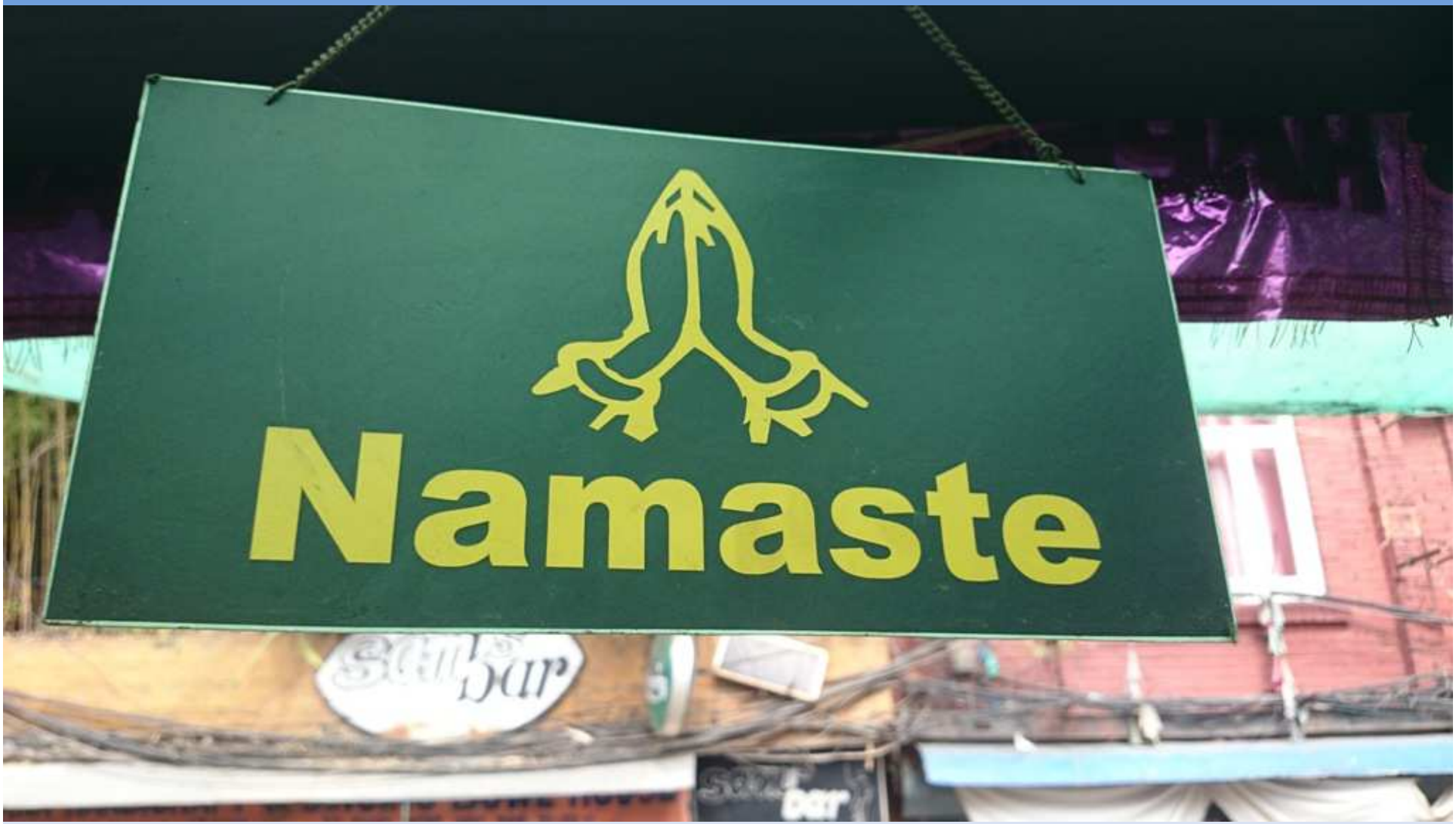

Namaste

BHRC & APDIM Partnership

Prof. M. Shekarchzadeh

Head of Road, Housing and Urban Development Research Center (BHRC)

Main Areas of works in BHRC

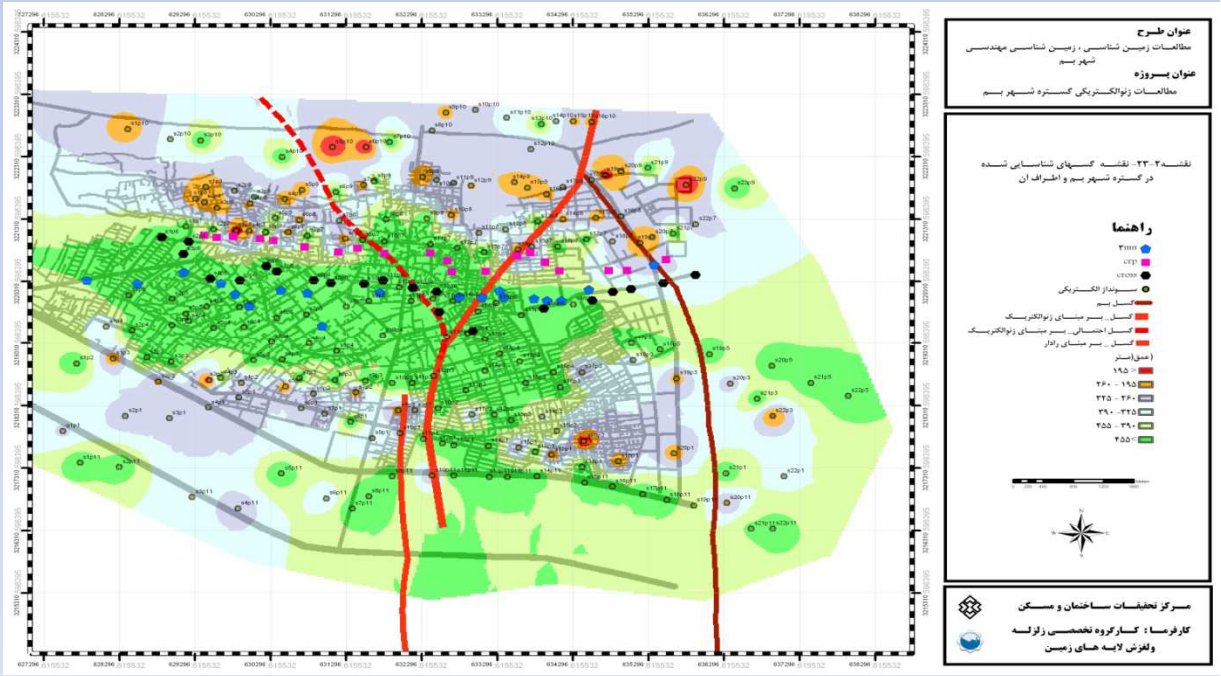
UNITED NATIONS ESCAP
Economic and Social Commission for Asia and the Pacific

- Seismic Microzonation
- Seismic Building CODE and its Development
- Rehabilitation of masonry, Hybrid and other Type of Structures
- Seismic Design and retrofitting of nonstructural Elements
- Seismic Design and retrofitting of infra-structure systems
- Early warning Systems and Development of strong motion network
- Education and Workshops

Seismic Microzonation

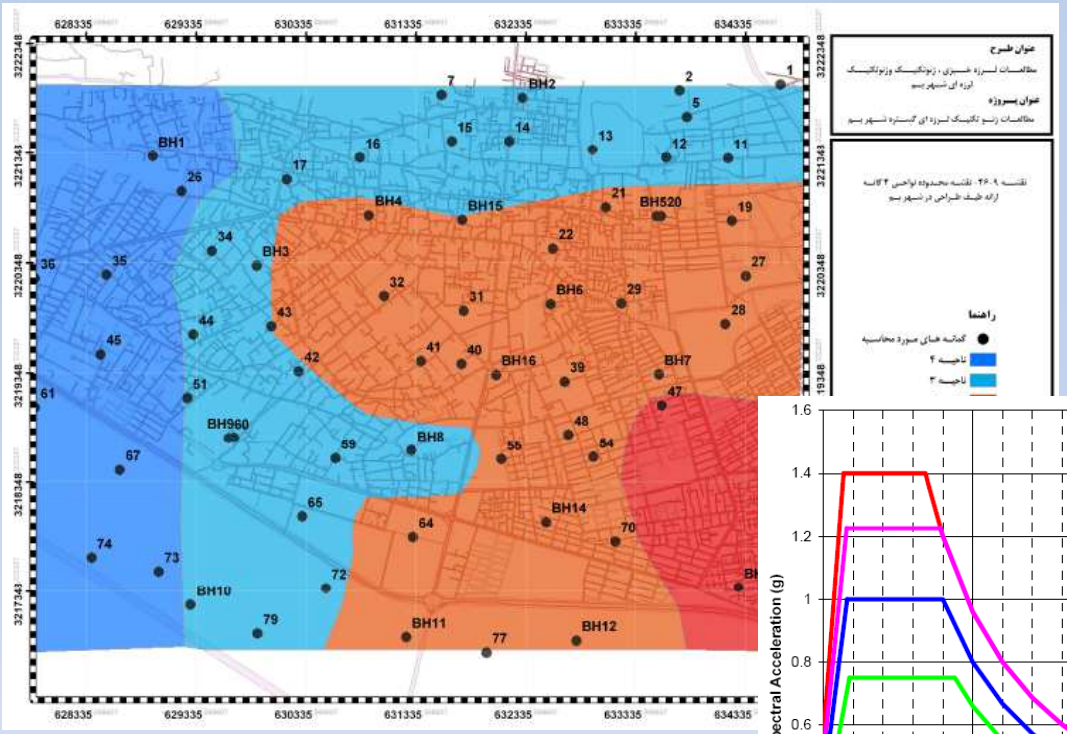
BHRC has a great experience in seismic macro zonation that can share and collaborate with other APDIM country. BHRC has already studied different cities in Iran such as Bam, Shiraz, Semnan, …..

Fault placement in Bam city

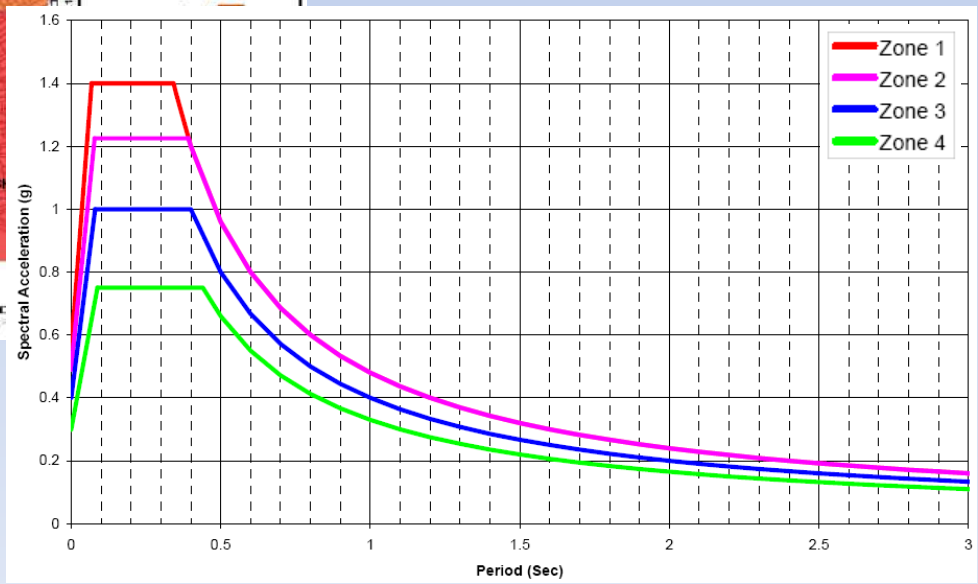


Seismic Microzonation Maps

- **Design Spectrum for 4-main zones of Bam as an example**



Final Design Spectrum parameters				
Zone	Ca	Cv	T0	Ts
Zone 1	0.560	0.480	0.069	0.343
Zone 2	0.490	0.480	0.078	0.392
Zone 3	0.400	0.400	0.080	0.400
Zone 4	0.300	0.330	0.088	0.440



Seismic Building CODE and its Development

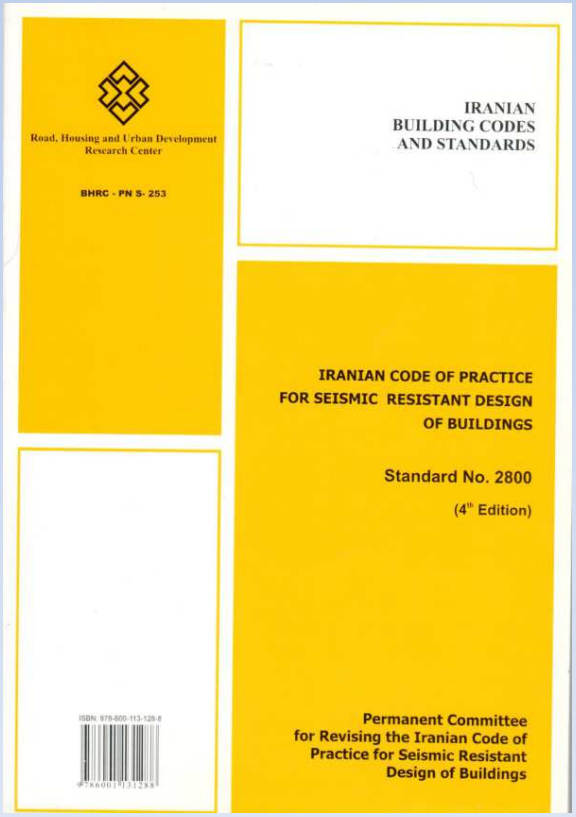
-BHRC has been developing National Building Code for Earthquake since 1987 (all buiding must be designed according this code)

-Forth edition of the Code published this year

-This version considered the seismic design of nonstructural elements and some kind of infrastructures

-This version also contains instruction and detailing for nonlinear design and analysis of structure

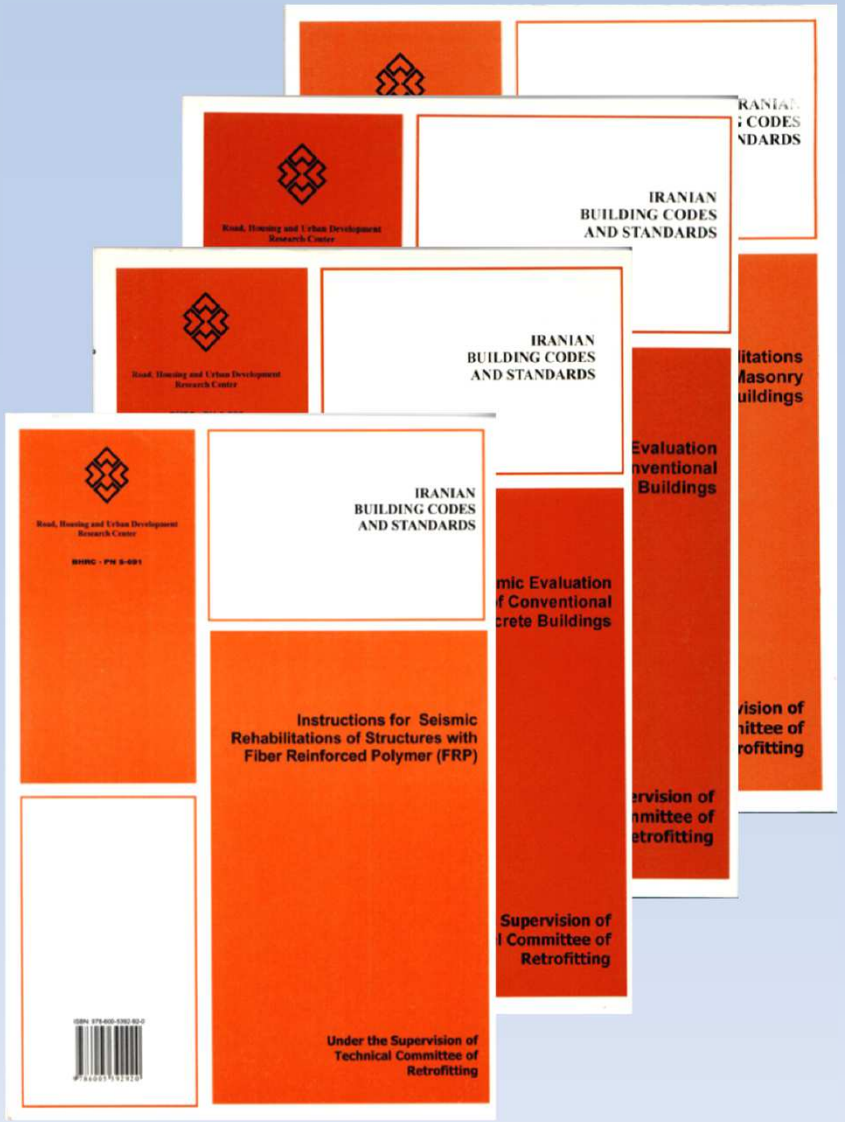
- This code is available in English and can be shared with other APDIM members



- Providing rehabilitation guidelines for masonry, Hybrid and other Type of Structures

-A lot of experimental and numerical researches have done in BHRC and other universities in IRAN for developing methods for Seismic Rehabilitation of masonry and Hybrid buildings that can be translated in English

1. Instructions for seismic evaluation and rehabilitation of concrete buildings.
2. Instruction for seismic rehabilitation of structures using FRP
3. Instructions for seismic evaluation and rehabilitation of steel structure.
4. Instructions for seismic evaluation and rehabilitation of masonry structure.
5. Instructions for seismic evaluation and rehabilitation of steel structure with saddle connection.
6. Instructions for seismic evaluation and rehabilitation of Hybrid masonary and frame building
7. Instructions for seismic evaluation and rehabilitation of non structural Equipment



The main URM buildings in Iran

se buildings must be conducted regarding the expected
strength.