

In the name of God

Policies for reconstruction in Bam

**1- A brief introduction to Bam and the earthquake**

**2- Reconstruction policies**









































# Bam Earthquake Specifications

- 1- Time : Friday, Dec. 26, 2003, at 01:56:52  
Coordinated Universal Time = (UTC)
- 2- Duration : 12.5 seconds
- 3- Magnitude : 6.7 Richter scale
- 4- Vertical component of acceleration :  
1g in the epicenter
- 5- Epicenter : underneath the city
- 6- Depth : 7 kilometers
- 7- Fault type : reverse (hazardous type)

# Human Casualties

➤ **Dead : 31830**

➤ **Injured : 17500**

# Parentless Children

Before	After		Ratio
150	5204		34.7 times increase
	parentless	2332	
	fatherless	2871	



# Families Under Welfare Org.

## Homeless or Handicapped Women

Before		After	Ratio
Families	625	1916	3 times increase
individuals	3750	9494	2.5 times increase

# Rehabilitation Statistics

Type	before	after	ratio	type	before	after	ratio
Spinal injuries	16	248	15.5	physical	57	274	4.8
Mental	533	873	1.7	Elderly people	24	259	10.4
Amputees	0	108	-	Chronic psychosis	38	84	2.2
Blind	20	56	2.8	Nerve breakdown	0	54	-
Deaf	10	41	4.1	Inmates in centres	0	116	-
edu. grant	404	452	1.1	Total	1092	2558	2.3

**All these people have been covered by the Welfare and Rehabilitation Organization**

# Material Damages

	Residential urban	Residential rural	commercial	industrial
Units destroyed	24283	10145	3326	-
Units Damaged	976	12252	524	141

- **World Bank experts have estimated the total damage at one billion and five hundred thousand US dollars.**

# Triple Stages of Managing the Crisis

- 1- Relief aid, rescue operations and emergency housing
- 2- Stabilizing and temporary settlement
- 3- Permanent reconstruction

- The organization responsible for stages 1 & 2:  
Kerman Office of Governor General
- The Organization responsible for stage 3:  
Ministry of Housing and Urban Development



# Policies

**Formation of conducting and policy making headquarter for reconstructing Bam**

**(Supervised by the Minister of Housing and Urban Development)**

**&**

**Aided by 11 other ministries as well as Governor General of Kerman**

**Setting a committee to determine the criteria of reconstruction based on three important principle:**

**1- Identity of Bam**

**2- Resistance of buildings**

**3- Satisfaction of people**

**Strong supervision will be done by Iran engineers organization**

# Resistance-Making Policies

- **Replacing of heavy, local, non-resistant construction systems and materials with light-weight but resistant materials**
- **Careful supervision over the reconstruction processes by authorized engineers.**



# **Reconstruction Timetable**

## **(Approved by the Headquarter)**

- **Reconstructing government and public buildings assigned to their relevant organizations**
- **Two models for reconstructing residential houses were discussed**
  - 1- **The government should start building the foundation as well as the façade; the rest should be done by people themselves supported by government loans**
  - 2- **All the technical, engineering and standard materials should be prepared by the government and people themselves will do the reconstruction supervised by the government**



**The second option was approved**

# Reconstruction Procedures

- **Establishing of the Reconstruction Headquarter in Bam**
- **Dividing Bam into 12 regions, each having its own headquarter accountable to the main headquarter**
- **Placing of the following units in each headquarter:**
  - 1- **Advisors for designs according to people's taste**
  - 2- **Housing and civil engineering offices to approve the design and oversee the reconstruction process**
  - 3- **Municipal representatives for issuing reconstruction license and other relevant licenses**
  - 4- **Contractors for executing the plan**



**The landlord signs a contract with the contractor**



# **Technical and Engineering Services Provided**

- **Provision of the universal plan and detailed map of Bam**
- **Deployment of 33 groups of Iran's best consultant engineers**
- **Deployment of 270 groups of Iran's best contractors**
- **Deployment of 30 groups of overseeing engineers**
- **Launching of a technical and engineering site in an area over 7 hectares which is a permanent exhibition venue for standard construction materials.**

# Government Aid

Rural Houses (US \$)

Repairing		New Buildings	
loan	Aid	Loan	Aid
<b>1705</b>	<b>341</b>	<b>5114</b>	<b>1705</b>

Urban Houses (US \$)

Loan	Aid
<b>12500</b>	<b>6250-5114</b>

- Damaged commercial units (US \$)

Loan	Aid
<b>148 US \$ for every square meter, ceiling 6818 US \$</b>	<b>1137</b>

- In Bam one can very easily build a 100 square meter house with 18182 US \$



# Now

- **More than 7 million of debris  
(more than 1,200,000 truck loads)  
In removed and the reconstruction is going on  
well, but a very important question remains:**
- **What we can do with a huge amount of  
nonresistant, no engineered, mud clay and  
...buildings?**
- **Hope to be answered by this and these  
conferences**



**With Special Thanks  
and Due Respect**