

In the Name of God Islamic Republic of Iran



An introduction to the Activities of

"Special Reporting Committee on Iran Floods 2019"

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Introduction

- ✓ Throughout the history, floods have brought untold wealth and prosperity to civilizations, and yet at the same time, they have caused tremendous losses and resulted in suffering for people.
- Even today, floods lead all natural disasters in the number of people affected and in resultant economic losses, with these numbers rising at alarming rates.
- ✓ Society must move from the current paradigm of post-disaster response and plans and efforts must be undertaken to break the current event-disaster cycle.
- More than ever, there is the need for decision makers to adopt holistic approaches for flood disaster management.







- □ Like many other countries of the world, Iran is facing the increasing risks and losses of flood disasters, which threatens the social and economic development.
- □ Iran was hit by floods in late March and early April 2019 causing considerable losses where some people were died and injured while several farmlands, facilities and infrastructures were damaged in the country.
- □ The government of Islamic Republic of Iran made endless and valuable efforts to reduce and minimize the consequences of the floods.

Flood affected Regions





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Mission of

"Special Reporting Committee on Iran Floods 2019"



President of University of Tehran, was appointed by the President of Islamic Republic of Iran, as the head of a special mission titled " Special Reporting Committee on Iran Floods 2019" to overview the event, causes and consequences in order to provide recommendations and suggestions to have a better vision of dealing with natural disasters specifically floods in future.

> The core members: 20 Total members: 708

Selected from the top scientists allover the country in the country having independent/ academic affiliations

Appointed at: April 16, 2019



یاد: رییس جمهوردر حکمی به دکتر محمود نیلی احمدآبادی، رییس دانشگاه تهران ماموریت داد تا ریاست «هیأت ویژه گزارش ملی سیلابها» با عضویت شخصیتهای علمی مستقل و خبره در تخصص های مرتبط را به عهده گرفته و ظرف ۶ ماه «گزارش ملی» این رخداد را ارایه کند.







دكترهادىخانيكى









دكترعلى اردلان

دكترعلى كبر آقاكوچك دكترحسن احمدي

بشوجات بلين دانتكاه تريبت مترس اعقمو هيأت علمى دانشگاه قوران السوليات شير بانتكاه موليردي العمو ميأت علمي دانتكاه ازاد النكابي المبر مانتاه علمي دانتكاه علاما طهتهي



دكتر بهلول عليجاني







دكترمحمدرضا ذوالفقارى دكتر حسين سراجزاده دكترمحمود شفاعي بجستان دكترمحمدمهدي عزيزي سر مصر مند مدهد می دانشگاه خوارزمی ، عضو میآن علمی دانشگاه چیران ، عضو هیآت علمی دانشگاه نیران ، مصوحیات علمی دانشگاه خوارزمی







دكترمهدي هداوند





دكترسيدفرشاد فاطمى دكترسيدمصطفى محقق داماد دكترسيد باقر مرتضوى











دكتررضامكنون



دكترسيده فاطمهمقيمي عصوميات علمي دانشگاد شريف اعضو آناق بازرگاني ايران الميرمات سي دسته مندر ميرويير اعضو ميات علمي دانشگاد شريف اسوليات نشي دسته بنداني

•Working groups:

•Infrastructure

•Training and Human Resources Management

•Business

- •Health. Relief and Rescue
- •Economics and Finance
- •Natural Resources and Agriculture
- •Legislative Issues
- •Risk Management and Insurance
- Crisis Management
- •River Engineering and Hydraulic Structures
- •Hydrology and Water Resources Management
- •Meteorology and Climatology
- •Social, Cultural and Communication
- •Urban Planning, Architecture and Cultural Heritage
- •Environment
- •Synthesis















دكترمحمدفاضلي

Objectives:

-To answer 110 questions asked by the President about the flood event



And

- □ A review of international experiences in the study of floods and reforms aimed at increasing resilience to this phenomenon.
- □ Investigating the causes and factors related to flood preparedness and management in the fields of meteorology and climatology, environment, infrastructure, water resources management and water structures.
- □ To assess the state of crisis management, rescue, and crisis communication after a flood
- □ Investigating the economic, legal, social, cultural, communication, and risk management and flood insurance dimensions
- Provide structural and legal reforms to increase resilience and national capacity in flood management



Meeting, MoUs, Field visits

بازدید از مناطق سیلزده

Weekly meetings of core members >



Visit of flood affected regions





حيات ويثه كزاش ملى سلاب





First report: Narration of the floods of (description of the event)





SECOND REPORT: ANSWER TO THE QUESTIONS OF THE PRESIDENT ON THE FLOOD









FINAL REPORT

NARRATION, ANALYSIS AND LESSONS LEARNED AND SUGGESTIONS



Build a Bridge on Flood Risk Management

South-South and Regional Cooperation for Flood Risk Management in the Islamic Republic of Iran



Synthesis Report of Knowledge Sharing and Capacity Development Workshop

9-10 October, Tehran









- UNITED NATIONS ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC (ESCAP)
- THE ASIAN AND PACIFIC CENTRE FOR THE DEVELOPMENT OF DISASTER INFORMATION MANAGEMENT (APDIM)

► WORLD HEALTH ORGANIZATION(WHO)



بات ویژه گزارش ملی سیلاب ۲ **COMMUNICATION OF THE ACHIEVEMENTS OF THE DELEGATION BY THE PRESIDENCY TO THE RELEVANT MINISTRIES AND BODIES**

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والإغلاق سكافان أوليرغان ستباد بارجوه

ې در ۱۳ مطبوبيل از ۲۰ کې بېشمارانه لرساليت لي مرحلی صاورته الله فرد در نقلته با این ودود شدی

المؤسيست والمعاو الماباد ليستاو أوار التوي

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المورة يرمى الأخل دوراء مدل المؤلد مطالبطي لألغ المد 1997 والودين 1994 بالما الادد بالبعو اس منهر سببه حينه روه الذي على سالسانه به مطور قابلي منزو كابارين اللوراج مثل ساله و رامالهای انهام بیره جامرانی اللی در برای نباش اللکل کود این جلتا او و جمید بیب هر از قرآت التكماني التي وجمالي مسائد لاستسنل الشكني الإششان بسكمان ليثى تؤاد سنابله مارودة مراكبه، حل و تواطر بها و الشنة خطرات إن اليرسي و خطر لد 14 محقو يدي از 14 مور سعجه إرادة الإنه السان إلى ويعلى حيق واللوز متريختان دامان عالى مرتعا عزرتم بود اللة اودا در طلقانا أبرا يدد طين مثلاث میدان و ومنطق منشار عنه وامر وزیددان آون میچن رقی آسد. الديني المدافراوي المراوي الفي منظرة عبالزي والفلة ستمحط ببالمقا والالتذه ارتماد والوتراغ تين

ستالحان بحثت است راهارهان رئيليواني حبثت وزه الزلش خي براشيعاء مي تواد وتتواءاي عبد ذراين زاسًا به 44

» بهند بر من 10 ده را میان 15 کر کی میانده ایرایت تخلق دیتر آمادها و پشهاده و 1994 د يافعة (بار أوالعار والواحل الإفر على بالأسفة (سال في لوا » توجه استاسانی در عنه انتیزان و بنانید سراین بیاندو بینند تقور ^{مر}یکر کی ^{ای} طور نگیزی مکانند واجدى وستسعد الترتين

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Quantity of agricultural lands affected by floods and the amount of damage :





- Flood damage to the agricultural sector (billion Rials)
- * Crops: 61625.395
- **Orchard products: 2271.581**
- Vegetable and summer products: 7130.923
- Livestock and poultry products: 135.393
- **Aquatic products : 902.775**
- **Agricultural infrastructure : 24773.106**

Infrastructure resilience in flooding



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Hydrology Working Group

Total rainfall in the first 6 months of the water year 97-98 before the flood

Total rainfall in the first 6 months of the water year 96-97

Long-term average (30 years) Total rainfall in the first 6 months of the water year



Rain Contributed to Flood



Scenario development and performance evaluation of Dez reservoirs



Flood management evaluation approach



Urban Planning, Architecture, and Cultural Heritage (UPACH) Sampling Criteria

- The amount of damages
- The importance of cities and villages in their region or province
- The type and condition of urban texture
- The proximity to rivers and other flood sources
- The presence of approved master plan for cities and villages
- The availability of required data

Selected Samples

Province	Cities	Villages
Khuzestan	Ahwaz, Shirin Shahr and Hamidiyeh	Hamdan Seljeh, Sahak Abd al-Nabi, and Safheh Yek
Lorestan	Khoramabad, Poldokhtar and Mamulan	Hayat al-Gheyb
Golestan	Gonbad, Aq-qala, Gomishan and Simin Shahr	Khajeh Nafas, Gharaviler, and Qanqormeh
The city of Shiraz in Fars Province		

Emergency Response Coordination Centre (ERCC) – DG ECHO Daily Map | 08/04/2019
Iran | Flood Situation



Source: Reliefweb. 2019b. Iran - Flood Situation, Emergency Response Coordination Centre (ERCC) -ECHO Daily Map | 08/04/2019. Reliefweb Updates. April 8, 2019. Accessed June 6, 2019. https://reliefweb.int/map/iran-islamic-republic/iranflood-situation-emergency-response-coordinationcentre-ercc-echo.



The First Phase: Documentation Process

1- The overall identification of the damaged settlements

1-1 The spatial distribution of these settlements

1-2 Defining the damaged settlements at the provincial level

2- Field study in the chosen cases

2-1 Choosing the main cases

2-2 Documenting the amount of damages in each case

2-3 Analysis of the master plans of the cases

2-4 Documenting and analysis of the implementation of plans and policies in each case

5-2 Documenting and analysis of the role of local governments in each case

3- Conclusion

The Second Phase: Analysis Process

1- Defining urban resilience criteria for urban and rural settlement based on theoretical literature review and international case studies

2- Defining methodology and the analysis method in order to provide the answers to the research questions

3- Analysis of the data from the First Phase at provincial, urban, and rural levels

4- Khuzestan



6- Golestan

7- The city of Shiraz

Sample Case Study: The city of Poldokhtar in Lorestan

- Two episodes of flooding on March 26th and April 2nd
- Destruction of 6,800 residential, commercial and educational buildings
- The flooding of 1 square kilometer from
 2.5 square kilometers of the city
- The flooding of the internal arc of the river



The city of Poldokhtar: Destructed neighborhoods

- The destruction of residential neighborhoods on the west side of the river
- The most severe damages to low income houses
- Serious damage to the governmental buildings such as the municipality
- The destruction of the retaining concrete walls of the river on the west side of the river
- The total power and water outage for more than 48 hours
- Destruction of 19 schools, 3 mosques and 25 governmental buildings





The city of Poldokhtar: Analysis and Evaluation

Defining the main factors contributing to the increase of the flood damages

- Failure of the structural implementations
- High urban density on the northern part of the city
- Transgression to and narrowing the riverbed
- The absence of flood risk management plans for the city



Sample Case Study: Analysis and evaluation (DPSIR)



Urban and Rural Planning Strategies (1)

1- Reviewing general approaches towards policy making for development planning and flood management

- Changing the criminal discourse about the unofficial settlements in river basins and alleviating them or, in necessary cases, displacing them with the residents' partnership
- A shift from the structural approach for flood management which defines cities in two extreme, dry or critical, conditions
- Changing the linear definition of river: Flood risk zones should not be defined as two parallel line to river
- Regarding stormwater as an opportunity rather than a treat
- The systematic incorporation of the criteria of sustainable development in provincial development policies





Cat Modeling: Concept of Cat Risk Assessment



K.N.Toosi University of Technology

Model Resolution



K.N.Toosi University of Technology

Probabilistic Flood Risk Modelling

- Synthetic scenarios of thousands precipitations
- Precipitation to Discharge
- Routing & Water Height (Convolution & dispersion)
- Flood defenses and failure probability
- Breaching & lateral propagation (time step)
- Built environment & risk distribution
- Risk dependent Vulnerability functions
- Calculation of damage and insured loss



0.15 m	Carpets & floor décor needs replacing, wood floor is partially salvageable, concrete floor needs resurfacing, etc	
0.30 m	Ground floor decoration affected, plasterwork needs replacing, electrical equipment can be reused after drying, etc	
0.60 m	Floorboard need replacement, electrical equipment needs replacing/rewiring, wooden staircases damaged/warped beyond repair, etc	
2.5 m	Windows need replacing, humidity in decoration of second level	
3.0 m	Same as 0.15 above for second level	



Thank you for your time