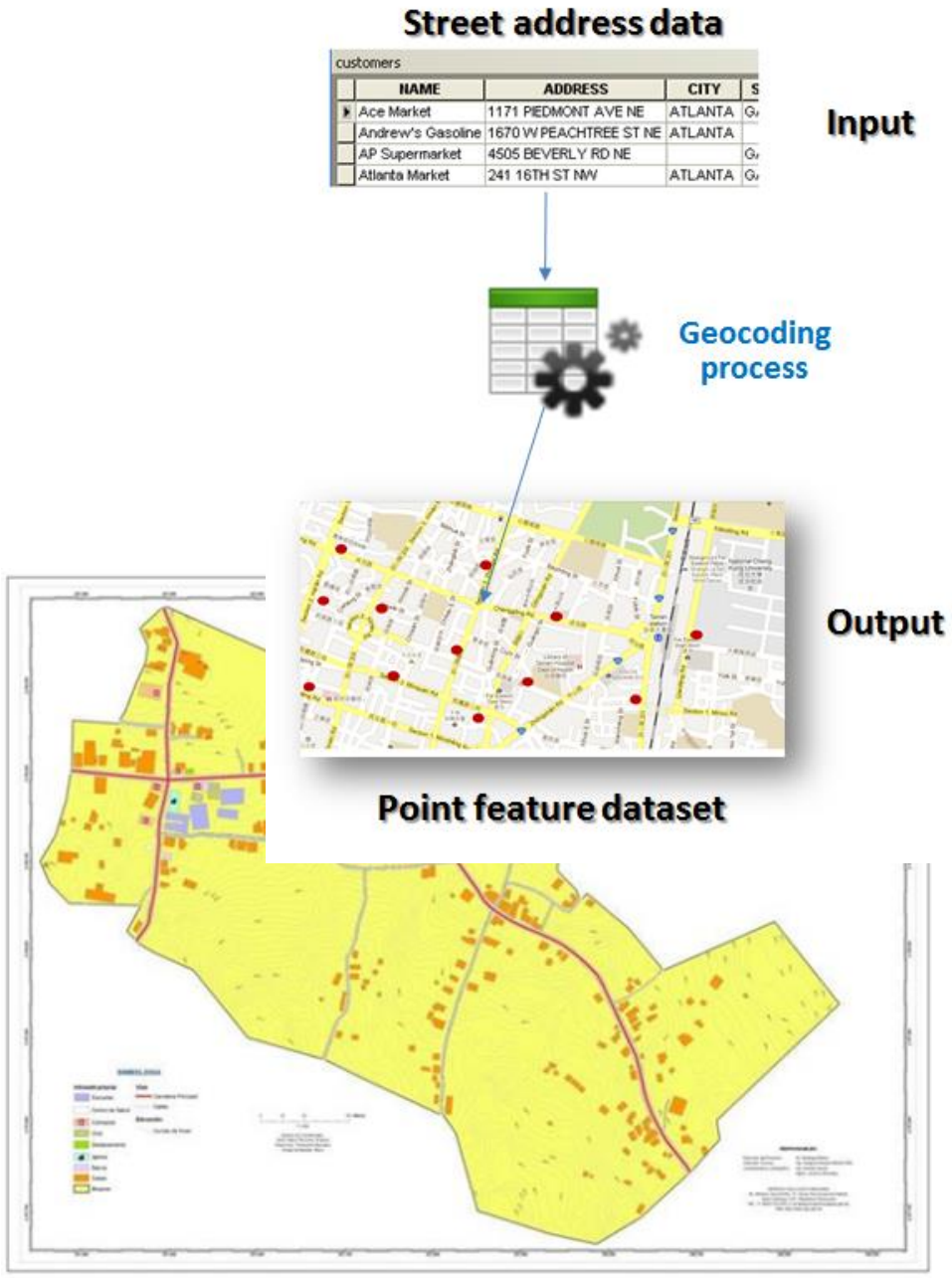

Value of Geographic Information

in Emergency Response Organizations

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November 9, 2021
Dominican Republic

Multi-hazards scenarios

Impact of Natural Disasters*:

- Economic losses ranging from US$250 billion to US$300 billion each year.
- But they only partially reflect total disaster losses.
- Sustainable development linked to Disaster Risk Reduction (DRR).

Sendai Framework for DRR 2015:

- Sharing information about risk
- Strengthening DR governance and coordination
- Participation of stakeholders at all levels

*UNISDR. (2015b). *Sendai Framework for Disaster Risk Reduction 2015 - 2030*. Geneva, Switzerland: United Nations Office for Disaster Risk Reduction (UNISDR)

- Global Assessment Report on Disaster Risk Reduction 2013

Small Island Developing States

SIDS in the Caribbean Region are greatly affected by Natural Disasters

HURRICANE IRMA AND MARIA
September, 2017

Puerto Rico

- 2 Storms
- 46 deaths
- US$ 68.000 millions
- Hurricane Irma
- Hurricane Maria

Cuba

- 1 Storm
- 10 deaths
- US$ 2.000 millions
- Hurricane Irma
- 8 September 2017

Dominican Republic

- 3 Storms
- 2 deaths
- 42.587 affected people
- Hurricane Irma
- Hurricane Maria

Turk and caicos

- 3 Storms
- US$ 500 millions
- Hurricane Irma
- 8 September 2017

* Centre for Research on the Epidemiology of Disasters – CRED Emergency Events Database (EM-DAT) http://emdat.be/emdat_db/

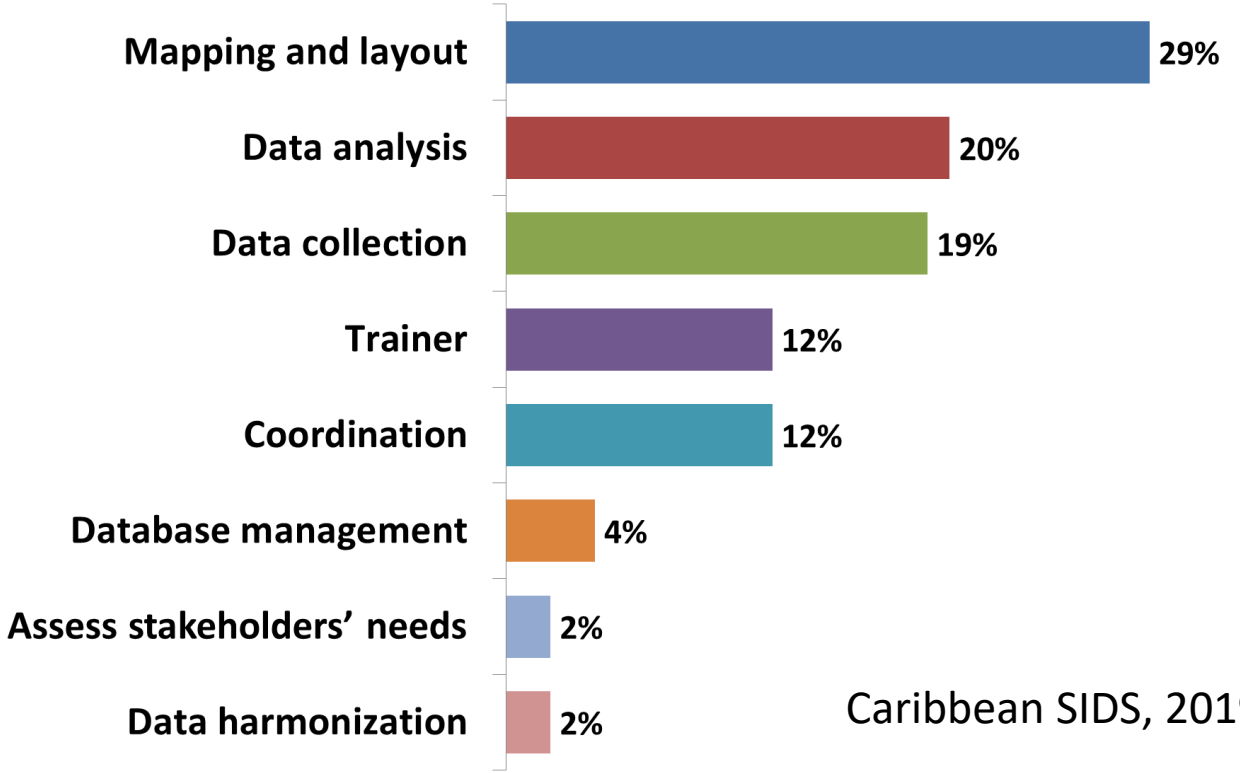
Geographic information

in Emergency Response Organizations

Effective management of ICT technologies and tools to integrate and analyze spatial data for disaster risk reduction

- Most up-to-date field incident information to make decisions that can impact the live and of victims and fellow responders.
- Tool for citizens to indicate whether they are safe or in danger.
- to arrive at a location sooner, potentially saving crucial minutes.
- to increase a situational awareness.

Main tasks and responsibilities



Caribbean SIDS, 2019

Different users require different themes of information originating from different sources (usability). Depending on the user, the timeliness, frequency, affordability and accessibility criteria will differ.

The key challenges of multi-agency collaboration

Efficient communication across emergency agencies

Establishing and maintaining shared situational awareness

Achieving adequate organizational understanding

Key challenges

Geographic information

in Emergency Response Organizations

Some major challenges for data collection and distribution

Very short time to collect and disseminate data and products to deal with the problem

Different data types are useful for different disaster types

Multiple stakeholders involve, including no-experts

Quality control and update

- Lack of human resources and knowledge
- Requirements change with time
- Copyright protection
- Integration of data from different sources
- Avoid duplication of efforts
- Sharing agreements
- Data specification and procedures

* Eide, A. W., Halvorsrud, R., Haugstveit, I.M., Skjetne, J.H., Stiso, M., (2012) Key challenges in multi- agency collaboration during large-scale emergency management, in: AmI for Crisis management, International Joint Conference on Ambient Intelligence, Pisa, Italy.

*Key benefits

Geographic information

in Emergency Response Organizations

DISASTER RESPONSE

DISASTER PREPARATION

DISASTER PREVENTION

- to create a model of the zones that will most likely require a disaster response.
- to provide evacuation route information for residents
- to identify the most heavily impacted areas.
- to allow emergency teams to know which roads were passible
- to post location-based information
- ranging from news on infrastructure damage
- to alerts on people

*The economic impact of geospatial services: how consumers, businesses and society benefit from location-based information. AlphaBeta, 2016.

*Key benefits

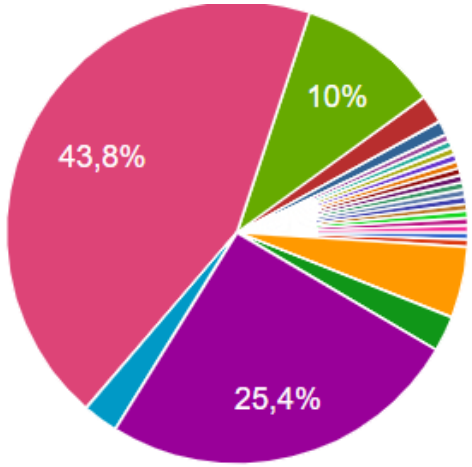
Geographic information

in Emergency Response Organizations

*Seminario Gobernanza de datos espaciales para la toma de decisiones y la reducción del riesgo ante desastres Santo Domingo, Republica Dominicana, 2019.

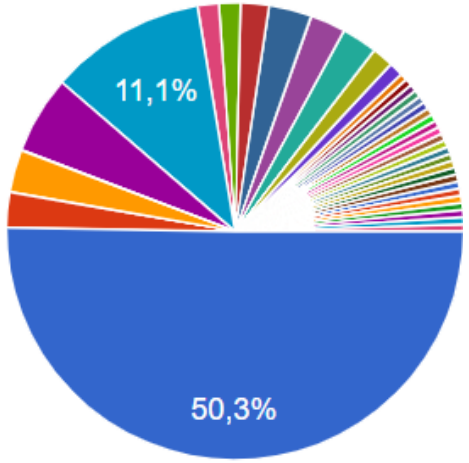
N = 204 participants

Type of organizations



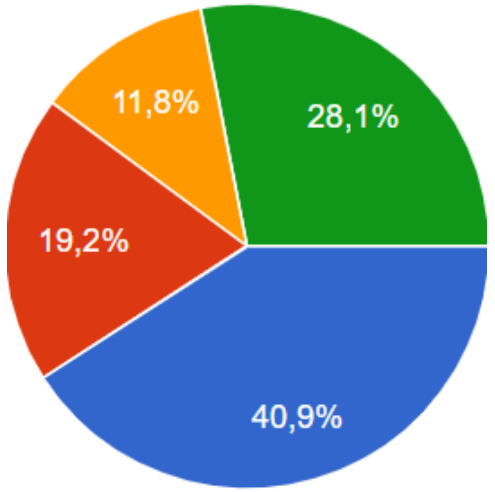
- Cartographic agency
- Military Forces
- Local government
- Research Institute
- Ministry / government agency
- Non-governmental organization (NGO)
- Private sector
- University

Professional background



- Surveyor
- Cartography
- Geographer
- Geology
- Geomatics
- Project Management
- Disaster Risk Management
- Computer science

Year of experience



- 1 to 5 years
- 5 to 10 years
- 10 to 15 years
- More than 15 years

*Key benefits

Geographic information

in Emergency Response Organizations

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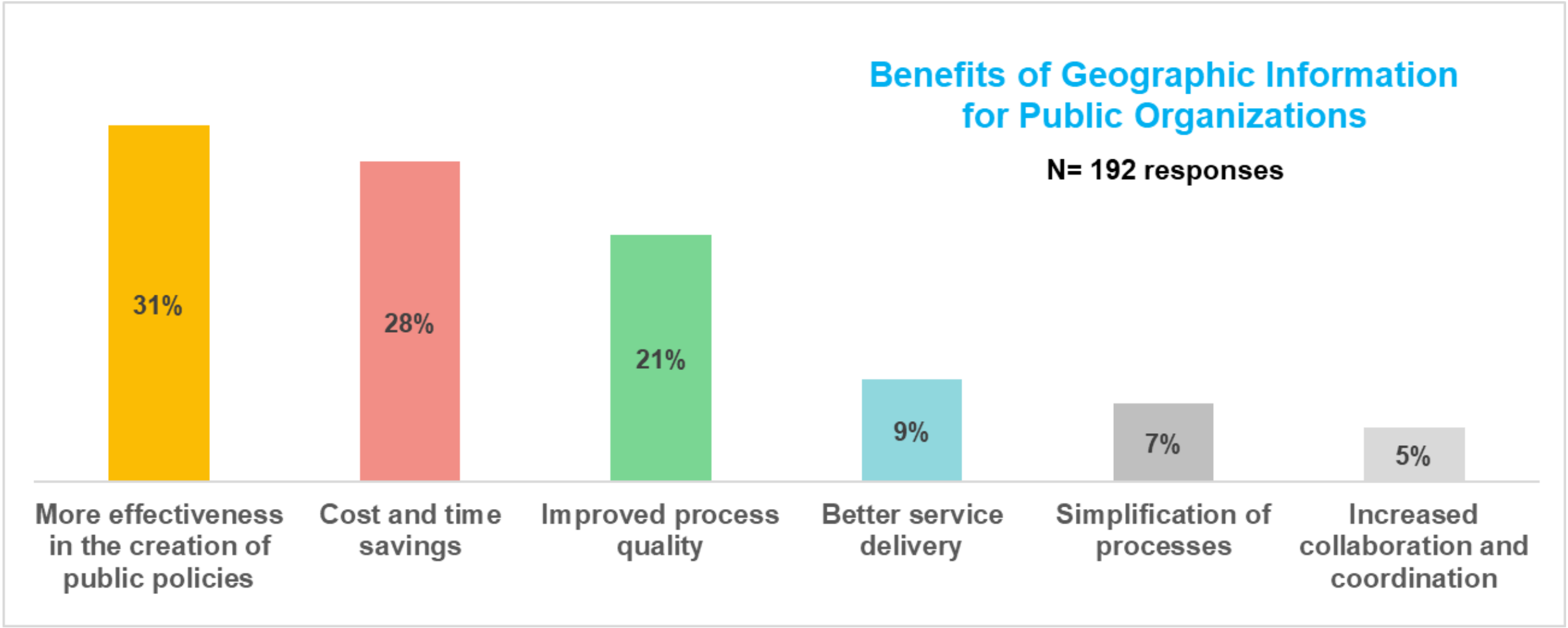

*Key benefits

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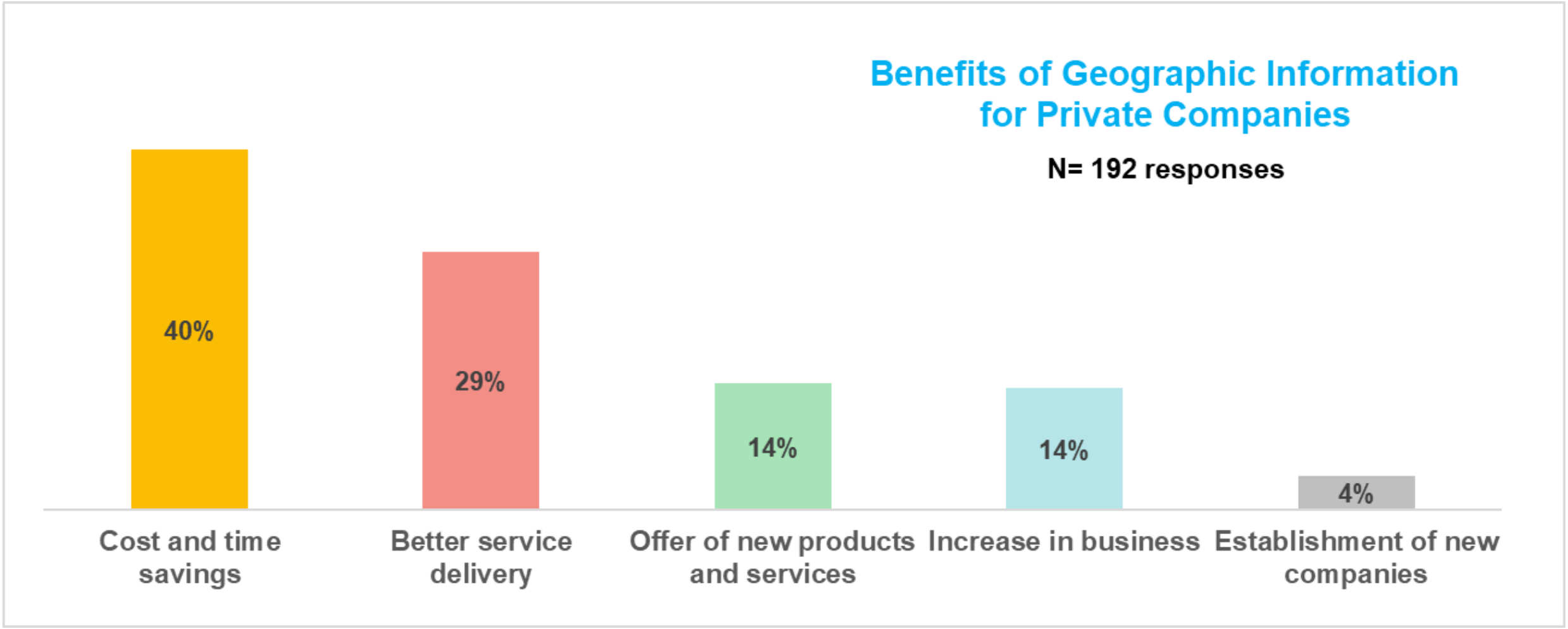

*Key benefits

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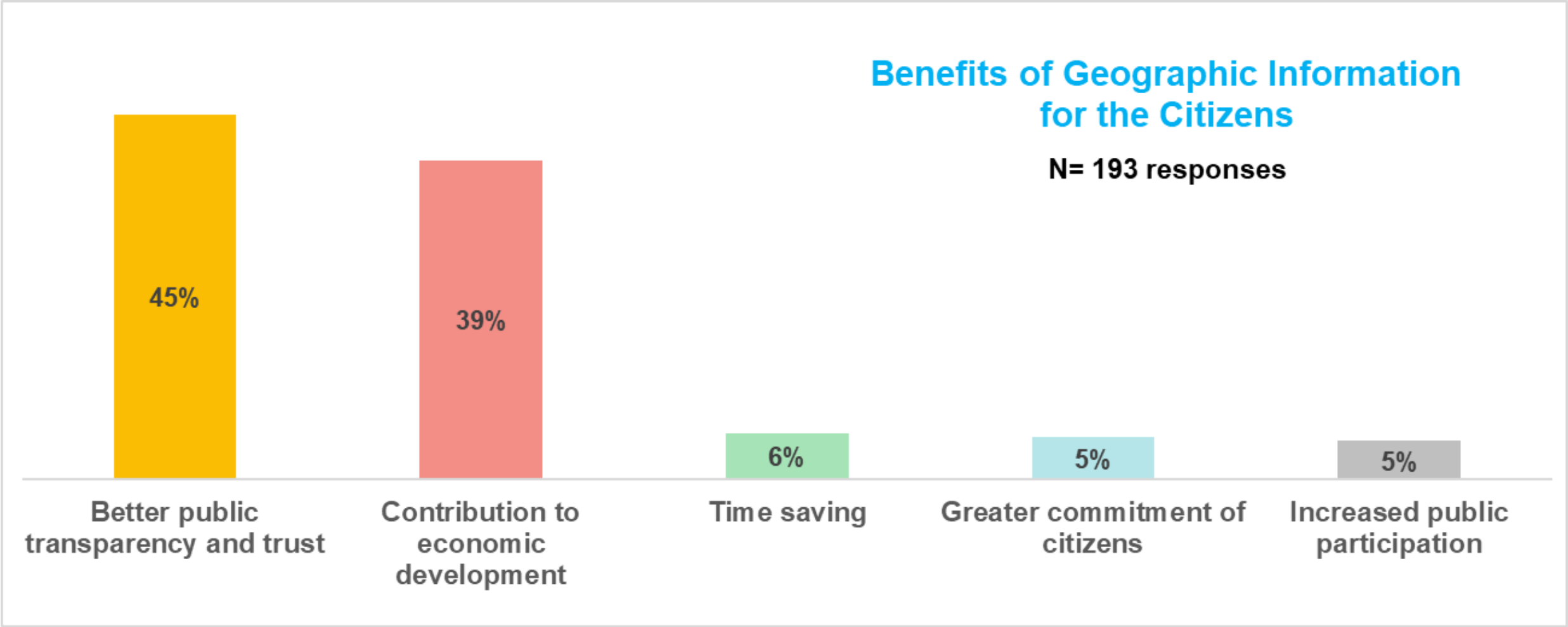

Lessons learned

- Geographic information add value to help save lives and goods when natural disaster strikes
- Necessity to continue strengthening capacity building programs and studies on socioeconomic value of geographic information in disaster response organizations (SIDS, local level)
- Governments and citizens can be linked together to deliver strong and rapid response to prevent disasters
- Coordination must be done beforehand between all the stakeholders involved

Q&A

Thanks for your attention

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