

Crédits - Photothèque Veolia : Emmanuel Besnier



Crisis management

In Saint Martin after Hurricane Irma

Feedback

David Poinard 01 december 2017



Fondation VEOLIA

Saint Martin - key figures

• Volcanic - dry island (no lake, no river, only seawater)

- 90 km²
- Population : 75 000 inhab.
- 35 000 French
- 40 000 Netherlands
- Water management (french side)
- 1 desalination plant reverse osmosis
- 5 000 m³/day
- 2 tanks (2 x 2000 m3)
- 140 km network
- 15 000 meters (aerian meters)
- 15 €/m³ (vs 3 in Europe)
- 25 l/day/pers (vs 150 in Europe)



Before the Hurricane [D day – 6]

- Analysis and monitoring of the day-to-day situation
- Establishment of a crisis unit and beginning of coordination
 - Definition of all actors and their role (state authorities, collectivity, military, managers, ...)
 - Update contact list
 - Definition of means (transport, logistics, ...)

Water management

- Technical studies (hydrogeological, hydraulic network, ...)
- List of potential volunteers (put on standby)
- Prepositioning reinforcement (in Guadeloupe)
- Packaging of material (containers, supply, ...)
- Definition of technical answer (... with differents scenarios)



[D-Day] Septembre 06, 2017 : The Hurricane

- IRMA
 - Category 5
 - Wind > 400 km/h
- Confinement and waiting



Videos :

- Short version : <u>https://www.youtube.com/watch?v=I7jxHVVbzjY</u>
- Long version : <u>https://www.youtube.com/watch?v=sEX6V_drna4</u>

Organization and strategy – Global - [D +1]

- Local staff (Veolia) : 30 employees
- Veolia Fondation : additionnal staff 100 volunteers (15 volunteers in rotation)
- Crisis cell: 2h/day
- Priority [first days D+2]:
 - Security,
 - Health and first aid,
 - Shelter,
 - Field diagnostics
 - 11 dead
 - 25 injured (?)
 - 90 % destroyed
 - A lot of fake news
 - No water, no electricity, no communication, no food, ...



Organization and strategy - First steps (water)

At the same time ...

- Repair the main plant [start D +3]
- Reinforcement with a mobile emergency plant reverse osmosis (600 m3/day) [start D +6]
- 12 rescue tanks supply by water trucking (1 by district) [start D +7]



Organization and strategy - second steps (water)

- Restore water in the drinking water network ... gradually
- Locate and repair leaks (night and day)
- Control and adapt the water quality
- Connect the tanks to the water network











Find the leaks, meters ... and houses



Diagnostics water quality, schools, hydraulic equipment

















Technical results (Plant - production)

Production : ok

- 1 week after Irma : 30 %
- 2 weeks after Irma : 50 %
- 5 weeks after Irma : 75 %
- 6 weeks after Irma : 100 %





> 5500 m3/day

W TITRE PRÉSENTATION / SOUS TITRE / DATE

Technical results (Network : instantaneous flow)



« Manage the technique is (relatively) easy ...

... but crisis management requires more ! »

... the teams and human needs (and skills)

Back office Veolia

• Logistics (travel, etc)

On the site

- Welcoming newcomers
- Brieffing security
- Prepare the schedules



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… hosting

In offices





Life base







In food (breakfast, lunch, diner and a lot of coffee for 15 people)



... vehicles (rental, gas ... with special authorization)



... stores, supplies, orders and transportation



... after an hurricane !





Only one port





... hygiene and health



Shower









First Aid



Laundry

Repair toilets

Tired

... security (wild)



Zika, Chikungunya, Dengue



Shark



Pitbull



Spider

... security (human)



Looting





Drugs

... security (of team and journalists)



... the security staff (8 men + 1 dog), to secure ...

- stores
- night interventions
- the transport of materials



OLOMBI FRANCE Nous serons présents

que 100% des habitations e seront pas alimentées

UNE BELLE AVENTURE

... communication and journalists

- Write press release
- Interviews (radio, tv, print media)
- Flyers (awarness, information to the population)











... reporting (whitout computer, internet)









In general, a current day (during crisis)

6h30 – 7h00	Brieffing teams
7h00 – 9h00	Locate and repair leak (or manage something)
9h00 – 10h00	Daily (morning) report: PI of the day before (volumes,)
10h00 – 12h00	Crisis local cell
12h00 - 14h00	Call with crisis cell of Veolia (Paris)
14h00 – 18h00	Locate and repair leak (or manage something)
18h00 - 19h00	Debrieffing teams
19h00 – 20h00	Daily (afternoon) report: PI, Maps, tomorrow's shedule
20h00 - 24h00	Break
00h00 – 05h00	Leak detection by « manual DMA »

 \leftarrow 2-3 nights/week

- 16/09 → 08/11
- 46 days (7/7)
- 14 sleepless night

Return to every day life ...

• November 09, 2017

- Delay in projects,
- Delay in mail replies,
- Reporting, PI, Studies,
- ...

« The hardest ... ?»

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Very good times and Nice meets !



Thank you

Thanks to the Saint-Martinois