

Making Cities Resilient (MCR) Campaign: Comparing MCR and non-MCR cities

1. Background and Methodology

Rapid urbanisation has a potential to make countries productive and prosperous. On the other hand, at present, most of the cities are totally unprepared to handle multiple challenges associated with urbanisation. Consequently, the urban population is at high risk. Today, more than half of the world population live in urban cities. Disaster trends show that many urban areas sustained after heavy losses due to disasters. Haiti earthquake in 2010, Cyclone Nargis in 2008, and the South Asian tsunami in 2004 are some of the popular examples that created a massive loss to the human population. Comparatively, urban areas concentrate disaster risk owing to urban expansion, increasing population, infrastructure and assets, and inadequate management. Hence, building resilience became an essential need for all urban cities.

Scholars demonstrated the link between the institutional effectiveness and disaster mortality. Gencer (2013) highlighted several examples in her study showing this link. For example, the death toll from earthquakes is higher in countries with higher public sector corruption. On the other hand, countries with better performing institutions are better at mitigating disasters. Though several institutional frameworks exist, Malalgoda, Amaratunga and Haigh (2016) suggest that local government is the most appropriate body to handle disaster risk reduction (DRR) of cities. The reasons are, the local government is the first line of response and defence for disasters, and they are the closest government body to the local population. Thus, they are in a better position to engage the local community in DRR activities.

Approaches for building resilience may range from highly technical and resource-intensive, to simple and inexpensive practices. The “Making Cities Resilient” (MCR) Campaign initiated by the United Nations Office for Disaster Risk Reduction (UNDRR) is one of the examples. It helps to promote disaster resilience building in cities through raising awareness and providing simple tools, technical assistance, city-to-city support networks, and learning opportunities for local governments.

The MCR Campaign was launched in May 2010 with the aim to advocate and raise awareness among local authorities and cities on disaster risk governance, urban risk, and resilience (Phase 1). It was recognized as a powerful tool to engage local political leaders and cities' commitment toward disaster resilience building. Following the Local and Sub-National Governments Declaration at the 2015 UN World Conference on Disaster Risk Reduction in Sendai, Japan, and “The Florence Way Forward” adopted at the High-Level Forum on Implementing the Sendai Framework for Disaster Risk Reduction at the Local Level in Florence, Italy in June 2016, the Campaign was extended into a new phase (Phase 2), with a focus not only on advocacy but also to implementation support, partner engagement, investment-cooperation opportunities, local action planning and monitoring of progress.

In 2018, a local government survey was developed and administered online by UNDRR to capture the progress in DRR and the implementation of the Sendai Framework at the local level around the world, including both the

cities participating in the MCR Campaign and those that are not. The survey included 58 questions about the local governments, local risks and understanding of risk, risk communication, local DRR strategy, strategy implementation, and DRR actions and experience. Taking part in this survey was an opportunity for cities to showcase their good practices and contribution to the advancement of the global framework such as the Sendai Framework and the Sustainable Development Goals.

On the closing date of the survey in July 2018, 159 valid responses were collected from the local government representatives. Multiple descriptive statistical techniques were used to analyse the ordinal data, which were further processed using MS Excel software. This report attempts to explain the results of the survey, particularly the comparative analysis between the progress of the cities participating and not participating in the MCR Campaign.

2. Findings

2.1 Profiles of cities within the survey

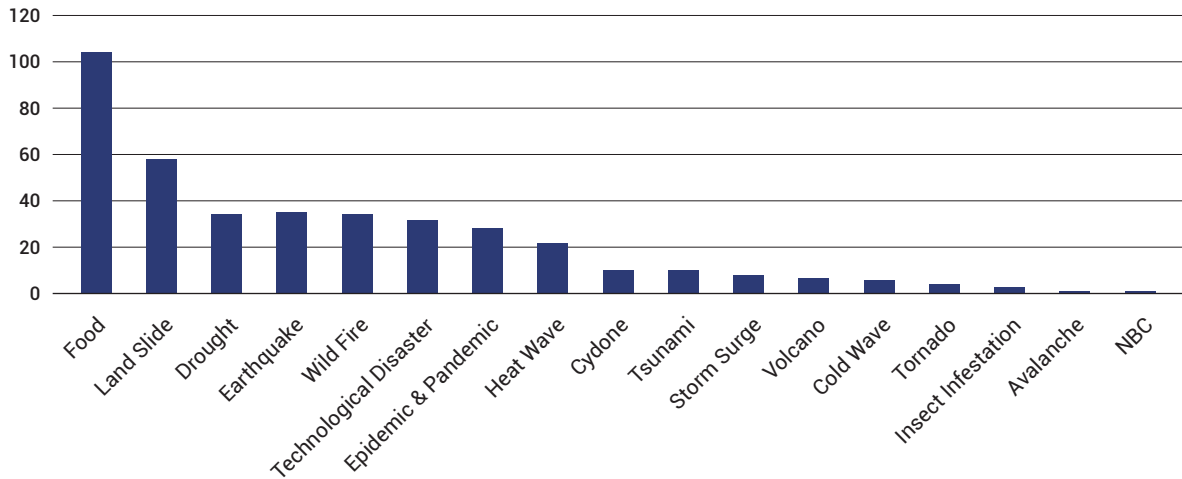
Based on the 159 valid responses, 134 of them have signed up to the MCR Campaign, while 25 of them are not part of the Campaign (Non-MCR). Among them, 95 responses are from the Americas, 25 from Asia-Pacific, 16 from Africa, 16 from Europe, and 7 from Arab states. The majority of the respondents are municipality level with population of less than 500,000 people. Table 1 shows the profile of the respondents' cities.

Table 1: Profile of the cities

Period signed up to MCR Campaign	Region	Population Size	Type of the city
MCR Phase 1 (2010-2014): 53 cities	Americas: 40 Africa: 01 Asia Pacific: 03 Europe: 06 Arab States: 03	<500,000: 42 500,000-1million: 06 1-4.99 million: 04 5-10 million: 00 >10 million: 01	Municipality: 32 Metropolitan Area: 01 Town: 13 District: 01 Province: 01 Other: 05
MCR Phase 2 (2015 onwards): 81 cities	Americas: 51 Africa: 07 Asia Pacific: 15 Europe: 08 Arab States: 00	<500,000: 64 500,000-1million: 05 1-4.99 million: 10 5-10 million: 01 >10 million: 01	Municipality: 52 Metropolitan Area: 04 Town: 17 District: 04 Province: 02 Other: 02
Non MCR: 25 cities	Americas: 04 Africa: 08 Asia Pacific: 07 Europe: 02 Arab States: 04	<500,000: 17 500,000-1million: 02 1-4.99 million: 04 5-10 million: 01 >10 million: 01	Municipality: 14 Metropolitan Area: 01 Town: 01 District: 01 Province: 01 Other: 07

Cities participating in the survey are mostly prone to floods (65%), followed by landslide (37%), drought (22%), earthquake (22%), wildfire (21%), technological disasters (19%), and epidemic & pandemic disasters (18%), as show in Figure 1.

Figure 1: Prominent risks around the globe

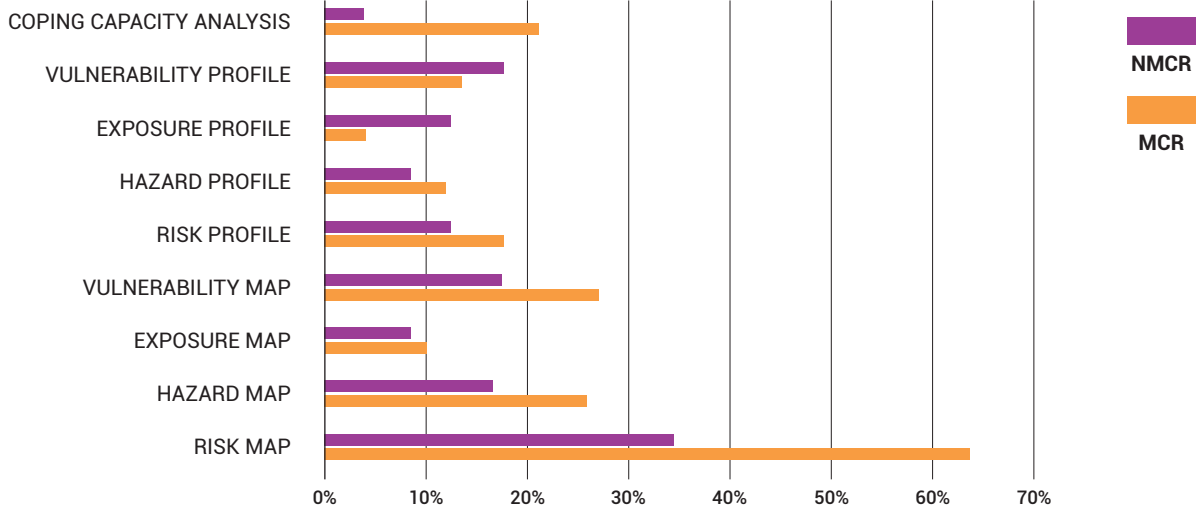


2.2 Understanding risks

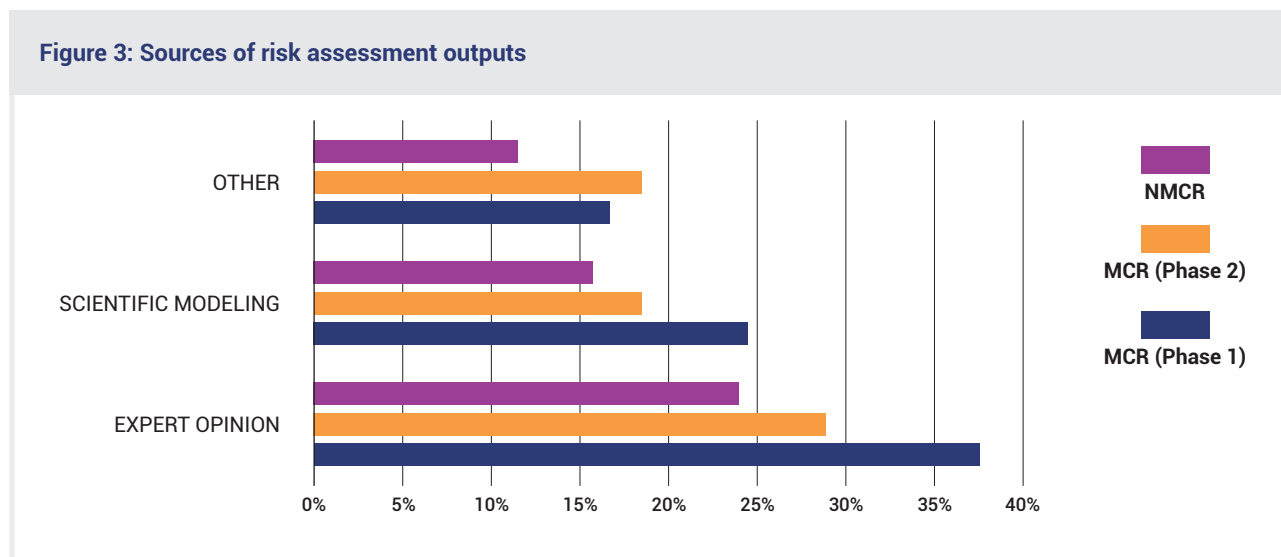
Local Risk Assessment

The results show that 110 local governments participating in this survey (69.2%) conduct disaster risk assessments to understand the risks of their territory, while 27 local governments do not conduct risk assessment and 22 did not respond to this question. Comparatively, more cities that have conducted risk assessment are part of the MCR Campaign. The results also reveal that, among cities completing risk assessments, the MCR Campaign cities produce risk maps, coping capacity analysis, vulnerability maps, hazard maps and risk profile relatively more than cities that are not part of the MCR Campaign. Out of 11 local governments or 10% that produce all risk, hazard, exposure, and vulnerability maps, 9 are cities that have signed up to the MCR Campaign. Figure 2 shows the types of risk assessment outputs as produces by MCR and Non-MCR cities.

Figure 2: Types of risk assessment outputs



45% of these risk assessments are based on expert opinions, 30% are based on scientific modelling, while 3.6% use both. Multiple statistical data, local expertise, and previous experiences are also used as a basis for disaster risk assessment in some local government. Figure 3 shows this ratio among MCR and Non-MCR cities.

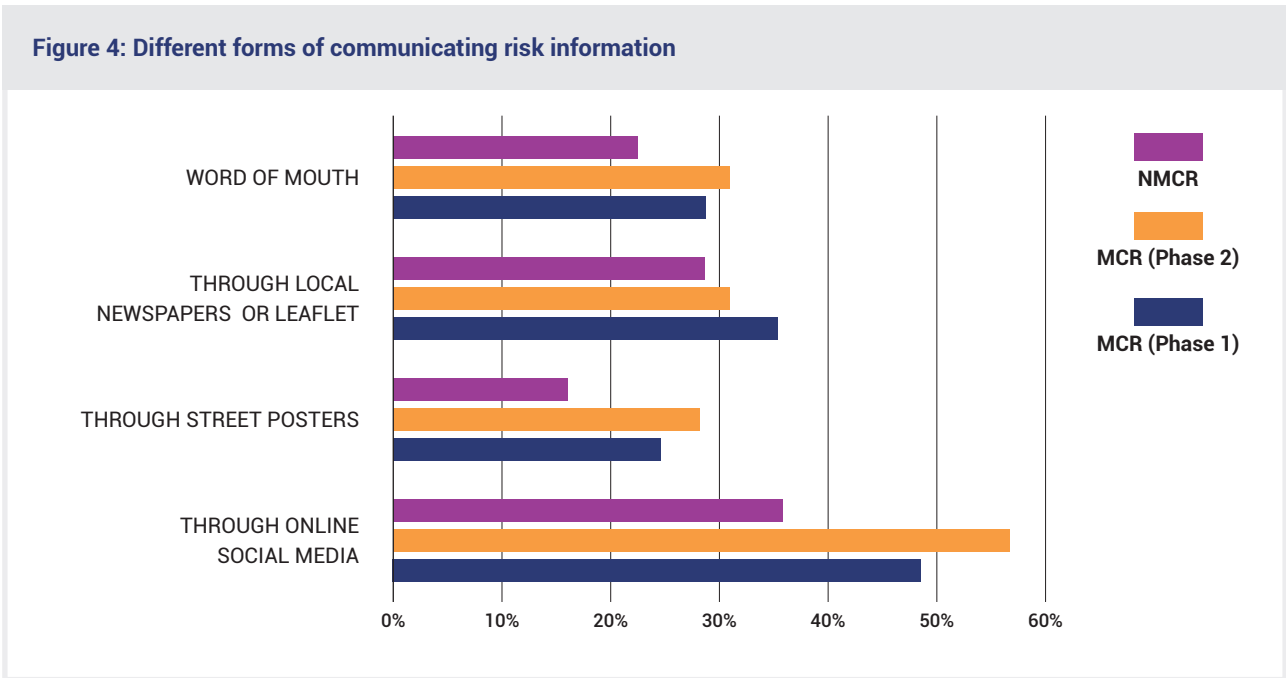


97% of the local governments have conducted a risk assessment from 2005 to 2018. Among them, 37% update their risk assessment every year, and 35% update every 2 to 4 years. Among non-MCR cities, more than half of them update their risk assessment every year. According to the risk assessments, 54% of the respondents mentioned that they are exposed to a mixture of new and recurrent risks. The other 41% of the cities are exposed to only recurrent risks. MCR and non-MCR cities do not show much difference in these percentages.

Local Risk Communication

Communicating the localised risks to the stakeholders is equally essential to understanding risks. The results show that 70% of the local governments publicised information on disaster risk to increase public awareness of risk reduction. Following the trend, the most popular way of advertising risk information, which is adopted by the local governments, is online social media such as Facebook, Twitter, and Instagram. The second most popular way is the local newspapers and leaflets. Figure 4 shows different forms of communicating risk information. The cities that joined the campaign in the second phase utilise the social media comparatively more (57%) than other cities that publicise the risk information. Further, the effort for communicating about disaster risk can be observed more among MCR cities compared to Non-MCR cities.

Figure 4: Different forms of communicating risk information



2.3 Local DRR strategy/plan

Local DRR Strategy/Plan Development

Having local DRR strategies is essential for local governments to handle disaster risks practically, as reflected in the Target E of the Sendai framework and the indicator SDG11b of the Sustainable Development Goals (SDG) which call for the substantial increase of countries with national and local DRR strategies. The development and implementation of DRR strategies contribute to decreasing the direct economic losses caused by disasters and protecting the poor and people in vulnerable situations. Thus, local governments' commitment is essential and expected by the global communities. According to the survey, 53% local governments already have local DRR strategy in place. 87% of these are the members of the MCR Campaign. Additionally, 30% local governments are in the process of developing the local DRR strategies, 63% and 23% of which have joint the MCR campaign within the years of 2015-2017 and 2010-2014, respectively (Figure 5 and Figure 6).

Figure 5: Availability of local DRR strategy

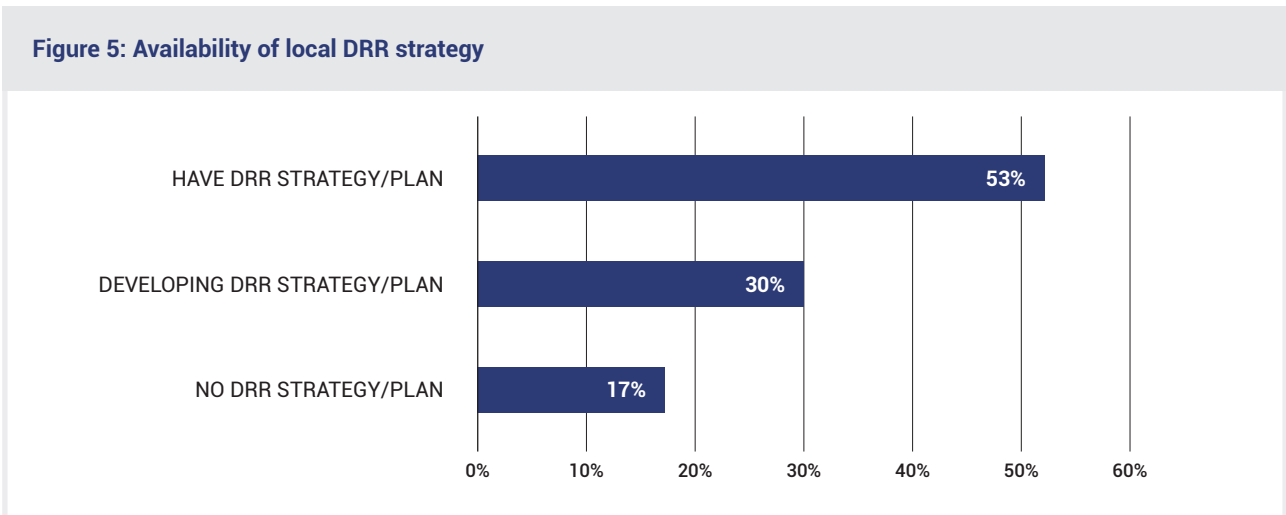
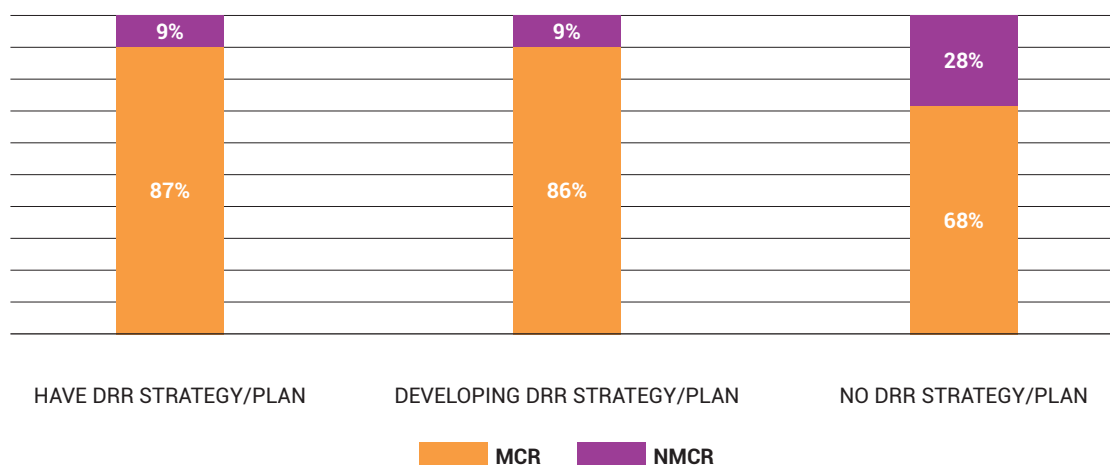


Figure 6: Availability of local DRR strategy



Elements of Local DRR Strategy/Plan

The technical guidance for monitoring and reporting on progress in achieving the global targets of the Sendai Framework for Disaster Risk Reduction¹ has noted the 10 key elements to be included in the DRR strategy to be considered as fully aligned with the Sendai Framework: DRR strategy should:

- i) have different timescales, with targets, indicators and time frames,
- ii) have aims at preventing the creation of risk,
- iii) have aims at reducing existing risk,
- iv) have aims at strengthening economic, social, health and environmental resilience,
- v) address the recommendations of Priority 1, Understanding disaster risk: Based on risk knowledge and assessments to identify risks at the local and national levels of the technical, financial and administrative disaster risk management capacity,
- vi) address the recommendations of Priority 2, Strengthening disaster risk governance to manage disaster risk: Mainstream and integrate DRR within and across all sectors with defining roles and responsibilities,
- vii) address the recommendations of Priority 3, Investing in disaster risk reduction for resilience: Guide to allocation of the necessary resources at all levels of administration for the development and the implementation of DRR strategies in all relevant sectors,
- viii) address the recommendations of Priority 4, Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction: Strengthen disaster preparedness for response and integrate DRR response preparedness and development measures to make nations and communities resilient to disasters,
- ix) promote policy coherence relevant to disaster risk reduction such as sustainable development, poverty eradication, and climate change, notably with the SDGs the Paris Agreement, and
- x) have mechanisms to follow-up, periodically assess and publicly report on progress.

1 • <https://www.unisdr.org/we/inform/publications/54970>

Figure 7 shows the key elements in which local governments include in the DRR strategies/plans. The data shows that measures to reduce existing risk (element iii) are the most captured element and measures to strengthen investments in DRR (element vii) are the least captured element in the strategies. The DRR strategies and plans of MCR Campaign cities tend to capture these key elements more than those of the non MCR cities.

Additionally, only 2 local governments among the participants have the plan that is fully aligned with this guidance by including all the 10 elements. One is a local government that joined the MCR campaign in Phase 1 and the other one joined the campaign in Phase 2. Furthermore, 7 local governments' DRR strategies include 9 key elements, all of which are the members of the MCR Campaign. Most of the local governments participating in this survey include 1-2 key elements in the DRR strategies. Figure 8 shows the number of key elements included in the DRR strategies.

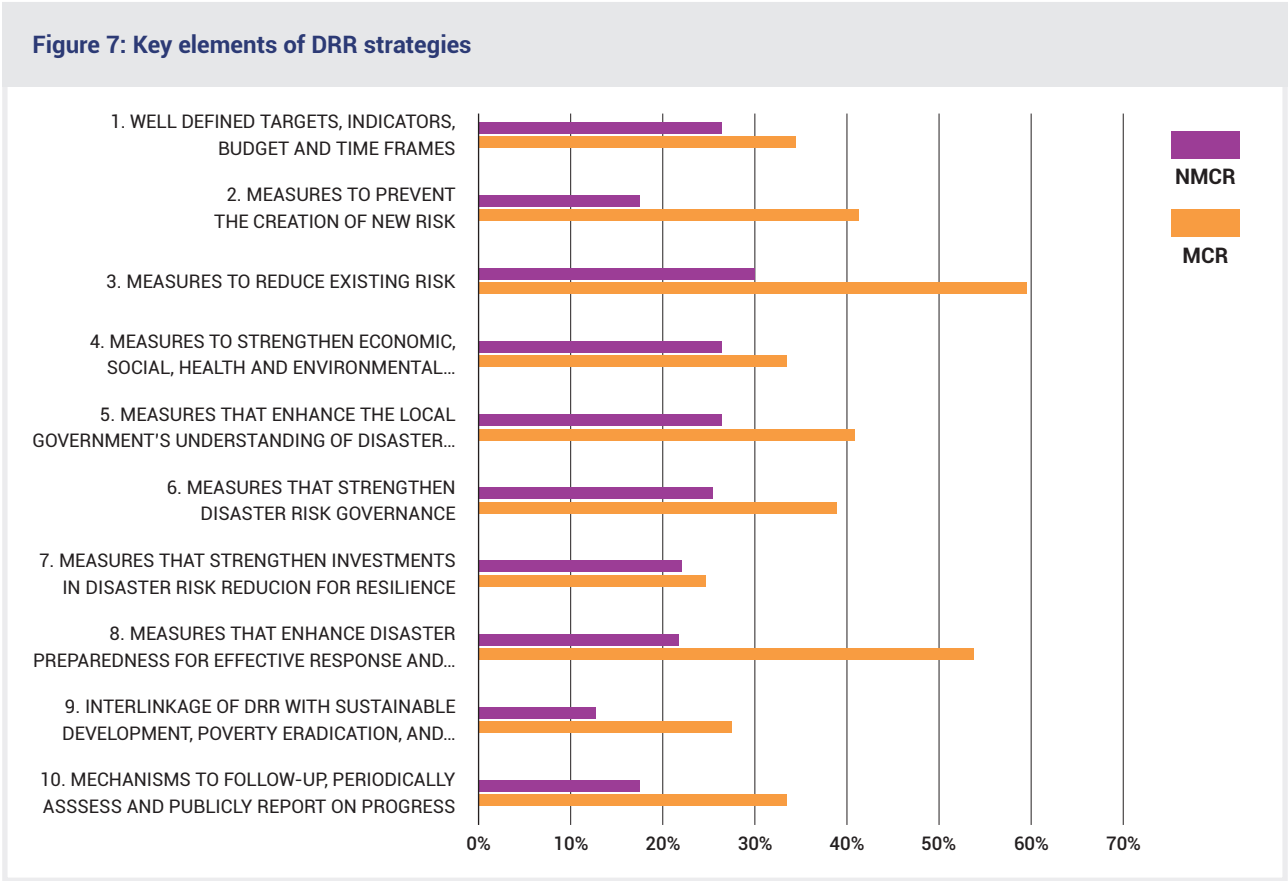
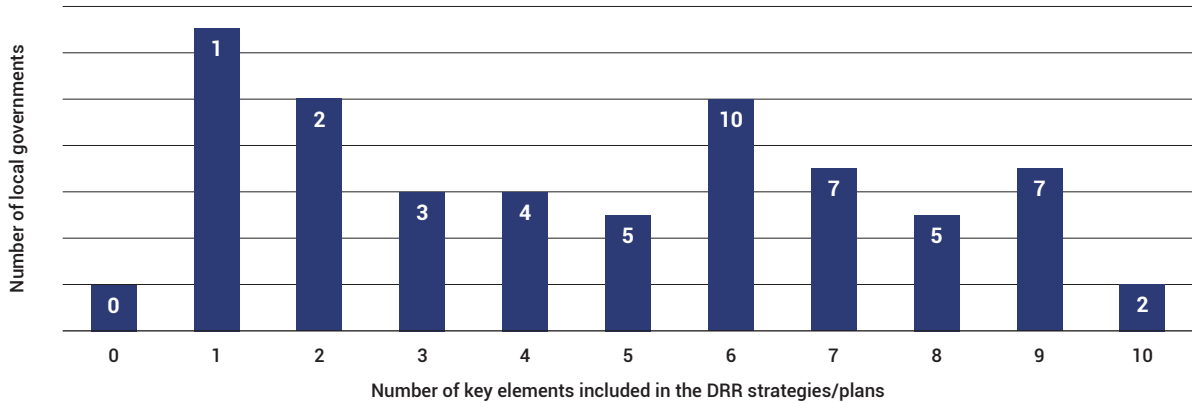


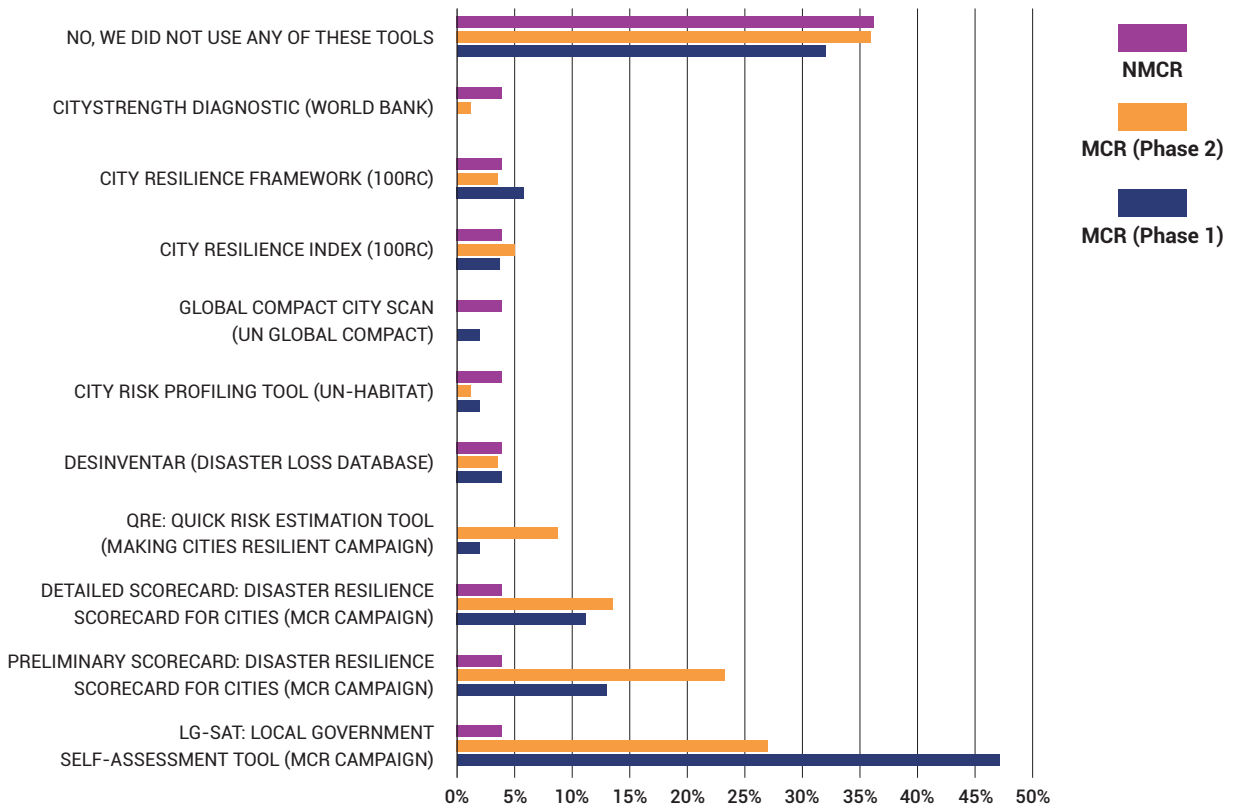
Figure 8: Alignment with the Sendai Framework for DRR



Tools used to develop Local DRR Strategy/Plan

Respondents mentioned the tools that the local governments use to support DRR planning and implementation. Among them, the Local Government Self-Assessment Tool (LG-SAT) is the frequently mentioned tool, followed by Preliminary and Detailed Disaster Resilience Scorecards for Cities. Surprisingly, majority of the local government did not use any tool for support DRR plan development. Figure 9 shows different tools used by the local governments.

Figure 9: Different tools used by the local governments to support DRR strategies

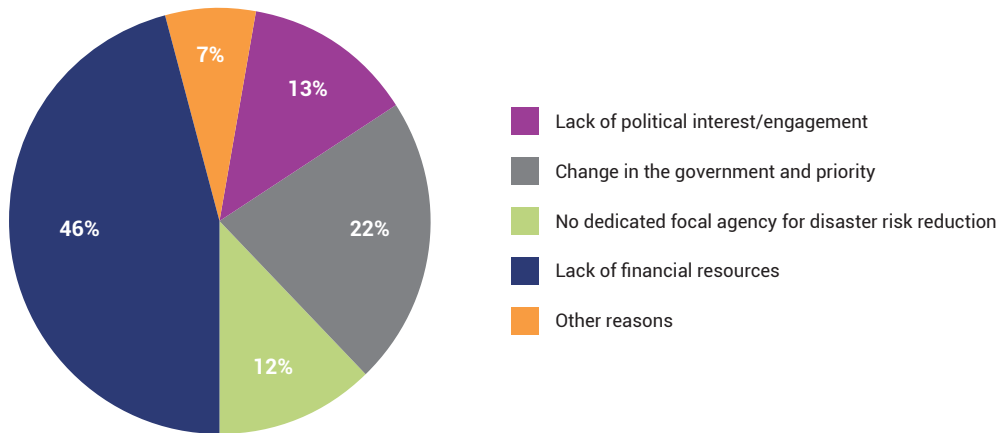


2.4 Implementing DRR Actions

Implementation of DRR strategies

Implementing local DRR strategy is more important than having the strategy. The results show that among the local governments having DRR strategies, 27.4% has fully implemented the DRR strategies, while the majority of the cities (53.4%) only partially implement the strategy and 19.2% have not yet started the implementation. There is no significant difference in this proportion among MCR and NMCR cities. The reason mentioned by most of the respondents for incomplete implementation of the strategy is the lack of financial resources (46%). Change in the government and its priorities (22%) is also one of the frequently mentioned reasons for lack of implementation. Figure 10 shows the reasons for partial implementation.

Figure 10: Reasons for partial implementation



Taking local DRR actions

Regardless of whether the local governments have DRR strategies in place or not, some DRR activities are on-going in various forms. Based on the survey results, risk assessment (60.4%), capacity building on DRR for government officials (54.1%), and training on emergency response (52.2%) are the most implemented DRR actions by the local governments. Table 2 shows the list of DRR actions and number of local governments that implements them. Respondents further mentioned that domestic financial incentives (83), in-house technical capacity (79), and citizen engagement (74) are the most crucial factors for successful implementation of DRR actions.

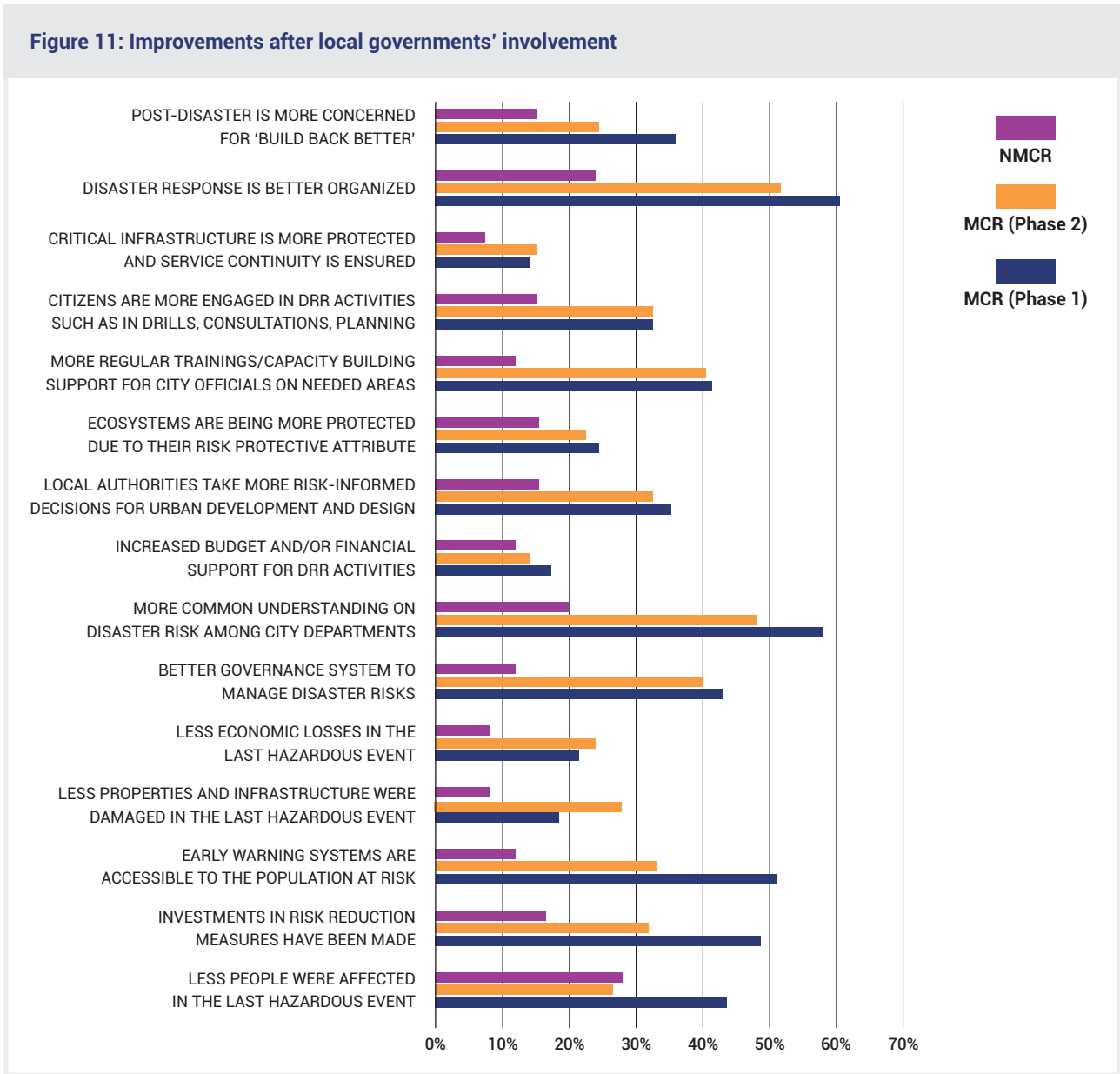
Table 2: DRR actions implemented by local governments (N=159)

Local DRR Actions	MCR (N=134)	NMCR (N=25)	Total
Risk assessment	89	7	96
Capacity building/training on DRR for government officials	76	10	86
Training on emergency response	75	8	83
Establishment of dedicated department or unit for DRR	61	7	68
Risk-informed land use planning	57	7	64
Educational programs and training on disaster risk reduction in schools and local communities	56	8	64
Post-disaster damage and loss assessment	55	8	63
Mainstreaming DRR with other development sectors	55	6	61
Risk communication policies	53	4	57
Assignment of dedicated DRR officials	50	5	55
Establishment of multi-stakeholder coordination mechanism	50	5	55
Early warning system	51	3	54
Capacity building/training on DRR for non-government stakeholders	46	4	50
Citizen participation mechanisms in all phases of disaster management (Prevention, Preparedness, Response, Recovery)	44	5	49
Construction of protective infrastructure (e.g. sea wall, levees, storm drains, slope stabilization, etc.)	44	4	48
Media program to increase awareness of citizen	44	4	48
Relocation of population from risk areas	37	3	40
Disaster-proof building regulation	29	5	34
Risk-informed informal settlements upgrading	30	4	34
Local DRR fund & budgeting	28	3	31
Reconstruction of damaged assets taking into account of DRR measures (Build Back Better)	30	1	31
Ecosystem restoration for DRR purposes	22	3	25
Retrofitting of critical infrastructure	18	2	20

Impact of local DRR actions

Figure 11 shows the improvements observed in the cities after local governments became interested and involved in disaster risk reduction. The results reveal that the improvements are highly visible among cities participating in MCR Campaign, particularly in the cities that have signed up to the Campaign in Phase I before 2015. Other improvements include better-organised disaster response (MCR 1: 60%, MCR 2: 52%, NMCR: 24%), improved common understanding on disaster risk among city departments (MCR 1: 58%, MCR 2: 48%, NMCR: 20%), and more regular training/capacity building support for city officials in needed areas (MCR 1: 42%, MCR 2: 41%, NMCR: 12%).

Figure 11: Improvements after local governments' involvement

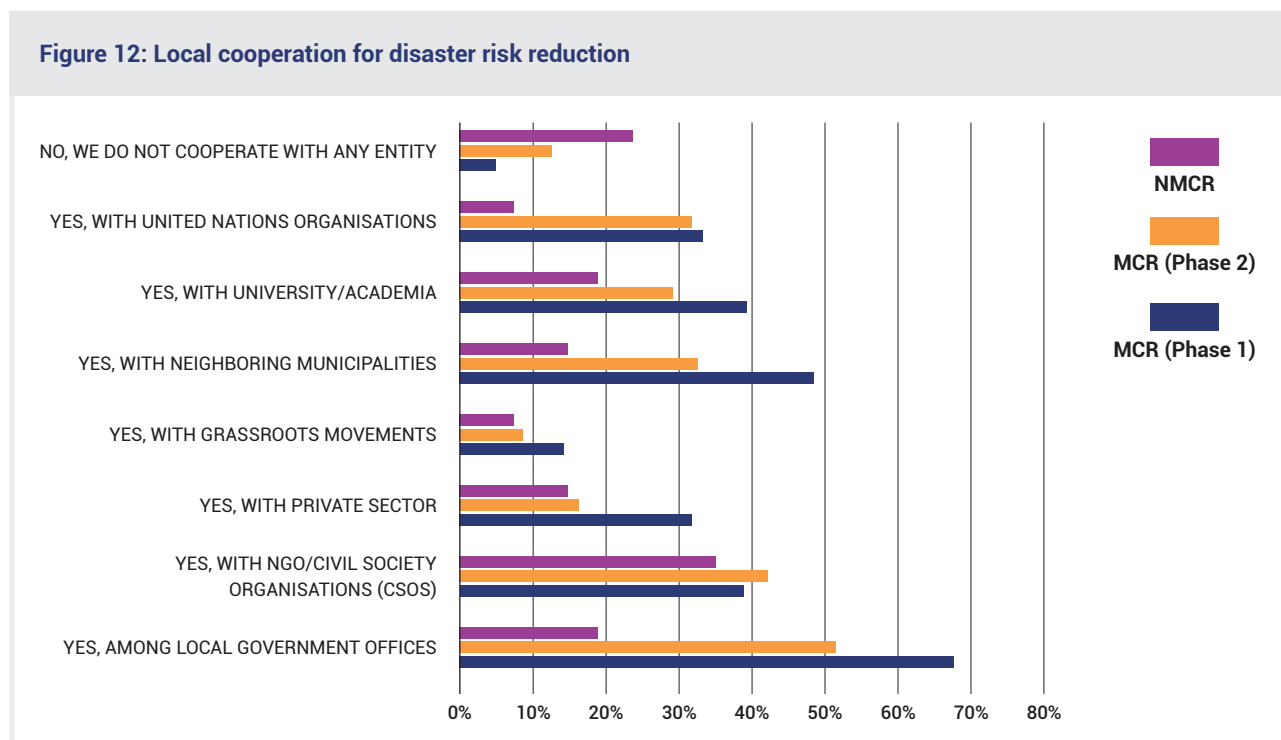


Local partnership for DRR

The Sendai Framework highlights the role of local governments in taking the lead in disaster risk reduction and emphasises the shared responsibility among all stakeholders. Various stakeholder groups must be included in DRR to enhance local disaster resilience building. The results further reveal that MCR Campaign cities have high engagement with other stakeholders and create partnership with these stakeholders for local disaster resilience building.

According to the survey, most of the local governments coordinate among various local government offices in disaster risk reduction (MCR 1: 68%, MCR 2: 52%). Non-governmental organisations (NGOs) and civil society organisations (CSOs) are also the key partners for local governments on DRR (MCR 1: 40%, MCR 2: 42%), followed by neighbouring municipalities (MCR 1: 49%, MCR 2: 33%), university and academia (MCR 1: 40%, MCR 2: 30%) United Nations Organisations (MCR 1: 34%, MCR 2: 32%), and private sector (MCR 1: 32%, MCR 2: 17%). The result show that there is a relatively minimal involvement of grassroots organisations (MCR 1: 15%, MCR 2: 10%) in local DRR. Surprisingly, 13

MCR local governments (MCR 1: 6%, MCR 2: 12%) reveal no cooperation with other entity. Figure 12 shows the local cooperation for disaster risk reduction.



An effective DRR plan is the one that is developed with the involvement of the citizens. According to the respondents, 61% of MCR cities and 20% of NMCR cities have developed their DRR plans with the participation of the citizens in some form. Demonstrative actions, open workshops and public consultations are some of the most common citizen engagement methods used by the cities. 25% of the MCR 2 (2016 onwards) respondents mentioned that the most common citizen engagement method is via open workshops to increase awareness and demonstrative actions and campaigns. Table 3 shows the number of cities that use various citizen engagement techniques.

Table 3: Techniques used for citizen engagement

Technique	MCR 1	MCR 2	NMCR
Demonstrative actions and campaigns	25%	7%	4%
Open workshops to increase public awareness	11%	21%	4%
Public consultations	13%	12%	8%

External support for DRR at the local level

Further 59% of the DRR plans are developed with external support. Most of the support is provided by the national government followed by the private sector. According to the respondents, financial support, human resources and capacity building is mainly received from the national government, and technical support from academia and the private sector. Table 4 shows the different type of support received from various organisations.

Table 3: Techniques used for citizen engagement

Type of support	National government	UNOs	Development bank	NGOs	Sister city	Academia	Private sector	Others
Financial resources	40%	17%	0%	13%	3%	3%	13%	10%
Human resources	21%	6%	0%	15%	9%	15%	11%	23%
Technical advise	16%	11%	0%	12%	8%	19%	18%	17%
Capacity building	23%	13%	0%	15%	10%	16%	3%	21%
Others	32%	18%	0%	18%	0%	5%	5%	23%

3. Analysis and conclusion

Why cities are at risk? It can be due to several reasons: rapid urbanisation; high population density; unplanned urban development (increased vulnerability to hazards); informal settlements and slums; low building standards and inappropriate construction; lack of protective infrastructure; lack of adequate city development plans and improper planning for land use; lack of safe lands leads to developments and developments in marginal and hazard prone lands such as sloping lands, flood plains, reclaimed lands etc., to name a few.

Disaster trends show that majority of the cities are totally unprepared to handle any adverse effects of hazards that are amplified due to rapid urbanisation. Based on the analysis of the local government survey conducted in 2018 to capture the progress in DRR and the implementation of the Sendai Framework for Disaster Risk Reduction at the local level around the world, cities that are part of the MCR Campaign tend to perform better than non-MCR Campaign cities on many aspects of disaster risk reduction at the local level.

Survey results show that, in relation to understand the risk in their territory, almost 70% of the cities participating in the survey conduct disaster risk assessments. Among them, the majority are the MCR cities. 10 different types of risk outputs are identified as the outputs of this risk assessment. Out of 11 local governments or 10% that produce all risk, hazard, exposure, and vulnerability maps, 9 are cities that have signed up to the MCR Campaign.

Following the trend, the most often used means to communicate risk information by the local governments is online social media such as Facebook, Twitter, and Instagram, followed by the local newspapers and leaflets. The result reveals that the effort on risk communication can be observed more among MCR cities than the non-MCR cities.

Furthermore, among local governments which already have local DRR strategy in place, nearly 80% are the members of the MCR Campaign. Within the additional 30% of local governments in the process of developing the local DRR strategies, approximately 86% have also joined the MCR campaign.

Two of the local governments participating in this survey have the plan that is fully aligned with the Sendai Framework technical guidance by including all the 10 key elements of DRR strategies. One is a local government that joined the MCR campaign in Phase 1 and the other one joined the campaign in Phase 2. Additional 7 local governments' DRR strategies include 9 key elements. All of which are the members of the MCR Campaign.

Majority of the respondents (80%) mentioned that the capacity to cope with disasters has improved since local governments become interested and involved in disaster risk reduction. The results reveal that the improvements are highly visible among cities participating in MCR Campaign, particularly in the cities that have signed up to the Campaign in Phase I, before 2015. The results further reveal that MCR Campaign cities have high level engagement with other stakeholders and have created partnerships with these stakeholders for local disaster resilience building.

Based on the evidence gathered via the survey, it can therefore be concluded that the MCR cities perform better than non-MCR cities on many aspects of disaster risk reduction at the local level, from understanding risk, communication of risk information, development of DRR strategies and plans, engaging multi-stakeholders in DRR, and taking actions to reduce disaster risks. Accordingly, the MCR campaign could be further promoted to support local governments towards achieving more impact on disaster risk reduction and resilience.

Some of the policy implications for local governments that can be derived from the analysis include: adopt a policy to make disaster risk reduction a local priority with strong institutional commitment, decentralize and delegate responsibilities; continue to conduct risk assessments and integrate the outcome in the city and urban planning, as part of the MCR campaign; use knowledge, both scientific and local, in disaster risk reduction practices and ensure that local capacities are enhanced and valued; integrate disaster risk reduction in the city development plan; strengthen disaster preparedness, response, rehabilitation and recovery plans and practice; take decisions to actively participate in national, regional and international networking and sharing of experience for resilient cities.

4. References

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- Malalgoda, C., Amaratunga, D., & Haigh, R. (2016). Overcoming challenges faced by local governments in creating a resilient built environment in cities. *Disaster Prevention and Management: An International Journal*, 25(5), 628-648. doi:10.1108/DPM-11-2015-0260

5. Further reading

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