics correlated with welfare levels in a formal algorithm designed to proxy household income or welfare. These instruments are selected based on their ability to predict welfare as measured by, for example, consumption expenditure of households. The obvious advantage of Proxy Means Testing is that information is collected on items which are much easier to measure and verify, such as demographic data, characteristics of dwelling units and ownership of durable assets, etc. These variables should be ones which are known to correlate with poverty in the country, and ideally, which are easy to measure and thus require little administrative cost to verify.

In Egypt, like most developing countries, it can be very difficult and administratively very costly to verify true household money income as applicants have an incentive to understate their welfare level. Thus we choose to adopt PMT for household targeting.

A.2.2. Design and Implementation of PMT Systems

Proxy Means Tests involve screening households for eligibility using a composite score on a multi-dimensional index of observable characteristics (“proxies”) that are associated with poverty. The indicators used in calculating this composite score and their weights are generally derived from statistical analysis of household survey data. The design and implementation of PMT systems usually involves three steps:

- Step 1: Determining PMT Variables and
- Step 2: Household Data Collection
- Step 3: Determining Household Eligibility by Calculating Composite PMT Scores

A.2.3. Performance of PMT - Empirical Evidence

A number of simulations in academic papers by various authors show how proxy means tests could work; and, the welfare gains likely to be produced by implementing such a targeting system. Proxy Means Tests have several advantages that make them a promising and feasible alternative to other household targeting systems. Coady showed that between 80% to 90% of the benefits of proxy-means tested programs in Chile and Mexico are received by the poorest 40% (two quintiles) of households in those countries.

Haddad, Sullivan and Kennedy (1991) used household survey data from Ghana, the Philippines, Mexico and Brazil to show that some variables that would be very simple to collect could serve as good proxies for the difficult to collect measures of caloric adequacy that are usually used as the standard measures of food and nutrition security. In a recent study, Grosh and Glinskaya (1997) used regression analysis with data from Armenia to show how the targeting outcomes of a current cash transfer program can be improved by using a suitable proxy mean test formula. The efficacy of proxy means testing is indicated by a recent comparative study of targeting in Latin America (Castaneda et al., 2005 and Grosh, 1994), which found that among all targeting mechanisms, proxy means tests tend to produce the best incidence outcomes in developing countries.

The first large-scale use of proxy means testing occurred in Chile in the late 1970s and 1980s, in a program called the Ficha CAS (card for social assistance). Since 1994, many developing countries including Turkey and Tunisia have adopted proxy means-tests for some of their social assistance programs through conditional or unconditional cash transfers.

A.2.4. Developing a Proxy Means Testing Formula (PMTF) for Egypt²²

This report uses the Household Income, Expenditure and Consumption Survey (HIECS) of 2005, conducted by CAPMAS to construct the PMTF for Egypt. These are multi-topic household surveys, with modules on consumption, income, employment, education, and living conditions. The HIECS for 2005 covered around 48,000 households nationwide. It was designed to be representative at the national and governorate levels in both urban and rural areas and is well-suited to the purpose of developing the PMTF for EGYPT.

Consumption expenditure is generally considered a more accurate measure of welfare than income. Total household expenditures are then divided by the number of household members to generate per capita expenditure. Per capita household consumption expenditure (monthly) is taken as the welfare measure proxied by a set of easily observable indicators.

The prediction of welfare as measured by per capita consumption takes into account two separate criteria: 1) correlation between the welfare measure and the predictor, which will determine accuracy of the prediction; and 2) verifiability of the predictor, which will determine the accuracy of information used to impute welfare. Common variables include:

- Location variables; the most easily verifiable.
- Community Characteristics; also easily determined by field visits.
- Housing Quality; easily verified by a social worker visiting the home.

²² MOSS has recently developed a formula for reaching the poor. However, this formula has several drawbacks; first it depends on urban and rural models but in Egypt, large differences are observed between upper and rural Egypt as well; Second, it does not have any community characteristics, as we know households with similar characteristics may experience different welfare levels because of different community characteristics they live in; third, performance of the formula had never been tested, as literature indicates, it is not enough to depend on R² criteria.

- Household Characteristics such as the number of members and dependents; and age and gender of household head. Socio-economic characteristics of the household head and of other household members are less easy to verify. However, it is generally felt that this data are not overly difficult to verify, and households are less likely to misrepresent such information. Using program officers who live in the same community as the applicant households to collect the information also makes it more likely that such information will be reported correctly.
- Ownership of Durable Goods or Farm Equipment is verifiable by inspection – however it can be misrepresented by removal of goods from the home by household members during an expected visit by the social worker. Of course this is easier to do with small or mobile items than for items such as stoves or refrigerators. The general presumption in the literature is also that people are more willing to lie about ownership of such items than they are about household characteristics. However, these variables tend to have high predictive power for welfare, and therefore including them can substantially reduce inaccurate targeting.

Model Development

Very briefly, the steps required to develop the PMTF run as follows. The original set of variables belonging to the six broad categories is identified based on the two criteria mentioned above. Dichotomous variables are then created for some of the continuous variables in order to identify those characteristics that discriminate between poor and rich households. The set of selected predictors are then introduced in a weighted OLS²³ regression that uses log of per capita annual consumption expenditure as the dependent variable. In some models, only subsets of the predictors are used to eliminate variables that do not increase the model's overall explanatory power, and are not statistically significant, from the regression. Different models (described in detail later) evolve from this process based on the subset of variables entering into the regression. Three proxy models are explored below.

Model 1A

This model contains the full set of predictors including selected variables for:

- Location(regions);
- Community Characteristics (poverty rate; existing basic services);
- Household Assets (consumer durables);
- Characteristics of Household Head (age, education, main activity, marital status, employment status);
- Household Demographics and Socio-economic Characteristics (household size, number of dependents, whether children attend school, employment characteristics);
- Housing Characteristics (owned housing or not, type of floor, wall and latrine, number of rooms availability of basic amenities); and
- Sources of transfer income (whether the household received a pension, transfers).

Model 1B

This model uses different regressions for the seven regions of Egypt. The same basic regression equation as in Model 1A is derived separately for different regions and for rural and urban areas within each region. Thus seven regression equations are estimated. The rationale behind this is that the infrastructure and housing characteristics of the various populations may differ to the extent that models need to be developed for each group individually. For example, even relatively wealthy rural residents may not be served by a sewerage disposal system, nor have their water piped from a city system. Urban residents not connected to water and sewerage are highly likely to be poor, whereas, in rural areas, this correlation is less strong.

²³ Ordinary Least Squares (OLS) regression

Models 2A and 2B

These models involve running similar regressions to Models 1A and 1B but omitting poverty and inequality measures as these variables are difficult to update.

OLS regression is performed for the four models described above. Table A. 1 presents the exact number of variables used in each model, as well as the R-squared value.

As illustrated in Table A.1, regional models performed better than the "all Egypt" model. This is not surprising as regions differ not only in educational levels, job availability, and the availability of public services, roads and markets, but also in the impact of these variables on per capita expenditure. Models 2A and 2B are similar to Models 1A and 1B but without poverty measures for villages. Reduction in R-squared of models 2A and 2B ranged from 5 % to 0.04 % compared to the corresponding models.

Table A.1: Adjusted R-squared and Number of Variables for Different Models

	With Village Poverty Rate		Without Village Poverty Rate	
	Adjusted R ²	Number of Variables	Adjusted R ²	Number of Variables
All Egypt	0.717	63	0.694	61
Metropolitan	0.704	45	0.703	47
Lower Urban	0.611	40	0.590	38
Lower Rural	0.568	43	0.515	44
Upper Urban	0.720	43	0.700	42
Upper Rural	0.588	34	0.552	35
Borders Urban	0.701	22	0.676	23
Borders Rural	0.851	35	0.839	24

The scores are computed by multiplying the coefficients from each particular model by the value of its corresponding variable. The calculation to arrive at a household score uses the intercept/constant as the starting point. For any dummy variable, if the condition is true for the household, then the weight for the variable is multiplied by 1 and added to the constant. For continuous variables, the measure of the variable for the household is multiplied by the weight and the result added to the constant. The predicted expenditure is the exponential of the score derived earlier as in (per capita consumption) is used. The lower the score of a household, the poorer it is. All formulae are more likely to assign benefits to larger households; households with few durable goods and amenities; poor housing conditions; households with older household heads; and where the head has lower levels of education and does not work in permanent employment.

The selection of the cutoff point is essentially a policy decision rather than a technical one. By simulating a wide range of scenarios corresponding to different cutoff points for each model, we seek to achieve two objectives: 1) the exercise will show the sensitivity of the model and its attendant errors in targeting to changes in cutoff points; and 2) the simulations will help the government make a policy decision on the optimum cutoff, taking into account the tradeoffs inherent in choosing a relatively high cutoff versus a low one.

A.2.5. Assessing the Prediction Performance of the Proxy Means Test Formula

The criterion involves looking at measures that indicate the ability of various models to identify the poor properly. No matter what model is used, given that it can predict welfare only with some imperfection, it is likely that some truly eligible people will be left out, while others who are not eligible will benefit. The targeting accuracy of alternate targeting formulae was evaluated using Type I and II errors, and rates of under-coverage and leakage were calculated.

Individuals are categorized into four groups according to whether their "true" and their "predicted" welfare levels fall above or below the eligibility cut-off point. Individuals whose "true" and "predicted" welfare measures put them on the same side of the cut-off line are targeting successes. Those who should not and do not receive benefits under the targeting scheme are likewise a targeting success. When "true" and "predicted"

welfare levels fall on different sides of the eligibility cut-off point, a targeting error has occurred. A person whose “true” welfare level is below the cut-off but whose “predicted” welfare is above it will be incorrectly identified as ineligible for program benefits. This kind of error is called a false negative, a Type I error or an error of exclusion.

Type I errors lead to "Under-coverage". Under-coverage is the percentage of eligible households that are not covered and is calculated by dividing the Type I error by the total number of beneficiaries. Under-coverage makes the program ineffective in changing the welfare level of the intended beneficiaries, but it carries no budgetary cost. Since those who are not covered receive no benefits, the program does not incur the costs of delivering those benefits.

Table A.2: Illustration of Type I and II Errors

	Target Group(poor)	Non-target Group (non poor)	Total
Eligible: Predicted PMTF by	Targeting Success (s1) These are the poor who are correctly identified as eligible so they will receive benefits	Type II error (e2) These are the non poor who are wrongly identified as eligible so they will receive benefits while they do not deserve any,	M1
Ineligible: Predicted PMTF by	Type I error (e1) These are the poor who are not correctly identified as ineligible so they do not receive benefits	Targeting Success (s2) These are the non poor who are correctly identified as ineligible and thus do not receive benefits	M2
Total	N1	N2	n

Source: Nayaran et al 2005.

The other case of targeting error occurs when a person's “true” welfare level is above the cut-off but his/her “predicted” welfare is below it. These individuals are thus incorrectly identified as being eligible for program benefits. This kind of error is called a false positive, a Type II error or an error of inclusion, and leads to the leakage of program benefits.

Leakage is the percentage of program benefits that are received by people who are not eligible to receive them. It is calculated by dividing the number in the Type II error category by the number of persons served by the program. Leakage increases program costs by giving benefits to those who are not the intended recipients, thereby rendering the program inefficient.

Lower rates of under-coverage and leakage are preferable to higher rates. In reality, however, one may face tradeoffs between these two objectives. In general, the higher the priority assigned to raising the welfare of the poor, the more important it is to eliminate under-coverage. Conversely, the higher the priority assigned to saving limited budget funds, the more important it is to eliminate leakage.

Lowering leakage, besides being cost-efficient, can also increase welfare in the presence of a budget constraint; the lower the leakage of benefits to ineligible individuals, the higher the amount available for transfers to those who are eligible.

In practice, poverty and social programs aim to raise the welfare of the poor as much as possible within their budget constraints. Both kinds of error are, therefore, important, and a firm preference for one over the other is rarely stated. It is perhaps interesting to note that minimizing under-coverage has been a traditional argument in favor of universal subsidies, especially of food prices.

Under-coverage and Leakage Rates

Table A.3 provides the results of an ex-ante evaluation of the levels of accuracy of models 1A, 1B, 2A, and 2B for predicting the needy and the non-needy. As indicated above, each model predicts a score for every

household. These predicted welfare levels (scores) are used to assign individuals to eligible or ineligible groups, based on an eligibility cutoff point. Under-coverage and leakage rates are then calculated for each model and at different cutoff points. A range of cutoff points are considered, defined by specific percentiles of actual/true per capita consumption expenditures (e.g. 15th, 20th, 25th, 30th, 35th and 40th, etc.).

Model 1B performed better than model 2B with respect to leakage and under-coverage errors regardless of the cutoff point chosen. Generally models with village poverty rate variables performed better than those without. Similarly, regional specific models performed better than models for all Egypt even when regional dummies were included.

Table A.3: Under-coverage and Leakage Rates for Different Models at Different Cutoff Points

Cutoff Point	Model 1A (All Egypt, with Village Poverty Rate)		Model 2A (All Egypt, Without Village Poverty Rate)		Model 1B (Regional Models With Village Poverty Rate)		Model 2B (Regional Models Without Village Poverty Rate)	
	Leakage	Under-coverage	Leakage	Under-coverage	Leakage	Under-coverage	Leakage	Under-coverage
15%	0.421	0.651	0.324	0.593	0.294	0.518	0.301	0.559
20%	0.385	0.567	0.308	0.507	0.275	0.454	0.288	0.492
25%	0.365	0.491	0.297	0.433	0.259	0.397	0.274	0.431
30%	0.333	0.423	0.276	0.370	0.246	0.345	0.262	0.370
35%	0.305	0.362	0.260	0.316	0.229	0.299	0.246	0.316
40%	0.282	0.305	0.246	0.266	0.217	0.257	0.235	0.269

As can be seen from the above comparison, Model 1B is preferable to other models followed by Model 2B. Both these models are best at identifying eligible populations.

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