REGULATORY ACTIONS FOR DESASTER RESPONSE – THE BRUMADINHO`S CASE

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ANATEL

- Brazilian legislation and regulation about the use of telecommunications in a disaster situation

- Disaster in Brumadinho

- Crisis Cabinet - Strategic Sectors

- Post-disaster Telecommunications operation

- Lessons learned

Law Nº 12.340, December 1st, 2010 changed by the law Nº 12.983, of June 2nd, 2014.

- Provides for the transfer of resources of the Union to the organs and entities of the States, Federal District and Municipalities for the execution of prevention actions in areas of risk and response and recovery in areas affected by disasters and on the National Fund for Public Disasters, Protection and Civil Defense

- Art. 15-B. The companies operating mobile personal services are obliged to transmit free warning information to the population about disaster risk, by initiative of the competent bodies, under the terms of the regulation.

Based on the draft contract of the Anatel Regulation

Regulation on Risk Management of Telecommunications Networks and Use of Telecommunications Services in Disasters, Emergency Situations and Public Calamity State

- Approved by Anatel Resolution No. 656 of August 17, 2015

- Three main themes:
  – Risk management of critical telecommunications infrastructures;
  – Monitoring the performance of telecommunications networks;
  – Preparedness and response measures for disasters, emergency situations or public calamity state.

Disaster Preparedness Measures

Article 12. The providers covered by this Regulation shall prepare and maintain a **Contingency Plan** for the disaster risk areas mapped and shall put it into practice in a disaster situation.

Contingency Plan: carried out to control and minimize the foreseeable effects of a specific disaster, so that providers can respond, retrieve, resume and restore services operation.

Disaster Response Measures

When declared the Emergency Situation or the Public Calamity State, under the terms of Law, in affected areas and for as long as the event lasts:

The providers must:

• Take the necessary actions to ensure the continuous availability of communications between their networks and:

- **Civil Defense;**
- **Fire Department;**
- **Military and Civil Police;**
- **Public Removal Service (ambulance) and**
- **Public rescue service for victims of accidents.**

• Take the necessary actions for the brief restoration of services (optimization and reinforcement of the network with temporary and mobile systems)

• Share Infrastructures and enable roaming.

Disaster Response Measures

- The Service Provider may be called to install terminals in shelters and / or strategic locations;

- Mobile and Pay-TV Service Providers shall disseminate notifications of alerts, alarms and guidance to users located in municipalities at risk.
  - Free of charge;
  - Time of transmission, scope and content of the message defined by the competent governmental body;
  - For Pay-TV Service the message must be performed through pop-ups.

    Only for disasters that appear in the Brazilian Classification and Codification of Disasters (COBRADE).

Disaster Response Measures

NATIONAL EMERGENCY NETWORK OF TELECOMMUNICATIONS PROVIDERS – RENET

- The providers covered by this Regulation shall compose RENET;

- Installation and operation will be monitored by Anatel

- Goals:
- necessary measures for the brief restoration of telecommunications services during the event.

- activated totally or partially when the occurrence of an Emergency Situation or State of Public Calamity

SMS alerts
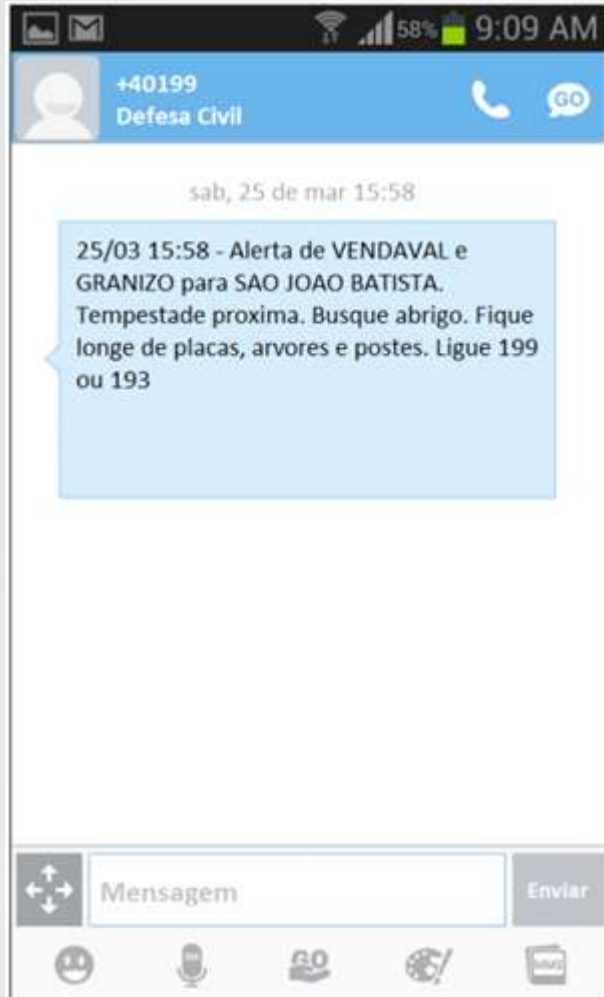
Pay TV alerts

In May 2018 it is going to initiate the pilot project

Open TV

Ministry

Brumadinho

Brumadinho is a Brazilian municipality in the state of Minas Gerais, Southeast Region of the country. It is located in the Metropolitan Region of Belo Horizonte and its estimated population in 2018 was 39,520. Its main economic base is supported by mining activity, mainly by the company Vale.
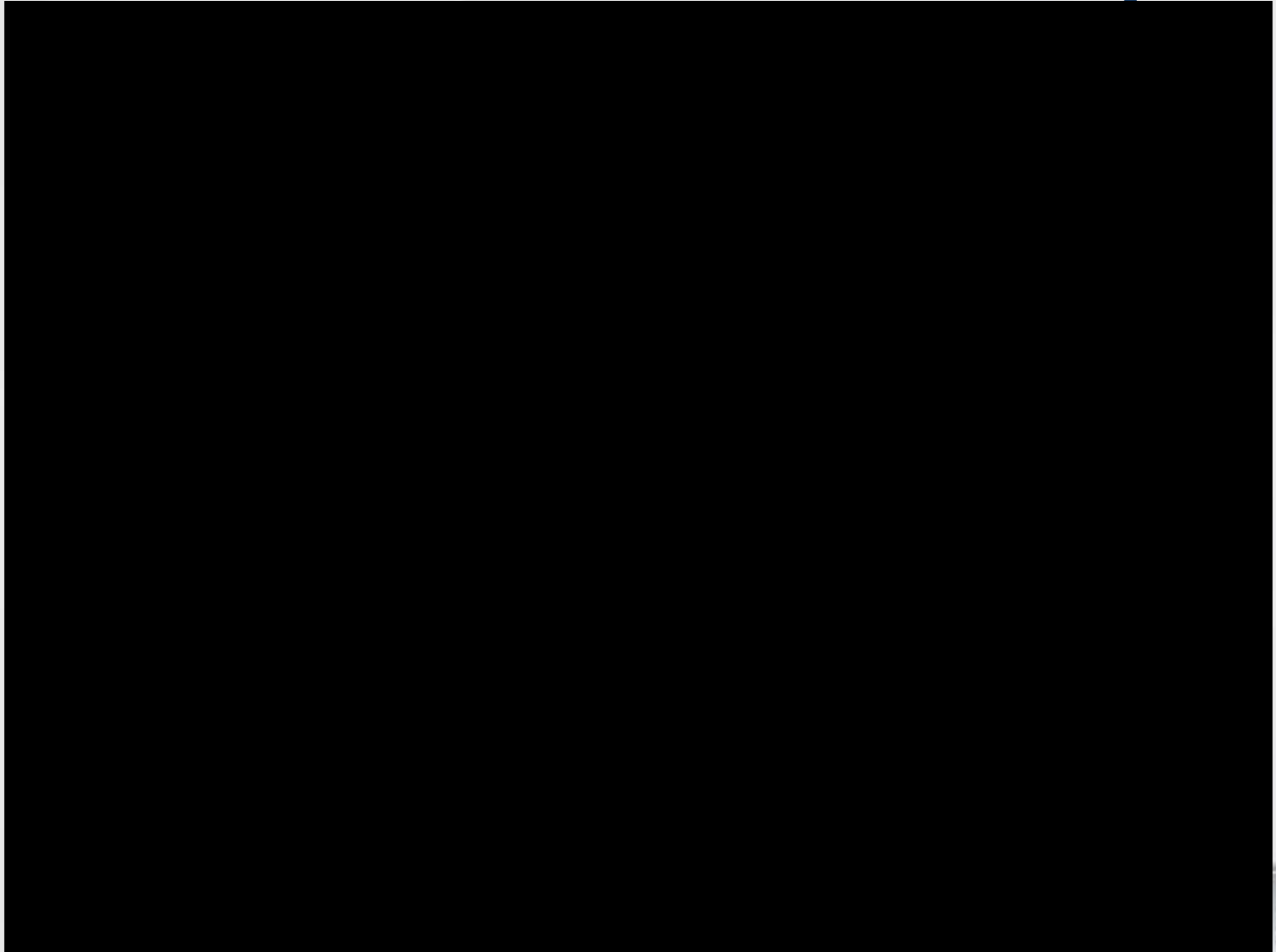
Brumadinho

Córrego do Feijão Mine (VALE)
Brumadinho/MG

B6 : 1.4 million m³
of water

B1: 11.7 millions m³
of iron ore scrap

Exact moment of the dam rupture

Before and after the rupture

Paraopeba

P.Cachoeira

Pousada

C. Feijão

Adm

Foto: IBAMA

Foto: IBAMA

Base Avançada Córrego do Feijão

Ônibus

Refeitório / Área Administrativa da Vale

Foto: CENAD

Foto: CENAD

Burial - Residences

Projeção: CENAD

Google Maps

Projeção: CENAD

Foto: IBAMA

Human damages

	Status	Determined in	Accumulated
Rescued / located	-		394
Deaths	179	25/feb	
Disappeared	131	25/feb	
Homeless	105	03/feb	264

In Feb, 28^{Th}:

186 deaths
122 desappered
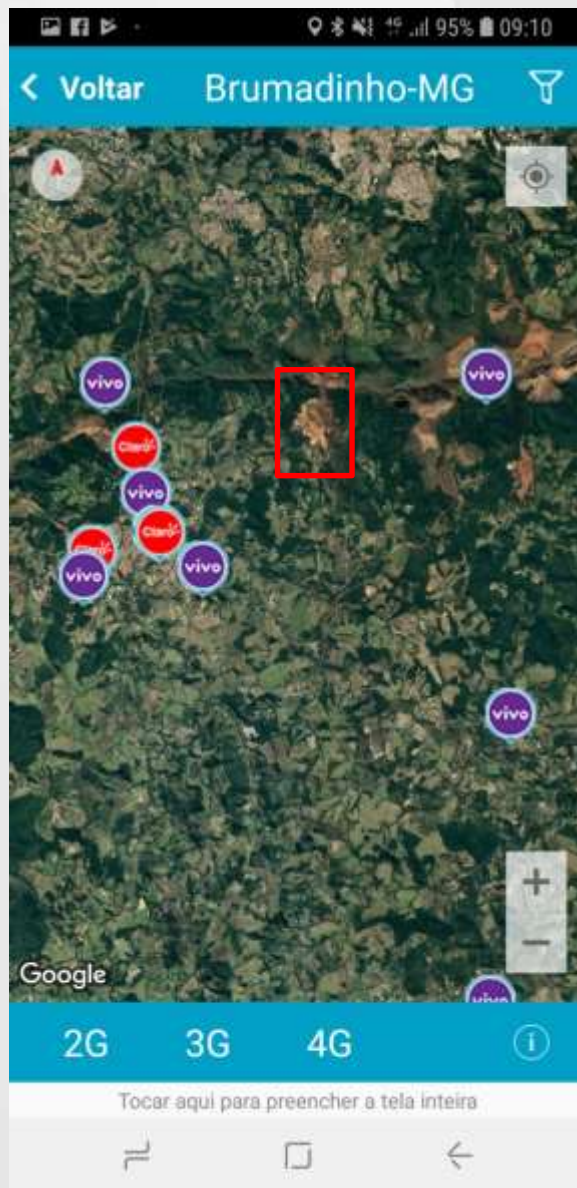Total 308

Foto: IBAMA

Crisis Cabinet - Strategic Sectors

- ✓ **ANATEL (National Telecommunications Agency)**

- ✓ **ANM (National Mining Agency)**

- ✓ **TELEBRAS**

- ✓ **CNEN (Nuclear Energy National Committee)**

- ✓ **MINISTÉRIO DA CIDADANIA (Ministry of Citizenship)**

- ✓ **MINISTÉRIO DA MULHER, FAMÍLIA E DOS DIREITOS HUMANOS (Ministry of Woman, Family and Human Rights)**

- ✓ **MCTIC (Ministry of Science, Tecnology, Inovations and Comunications)**

Foto: TELEBRAS

Telecommunications Scenario

Telecommunications Crisis Cabinet

- Established and coordinated by National Telecommunications Agency (ANATEL) – e-mail and whatsapp group
- An hour and a half after the rupture of the mine dam;
- Interaction with the service providers to evaluate, reestablish, repair or maintain communications in the region;
- Ensured the functioning of the telephony signal and the mobile data communication even with interruption in the electricity supply;
- Were attended by representatives of the mobile service providers present in the locality: Claro, Nextel, Oi, TIM and Vivo, as well the support of the telecommunications companies union (SindTelebrasil);
- Reports were sent daily to the MCTIC.

- In response to the disaster response measures of Resolution 656 of Anatel, which approved the "Regulations on the Management of Risks of Telecommunications Networks and the Use of Telecommunications Services in Disasters, Emergency Situations and State of Public Disaster ".

Telecommunications Response Measures

- The first gasoline generators arrived the morning of the day following the tragedy when the telecommunication stations still had power for the maintenance of operations.

Other measures:
- The reinforcement of the mobile telephony coverage in the region, the increase of the capacity of the installed antennas and the use of temporary stations.
- A mobile 4G station in band 28 (700 MHz) was also established for emergency communication service. An effective measure was the possibility of users having roaming available to make calls from any antenna, regardless of the provider.
- The cell phone carriers distributed 300 SIM cards to the affected population and members of the civil defense.

Telecommunications Response Measures

- In addition, in order to improve the efficiency of victims' rescue, after judicial authorization, the Call Detail Records -CDRs of the calls made in the region were used to identify the location of the mobile devices of the local population.

Telecommunications Response Measures

- *Telebras counts the total of 22 antennas for the provision of satellite communications services by means of wireless access networks with WiFi of 20 Mbps each, provided by the Geostationary Satellite of Defense and Strategic Communications (SGDC), using the Ka band, which covers the entire region.*

Lessons Learned – General Evaluation

- The process has proven to be effective, with fast and pertinent interactions via WhatsApp application.

- Improved with previous smaller-scale experiences
  (fuel crisis - truckers strike, attacks on Ceará, threat of landslide in Alagoas)

- Already have delimited the communication matrix (contact persons) and the process to be followed (network mapping and survey of what was destroyed and interdependence with other sectors (such as energy and transport)

- It is also important to highlight the commitment of the representatives of the service providers to send daily monitoring reports with network operating status to Anatel and MCTIC (including during the weekends).

- The process should be evaluated and improved for each performance.

- Need for simulation excercises.

Thank you!

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