

**Palestinian National Authority
Ministry of National Economy**

**Preparatory Final Estimates
of Gaza Strip Economic Losses
Caused by Israeli Invasion
(Dec. 27, 2008 – Jan. 17, 2009)**



Feb25th, 2009

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1. Introduction

Gaza Strip was subjected to a total and sustained invasion by the Israel for 22 days from the end of last year and into the beginning of this year. Due to the intensive use of force by the occupying Israeli army, huge damage was inflicted onto the Gaza Strip and its economic and human infrastructure. In addition to the great human losses that cannot be evaluated among the population, the losses that were inflicted upon the Palestinian economy and its infrastructure were huge both directly due to the war machine and indirectly due to the coming to a halt of the economic activity.

It is quite difficult to obtain accurate estimates about these losses due to being rather far from the war theatre and also due to the conflicting reports from the war zones. However, due to the compelling need of these estimates to be able to draw policies and programs aimed at initial relief and reconstruction, it becomes mandatory to base these estimates upon these early reports from the scene of the war zone and make use of some intelligent assumptions to arrive at estimates that are more realistic. These initial estimates shall be subjected to more scrutiny as and when more authenticated data is received.

Since the aim of this study is to arrive at estimated figures for the costs of the physical destruction only, it does not take into consideration the cost of the immediate humanitarian aid. In addition, the need for an assessment on the ground by specialist teams to evaluate the losses remains essential since these estimates under the available conditions will remain indicators that may closely reflect the real situation on the ground. They will help clear the way towards changing the catastrophic present conditions in Gaza once the appropriate political conditions prevail among which figure national unity and guarantees for the cease fire and the opening of the crossings.

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2. Methodology

1. The types of the economic establishments that were specifically targeted or were damaged by the aggression were listed
2. Two categories of direct losses were taken into consideration:
 - Total destruction (the establishments that were fully raised to the ground)
 - Partial destruction (the establishments that were partially destroyed)Above two categories were divided into four components each. These are: buildings and other constructions, infrastructure, stock including both manufactured goods and raw materials, and equipment and other property which includes furniture, animal stock at the farms and houses, etc.
3. Based upon reports and information from the operatives in the field and the media outlets, the number of the totally damaged units from each category configured. Then, based upon the assumption that the total number of partially damaged units is three fold those totally damaged¹; the sum total for each category of all fully and partially damaged units was calculated. To check, correct and adjust the final sums, these figures were compared with the final numbers received and obtained from the scenes of the war zones over the last month. The more reasonable and accurate numbers were used for the adjustments.
4. Based upon the average cost estimates for the fully damaged units using current market prices while taking into consideration the average quality and size, an estimate for the average value of these units was formulated. A further assumption that the total cost of all fully damaged units is equal to all partially damaged units was made. Therefore, it was assumed that the average cost of the partially destroyed units is equal to one third those totally destroyed. And by multiplying these averages with the total sums of the fully and partially destroyed units from each category, the total cost of the partially and totally destroyed units was calculated for each category. Again, to check, correct and adjust the final sums, these figures were compared with the final numbers received and obtained from the scenes of the war zones over the last ten days. For the integrity of the final results, the more reasonable and accurate numbers were used for the adjustments.
5. Based upon above methodology, the grand sum total for all items was calculated from the sums of the fully and partially destroyed units incorporating the four elements outlined above.

¹ This ratio was reconsidered upon the latest data about the re relation between fully and partially damaged homes.

3. Summary

1. The total direct and indirect losses of the aggression is about 2.2 billion Dollars² not including the percentage spare and the cost of immediate relief.
2. The total cost of direct losses was estimated at 1.346 billion Dollars while the total cost of the indirect losses was estimated at seven hundred and fifty million Dollars.
3. The total damages were estimated to account for half the direct losses while partial damages account for the second half.
4. Losses to residential apartments constituted 41.8% of the total direct losses. 4.2% Public institutions and security centers, 8.5% health, academic and religious centers constituted, the transport network accounted for 8.2% and another 6.3% for the remainder of the infrastructure. Vehicles and public transport amounted to 6%, commercial and service establishments to 13.4%, another 5.8% for agriculture and 4.3% for industry.
5. Buildings, establishments and interconnections constituted around 60% of the total damage while stocks amounted to 8.3% and furniture and equipment to 31.7%.
6. The total loss in the national production during the aggression was estimated at 132 million Dollars among which 88 million are the estimated losses of economic activity; 44 million would be money transfers by the workers. The losses due to the time needed for the rehabilitation of the economic establishments (one year from the cease fire) is estimated to be one third the gross national production, that is no less than 500 million Dollars.
7. The costs of flattening and clearing the rubble were estimated at 15% of the cost of the totally and partially destroyed buildings and establishments. That is a sum no less than 117 million Dollars.

The costs of immediate relief was estimated at 616 million Dollars

² The grand total of the losses has become less in one third of the essential estimates mainly because of the decrease in direct estimates of about 40% according to the field data.

4. Estimates

First: Direct Losses

Table1: Damaged units by type of establishment and level of damage

Item	Buildings and Constrictions		Extensions	
	Total destroyed units	Total number of damaged units	Total destroyed Km	Total number of damaged Km
Water networks wells&	22	66	110	330
Waste water networks	22	66	110	330
Electricity networks	22	66	110	330
Telecom networks	22	66	44	132
Transport networks	154	462	110	330
Gas stations	11	33		
Security stations	44	132		
Public institutions	66	198		
Medical centers	44	132		
Education centers	66	198		
Housing units	3960	11880		
Farms	2200	6600		
Factories	44	132		
& Commerce services establishments	88	264		
centers Religion	33	99		
Fishing boats	44	132		
Vehicles	4400	13200		
Grand total				

**Table2: Value of damaged buildings and constrictions
by type of establishment and level of damage**

Item	Buildings and Constrictions				
	Total damage		Partial damage		Total cost 000 US\$
	Ave unit cost 000 US\$	Total cost 000 US\$	Ave unit cost 000 US\$	Total cost 000 US\$	
Water networks wells&	200	4400	66.7	4400	8800
Waste water networks	200	4400	66.7	4400	8800
Electricity networks	200	4400	66.7	4400	8800
Telecom networks	200	4400	66.7	4400	8800
Transport networks	240	36960	80.0	36960	73920
Gas stations	500	5500	166.7	5500	11000
Security stations	200	8800	66.7	8800	17600
Public institutions	240	15840	80.0	15840	31680
Medical centers	300	13200	100.0	13200	26400
Education centers	400	26400	133.3	26400	52800
Housing units	50	198000	16.7	198000	396000
Farms	20	44000	6.7	44000	88000
Factories	200	8800	66.7	8800	17600
& Commerce services establishments	120	10560	40.0	10560	21120
centers Religion	200	6600	66.7	6600	13200
Fishing boats					
Vehicles					
Grand total					784520

Table3: Value of damaged Extensions by type of establishment and level of damage

Item	Total damage		Partial damage		Total cost 000 US\$
	Total cost of destroyed units 000 US\$	Total damaged distance Km	Ave unit cost 000 US\$	Total cost of damaged units 000 US\$	
Water networks wells&	12	1320	4.0	1320	2640
Waste water networks	16	1760	5.3	1760	3520
Electricity networks	40	4400	13.3	4400	8800
Telecom networks	40	1760	13.3	1760	3520
Transport networks	24	2640	8.0	2640	5280
Grand total					23760

Table4: Value of damaged inventory by type of establishment and level of damage

Item	Total damage		Partial damage		total 000 US\$
	Ave unit cost 000 US\$	Total cost of destroyed units 000 US\$	Ave unit cost 000 US\$	Total cost of damaged units 000 US\$	
Gas stations	240	2640	80	2640	5280
Security stations	12	528	4	528	1056
Public institutions	24	1584	8.0	1584	3168
Medical centers	60	2640	20.0	2640	5280
Education centers	12	792	4.0	792	1584
Housing units	1	3960	0.3	3960	7920
Farms	9	19800	3.0	19800	39600
Factories	180	7920	60.00	7920	15840
& Commerce services establishments	180	15840	60	15840	31680
Grand total					111408

**Table5: Value of damaged equipment & furniture
by type of establishment and level of damage**

Item	Total damage		Partial damage		Total cost 000 US\$
	Ave unit cost 000 US\$	Total cost of destroyed units 000 US\$	Ave unit cost 000 US\$	Total cost of damaged units 000 US\$	
Water networks wells&	100	2200	33.3	2200	4400
Waste water networks	160	3520	53.3	3520	7040
Electricity networks	200	4400	66.7	4400	8800
Telecom networks	240	5280	80.0	5280	10560
Transport networks	100	15400	33.3	15400	30800
Gas stations	240	2640	80.0	2640	5280
Security stations	12	528	4.0	528	1056
Public institutions	12	792	4.0	792	1584
Medical centers	60	2640	20.0	2640	5280
Education centers	72	4752	24.0	4752	9504
Housing units	20	79200	6.7	79200	158400
Farms	12	26400	4.0	26400	52800
Factories	500	22000	166.7	22000	44000
& Commerce services establishments	30	2640	10.0	2640	5280
centers Religion	15	495	5.0	495	990
Fishing boats	12	528	4.0	528	1056
Vehicles	9	39600	3.0	39600	79200
Grand total					426030

Table6: Losses grand total by type, value and percentage

Item	Losses grand total by item	%
Water networks wells&	15840	1.2
Waste water networks	19360	1.4
Electricity networks	26400	2.0
Telecom networks	22880	1.7
Transport networks	110000	8.2
Gas stations	21560	1.6
Security stations	19712	1.5
Public institutions	36432	2.7
Medical centers	36960	2.7
Education centers	63888	4.7
Housing units	562320	41.8
Farms	180400	13.4
Factories	77440	5.8
& Commerce services establishments	58080	4.3
centers Religion	14190	1.1
Fishing boats	1056	0.1
Vehicles	79200	5.9
Grand total	1345718	100.0

Second: Indirect Losses

1. Losses due to the suspension of economic activity

It is estimated that the indirect daily losses due to the suspension of economic activity in Gaza is four million Dollars, which is the value of gross local production of Gaza under normal conditions. This amounts to a total of 88 million Dollars over the aggression period. Add to it the transfers of workers from abroad, which were estimated at one half the local production makes the indirect total losses amount to 132 million Dollars.

However, these losses will persist after the aggression for at least one year at a rate no less than one third up to such a time when the repair and reconstruction of the production and infrastructure is complete. This also assumes that the borders are open and a certain number of the workforce is allowed to work in Israel. Therefore, based upon the most conservative estimations, the Gaza strip will lose what amounts to 500 million Dollars. It is expected that this money should be allocated to the owners of the destroyed enterprises and unemployment.

2. Cost of clearing the rubble

Based upon the lowest estimates for clearing the destroyed buildings and removing the rubble, no less than 15% the value of the totally and partially destroyed buildings and establishments will be needed. This means that this item shall cost no less than 118 million Dollars.

Total indirect costs:

Therefore, the total of the indirect costs for above mentioned items: $632+118=750$ million Dollars

Total estimated direct and indirect costs prior to precaution:

$750+1\ 346=2096$ million Dollars

Total estimated direct and indirect costs after precaution at (5%):

$2096+104=2200$ million Dollars

Third: Costs of Immediate Relief

1. Cost of temporary shelter:

This includes the provision of providing shelter to 7000 families whose homes were destroyed or unsuitable for habitation for a period of one year. An estimate of 30 million Dollars in addition to a further 20 million for the provision of needed habitation utilities.

2. Cost of medical care for the injured

It will be required to provide health care to 5300 casualties among whom there are 600 for a long period of time due to their disabilities. These estimates amount to 50 million Dollars

3. Reparation to the families of the martyrs

Acknowledging that no amounts will compensate these families, it is necessary to offer symbolic support for each family for each martyr no less than 5000 Dollars each. This amounts to 6.5 million Dollars

4. Cost of feeding and providing clothes to the poor and homeless:

An estimate of 510 million Dollar

Grand total: 616.5 million Dollars

5. References

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